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Computing for the Older Generation

Jim Gatenby

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About this Book

For various reasons, many older people feel they have missed out on the computing revolution of the last few decades. This book attempts to show, in plain English, that older people have much to gain by owning and using a computer. Computer jargon is avoided wherever possible.

The first chapter describes the way computers evolved over recent years and outlines many of the ways a computer can enrich later life. These include keeping in touch with friends and family by e-mail, organising records for a hobby and starting a new career or business. The next few chapters describe the main parts of a computer system with advice on buying and upgrading, including a list of questions for potential suppliers. Advice is given on setting up a computer in the home, with consideration for health and safety issues. The latest Microsoft Windows XP system installed on many computers is described, including built-in help for users with impaired mobility, hearing and eyesight.

Later chapters cover the main software applications, word processing, spreadsheets, desktop publishing and database and practice exercises and skills checklists are included. The Internet is described towards the end of the book, including searching for information on virtually any subject, tracing of family trees and e-mailing friends and family around the world, with photographs as attachments. The final chapter shows how your computer can be used as a competent music and video centre.

As a member of the over 50's club myself, I have considerable experience of teaching people of all ages. Since retiring from teaching I have used my own computer, working from home, to build a second career as an author.

About the Author

Jim Gatenby trained as a Chartered Mechanical Engineer and initially worked at Rolls-Royce Ltd using computers in the analysis of performance. He obtained a Master of Philosophy degree in Mathematical Education by research at Loughborough University of Technology. His most recent posts included Head of Computer Studies and Information Technology Coordinator. The author has written many books in the fields of educational computing and Microsoft Windows, including several of the current highly successful Older Generation series.

The author has considerable experience of teaching students of all ages and abilities, in school and in adult education. For several years he successfully taught the well-established CLAIT course and also GCSE Computing and Information Technology.

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Computers in Context

Introduction

Older people (including myself) have witnessed the phenomenal growth in the use of computers in the last 40 years or so. However, many of us were not directly involved in this revolution. Some older people feel they have missed out on the benefits of the new technology and others may feel it's too late to catch up.

This chapter describes the evolution of computers in the second half of the 20th century and attempts to explain why some older people may have doubts about their ability to benefit from using computers. This chapter is also intended to show that it's never too late to learn about computers and that older people have nothing to fear and much to gain from using the new technology.

Those of us born more than 50 years ago left school having used nothing more complex than log tables and perhaps early calculating machines. My first experience of computers was in industry in the early 1960s, when massive machines occupying whole rooms were used mainly for calculating work.

These early machines were used mainly by specialists such as mathematicians, scientists and engineers. Special new languages had to be learned to give instructions to the machines. Sets of instructions for a particular task were known as *programs* and this gave rise to the new profession of *computer programmer*.

1 Computers in Context

In these early years the use of computers was confined within the separate computing departments of large organizations, employing specialist staff. Advances in computing tended to bypass the general public; for example, secretaries and typists were still using manual and electric typewriters. Many people therefore saw the use of computers as an activity only for the technical specialist.

The Arrival of the Microcomputer

This situation started to change in the late 1970's with the arrival of the desktop microcomputer, which was to make computing available to a wider audience. Schools and home users could now afford to buy a small computer. These included the Sinclair ZX81 introduced in 1981. In those days it was still necessary to learn a special programming language and to write complex instructions in order to make the computer do anything.

Courses sprang up around the country, teaching people how to program the new machines. Most of the tasks still involved calculating work. Indeed, when computers were first introduced in school, they were usually part of the mathematics department. So anyone who didn't like maths was hardly likely to embrace computers with great enthusiasm.

The Development of Software



Magnetic tapes and discs were developed, allowing programs to be permanently saved, instead of being typed in every time using a keyboard. Soon a new industry evolved, selling ready-made programs stored on disc, collectively known as *software*.

This software was not just for calculating work; for example, the *word processor* was one of the first applications of microcomputers, later to revolutionize the office with many advantages over the ordinary typewriter.

However, it was still necessary to use the keyboard to type in *commands* to carry out tasks such as printing a letter on paper or saving the text onto a magnetic disc. Some of these commands were quite complex and were very off-putting to the ordinary user. The slightest mistake in the spelling or punctuation would cause a command to fail. Many people were too busy with their everyday work to find the time needed to learn the new skills.

Other people embraced the microcomputer with great enthusiasm. Some of these enthusiasts, nowadays referred to with the derogatory title of “nerds” or “anoraks”, took great pride in the specialist computing knowledge they quickly acquired, with a zeal sometimes bordering on addiction.

Unfortunately, some of these enthusiasts would use their new-found specialist knowledge to show off. Often their amateurish attempts at “training” other colleagues only had the effect of making quite normal and competent people feel stupid and apathetic about working with computers.

In the early days, computers were often introduced into companies without proper staff training, so that employees became frustrated and antagonistic towards the machines. Expensive new equipment was not always fully utilized and sometimes stood idle or locked away in cupboards.

1 Computers in Context

Computers Become Easier to Use

The software manufacturers, aware that computers were still regarded as difficult to use by the general public, began to look for ways to make the machines more “user friendly”. Instead of typing in complex instructions in a “foreign” language, the user was presented with a menu, or list of choices on the screen. To choose a task, such as printing a letter on paper, it was simply a case of selecting the task using various keys on the keyboard.

The Mouse

The next milestone in making computers easy to use was the arrival of the *mouse*. This is a small hand-held device with either two or three buttons. The mouse is usually attached to the computer by a cable, although wireless mice (and keyboards) are also available. Moving the mouse about the desk causes a small pointer to move about the screen. To select a task or object on the screen, the pointer is moved over the task and a button (usually the left-hand one) is pressed on the mouse.



Pointer

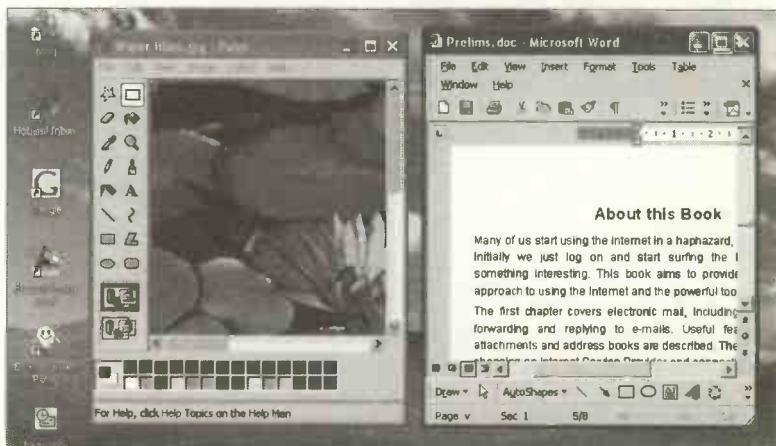
So the computer could now be controlled simply by moving the mouse pointer about the screen and “clicking” a button when the pointer is over the required task. The mouse can also be used for freehand drawing and painting on the screen. In this new system, many of the common operations were represented by small pictures or *icons*. For example, to print a letter you would use the mouse to point and click at a printer icon on the screen. Now there was no longer any need to remember complex commands to be typed in at the keyboard.



Introducing Windows

With this new mouse-controlled system, various parts of the screen were divided up into rectangular boxes known as *windows*. A screen may contain several windows at a time. For example, a window for a word processing document such as a letter might appear alongside another window for a painting program. The user can work on either document by using the mouse to switch to the appropriate window.

The screen below shows a painting program and a word processing document each running in their own window.



1 Computers in Context

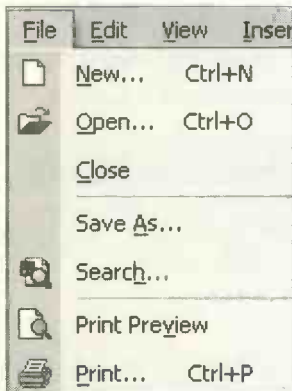
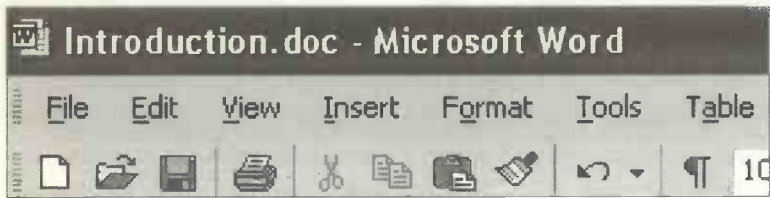
Also shown on the previous screenshot are various icons or small pictures representing different tasks. Any of these tasks can be started using the mouse and its pointer. For



example, clicking the icon shown on the left would start up Google, the very popular program for searching the Internet. This type of program is known as a *search engine*.

Menus and Icons

Most modern programs work in a similar way. Shown below is part of the screen for one of the world's most popular programs, Microsoft Word. This is used for producing letters, reports and books (such as this one).



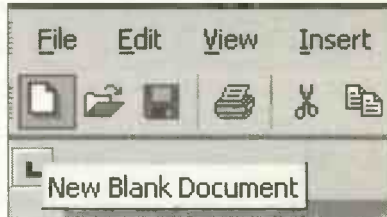
Shown above is part of the Menu Bar which is displayed across the top of the Microsoft Word screen, above the work area where you type your letters, etc. When you click any of the words on the Menu Bar such as **File** or **Edit**, a menu drops down in its own window, as shown on the left. For example, to start typing on a new blank page you would click the

word **New...** as shown on the left. For those who prefer to use the keyboard, a new document can also be started by pressing the key marked **Ctrl** together with the **N** key.

As can be seen, some commands can also be launched using an icon, such as the command to start a new document in a word processor, as shown on the right. Icons are displayed along the Standard Toolbar just below the Menu Bar as shown on the previous page and in more detail below.



You can see the purpose of each icon by allowing the on-screen cursor to dwell over the icon. This causes a short explanation to appear below the icon, as shown on the right for opening a **New Blank Document**.



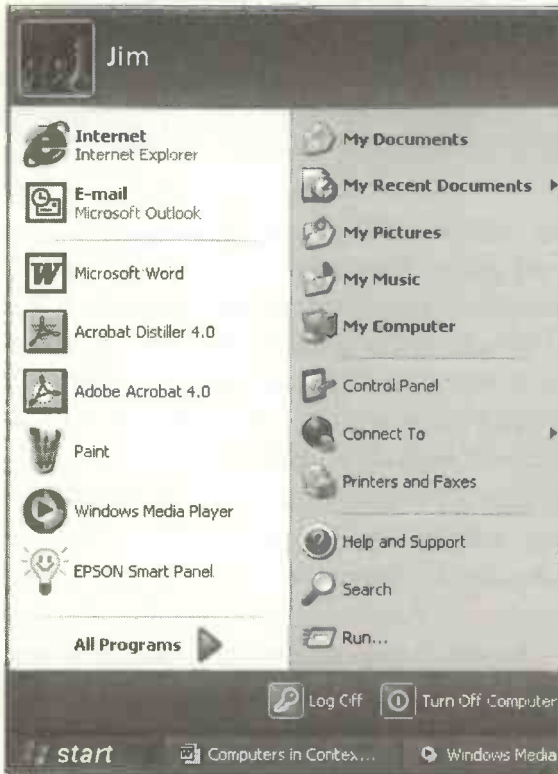
You will often find the same icons are used in many different programs. You might, for example, start off using a word processor for your correspondence then move on to a spreadsheet program for your household accounts or a database for your records and catalogues. When you have learned to use one program you will find it easy to learn others - they all work in a similar fashion.

This new method of working involves **Windows, Icons, a Mouse and a Pointer** and is known as a “WIMP” system. As its purpose to control or operate the computer, it’s known as an *operating system*. The WIMP system was pioneered by the Xerox Company and first made popular on Apple computers such as the Macintosh, which acquired many devotees because it was so easy to use.

Microsoft Windows

Most of the microcomputers in the world now use software made by the dominant Microsoft Company. In 1990 Microsoft brought out its own WIMP operating system, known as Microsoft Windows. The intervening years have seen several different versions of Microsoft Windows including Windows 3.1, Windows 95, Windows 98, Windows NT, Windows Me and currently Windows XP.

Microsoft Windows (or simply “Windows”) is discussed in more detail later in this book. The screenshot below shows the **Start** menu for Windows XP, the latest version of Microsoft Windows, discussed in more detail later.



Computer Whiz Kids and Older Users

There's no doubt that many older people are anxious about using computers, perhaps feeling they are too difficult to learn, especially when so many young children appear to be computer "whiz kids". As an experienced teacher of computing to students of all ages from 11 to 80 years I know that older people can make very good use of computers either in their own business or employment or to enhance their hobbies and daily life in retirement.

In recent years it has been compulsory for children to study ICT (Information and Communications Technology), so that on leaving school students should be able to cope with the widespread use of computers in most areas of employment. In addition, many children have computers and video games in their bedrooms, so from an early age they are familiar and comfortable with computing equipment such as keyboards and mice. On the negative side, excessive use of electronic games (rather than games involving physical exercise) has been blamed for an increase in obesity amongst children in recent years.

However, there is no doubt that younger people have generally grown up with greater confidence in the use of computers than many of the older generation. On the other hand, while many children *appear* to be computing geniuses simply because of their prowess at playing games, older people have the experience to use computers sensibly to do useful and interesting work. Older people often have the time to learn new skills and also the patience to persevere with problems.

As shown in the following list, there are many applications of computers which can be both interesting and beneficial to older people.

Making Good Use of a Computer

Modern computers are extremely versatile and can enrich the lives of older people. Listed below are just some of the applications now possible; some of these are described in more detail later in this book or in the companion text “The Internet for the Older Generation”, reference BP600, from Bernard Babani (publishing) Ltd.

- Keeping in touch with relatives and friends using letters and e-mails. Creating publications such as reports, magazines, posters and newsletters.
- Saving photographs taken with a digital camera and editing, enhancing and printing them.
- Using the Internet to find accurate and up-to-date information on any subject, including your ancestry and family tree, common illnesses, pensions and finance.
- Supermarket shopping, ordered in minutes over the Internet and delivered to your door. Ordering books from online retailers like Amazon, finding holidays and making all of the arrangements without leaving home.
- Cataloguing records for a small business or a hobby such as plants, recipes or a music collection. Keeping track of household expenses.
- Creating your own Web site or setting up an online diary or “blog” (short for Web log).
- Buying and selling antiques and collectables on e-Bay.
- Using a home computer to run a small business or start a second career. Since retiring from teaching I have produced several books at home, typeset and ready for printing, working flexible hours and avoiding the stress of commuting.

Some Reassuring Facts About Computers

If, after reading this chapter, you are still anxious about using computers for the first time, here are a few facts which may help to allay some common fears:

Modern computers are easy to use

Most modern computer programs are operated by selecting from menus and small icons (pictures) on the screen, using a mouse and on-screen pointer. The general method is easy to learn and this same method can then be used for all sorts of different tasks. Modern computers are therefore extremely easy for *anyone* to use.

You don't need to be good at maths or electronics to use a computer

Most computing activities do not involve maths or any sort of technical work – typical uses include writing letters, sending messages by e-mail or designing posters and leaflets. You don't need any special training to make good use of computers, although you may benefit from a confidence-building course or short courses tailored to help with particular tasks.

Modern computers can produce excellent results

Advances in software such as word processors and desktop publishing and also cheap inkjet and laser printers mean that anyone can produce professional looking publications.

Older people have significant advantages

Many older people have the time to learn new skills at their own pace and to attend day-time courses. They usually have a wealth of experience enabling them to plan and organize their work and set realistic targets.

You can't easily lose all of your work

With sensible precautions (discussed later in this book) you can easily make regular “backup” copies of important work to protect yourself against possible disaster.

You can't easily damage the computer itself

In normal use it is most unlikely that the computer or your work can be damaged by making a mistake while typing at the keyboard. Computer “viruses” (small programs designed by computing “vandals” to damage data files) can be spread through e-mails sent via the telephone lines. However, you can guard against these by installing up-to-date *anti-virus software* (discussed later in this book). Viruses only damage the data stored on your computer, they don't damage the physical components, known as *hardware*. In fact, the hardware is most unlikely to be damaged under any circumstances, except by careless handling or the spilling of drinks (and, of course, major disasters such as fire, floods or theft).

Modern computers are reliable

If handled with care, modern computers are generally robust and reliable. Obviously constant moving about is likely to cause problems. Making acquaintance with a reliable, local computer repair specialist is always a good idea should you be unlucky and have a major fault.

Help and support is readily available

Most software has built-in help and further support is available by telephoning or e-mailing the manufacturers. At a local level, there are usually beginners' courses either free or for a modest fee. The popular CLAIT courses offered at local colleges lead to qualifications in basic software skills and are widely recognized by employers.

The Main Parts of a Computer System

Introduction

This chapter discusses the main parts making up a computer system. Although there are variations in the price and performance of systems, they all contain the same set of basic components. A typical system is shown below.



The main parts of the basic system shown above are:

- The *tower* or *base unit* shown on the left.
- The *keyboard* with the *mouse* to the right.
- The *monitor* or *VDU* (Visual Display Unit).
- The *printer*, in this case a small laser printer.

2 The Main Parts of a Computer System

The *base unit* is at the heart of the system. Nowadays the base unit is often in the form of a *tower*, which can stand upright on the floor, thereby saving desk space. This allows more space for other components, such as a scanner and speakers, to be placed on the desk.

The base unit contains the essential components of the computer, such as the *processor*, the *memory*, the *motherboard*, the *hard disc drive* and the *CD and DVD drives*. These parts, normally hidden from view under the metal case of the base unit, are described in the next chapter, *Inside the Computer*. Other components which make up the computer system, such as the mouse, keyboard, monitor and printer, sit outside of the base unit and are known as *peripheral* units.

The peripheral units connect to the base unit via cables plugged into sockets on the back of the base unit. Some of these sockets, known as *ports*, are shown below.



USB Ports

USB (Universal Serial Bus) Ports

USB ports shown on the right above are now very important and may be found on the front and back of a computer. These ports make it very easy to connect peripheral devices, even while a computer is up and running – a process known as “hot swapping”. USB ports are now used to connect all sorts of peripheral devices such as printers, removable storage, digital cameras, scanners, Bluetooth adaptors and modems (discussed shortly).

The USB Dongle

All sorts of recent innovations now use a USB connection; these include very small plug-in devices known as “dongles”. *Flash drive* dongles are minute removable storage devices (shown left) capable of storing more data than several hundred floppy discs, which are now becoming obsolete.



Bluetooth

Bluetooth is a technology which allows various devices to communicate with each other *wirelessly*. A *USB Bluetooth Adaptor* is a small dongle which plugs into one of a computer's USB ports. This allows the computer to exchange data with other Bluetooth devices; for example, to transfer photographs from a Bluetooth mobile (camera) phone to a computer, for editing and printing.

The Keyboard

Keyboards have not yet been replaced, to any great extent, by modern inventions such as voice recognition systems.



Most keyboards still follow the QWERTY convention, which refers to the order of the first six letter keys.



2 The Main Parts of a Computer System

Some Important Keys



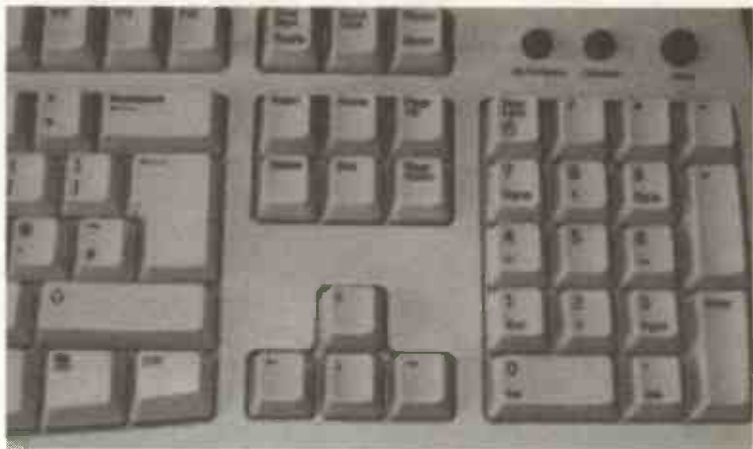
Capital letters are obtained by simultaneously holding the **Shift** key, shown left and below, marked with an upward pointing arrow. Or you can switch the **Caps Lock** key on and off as required.



Where there are two characters on a key, the upper character is obtained by holding down the **Shift** key while the required key is pressed.



The photograph below shows another set of important keys on the right of the keyboard.



The cluster of numeric keys on the right above is the *numeric key pad*. This is often used when a large amount of numeric data is to be entered continuously.

The four keys marked with arrows shown above are the *cursor control keys*. These can be used to move the cursor about the screen or to step through the options on a menu. Along the top of the keyboard are the *function keys*, marked F1 to F12. These can be programmed to carry out various functions. For example, F1 is often programmed to provide help within a piece of software.

Still referring to the keyboard shown above, the **Backspace** key is used to delete text to the left of the current cursor position. The **Delete** key removes text to the right of the current cursor position.

Also shown above are duplicates of the **Shift** and **Ctrl** keys, which are also present on the left of the keyboard.

2 The Main Parts of a Computer System



The **Enter** key shown left and on the numeric keypad on the right of the image on the previous page, is used to start a new line when typing. It is also known as the **Return** key, after the Carriage Return key on traditional typewriters.



The **Insert** key shown left allows you to switch between **Insert** and **Overtyp** mode. In **Insert** mode, any letters you type in the middle of a sentence push out the existing letters. In **Overtyp** mode the existing letters disappear as you type over them.

The **Home** key moves the cursor to the beginning of a *line of text*. The **End** key moves the cursor to the end of a *line*.

Ctrl+Home and **Ctrl+End** move the cursor to the beginning and end of a *document*.

Page Up and **Page Down** enable you to scroll through a document approximately one *screen* at a time.

Ctrl+Page Up and **Ctrl+Page Down** enable you to scroll through a document a *page* at a time.

At the bottom of the keyboard, the long key (shown below) is the **Space Bar**, used to insert spaces between words.



Also shown above and below is the **Windows** key, which brings up the Microsoft Windows **Start** menu.



If you don't possess typing skills you may wish to practise with one of the many typing tutor programs available such as Mavis Beacon Teaches Typing. If you learn to type properly, apart from saving time, this will allow you to concentrate on the screen and the content of your work, rather than constantly looking for keys on the keyboard.

Keyboard Shortcuts

Many people are quite happy to operate the computer using a mouse, pointing and clicking over screen icons and menus. Others, particularly trained typists, prefer to use the keyboard rather than the mouse, whenever possible.

As an alternative to using the mouse, many operations can be carried out using special combinations of key presses, known as *keyboard shortcuts*. For example, to turn bold text *on* you would press the key marked **Ctrl** together with the key for the letter **B**. To turn bold text *off* you would again press **Ctrl+B**.



In general, if an effect is turned on by a keyboard shortcut, it is also turned off by the same method. This sort of on/off switch action is known as a "toggle". Keyboard shortcuts are discussed again in the chapter on word processing.

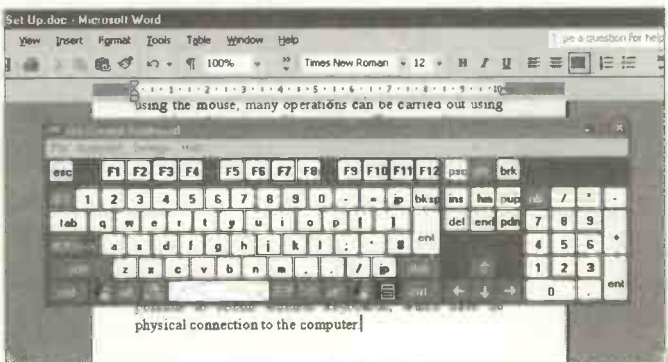
2 The Main Parts of a Computer System

Microsoft Keyboards

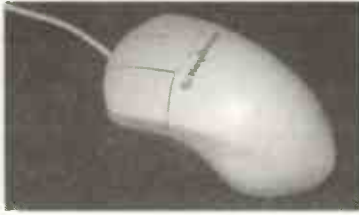
Special Microsoft Windows keyboards are available which contain, amongst other things, small round buttons for connecting directly to the Internet and searching for particular Web pages. Special buttons also give direct access to Windows features such as a **Calculator** and **My Computer**, which displays information about your discs and files.



An *on-screen keyboard* is provided in Windows XP to help anyone with restricted movement. The virtual keyboard is displayed on the screen as shown below. The mouse is then used to select the required key on the screen. Clicking a letter or number causes that character to appear in the document on the screen at the current cursor position.



The Mouse



As discussed in the previous chapter, the mouse is used to:

- Select icons from a menu on the screen.
- Start programs from a screen icon.
- Open a “folder” containing documents.
- Draw or paint freehand.



Shown below is the Windows **Start** menu. Any of the programs or menu objects can be launched by clicking the left mouse button while the cursor is over the appropriate name or icon.



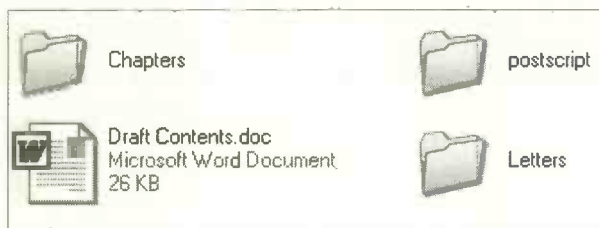
2 The Main Parts of a Computer System

The mouse can also be used to “drag and drop” objects on the screen. As discussed later, documents are saved as *files* and stored in *folders* which can be displayed as icons as shown on the right.



A document file can be moved between folders by dragging and dropping. This involves moving the mouse pointer over an object then *keeping the left mouse button held down* while the object is dragged to its new position. Then the left mouse button is released.

For example, the screenshot below shows three folders and one document called **Draft Contents.doc**. The document could be moved and stored in any of the folders by dragging and dropping as described above.

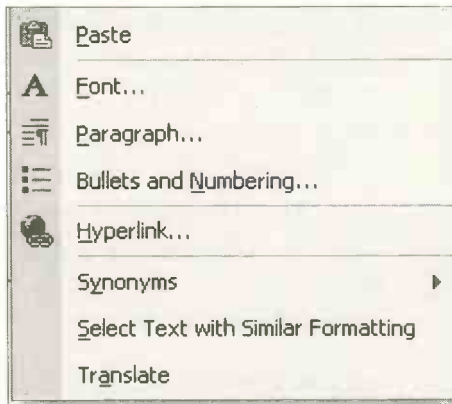


Managing documents and folders in this way is described in more detail later in this book.

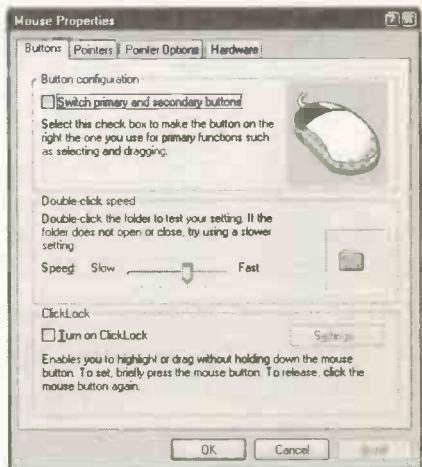
Mice normally have two or three buttons. Even with a three-button mouse, most programs only use the left and right buttons. The left-hand button is used to select objects on the screen. Some operations require a single click while others need a “double click” – two clicks of the left button in rapid succession.

In some programs, the right-hand mouse button can be used to cancel or undo the most recent operation.

The right button can also be used to display *pop-up menus* relevant to the current cursor position. These menus (known as *context-sensitive*) appear wherever you click on the screen, unlike *drop-down menus* which appear under the menu bar at the top of the screen. For example, pressing the right mouse button over the text in a word processing document would bring up the following menu in Microsoft Word.



The settings of the mouse can be adjusted in Microsoft Windows, after selecting **Start**, **Control Panel** (in **Classic View**) and **Mouse**. For example, you can swap the functions of the left and right buttons or alter the appearance of the on-screen pointer, as shown on the right.

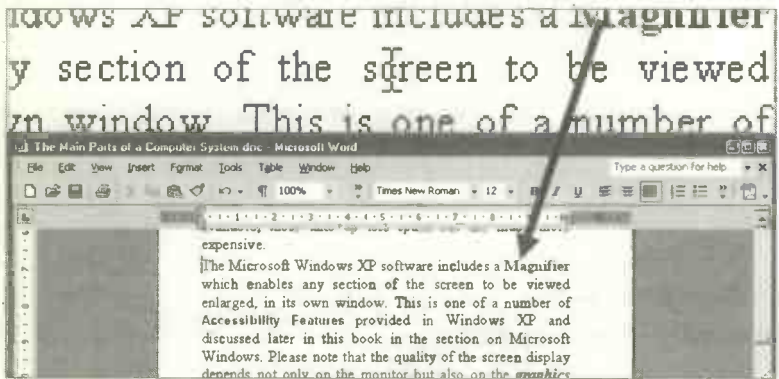


2 The Main Parts of a Computer System

The Monitor

The choice of monitor (or screen) depends on how much you want to spend. If you intend to do a lot of exacting work such as DeskTop Publishing or Graphics, or if you have impaired vision, you may be wise to invest in a large screen size. 15-inch, 17-inch, 19-inch and 20-inch monitors are common today. These screen sizes are nominal and measured diagonally across the screen. The actual viewing area may be about an inch less, because of the plastic case surrounding the *CRT* (Cathode Ray Tube). Flat screen monitors (known as *TFT* or Thin Film Transistor monitors) are now very popular; these take up less desk space but are more expensive. However, like many innovations in technology, the prices of TFT monitors are falling steadily.

The Microsoft Windows XP software includes a *Magnifier* which enables any section of the screen to be viewed enlarged, in its own window.



This is one of a number of **Accessibilty Features** provided in Windows XP and discussed later in this book in the section on Microsoft Windows.

Please note that the quality of the screen display depends not only on the monitor but also on the *graphics card*, a small circuit board or *expansion card* plugged into the computer's main motherboard. As discussed later in this book, Microsoft Windows allows you to adjust the colours used to display the various menus and windows. You can also adjust the screen *resolution*. The resolution is the number of small squares (known as *pixels* or *picture elements*) used to map out the screen. Typical screen resolutions are 800x600 and 1024x768, as shown below.



2 The Main Parts of a Computer System

The Printer

A reliable printer is an essential part of your computer system – you can't do all of your communication by e-mail or posting on Web sites. A printer is needed to produce paper copies of letters, reports, accounts, publications, magazines, photographs, e-mails and Web pages.

Nowadays there are two popular types of printer used in the home and small business. These are the *laser printer* and the *inkjet*. You need to consider the type of work you will be doing in order to choose a suitable printer.

The Inkjet Printer

Inkjet printers are good all-rounders and can be bought for as little as £50, although models costing several hundred pounds are also available.

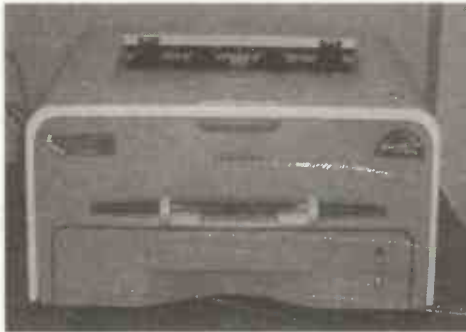


You must also consider the cost of the black and colour ink cartridges which can cost from £10 – £20 or more per set. Inkjet printers can produce high quality colour photographs, though the cost of the cartridges and the special glossy paper makes this quite an expensive activity.

The Laser Printer

Laser printers are popular in the home and in business. They are fast, produce high quality printout and tend to be quieter than their main rival, the inkjet. Most laser printers are *mono* (i.e. they print only in black and white.) Mono laser printers suitable for the home or small business can be bought for less than £100, while colour laser printers cost from about £200 upwards. I have used two cheap mono laser printers over the last 10 years and they have been very reliable.

You need to shop around for replacement *toner cartridges* which typically cost around £40 – £50. *Toner* is a fine black powder used as “ink” to print text and graphics on the paper. A toner cartridge should be capable of printing several thousands sheets of A4. *Refill toner kits* are a cheap way of extending the life of a cartridge although print quality may eventually suffer as the cartridge drum surface inevitably deteriorates.



Multi-purpose printers combine several functions such as printing, photocopying, sending faxes and scanning (discussed on the next page).

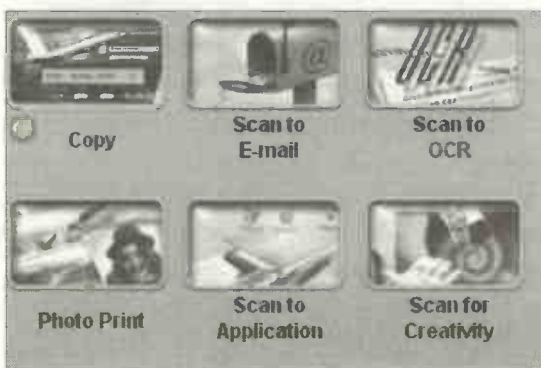
2 The Main Parts of a Computer System

The Scanner

The scanner is an optional extra rather than an essential part of a computer system. A common type is the A4 flatbed scanner, a flat box roughly the size of a large folder, as shown. Scanners cost from about £40 upwards.



An image of a piece of paper containing text and/or graphics can be copied and inserted into a document on the screen. Alternatively the scanned image can be saved on your hard disc or sent to a range of destinations such as e-mail or the Web. As shown in the menu below (for an Epson scanner), the scanner can also copy a document straight to your printer, acting like a photocopier. The scanner is considerably slower than a photocopier and is most suitable for small copying jobs. The scanner is also useful for copying old photographic prints into a program such as Corel Paint Shop Pro or Adobe Photoshop Elements, where they can be edited, improved and any scratches removed before reprinting.



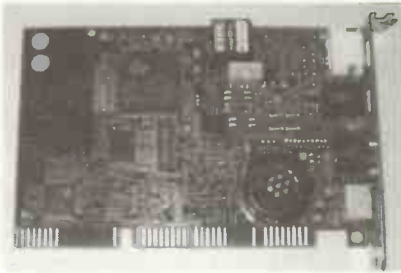
The Modem

The modem is a small set of microchips used to connect a computer to the Internet via the telephone lines. *External modems* are contained in their own box and sit outside of the computer on the desk. A cable connects the modem to the back of the computer and another cable plugs into the standard telephone line. The external modem has an array



of indicator lights which report on the current activities – such as whether the modem is switched on, or if it is sending or receiving data, fax or voice mail, etc. The external modem is portable – it can easily be unplugged and transferred to another computer.

The *Internal Modem* consists of a small circuit board containing a set of chips. This plugs inside of the case of the computer, out of sight. The internal modem obviously saves desk space and is more secure from damage or possible theft. The internal version takes its power off the computer itself.



The Dial-up Modem

For many years most home users connected to the Internet via the telephone line using a device called a *dial-up modem*. The major disadvantage of the dial-up modem is that it is too slow for transferring large files, such as videos, etc., across the Internet. Also, you can't make ordinary telephone calls while connected to the Internet.

2 The Main Parts of a Computer System

The Broadband Internet Connection

Recent years have seen the development of *broadband* Internet connections, which provide vastly improved performance for finding information and transferring across the Internet large files such as video clips and music. Broadband is still not available in some areas of Britain.



A common type of broadband connection is the *ADSL modem*, which may be plugged into the computer through a USB port. The modem and an ordinary telephone handset

both plug into the telephone line via a special device called a *filter*, allowing both Internet activities and ordinary telephone calls to continue simultaneously.

If you decide to subscribe to a broadband service like BT, they provide a kit containing all of the necessary components, which really are very easy to install (honestly!). This subject is described in more detail later in this book.

The Wireless Network

If you have more than one computer in your home, you may wish to install a *wireless network*. This will allow several computers to share an Internet connection, (amongst other things) without the need to drill holes and trail cables around the house. With a wireless network you can even connect to the Internet using a laptop computer while sunbathing in the garden!

The parts for a wireless network for two or more computers cost around £60; you don't need to be a technical expert to plug the bits together and get the network up and running.

The Digital Camera

Cheap digital cameras can be bought for as little as £40, while better quality ones may cost several hundred pounds. The digital camera doesn't use film, but instead has a memory. The images are stored in the memory until you "download" them to your computer. This is done by connecting the camera to the computer using a special USB cable, included in the camera package.



A menu pops up with options to print, view or copy the images. Once in your computer, the images can be edited in a program such as Corel Paint Shop Pro or Adobe Photoshop Elements, before being printed on special glossy photographic paper.

Some cameras are supplied with ordinary AA batteries to get you started but you will need to replace these with rechargeable ones (*Nickel-Cadmium* or *Nickel-Metal Hydride*). A set of these together with a charger costs about £15. Rechargeable *lithium batteries* are also popular; these are more expensive but have a longer life.

2 The Main Parts of a Computer System

The memory in a digital camera often consists of a plug-in module such as the *SmartMedia*, *Compact Flash*, *Memory Stick* or *xD* cards. The memory itself is mounted on a thin plastic material about the size of a large postage stamp. The card is a push fit in the body of the camera. Memory capacity is often quoted in *megabytes* or MB for short, as discussed in Chapter 3. A 16MB or 32MB card is often supplied as standard with a new camera, but you will probably soon replace this with a card of, say, 1024MB (1 *gigabyte*), capable of storing hundreds of photos.



Some digital cameras are equipped with flash and a zoom lens. Most have a small preview screen allowing you to view the set of images stored in the memory and delete any you don't want. Some digital cameras also allow you to record a few minutes of video. This can be viewed initially on the small monitor on the back of the camera, prior to viewing on your computer screen or on a standard television set.



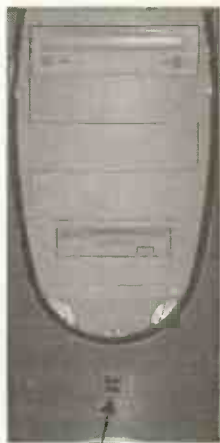
Next

The next chapter, *Inside the Computer*, describes the main components inside the case of the base unit. These are at the heart of the computer and determine how your computer will perform. It's worth familiarizing yourself with them, if only so that you are not bamboozled by the sales staff when you are choosing your first computer.

Inside the Computer

Introduction

The base unit is the metal box containing the essential parts of the computer and is really the computer itself. It could start up and run without the peripheral units like the keyboard, mouse and printer, although you wouldn't be able to do much with it. The peripheral units are for *inputting* data, etc., and for displaying or printing information *output* from the computer. The base unit on the right is in the form of a *tower*, usually situated on the floor.



USB ports

At the top of the base unit shown above is the CD drive, with space underneath for additional drives such as a DVD drive. The smallest slot at the bottom is a floppy disc drive. Many new computers no longer have floppy drives as these have been superseded by more capacious storage media such as CDs, DVDs and removable flash drives and mini hard drives. On the right of the tower is the main power switch for the computer. There is also a light which flashes on and off to indicate hard disc activity and a light to show if the computer is switched on. At the bottom of the base unit are two convenient USB ports (shown on the right), to supplement the less-accessible USB ports at the back of the machine.



The Processor

This is the “brains” of the computer and carries out all of the instructions sent into the processor by the program you are using. Well known brands are the Intel Pentium, Celeron and Centrino and the AMD Athlon and Sempron. The speed at which the processor works determines the performance of the computer. At the time of writing, new computers are advertised offering processor speeds of around 1.6 – 3.2GHz (gigahertz). This is a measure of how many thousands of millions of instructions per second the processor can carry out.

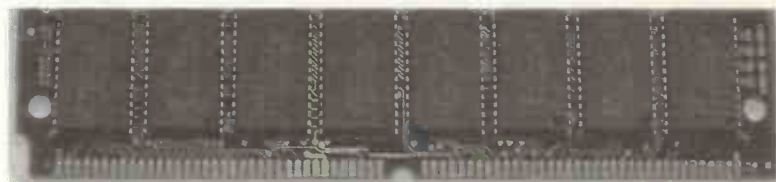
Machines with faster processors are available at a greater price. As a general rule, if you are intending to use your computer for tasks such as word processing, publishing documents, keeping accounts and records, sending and receiving e-mails and searching the Internet, then a basic processor of perhaps 1.6GHz will be quite adequate.

It's certainly not necessary for the general user to keep up with all of the latest offerings from the processor manufacturers. For example, I am currently using a machine with a 1.6GHz processor and this is quite satisfactory for the sort of use described above.

If you later find that you need a more powerful processor, it may be possible to “upgrade” your existing computer. Check before buying a new system whether the processor can be upgraded at a later date. It may simply be a case of unplugging the old processor and replacing it with the new one. This is much cheaper than buying a new computer.

The Memory

The memory (also known as RAM or Random Access Memory) is a set of chips, as shown below, which act as a store for the data or information typed in at the keyboard.



The memory also holds the programs that you are currently using. The memory is only a *temporary store*. Like the processor, the size of the memory can have a major effect on the performance of the computer. Modern programs, with all of their graphics, windows and icons, demand massive amounts of memory. Photographs are also very hungry for memory.

If your computer is short of memory, programs will run very slowly. Therefore it's best to buy a computer with as much memory as possible. Currently machines are being sold with 256MB, 512MB or 1024MB of memory. Memory prices fluctuate – at the time of writing 512MB costs around £30. It's a 10 minute job to plug extra memory or RAM chips, also known as SIMMs, into the computer at a later date.

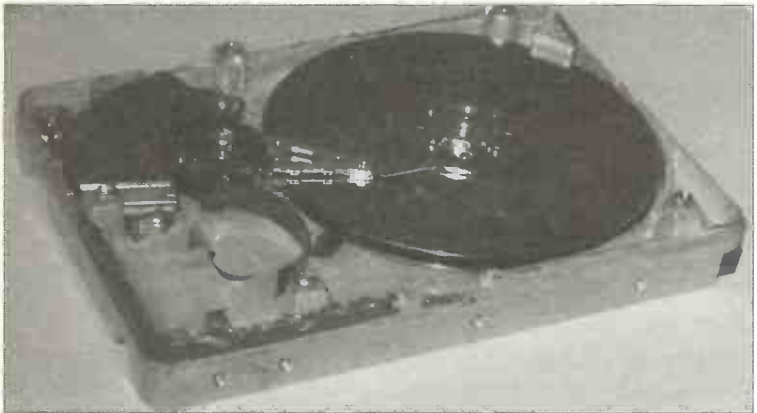
Unlike data stored on a magnetic disc, data held in the memory is *volatile*. So any data stored in the memory is lost as soon as the computer is switched off. Any data you wish to keep must be saved on a magnetic storage medium such as your hard disc drive or a CD, etc., discussed shortly.

(In this case *data* means anything you are likely to save such as text, pictures, music, video clips, etc.)

The Hard Disc Drive

The hard disc drive is a sealed unit built inside of the computer. You won't ever see your hard disc drive unless you remove the computer's metal casing. The magnetic disc surfaces on which programs and data are recorded are an integral part of the drive unit, which also contains the heads used for reading and writing data.

The hard disc is usually designated as the C: drive, and consists of a set of metal discs, coated in a magnetic material and rotating about a central spindle. The hard disc unit is housed in a metal case and is sealed to prevent particles of dust from entering and damaging the disc surfaces, which are machined to very fine tolerances.



In normal use the hard disc rotates at several thousand revolutions per minute. This makes it very fast at saving and retrieving data. Although the hard disc is normally very reliable and robust, the computer should not be moved or knocked while the hard disc is running as this might cause damage and loss of data.

How Much is a Megabyte?

The amount of data which can be stored on a hard disc is normally measured in *megabytes (MB)* or *gigabytes (GB)*. A megabyte is roughly a million keyboard characters (such as letters of the alphabet, the numbers 0–9 and punctuation marks). A gigabyte is roughly 1000 megabytes. For example, all of this book including text and pictures occupies 61MB on a hard disc. This makes little impression on a typical modern hard disc holding 80GB or roughly 80,000MB of data. Similarly a single CD costing about 20 pence with a typical capacity of 700MB is used to securely back up original copies of several of these books.

The Contents of the Hard Disc Drive

The hard disc inside of the computer is like the filing cabinet in a traditional office. Permanently saved on the magnetic surfaces of the hard disc are the programs and data essential for the running of the computer.

When you switch the computer off, the contents of the hard disc remain in place (barring disasters, which thankfully are very rare). The hard disc normally contains:

- The *systems software* such as the Windows operating system needed to start and run the computer.
- The *applications software* (programs) such as your favourite word processor, database, desktop publishing (DTP) and Internet browser.
- The work you have produced and saved as *files* – such as word processing documents, spreadsheets, pictures, music, photographs and Web pages captured from the Internet.

3. Inside the Computer

The hard disc is generally a robust component which can perform reliably for many thousands of hours over several years. However, due to possible accidents and disasters such as fire and floods, it is possible for individuals and companies to “lose” the entire contents of a hard disc.

In some cases the files of data may still exist on the disc after a disaster, but the ordinary user can't retrieve them by normal methods. (There are companies specialising in the recovery of data from damaged hard discs but this can be an expensive process).

As discussed later in this book, important work should always be “backed up”, i.e. a duplicate copy made on a separate disc or CD, etc.

The Floppy Disc

The name floppy disc originated with the earlier 5.25-inch disc, which really was “floppy”. Some people mistakenly think that the 3.5-inch “floppy” disc, because of its rigid plastic case, is actually a “hard” disc. In fact, the magnetic disc material (known as the “cookie”) inside the plastic case of the 3.5-inch disc is really quite flexible and “floppy”. The 3.5-inch disc or “diskette” is portable and very easily inserted into or removed from the floppy disc drive. In the past, most new software packages were supplied on one or more floppy discs. Now, with the vastly increased size of new software packages, this role has been taken over by the CD-ROM. Transferring files from a single CD is much faster and less prone to errors than from a large number of 3.5-inch diskettes.



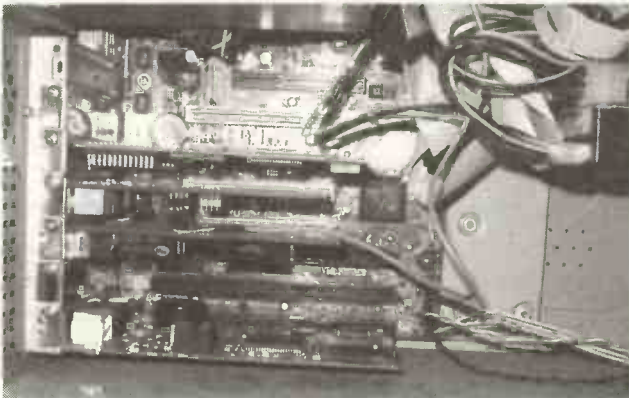
In recent years, the floppy disc has been overtaken by newer media such as the CD and removable USB flash drives and mini hard discs. However, the 3.5-inch disc is still a very cheap and convenient way of transferring a few files or a small piece of software from one computer to another. It's also a quick way to make a backup copy of important files for security purposes, provided they can fit on the floppy disc, with its limited capacity of 1.44MB. (Compare this with the CD, which has a typical capacity of 700MB.) The floppy disc drive is usually called the **A:** drive.

Floppy Discs and Viruses

Floppy discs can be a source of viruses. Always check discs you have received from elsewhere, with an up-to-date anti-virus program, as described later.

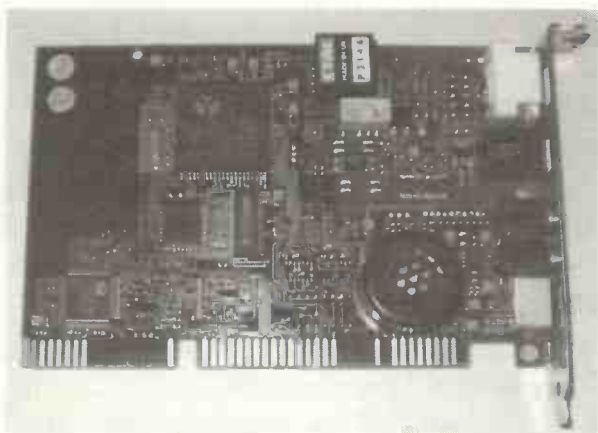
Expansion Cards

Sitting inside of the case of your computer are a number of small circuit boards, known as expansion cards. These plug into the motherboard of the computer and often have a cable connector at back of the main computer base unit.



3 Inside the Computer

Some expansion cards are essential and are already present in a new computer. These may include the *graphics card* and usually a *sound card*, although as discussed shortly some computers have these facilities “on board” as part of the motherboard, i.e. the main circuit board of the computer. Other cards may be added later to provide extra functions for the computer, (hence the term “expansion card”). These might include an *internal modem* which is supplied on an expansion card, as shown below.



The CD Drive and CD Media

Although CDs have been around for a long time, only in the last few years has it been possible, at an affordable price, to write and rewrite your own CDs. Originally, when most CD drives were “read only”, you might buy a CD containing a new piece of software. This had to be copied onto your computer’s hard disc. Then you could use the software whenever you wanted to, without putting the CD in the drive. The CD is still the main medium for supplying new software.

The CD is also used for permanently storing vast quantities of information which you can search on your computer, such as an encyclopedia or an instruction manual.

Nowadays the CD is very versatile. The main breakthrough is that the user can now “write” to the CD, so that you can make copies of your own work. This is a cheap and convenient form of storage either as a backup or for sending work to another person. For example, when this book is finished it will be copied onto a CD and posted to the printers. The CD has a storage capacity equivalent to *several hundred* floppy discs.

Microsoft Windows XP includes its own software for “burning” or copying files onto a CD. If your computer has an earlier version of Microsoft Windows, you can buy CD burning software separately, such as Nero from Ahead Software and Easy CD Creator from Roxio.

CD Media

There are two main types of writeable CD media:

- The **CD-R** disc can be written to only once, after which it can only be used for reading operations. CD-R discs can be bought for around 20p or less if you shop around.
- The **CD-RW** disc can be used repeatedly for writing and rewriting. First it must be formatted to prepare it for the recording process, known as “Packet Writing”.

This allows the CD-RW disc to be used like a floppy or hard disc, with drag and drop copying operations, etc. CD-RW discs are currently priced at around 50p each. If you buy a CD-RW drive, it can be used to read normal data and audio CD-ROMs, to “burn” CD-R discs in a once only operation, and to format, write and rewrite CD-RWs.

3 Inside the Computer

Advertisements for CD-RW drives normally state performance in terms of writing, rewriting and reading speeds. For example, 52/32/52 means:

- Writes at 52 speed (7800KB/s)
- Rewrites at 32 speed (4800KB/s)
- Reads at 52 speed (7800KB/s)

Some new computers are fitted with separate CD and DVD drives, whereas special “Combo” drives can handle both CDs and DVD discs. DVDs are very high capacity *digital video discs* capable of storing a full-length movie, replacing the old VHS tapes. Whereas a CD has a capacity of about 700MB (enough for about 75 minutes of music) a DVD can store a massive 4.7GB of data, equivalent to about 8 hours of music. If you want to record your own CDs or DVDs, the drive in your computer must be designated RW, short for *re-writer*, as in CDRW or DVDRW.

The Windows Media Player software allows you to copy music from a CD onto your hard disc. Background music can then be played from your hard disc, while you are working away on the computer. The CD and DVD drives are designated as the D: drive or perhaps the E: or F: drive.

Multi-media

Small speakers which plug into the back of your computer can be bought costing anything from about £10 upwards. These help to turn a computer into a complete multi-media centre. Apart from playing music, you can also use software with sound effects or a voice commentary. For example, the Microsoft Flight Simulator, designed with the help of experienced pilots, includes realistic graphics, airport scenery, video and sound. One of my sons found this very helpful during his training to be an airline pilot.

Planning for the Future – Upgradeability

As previously stated, computers rapidly become obsolete. It's not that this year's computer suddenly becomes useless; rather that new software applications are developed which require more and more power. Nowhere is this more true than with computer games which are provided with ever more stunning graphics. However, serious applications such as Microsoft Office (word processor, spreadsheet, etc.) and Windows itself continue to demand more powerful machines as each new version is packed with additional features.

There are three ways to deal with this demand for more and more computing power:

- Settle for the computer system you've got. Ignore the latest versions of Windows and new software applications which may not run on your machine.
- Buy a brand new computer system every year or two and keep up to date. (Obviously this is too expensive for most people on a limited budget).
- Buy a computer which can be upgraded easily and cheaply over the years.

Obviously the cheapest option is to settle for what you've got. Most common tasks such as Word Processing, Desktop Publishing, Accounts, Graphics, E-mail and surfing the Internet could be carried out perfectly well on machines built several years ago. However, if computing is your main hobby, or you work in a business and deal with people having the latest technology, then you may need to keep up-to-date. After all, most experienced users would agree that Windows XP is much easier to use, more powerful and more reliable than Windows 95, for example.

3 Inside the Computer

It's worth considering future *upgradeability* at the time of buying a new computer system. Peripheral units like the printer, keyboard and mouse can be swapped for improved models at any time. However, the important components inside of your computer's metal case should also be upgradeable. If you're handy with a screwdriver you might have a go at this work yourself. Otherwise your local computer shop should be able to do the work in no time at all. If you have a good monitor, keyboard, mouse and printer all you need to consider upgrading are a few of the critical parts inside of the base unit. These are the processor, hard drive, memory and possibly one or two of the expansion cards.

Fitting a Faster Processor

This is mainly needed to run graphics programs quickly, such as simulations and games. Sometimes you can get away with simply plugging in a new processor, but you may also need to buy a new *motherboard* (the main circuit board inside of the computer). You should check before buying whether the processor can be swapped easily. Some older machines cannot be upgraded with a new motherboard because the computer case is not compatible.

Fitting a Bigger Hard Disc Drive

A simple upgrade, which many people can do for themselves is to fit a *bigger hard disc* drive. You may fill your existing drive with your collections of photographs, music or files of work. New programs tend to need far more hard disc space than the earlier versions. It may also be possible to leave your old drive in situ and simply add a second new drive. This also provides an additional place to store backup copies of important files, though not entirely secure as the computer itself could be damaged or stolen.

Extra Memory

New versions of programs tend to be more memory hungry than earlier versions because of all the extra features that have been added. Shortage of memory causes excessive hard disc activity when you are not expecting it. This is indicated by the hard disc's light flashing repeatedly. Lack of memory also causes the computer to run very slowly.

Adding *extra memory* is just a case of adding two or more additional memory modules known as SIMMs. These are small circuit boards containing banks of memory chips as shown on page 35. It's a simple job to fit some new SIMMs into special clips in the motherboard.

Expansion Cards

Several other components are upgradeable because they consist of *expansion cards* or small circuit boards which plug into the motherboard, the main circuit board inside of the computer. These cards may include the *graphics card*, which controls the screen display, the *sound card* and perhaps an *internal modem* (as shown on page 40). All of these cards can be replaced by new, improved models – it's simply a case of removing the metal casing, disconnecting any cables, undoing a single screw and pulling the card out.

On some computers the functions such as the sound and graphics facilities are provided by “onboard” components built-in as an integral part of the motherboard. These facilities can still be replaced by expansion cards – it's just a case of disabling their software in the computer's Control Panel and pushing in the new card. Any computer repair shop or local “guru” can do this in minutes or you could have a go yourself – you only need a screwdriver.

3 Inside the Computer

Please note that before removing the casing of your computer at any time, you should rid yourself of static electricity. This can be done by touching the frame of your computer or by touching some water pipes. You can also purchase special *anti-static earthing straps*, at a modest price, from most electrical shops.

The new card is pushed into place and the fixing screw and any cables are replaced before fitting the metal computer casing.

You may also want to install expansion cards to extend the facilities on your computer; for example, cards are available which provide several more USB ports into which devices such as scanners and modems can be connected.

USB hubs are also available which provide four or more extra USB ports, connected by a cable to a single USB port, as shown below.



You can delay the need to upgrade by buying the most powerful computer that you can reasonably afford. This really means the fastest processor, the biggest hard drive and the maximum memory.

Getting Set Up

This chapter looks at the steps involved in buying a computer and getting it up and running in your own home. If you have read the previous chapters you should know if you can manage with a standard sort of machine, i.e. suitable for tasks like word processing and using the Internet. Such a basic machine will be readily available for perhaps £300 – £500. Alternatively if you or a member of your family is likely to be a “power user”, perhaps handling a lot of large graphics files, photographs, music or video files or playing the latest games, then you will need to buy a more powerful computer with a faster processor and probably costing upwards of £600.

Choosing a Supplier

There are several ways of obtaining a computer:

- Major stores with branches throughout the country.
- Mail order specialists.
- Small local businesses.
- Buying a second-hand machine.
- Building your own computer from a kit.

Normally a basic computer system will consist of the base unit (tower or desktop), a monitor, a keyboard and a mouse. The base unit will normally include the motherboard, processor, hard disc drive, CD drive and perhaps a DVD drive for playing moving videos. Floppy disc drives are becoming less common on new machines, as discussed on page 39.

4 Getting Set Up

If you go to one of the big stores they will sometimes “bundle” a complete package to include a printer, modem and scanner for about £700 upwards, depending on the specification of the processor, hard disc, etc. This should also include Microsoft Windows (with Internet Explorer) and probably applications such as Microsoft Works (word processor, database, spreadsheet, etc.) to get you started.

Large stores and mail order companies also offer warranties, which may be on-site or on a return-to-base basis. Obviously the on-site option is more convenient. Return to base is not a good option for a computer system on which you depend for work or regular use. From my own experience, it can be extremely frustrating and expensive, as there may be post and packaging to pay in two directions. You may also have to spend hours on the telephone trying to find a person dealing with your machine. It's also not unknown for mail order companies to collapse while holding customers' money for machines not yet delivered.

I have had good experience dealing with small local computer builders. Obviously you need to choose a firm you can trust and if possible talk to previous satisfied customers. If the firm has been in business for a few years, this is a good indication. You may not get a complete package including a printer and scanner but you will get some other advantages. In a typical small business, you will be able to talk directly to the person who has built your machine and knows it thoroughly. If you know exactly what you want, the small business will probably build a machine tailored to your own specification.

With the small local business, if you do have problems it should only be a matter of returning the machine for perhaps a day or two. In the large store you may be talking to a sales person with little or no practical knowledge of computers.

Monitors are slightly different from the rest of the computer when it comes to repairs. If you take a faulty monitor to a computer specialist they often forward the monitor to a specialist repairer. This is often a person trained in the repair of televisions. If your monitor needs repair (and is out of warranty) it may therefore be cheaper to go directly to a specialist monitor/TV repairer. I have only had 2 monitor repairs in the last 8 years and as I keep a spare monitor this has never been a problem.

Although you may hear some horrendous tales, in practice most modern computers are very reliable and you will be unlucky if you have to return your machine. If treated with respect, I have found that most computers soldier on for years.

Another point to consider is the installation of the machine in your home. If you are not very mobile, you may need the supplier to deliver the machine to your house then set it up and get you started. This should include connecting to the Internet via your telephone socket.

When visiting a computer shop to buy a new machine, it is very easy to be bamboozled by the sales staff, who may have learned lots of impressive jargon but may not have very sound technical knowledge to support it. Before visiting the shop, have a look at a few magazines and get a feel for the latest prices and offers. Read Chapters 2 or 3 of this book so that you are familiar with the jargon and the names of the various components.

4 Getting Set Up

Then you won't be baffled by terms such as RAM and "Pentium Processor", "kilobytes" and "gigabytes". Prepare a list of questions before leaving home – a good supplier will have no problem in giving you honest answers. A few ideas are given below.

Suggested Questions for Computer Suppliers

- What system would best suit your intended use of the computer, such as e-mail, Internet, DTP, etc.?
- Is it easy to upgrade the computer in the future, with more memory, faster processor, bigger hard disc, more expansion cards?
- What guarantee is included with the machine and what does it cover?
- What are the arrangements for returning the machine and who pays for transportation?
- What is a typical turnaround time for repairs?
- What software is pre-installed on the machine – Windows, word processor, spreadsheet, etc.?
- What peripherals are included – printer, scanner, digital camera, etc.?
- Would the basic machine without these "free" peripherals be better value? Also, you may want a better printer, for example, than one included as part of a package.
- Will the supplier deliver the computer and get it up and running (including the Internet) in your home?
- Would they give you any free tuition to get you started?

After buying a new machine, keep all receipts and packaging in case the system has to be returned for repair.

Buying a Second-Hand Machine

Computers depreciate rapidly and a useful secondhand system may be available for less than £100. However, computers become obsolete very quickly and unless your needs are very minimal I wouldn't recommend a second-hand computer more than a year or two old. Unless you know the background of a second-hand computer, I think it's worth spending the extra money to buy a new machine. The way computers advance, even a new machine bought today will look a little out-of-date in a year or two's time. After three years it may seem positively antiquated.

Building Your Own Machine

This option is not nearly as difficult as it may seem. It's actually only a case of buying a kit and plugging together the main components, namely the motherboard, processor, memory, hard disc drive, CD and DVD drives. All of the power cables are supplied already attached to the power supply unit in the computer's metal case. The cables are all different and cannot normally be fitted incorrectly.

If you are handy with a screwdriver and can spare the time you could certainly consider building you own computer. There are also lots of books on the subject. I have built two computers and both have given several years of reliable service. They have since been kept up-to-date by various upgrades to processors, memory and hard disc drives (rather like the woodman's axe which has had 3 new handles and 4 new heads).

However, you don't save a great deal of money building your own machine. What you do gain is a good knowledge about the components of the machine and a great deal of personal satisfaction.

Creating the Right Environment

Before buying a new computer it's worth deciding where it's going to be set up in your home. If possible a separate small room such as a spare bedroom is ideal so that you can work without disturbance. Other people may use a special shed or summerhouse in the garden; I have converted part of a garage to create a small office as shown below.



If you are planning to use your computer for any sort of work or business, it may be worth installing some extra work surfaces. Also check with your insurance company that your house insurance is not affected. If you are using your computer for working from home, you may be able to claim the cost of any computer equipment, fixtures and fittings as capital allowances on your self-assessment tax form. If you are dedicating a room to your business or employment then you may be able to claim, for tax purposes, the cost of heating and lighting as a fraction of the total bill for the whole of your home.

Safety and Security Issues

If possible, have some extra power points installed in your room; recent legislation requires electrical work to be certified in writing by a qualified electrician. A computer system with printer, scanner, speakers, etc., can easily require 6 or more power points. Connecting several plug adapters together is dangerous and might cause a fire, with possible consequences for any insurance claim you make apart from the obvious personal danger.

You also need to make sure that the computer base unit and monitor have plenty of space around them, to prevent overheating and the possible risk of a fire. Install a smoke alarm near to the computer system. The increased risk of flooding in recent years must also be borne in mind when choosing a location for a new computer system.

Computers as a commodity are very popular with burglars. The computer system represents a big investment by any standards. What may not be realized is that the value of the hardware and software can easily be exceeded by the value of the data, in which you might have invested hundreds of hours of work. In the case of a small business, the loss of a computer system and all of the data may be devastating.

If your system is installed on the ground floor and visible from outside, it is asking to be stolen. I know of one case where a computer and then its brand new replacement were stolen from the same location next to a window, without the thieves ever entering the building.

You might also mark your equipment with your post code, using a permanent marker pen, to deter thieves. Marking invisibly with an infra-red pen may help in claiming your equipment if it's later recovered by the police.

Internet Access

You will also need a convenient telephone socket for connecting your machine to the Internet. The cheapest option is a telephone extension cable and socket available from DIY stores. If you have a broadband Internet connection, the ADSL modem and an ordinary telephone handset both plug into the telephone line via a small junction box called a *filter*. This allows you to use the ordinary telephone at the same time as the Internet.

Some people are still using a traditional dial-up modem. This ties up the telephone line so that other people can't use the 'phone while you are surfing the Internet. One solution is to install an additional telephone line dedicated solely to the computer and Internet. You will then be billed separately for your Internet and e-mail activities.

Computer Furniture and Health Issues

The height of your desk and chair must allow you to work comfortably. Office chairs with adjustable seat height are available for about £30 upwards. Special computer tables, often called *workstations*, can cost over £100 while good second-hand office desks can be bought for as little as £30.

Long, unbroken hours at the computer can result in *RSI* or *Repetitive Strain Injury*. This can cause pain and serious injury in the muscles of the wrists, neck, back and shoulders. The risks of RSI can be reduced by making sure that your seating position allows a good posture, ensuring that your arms, wrists and thighs remain roughly level. Your back should be straight and you should not have to strain to reach forward. You are advised to move and stretch every few minutes and walk about, every hour, say.

Assembling the System

Assuming you have bought a new system and have identified a suitable location for the new machine, we can now consider putting the pieces together and starting the computer for the first time. At this stage it is probably best to concentrate on the basic system, i.e.

- Base unit
- Monitor
- Keyboard
- Mouse

Peripherals such as the modem and printer can be installed later when the basic system is working correctly. Don't switch any power on until the whole system is connected.

If you have bought a base unit in the tower configuration, you may find it easier to do an initial setting up on the work surface or desk. This is because if the tower unit is on the floor, the cables which connect into the back of the base unit can be difficult to fit for the first time, especially if you're lying on your back in a confined space! Once you are familiar with the set-up you should have no trouble reassembling the cables with the tower unit on the floor.

Assembling the system mainly consists of plugging a few cables into the correct sockets on the back of the base unit. Fortunately most of these are designed so that you can't plug a cable into the wrong socket.

It's worth spending a few minutes familiarizing yourself with the connectors on the back of your base unit, as described on the following pages, before connecting the units together.

Connection Sockets on the Base Unit

This section looks at the various sockets on the back of the base unit, into which all of the peripheral devices such as the keyboard, monitor and printer are connected. Fortunately, most sockets or *ports* are designed so that you cannot connect the wrong device.

The mouse and keyboard plug into two small round 6-pin female sockets known as *PS2 ports*. If you look closely at your machine you should see small icons or labels on the base unit to distinguish between the mouse port and the keyboard port. Take care to line the pins up with the holes in the port before gently pushing the plug home.

Some mice use what are known as the *serial ports*. These are two 9-pin D-type male sockets at the back of the base unit. They are also known as *COM1* and *COM2* and may be marked as such on the casing. One of the serial ports is often used to connect an external modem.

It's possible to buy adapters which allow the older serial port devices and connectors to work with the newer PS2 devices and connectors.

The large 25-pin D-type female connector on the back of the base unit is used to connect a "parallel printer" and is usually referred to as the *printer port*. Some scanners also connect to the printer port. This arrangement can be very inconvenient unless you fit a second printer port, allowing both printer and scanner to be used simultaneously and without the need to swap cables around.

New printers nowadays often use the USB port described on the next page.

Modern computers have two small rectangular female sockets known as the *USB ports* as shown on page 14. These are a relatively new feature and are designed to make peripheral devices easy to connect and set up. The USB ports are used to connect peripheral devices like printers, scanners and digital cameras, for example.



The main power lead into the computer attaches to the base unit through the 3-pin socket marked AC 230V as shown on the left. Also shown is the main switch for the power unit.

On the right above is the computer's cooling fan.

The remainder of the connectors and sockets for the various cables are on the outside end of the expansion cards, again at the back of the base unit, as shown below.



4 Getting Set Up

Expansion cards are described in the previous chapter. The cards fitted to individual machines vary according to what devices have been installed.

Referring to the bottom photograph on the previous page, two of the slots are filled by removable blanking plates. These can be removed to allow extra devices to be fitted. The purpose of the blanking plate is to prevent dust, etc., from entering the computer while a slot is not occupied by an expansion card.

Connecting the Monitor to the Graphics Card

The top connector shown on the previous page is a 15-pin D-type female socket. This is the connection for the monitor lead. Located behind the connector is the graphics card, which contains the circuitry controlling the screen display.

The monitor also has a power lead. On some computers this has its own plug, to be inserted into a power point on the wall. Other monitors take their power off the back of the computer using a power lead with a male connector.

The Sound Card – Attaching Speakers and a Joystick

The next card down on the photograph on the previous page is the sound card. The large 15-pin D-type female connector shown on the left of the photograph is the *Games Port*. The games port is used for attaching a joystick, used instead of a mouse for playing games. The small connectors on the right are for connecting various devices to the sound card, such as a pair of speakers and a microphone. The sockets are normally labelled, e.g. **SPK** and **MIC**, on the end plate of the sound card, though you may need a torch and magnifying glass to read them.

The Network Card

Below the sound card in the photograph on page 57 is the network card. This card is used to allow two or more computers to be connected together with cables. The different types of connector shown on the card are needed because there are various types of network cable. The network card is not normally fitted as standard and if you only have one computer you can forget about it for the time being. However, many homes and small businesses now have more than one computer and there are many advantages in connecting them on a network. I fitted this card in order to connect my two computers together for the purpose of exchanging data files, sharing a single Internet connection and backing up my work. Wireless network cards and “dongles” are becoming very popular.

Connecting an Internal Modem

At the bottom of the group of expansion cards shown on page 57 is the end plate of an internal modem. The modem is used to connect the computer to the Internet.

The rectangular female socket is for the special lead which connects the modem to the telephone line. Another socket allows an ordinary telephone handset to be connected. This particular modem also has three additional sockets for a Web camera, speakers and a microphone.

As mentioned elsewhere in this book, *external* modems are also available. These have lights providing information about the modem’s activities. The external modem is obviously easier to connect but adds to the clutter on your desk and is more vulnerable to theft or accidental damage.

Connecting the Cables

Do not at this stage plug in any of the power cables at the power points. Now connect the monitor, keyboard and mouse to their respective sockets on the base unit. It's important to make sure you have good light and take care to line up the pins in the connectors carefully before gently inserting the cable plugs. The pins are easily bent and this will render the component useless.

When you've connected all of the components, next plug the power leads into the power points. Switch on the power unit on the back of the computer. Next switch on the power points and press the main **ON/OFF** switch on the front of the base unit. Also press the switch on the front of the monitor. Green power indicator lights should be illuminated on the monitor and on the base unit.

The computer should start up with the screen initially displaying a lot of text giving technical details. Depending on which version of Windows you are running this may be followed by the Windows logo, then a Welcome message, then the Windows Desktop itself, shown below.



The all important **Start** button is shown on the bottom left of the previous screenshot. Also shown on the left-hand side are icons representing shortcuts to start the various installed programs.



If the Computer Fails to Start

If your monitor screen is blank, check that the green power indicator on the front is **ON**. Also check that the D-type connector on the monitor cable has been fitted correctly to the graphics card at the back of the base unit. If you didn't hear the hard disc spinning in the base unit (a bit like a jet engine starting up), check that the switch at the back of the base unit is in the **ON** position. Try switching on again using the main switch at the front of the base unit. If the computer still doesn't start up, switch off all power points and check all of the connections, before repeating the start-up test. If either the mouse or keyboard doesn't work, it's usually because the connectors have been incorrectly fitted.

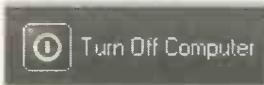
Return to Base

If, after checking all of the connections, your computer still refuses to start up, it will have to be returned to your supplier. Unless you suspect the monitor to be faulty, it is easier to return just the base unit, especially in the case of a small local supplier. If you suspect the monitor to be faulty, perhaps you could borrow one from a friend to confirm your diagnosis. In the case of a system bought from a large company it will need to be parcelled up in its original packaging and returned to the company's repair department, possibly by parcel carrier. You might ask someone with more experience to check over the connections but do not allow anyone to remove the metal cover of your machine as this may invalidate any guarantee.

Shutting Down Correctly

Before discussing the actual use of the computer, it is appropriate at this point to discuss the correct procedure for shutting down and switching off the system. Failure to shut down properly can damage the data on your hard disc. If this happens, next time you start the computer it will carry out a lengthy and very inconvenient recovery procedure as it checks for any damage and attempts to repair it.

Surprisingly, the correct shut-down procedure is initiated by clicking the **Start** button. Then you click **Turn Off Computer** on the bottom of the **Start** menu. The following window appears:



The Turn Off Option

If you select **Turn Off**, a message will eventually appear telling you it is safe to switch off the computer. At this stage I normally switch off at the power points rather than switching off individual components like the monitor and base unit. If you switch a monitor off every night you may find a new switch is needed before very long.

The Hibernate Option

Not all computers support the **Hibernate** option shown on the previous screenshot. **Hibernate** is used for shutting down a computer after saving everything to your hard disc. For example, if you click **Start, Turn Off Computer,** and **Hibernate** while your screen is displaying, say, a word processing document, the computer will shut down. However, next time you start the computer, the screen display will be exactly as you left it, with the document open where you finished working.

The Restart Option

Click the **Restart** button if you want to shut down and start up again straight away. For example, after making changes to the computer, like installing new software, the changes may not take effect until the computer has been restarted.

Starting a New Session

Next time you start a computing session it's just a case of switching on at the power points at the wall and pressing the **ON** switch on the front of the base unit. The computer should start up and display the main Windows screen showing the **Start** button in the left-hand corner. (Unless you shut down with **Hibernate**, when it should restore your screen display and document exactly as you left it).

Tidying Up the Cables

After setting up your system, you may need to tidy up the leads and cables. These can be fastened together using plastic ties or possibly encased in plastic trunking available from electrical shops. If your mouse movement is restricted by the length of the cable, you can buy cable extensions for a few pounds. *Wireless* mice and keyboards allow total freedom of movement, similar to a cordless telephone.

Connecting a Printer

A printer is obviously essential in most computer systems. In this section we will connect an Epson Stylus inkjet printer, using Windows XP, the latest version of Microsoft Windows. The general method is the same for attaching any printer to a computer and is broadly similar for other hardware devices such as a scanner or an external modem.

Apart from the printer itself, you should be supplied with:

- A power cable to connect the printer to a power point.
- A *data cable* to connect the printer to the computer.
- Software on a CD or floppy disc to enable your computer to work with your particular model of printer. This software is known as a *printer driver*.

There are two main types of data cable used with printers:

- The *Centronics parallel printer cable* was the standard for many years. One end of the parallel printer cable connects to the 25-pin D-type connector or printer port on the base unit, as discussed on pages 14 and 56 of this book. The other end of the parallel cable connects to a 36-pin socket on the printer.
- The *USB cable* is a recent development for connecting various peripheral devices, including printers. The USB cable connects the USB port on the printer to a USB port on the computer base unit. The USB ports are small rectangular slots as discussed on pages 14 and 57 of this book.

Connecting the Printer Cables

With all the power points switched off, connect the printer power cable and data cable.

Switch on the power supply for the printer and switch the printer on. The green power indicator light on the printer should be illuminated.

Switch on the power to the computer and start the computer by pressing the **ON/OFF** switch on the front of the base unit. The message **Found New Hardware** should appear in a balloon at the bottom right of the screen, as the computer automatically detects the new printer.

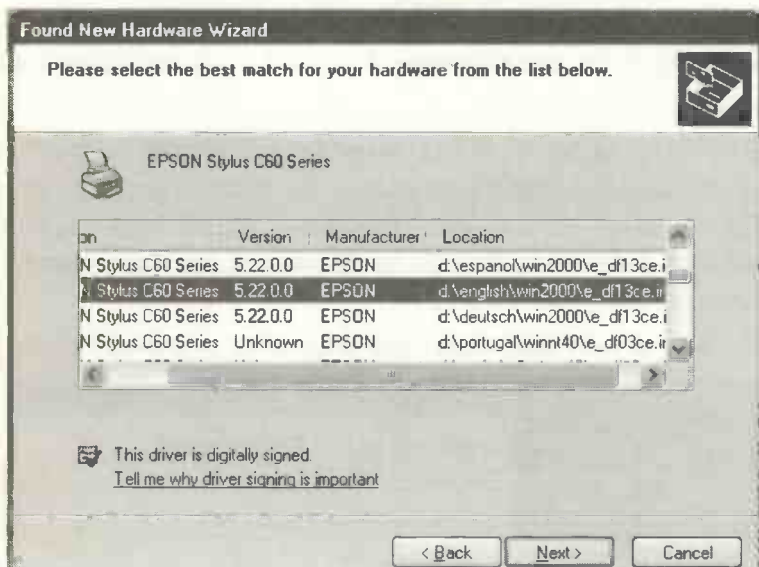
The **Found New Hardware Wizard** appears as shown below.



You are asked to insert the CD or floppy disc which came with your new hardware – in this case an Epson printer.

4 Getting Set Up

After inserting the CD, click the **Next** button as shown previously. The resulting window presents a list of choices of printer driver software in different languages.



In this example, there is not an English printer driver listed for Windows XP. However, there is one for Windows 2000 which is a close relative of Windows XP. Also there is a message (displayed on the window above), which states that **This driver is digitally signed**. This means the driver has been tested and approved for use with Windows XP. Some drivers will display the message **This driver has not been digitally signed!** If you decide to use such an unsigned driver you may later experience problems with the printer or other device. (Digital signing doesn't just apply to printers).

After choosing the printer driver, click **Next** and you are asked to click **Finish** to complete the installation.

Testing the Printer

You can see if your new printer driver software is installed on your computer by clicking the **Start** button and then selecting **Printers and Faxes**.



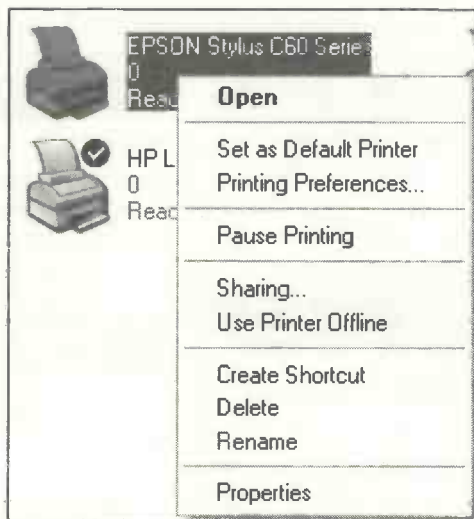
All of the printer drivers installed on your machine are displayed in their own window as shown below.



You can see the driver for the new Epson printer listed above. Also listed is my old printer, the **HP LaserJet 5L**. Notice that the LaserJet driver shown above is marked with a tick. This means it is set as the *Default* printer driver, i.e. the one which will be automatically used if printing from an application such as Microsoft Word.

4 Getting Set Up

Obviously if we now have an Epson printer physically connected to the computer, we should make the Epson driver the default printer driver. Move the cursor over the icon for the Epson driver shown previously. Clicking the *right* mouse button (in future referred to as “right-clicking”) brings up the menu shown below.

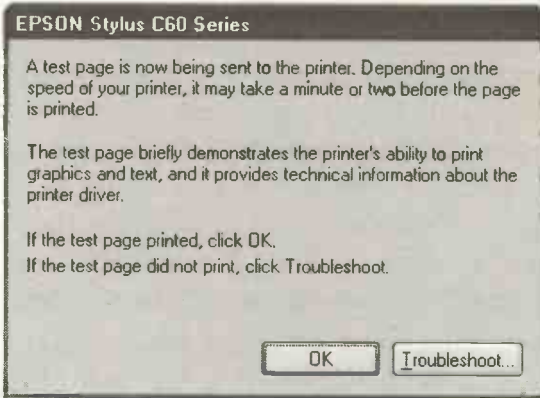


Now click **Set as Default Printer** to make the new Epson printer the one which is used automatically from applications.

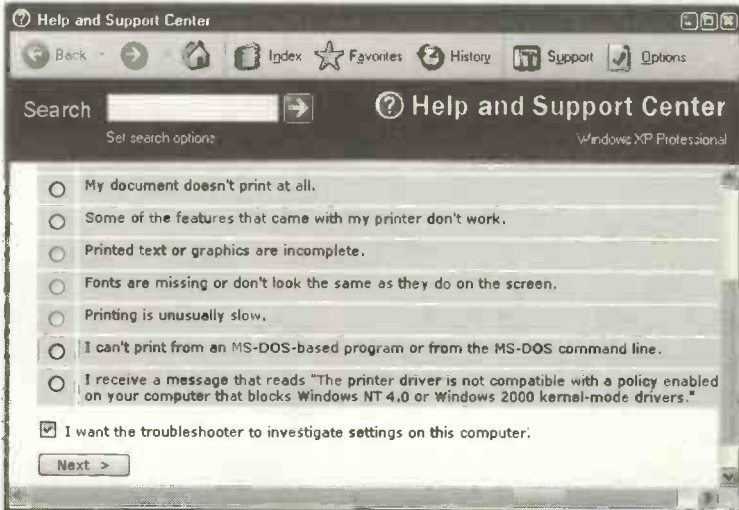
Printing a Test Page

On the above menu, at the bottom is the **Properties** option. Clicking this brings up the **Properties** window. Make sure this window is displaying the **General** tab by clicking **General** at the top. At the bottom is a button marked **Print Test Page**. Clicking this button will show whether your new printer can print text and graphics correctly on paper.

You are asked if the test page printed correctly. If not click, **Troubleshoot...** as shown below, to try to solve the problem.



The **Printing Troubleshooter** shown below attempts to solve printing problems after you select from a list of common faults. Click the small circle (or *radio button*) to include one or more faults in the diagnosis of your printing problem.



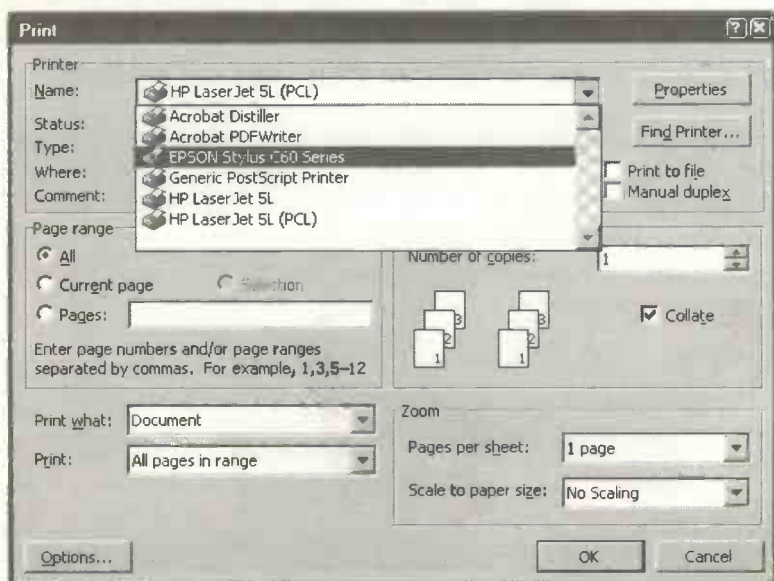
4 Getting Set Up

Using the New Printer

You will need to consult your printer manual for precise details about loading paper and fitting new ink cartridges (or toner cartridges in the case of laser printers).

If you have set the new printer as the *default*, as described on page 68 of this book, then this will be used automatically in any application such as a word processor. However, you can use any printer which is physically attached to your computer, even if it has not been set as the default printer. This is done by selecting the required printer driver from within an application, as follows.

In the application, select **File** and **Print...** from the menu bar. Now click the down arrow to the right of the default printer, in this example **HP LaserJet 5L (PCL)**, as shown below. Then, from the drop-down menu, select the printer you wish to use. Click **OK** and printing should begin with the newly selected printer.



Introducing Windows XP

What is Windows XP?

After you switch the computer on, it starts up and in a short while the screen displays the Windows Desktop with various icons, backgrounds and colours. During a session at the computer you might select a program from a menu, do some work such as typing a letter, save the letter on disc and print it out on paper. All of these tasks are controlled by a collection of software forming what is known as the *operating system*. Microsoft Windows in various editions has been the dominant operating system on personal computers for many years. Windows XP is the latest version of Microsoft Windows, now installed as standard on many new computers.

The operating system provides the environment in which we control and interact with the computer. It presents the menus from which we select commands or tasks, it controls the screen display and allows us to manage our document files and folders and to save and print our work. The operating system also controls peripheral devices such as scanners and modems and our connection to the Internet.

5 Introducing Windows XP

No matter what task we use our computer for – word processing, surfing the net, etc. – the operating system will be working in the background in overall control.

Windows XP also provides various tools for routine maintenance tasks and organizing your work. When you save a document, such as a letter, on your hard disc, the saved version is known as a file. The Windows operating system allows you to arrange your files into a system of organized folders (discussed later). Windows is also used for deleting any files of work which you no longer need. Windows XP includes its own *applications* software such as Internet Explorer. This is a Web browser, a program used for searching the Internet and displaying information in Web pages, such as bargain holidays or herbal remedies, for example. There is also a digital media player which allows you to turn your computer into an impressive music centre, with easily managed personal libraries of music and video clips.



The Evolution of Microsoft Windows XP

Windows XP is the latest in a family of Microsoft Windows operating systems, starting with Windows 3.0 and Windows 3.1, followed by Windows 95, Windows 98 and Windows Me. Business users were provided with separate versions of Windows, namely Windows NT followed by Windows 2000.

Windows 95, Windows 98 and Windows Me were primarily aimed at the home user and, while quite capable of running business programs, were also very suited to other areas of computing, such as games requiring sound and high quality graphics. Windows Me in particular introduced a new media player with facilities for copying and managing music CDs and for editing home videos.

Windows NT and Windows 2000, with their emphasis on business applications, were particularly strong on networking and security. In addition, being of a completely new design, they were more stable and reliable, not susceptible to “crashing” or locking up, as some users claimed of Windows 98, for example.

Windows XP is the result of a merger between the two Windows families, i.e. the home and business versions. In fact, there are two versions of Windows XP, known as Windows XP Home Edition and Windows XP Professional. The two versions are basically the same, both using the proven Windows NT technology at their core, known for its reliability and stability. The Professional Edition has additional features for network management and security in large organisations. Windows XP can also be installed on older machines, provided the machine meets certain performance criteria, described on the next page.

Moving Up to Windows XP

Hardware Requirements

As the Microsoft Windows operating system has evolved over the years it has become packed with more and more sophisticated features. This in turn demands ever more powerful computers in order to run at an acceptable speed. According to Microsoft, Windows XP requires a computer having the following *minimum* specification:

- PC with 300MHz or higher processor speed
- 64MB of RAM minimum but 128MB or higher recommended
- 1.5GB of available hard disc space
- CD-ROM or DVD drive

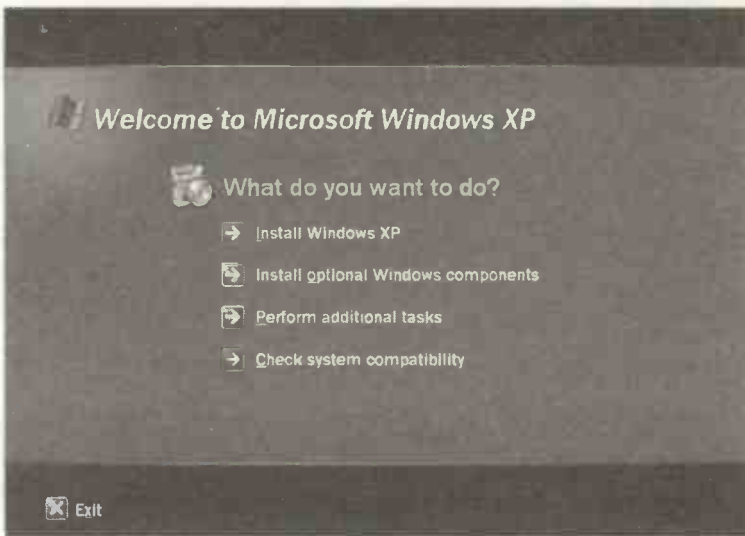
Please note that these are only *minimum* figures. A machine only just meeting this specification may work slowly – some people have said that 500MHz is the minimum processor speed to give acceptable performance.

If you have a computer on which you want to run Windows XP and the computer does not meet these minimum specifications, it may be worth upgrading, i.e. replacing one or more of the critical components listed above. This can be very much cheaper than buying a brand new machine. There will probably be several small businesses in your area specializing in building and upgrading computers and able to undertake the work at a reasonable price. If you are already running Windows 98, Windows 98 Second Edition, Windows Millenium (Me), Windows NT 4.0 or Windows 2000 Professional, you can buy an *upgrade* version of Windows XP. The upgrade version of the software is considerably cheaper than buying the full, standalone version of Windows XP.

Installing Windows XP

The installation process is started by inserting the self-“booting” Windows XP CD and responding to the on-screen instructions. The whole operation takes about an hour. If you are upgrading from an existing version of Windows, such as Windows Me, the installation may be interrupted while you are warned about compatibility issues. Since Windows XP is a new operating system, you may find there are problems of compatibility with some of your old hardware and software. In some cases you may be advised to remove software and perhaps re-install afterwards. In the case of incompatible hardware, you may need to visit the manufacturer’s Web site to obtain modified *driver* software.

Alternatively, check the compatibility of your system before starting the installation by selecting **Check system compatibility** from the Windows XP CD, as shown below.



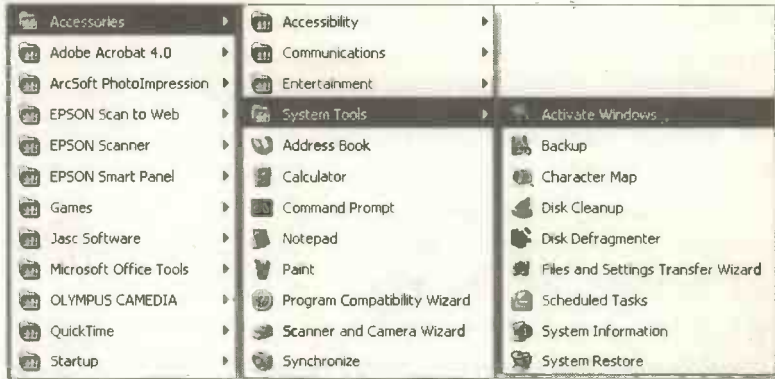
Product Activation

This is a new software feature intended to prevent, for example, a home or small business user buying one CD and installing it on several computers. This practice is known as *casual copying* and regarded as theft. Product Activation is aimed at the purchaser of a single Windows XP CD – it does not apply to large organizations buying multiple copies or to new computers supplied with Windows XP already installed.

The activation process relies on a unique *installation ID*. This is a number based partly on the *product key*, the string of 25 characters supplied on your Windows XP folder which you must type in during the installation process. The remainder of the installation ID is based on information automatically derived from the hardware components in your computer. Product Activation means your copy of the Windows XP CD can only be used to install Windows XP on your particular computer.

If you wish, activation can take place in response to a prompt during the Windows XP installation process. Otherwise, if you don't activate Windows XP straightaway, you can still use the software but only for the next 30 days. During this time you will be reminded to activate the software. After 30 days, Windows XP will cease to function, apart from the activation feature. During the 30 days there is an activation icon on the Windows XP screen.

The activation process can also be started by clicking: **start, All Programs, Accessories, System Tools and finally Activate Windows** as shown on the menus below.



Activation can be carried out over the Internet or by a telephone call to Microsoft. The activation process is quite straightforward and only takes a few minutes. It does not require any personal information

If you make several changes to the hardware components of your computer, you may need to repeat the activation process at some point in the future. Product Activation is not to be confused with *registration* in which you supply details like your name and address, to ensure that you receive support and details of future Microsoft products.

A Brief Tour of Windows XP

The next few pages give an overview of some of the main features of Windows XP. Many of the topics are discussed in more detail later in this book. You will see that in addition to providing the software to run your computer, Windows XP also provides a wealth of software tools to maintain the system and carry out modifications. Windows XP also includes many *applications* of its own. These are programs which might otherwise be bought separately from alternative suppliers, and cover tasks such as browsing the Internet, sending e-mails, drawing and painting, editing text and working with digital media.

When you switch the computer on, you may notice that Windows XP starts up more quickly than earlier versions of Windows such as Windows 98. If the computer has been set up for several people to use, select your user name from the list of users, as shown below, and if necessary enter your password.



This gives you access to your own area of the computer, personalised with your preferred settings and giving secure access to your files.

The next screen to appear is the Windows Desktop, with the start button in the bottom left-hand corner and the Windows TaskBar along the bottom, as shown in the screenshot below. Apart from an icon for the Recycle Bin (discussed later), the Desktop on a new installation of Windows XP is completely clear. If you are upgrading from an earlier version of Windows, your previous Desktop icons will be retained.

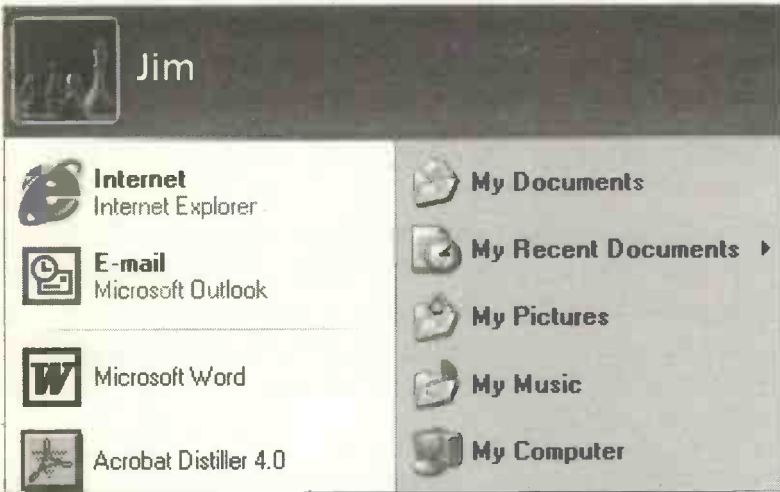
It is also possible to place shortcut icons on the Windows XP Desktop to give quick access to frequently used programs and files. However, Windows XP reduces the need for shortcut icons by automatically placing frequently used programs and recent documents in the pop-up start menu shown below.



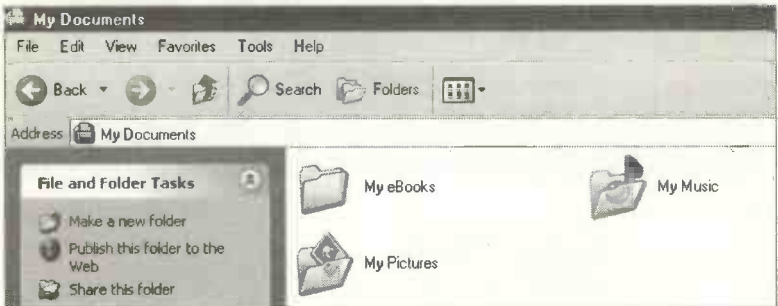
Entries can be deleted from the list of frequently used programs on the left of the panel.

5 Introducing Windows XP

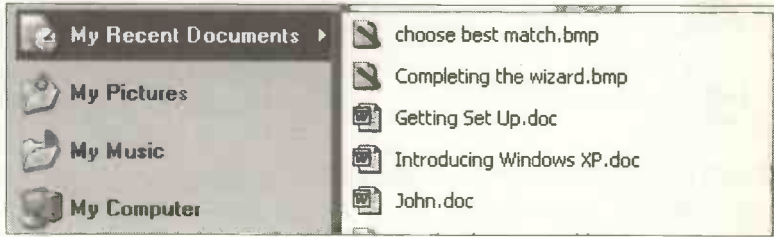
For clarity, the top half of the previous **start** menu is shown enlarged below.



My Documents shown above right, is a special folder in which your work is saved “by default”, unless you specify a different folder. (Creating your own folders and saving your work is discussed later). As shown below, apart from the documents and files you save, **My Documents** can also contain saved copies of pictures, music and *eBooks*. (*eBooks* are conventional printed books which have been converted to digital form for reading on a computer).



If you select **My Recent Documents** as shown on the previous menu, you are presented with a list of the latest documents you have been working on. Some recent documents are listed on the right of the following extract from the start menu.



Please note that in this context a “document” is not just a letter or report in a word processor. Drawings and paintings, for example are also referred to as documents.

Also note that when a document is saved as a file, a file name is given by the user. For example, I have named a letter as **John** above. Then Windows has automatically added **.doc** to indicate that this is a word processing document. The document is further identified by the *icon* for a word processing document, shown above right.



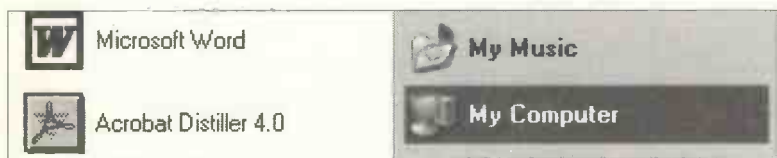
Similarly a picture is saved with a different icon and the file name extension **.bmp**, which stands for Windows “bitmap”. There are several other file name extensions for pictures and these are discussed later in this book.



The feature **My Recent Documents** provides a quick way of calling up a document you have recently been working on.

My Computer

Referring to the extract from the start menu shown below, **My Computer** listed in the right-hand panel is a very important tool used in the management of your computer



Clicking **My Computer** in the above start menu brings up the window shown below.



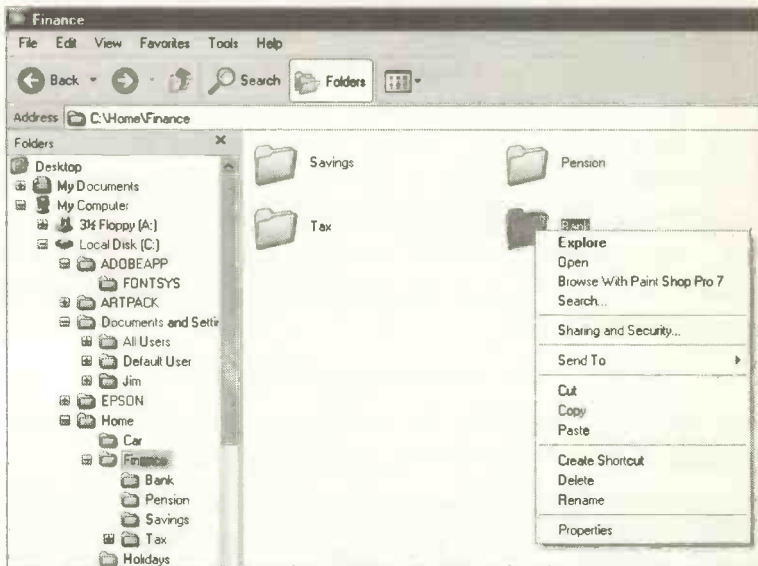
My Computer allows you to look at the various resources on your computer, such as disc drives and CDs. Amongst other things, you can carry out maintenance tasks such as cleaning up your hard disc by deleting unwanted files.



When you click on the icon for the hard disc drive as shown above, the panel at the bottom left of the **My Computer** window shows the amount of free hard disc space.

The Windows Explorer

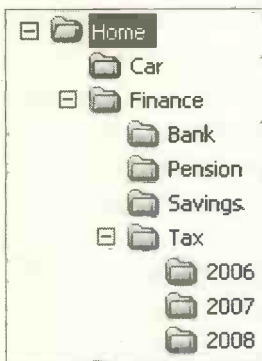
The Windows Explorer displays all of the folders and files on your computer. It is one of the main ways to locate a piece of work (usually called a *file* or *document*). Then the document can be opened by double-clicking the file name. This opens up the document in the program which created it. The Windows Explorer displays all the resources of your computer (disc drives, folders, sub-folders, etc.) in a list down the left-hand side of the screen, as shown below.



The right-hand panel above shows the contents of any folders you have opened. You can carry out a variety of management tasks on the folders and files listed in Explorer by right-clicking over the appropriate name or icon. This produces a menu as shown above on the right under **Explore**.

5 Introducing Windows XP

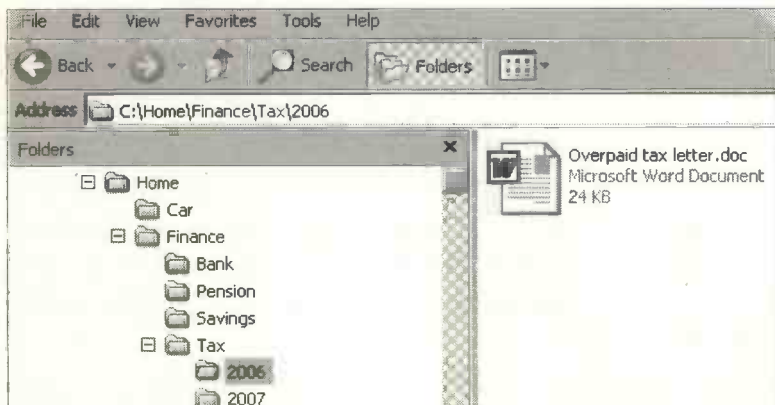
Amongst other things, the menu includes options to copy, delete, rename and create a shortcut to a file or folder from the Windows XP Desktop.



A *hierarchy* of folders is shown in the extract from the Windows Explorer on the left. Creating folders is discussed later. I have created a folder called **Home**, then within it there are sub-folders of **Car**, **Finance** and **Holidays**. Within the **Finance** folder there are sub-folders **Bank**, **Pension**, **Savings** and **Tax**. Within the **Tax** folder there are sub-folders for years **2006**, **2007** and **2008**. Shown below is an example of a file saved in a sub-folder. The file name is **Overpaid tax letter.doc** and it has been saved in the sub-folder **2006**. The full route to the file down through the various folders is known as the *path*. You can see the path in the **Address** bar shown below, i.e.

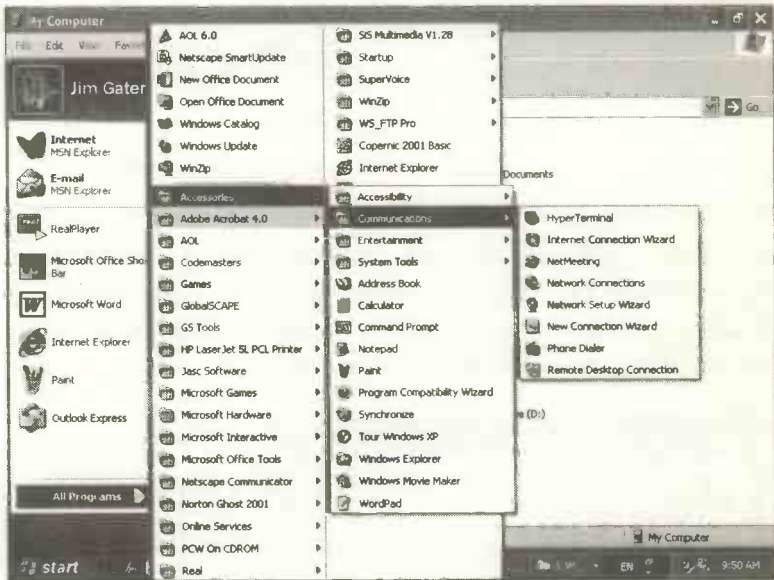
C:\Home\Finance\Tax\2006.

C: refers to the hard disc drive, **Home** is my main folder and **Finance**, **Tax** and **2006** are the various sub-folders.



Launching Programs

We have seen that frequently used programs are automatically placed on the left-hand of the start menu for easy access. If desired, commonly used programs and files can also be launched from *shortcut icons* on the Windows XP Desktop, as discussed elsewhere in this book. The main bulk of your programs, however, are launched by selecting start and All Programs, as shown below.



The programs listed on the All Programs menu shown above are a mixture of the software applications you have installed (such as your favourite word processing or painting package) together with a vast range of software applications and tools provided by Windows XP. When Windows is first installed from the CD you can select which components to include. Any components not included can always be added later.

5 Introducing Windows XP

Many of Windows XP's own programs are reached from the **Accessories** menu shown above. These include the **Windows Paint** program, **Windows Explorer** and the **Notepad** and **WordPad** text processors for creating and editing simple documents.

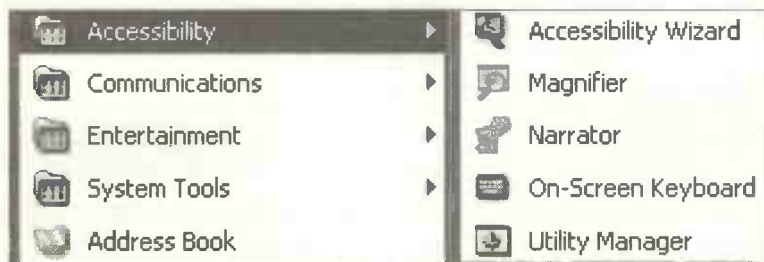
Menu options with a right-pointing arrow lead to further menus such as the **Communications** menu off the **Accessories** menu shown previously and below.



The **Communications** menu contains a number of options for setting up your Internet connections, discussed later.

Accessibility Features

Windows XP allows you to set up a number of **Accessibility** features to help anyone with special vision, hearing and mobility needs. These are listed after selecting **Accessibility** from the **Accessories** menu.



Please note that a **Wizard** in this context, as in the case of the **Accessibility Wizard** option shown on the right above, is a **program** which guides you through the process of setting up a piece of hardware or software. The **Accessibility** features are discussed in more detail shortly.

The Windows Media Player

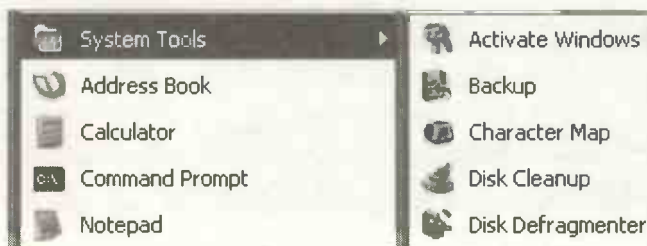
The **Windows Media Player**, which is launched from **start** and **All Programs**, allows you to create and manage your own music CDs and edit home movies.



You can copy your CDs onto your hard disc and then compile playlists of your favourite records. These can be played in the background while working at the computer. The Windows Media Player has many other features and these are discussed in a separate chapter later in this book.

System Tools

An important feature within the **Accessories** menu is **System Tools**, shown below. This menu includes a number of maintenance tools intended to keep your computer running efficiently, such as **Disk Cleanup**, and **Disk Defragmenter**.



The Control Panel

This is an essential component of Windows XP, used (amongst other things) for altering settings and adding and removing new hardware and software. The **Control Panel** can be launched by clicking its name in the previously shown **start** menu. Alternatively click **Change a setting** in the **System Tasks** menu on the left of the **My Computer** window. The **Control Panel** opens in the **Category View** shown below. This view shows the tasks, under broad headings, which can be performed using the **Control Panel**.

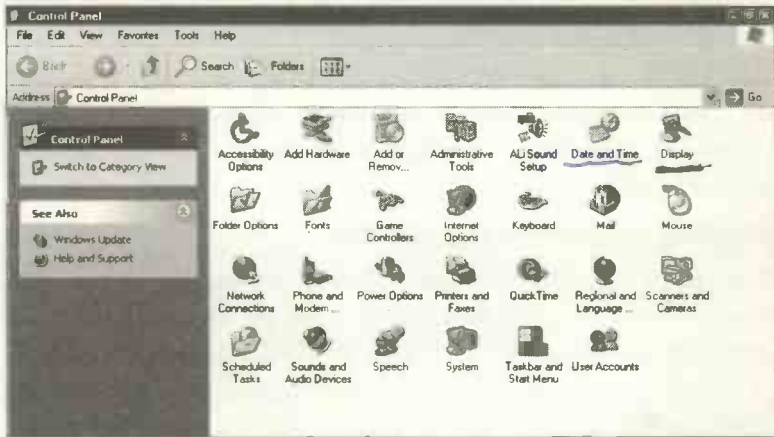


Selecting, for example, **Performance and Maintenance** as shown above, leads to some more specific tasks for you to choose from, as follows:

- ➔ Adjust visual effects
- ➔ Free up space on your hard disk
- ➔ Back up your data
- ➔ Rearrange items on your hard disk to make programs run faster

The Control Panel in Classic View

Earlier versions of Windows showed the Control Panel as a set of icons representing the various tools. This arrangement, now known as Classic View, is still available in Windows XP. Classic View can be selected by clicking the option **Switch to Classic View** from the Control Panel when it is displayed in Category View, shown previously.



With the Control Panel in Classic View, as shown above, changes are made to settings after double-clicking the appropriate icon. For example, double-clicking the Display icon allows you to change all of your screen colours and to select a screen saver.

A screen saver is a display which occupies your screen if the computer is not used for a few minutes. The screen saver presents a constantly changing pattern or picture. This is to prevent burning of the monitor which might occur if the display remained fixed for a long time. There is a choice of screen savers within Windows XP and many others are available in all sorts of designs.

Windows Update

Both views of the Control Panel also give access to **Windows Update**. Clicking this option connects your computer to the Internet (if your machine already has a modem set up to connect to the Internet.) Here you are given the opportunity to

download the latest upgrades available for the Windows software installed on your computer. (*Downloading* means transferring files, i.e. programs and data, from the Internet to your computer).



Deleting Files – The Recycle Bin

This is a container for your deleted files and folders. When you delete a file by pressing the **Delete** key over the file name in the Windows Explorer or My Computer, the file is initially sent to the Recycle Bin. Files and folders in the Recycle Bin are still taking up space on your hard disc.

The **Recycle Bin** is launched by double-clicking its icon on the Windows XP Desktop. From here the files can be permanently deleted. Files which have not yet been permanently deleted from the **Recycle Bin** can be restored to their original location on the hard disc, should the need arise.



That completes the tour of the main features of the Windows XP operating system. The next chapter looks at the different parts of a window and how we use them.

Working with Windows

Windows are rectangular boxes on the screen, used to frame the current task. A window might contain, for example:

- A document in an *application* such as a word processor, drawing program or a spreadsheet.
- A display of discs and folders in My Computer or the Windows Explorer.
- The set of icons or a list of tasks in the Control Panel, used for setting up hardware and software.

Although windows are used for such diverse purposes, in general they contain the same basic components. Shortly we will look at the make-up of a typical window. However, since the mouse plays a central role in the operation of windows, let's look at the use of the mouse in some detail.

You can tailor the mouse and pointer to work in the way you prefer. Select **start**, **Control Panel** and make sure you are displaying **Classic View**. Double-click the mouse icon, shown on the right, to make various adjustments to the way the mouse and pointer work. These include swapping the functions of the left and right button and altering the double-click speed.



Mouse Operations

Click

This means a single press of the left mouse button. With the cursor over an icon or screen object, a click will cause, for example, a command from a menu to be carried out or a folder to open.

Double Click

This means pressing the left mouse button very quickly twice in succession. This is often used to carry out operations such as starting a program from an icon on the Windows Desktop. Folders can be set to open with either a single or double click (discussed later).

Right Click

Pressing the right button while the pointer is over a screen object is a quick way to open up additional menus relating to the object. For example, if you right-click over the start button on the Taskbar, a menu appears giving, amongst other things, a quick way to start the Windows Explorer.



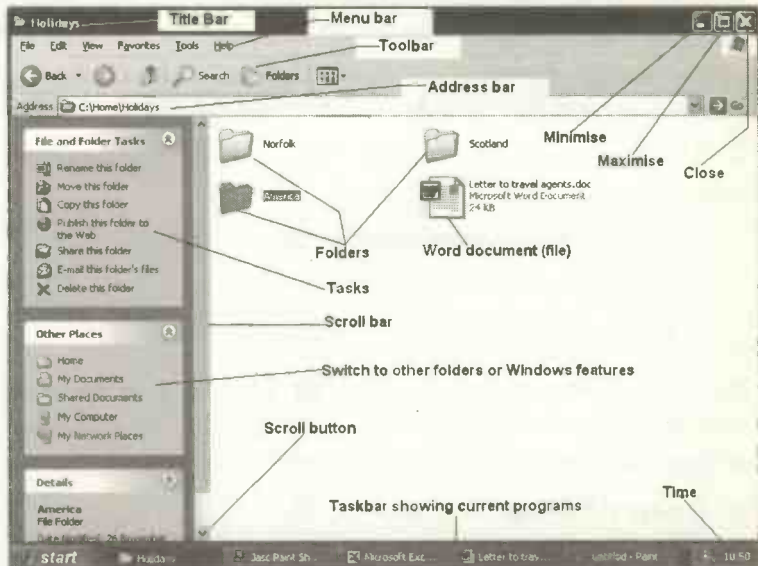
Dragging and Dropping

This is used to move objects about the screen, such as moving files and folders into different folders. Click over the object, then, keeping the left button held down, move the mouse pointer (together with the object) to the new position. Release the left button to place the object in its new position. Dragging is also used to resize windows and graphics on the screen and for *selecting* or *highlighting* a piece of text to be edited (please also see page 96).

Windows in Detail

The parts of a window can be illustrated using My Computer or the Windows Explorer. My Computer is selected from the start menu. The Explorer can be launched by *right-clicking* over the start button and then clicking **Explore** on the menu which appears.

In this example I have clicked on a folder called **Home** and then on a sub-folder called **Holidays**.



Similar windows are used for different purposes in Windows XP. For example, if you were word processing in Microsoft Word your document on the screen would be contained in a window with a Title Bar, Menu Bar, Toolbar and Taskbar. Both vertical and horizontal Scroll Bars may be displayed at different times.

You can choose which Toolbars are displayed by switching them on or off after selecting **View** and **Toolbars**.

6 Working with Windows

Next, consider the heavily used buttons in the top right of the screen, Maximize, Minimize, Restore and Close.



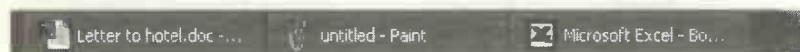
The Maximise Button

Click this to make the window fill the entire screen.



The Minimise Button

Click this to reduce the window to an icon on the Taskbar at the bottom of the screen as shown below.



The Taskbar above shows that the computer is currently running three programs. These are:

- A document, **Letter to hotel.doc**, open in Word.
- A drawing in Microsoft Paint.
- A spreadsheet in Microsoft Excel.

Click the icon on the Taskbar to restore a minimised window back to its original size. The icon on the Taskbar can also be used to minimise an open window.

The Restore Button

After a window has been maximised, the Maximise Button is replaced by the Restore Button shown right. Clicking this reduces the window to its original size.



Closing a Window

To shut down the current window, click the Close Button, marked with a cross, in the top right-hand corner of the screen.



Resizing a Window

You can change the size of a window by dragging arrows on each of the four sides and in the corners of the window. Move the mouse pointer over the border until the arrows appear. Then drag the border to the required size.

The Menu Bar

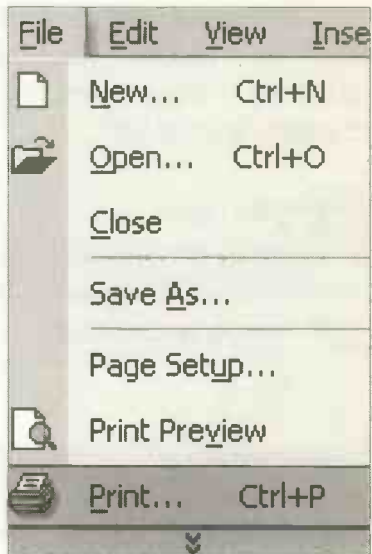
The Menu Bar is a list of words across the top of the window starting with **File**, **Edit** and **View**, etc. For example, the Menu Bar from the Microsoft Word program is shown below. The row of icons underneath the Menu Bar is known as the Standard Toolbar.



A single click of a word on the Menu Bar reveals a drop-down menu, such as the **File** menu illustrated. Then the required command is executed, again with a single click. Clicking the two small arrows at the very bottom of the drop-down menu shown on the right extends the list of options.

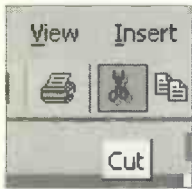
Windows programs in general all have a similar Menu Bar with the options **File**, **Edit** and **View**, etc.,

although there are some differences in individual programs.



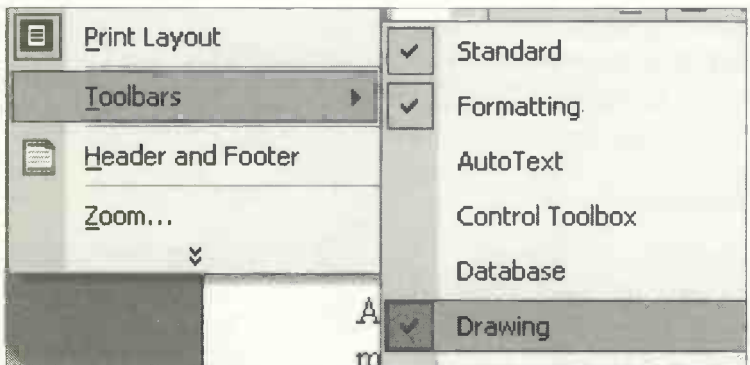
6 Working with Windows

The row of icons under the Menu Bar is part of the Standard Toolbar in Word. Similar Toolbars appear in other programs.



Allow the pointer to dwell over an icon. After a second or so a note appears describing the function of the icon. For example, when you hover over the scissors icon, the **Cut** command is revealed as shown on the left. This is used to delete or cut a piece of text in a document. (First you must highlight or select the required text by keeping the left-hand mouse button held down and dragging the cursor over the words).

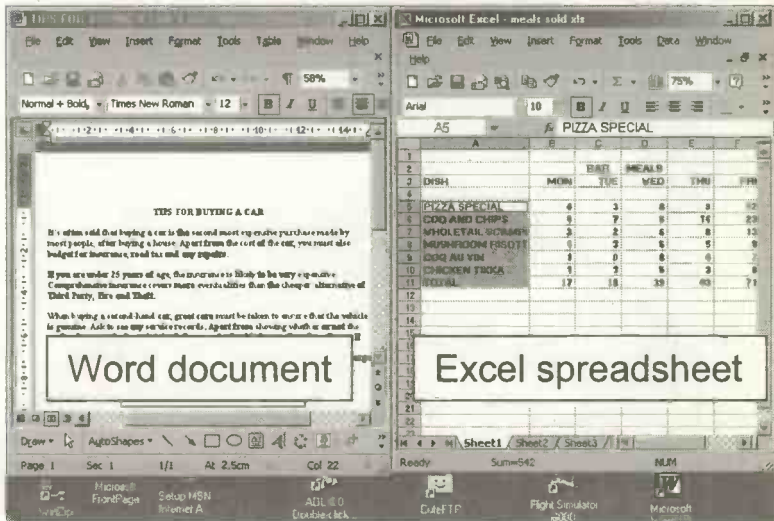
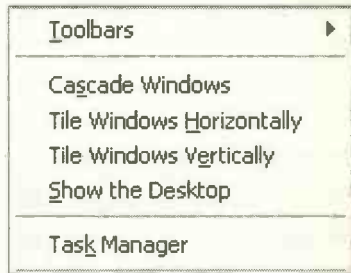
You can switch various toolbars on and off after selecting **View** and **Toolbars** from the Menu Bar as shown in the following example from Word. Click the name of a toolbar to switch it on or off.



Displaying Two or More Windows at a Time

When two or more programs are running at the same time, normally only one of them is seen in a window on the screen. The others are minimised on the Taskbar at the bottom of the screen as shown previously on page 94.

Microsoft Windows allows two or more windows to be displayed simultaneously by a *tiling* arrangement. Tiling is achieved after *right-clicking* on an *empty part* of the Windows Taskbar at the bottom of the screen. This brings up the menu shown on the right. For example, selecting **Tile Windows Vertically** when running Word and Excel, produced the screen display shown below. Windows can also be tiled horizontally and the same methods can be used for 3, 4 or more windows.



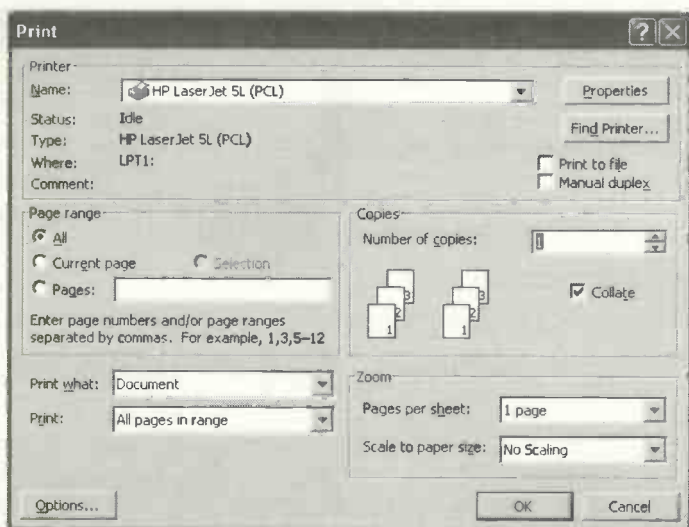
6 Working with Windows

The **Cascade Windows** option shown in the menu on the previous page has the effect of arranging the windows on top of each other in layers, but with the Title Bar of each window clearly visible. Clicking on the Title Bar of a window brings that window to the top layer. Please note that windows currently minimised on the Taskbar are not included in any tiling or cascading arrangements.

Dialogue Boxes

Whereas the windows discussed previously contain running programs and folders, *dialogue boxes* (as shown below) usually require the user to enter information or specify settings. (Microsoft Windows provides *default* settings and names which will usually suffice until you are ready to insert your own settings.)

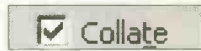
Dialogue boxes appear after you select a menu command which ends in an ellipsis (...) such as **Save As...** and **Print...** The **Print** dialogue box shown below contains many of the most common features of dialogue boxes.



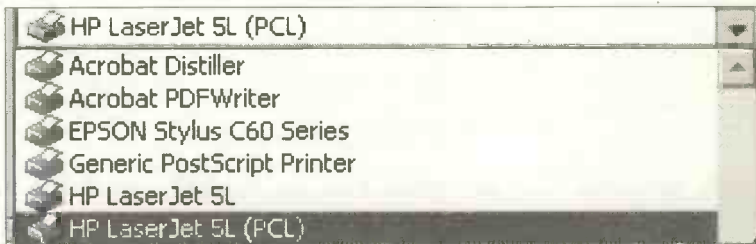
The white circles under **Page range** on the previous dialogue box are known as *radio buttons*, switched on or off with a single click. Only one of a group of radio buttons can be switched on at a given time.



The white squares next to **Print to file**, **Manual duplex** and **Collate** are known as *check boxes*. Any number of check boxes can be switched on or off at a given time.



Clicking the *down arrow* on the right of a horizontal bar reveals a *drop-down menu* of choices, such as several printers, as shown below.

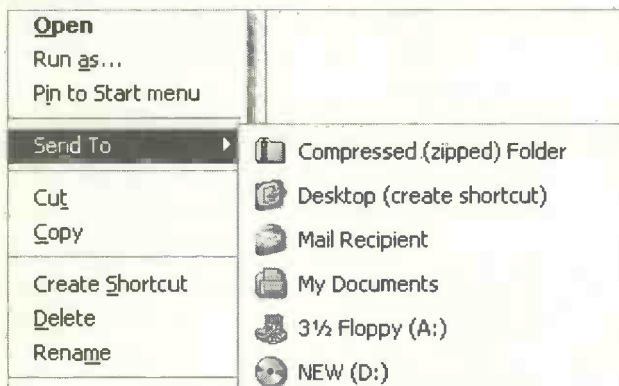


Some dialogue boxes have a *text bar* which allows you to type in your own words, such as a file or folder name. For example, when you select **Save As...** from the **File** menu, the **Save As...** dialogue box appears. This includes an icon to create a new folder, shown on the right. Click this icon and then enter a name for the new folder in the text box which appears, as shown below.

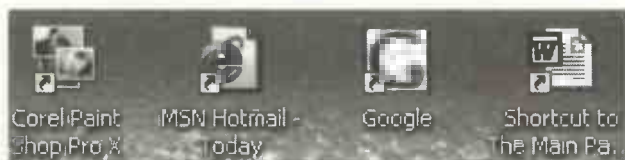


Creating a Shortcut Icon on the Desktop

To provide a shortcut icon on the Desktop for any of your programs, from the **start** menu, select **All Programs**. *Right-click* the name or icon for the program and click **Send To**. Now select **Desktop (create shortcut)** to place an icon on the Windows Desktop.



From now on the program can be started by double-clicking the new icon on the Desktop. You can also create shortcuts to frequently used files and folders. *Right-click* the file or folder in the Windows Explorer or My Computer and use **Send To** and **Desktop (create shortcut)** as before. As shown in the extract from my own Desktop below, there are shortcut icons for, (from left to right), the Corel Paint Shop Pro image editing program, an e-mail program, the Google Internet search engine and a word processing document.



Help for Users With Special Needs

Microsoft Windows XP contains a number of features to help with the following impairments:

- Vision
- Hearing
- Mobility

The features provided in Windows are limited and some users with special needs may require more specialised accessibility software. However, there are many useful tools included in Windows XP, to assist users with impaired sight, hearing or mobility and these are described on the following pages.

The Accessibility features are launched by selecting **start**, **All Programs**, **Accessories** and **Accessibility**.

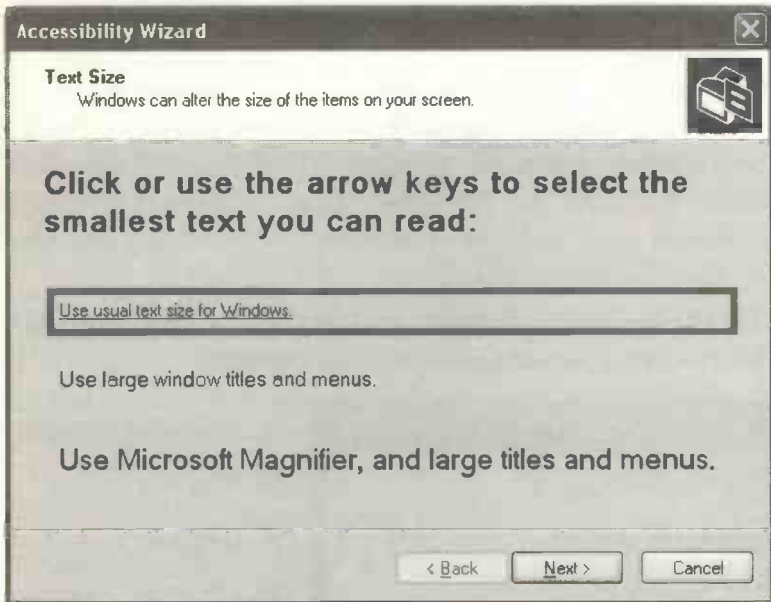


The next section looks at the five **Accessibility** options, shown in the right-hand panel above.

The Accessibility Wizard

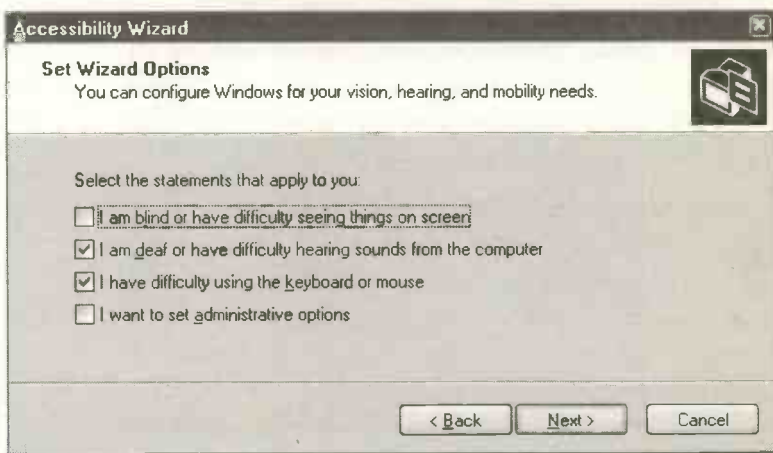
A wizard is a program which leads you through a series of interactive screens. The user makes selections from various choices before clicking **Next** to move on to the next screen. Wizards are frequently used in Microsoft Windows for setting up new hardware and software.

Start the **Accessibility Wizard** by clicking **start**, **All Programs**, **Accessories**, **Accessibility** and **Accessibility Wizard**. First you see the **Accessibility Welcome Screen** and on clicking **Next** you are given the option to select a suitable text size by clicking on one of the three samples starting with the word **Use...** shown below.

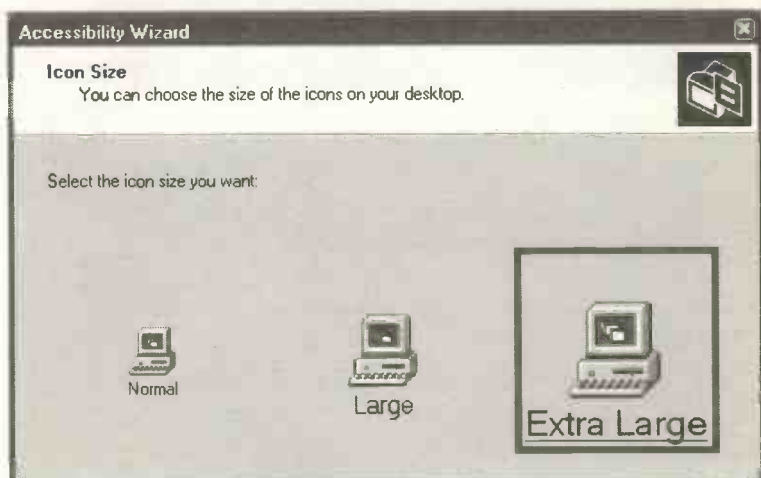


Further dialogue boxes in the wizard allow you to increase the text size which appears in windows title bars and also to increase the size of scroll bars.

Then you are asked to specify your own special needs, by ticking the check boxes for conditions which apply to you.

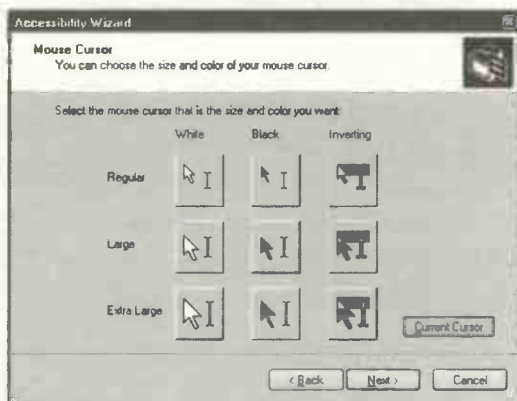


The Accessibility Wizard then proceeds in one of several ways, depending on the ticks you have placed in the above check boxes. For example, if your vision is impaired, the options to display **Large** or **Extra Large** icons are presented, as shown below.

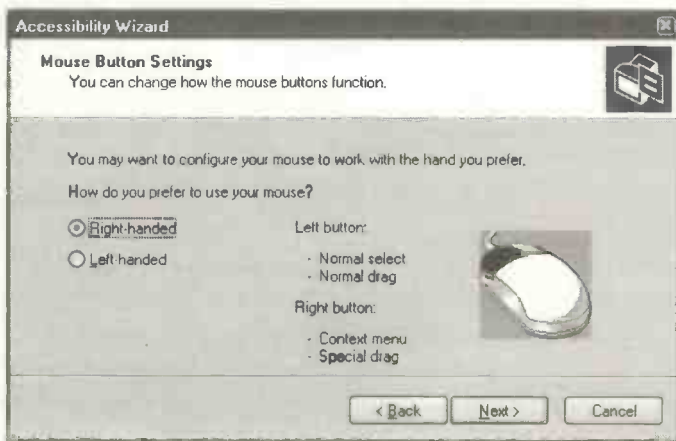


7 Help for Users with Special Needs

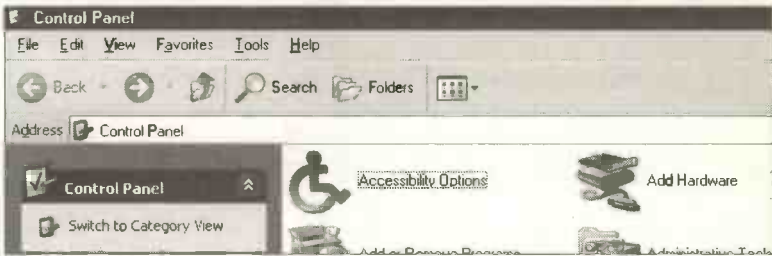
Another dialogue box allows you to select a high contrast colour display and this is followed by a box giving a choice of various colours and sizes of mouse cursor.



If you find using a mouse difficult, the numeric keypad on the right of the keyboard can be used instead. For example, using this option, the cursor can be controlled by the arrow keys, a mouse click is replaced by pressing 5 and double clicking is replaced by +. Finally a dialogue box appears allowing you to swap the function of the left and right mouse buttons, to work with your preferred hand.



After completing all of the dialogue boxes, click **Finish** to leave the Accessibility Wizard. Please note that you can also set the **Accessibility Options** without using the Wizard. First enter the **Control Panel** from the start menu. Make sure the **Control Panel** is in **Classic View**. If the **Control Panel** is currently in **Category View**, click **Switch to Classic View** from the top left-hand corner of the **Control Panel**.



Now double-click the icon for **Accessibility Options**. The following dialogue box opens. A series of tabs (**Keyboard**, **Sound**, **Display**, etc.) give access to many further options.

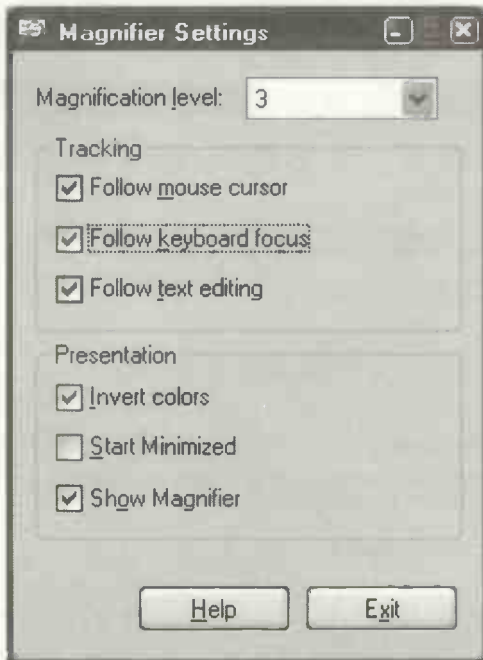


The Magnifier

This feature enables the person with impaired vision to enlarge different areas of the screen, as required. The Magnifier is started by clicking **start, All Programs, Accessories, Accessibility and Magnifier**, as shown below.



A settings dialogue box also appears, giving you the option to change the magnification level in the range 1 to 9.



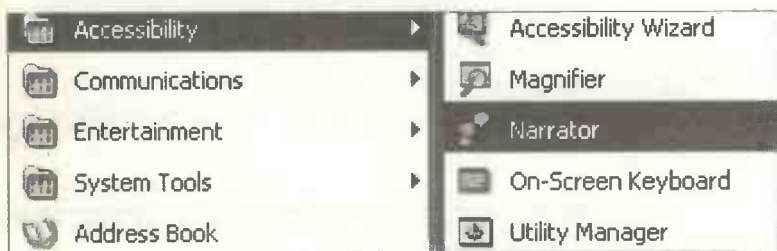
You are presented with a note stating that the Magnifier is intended for users with slight visual impairment. Those with more serious visual problems will need a program with higher functionality.

Note in the dialogue box on the previous page, you can set the magnifier to follow the mouse cursor and the keyboard focus. You can also invert colours to make the screen easier to read. The magnifier appears in its own window above the normal screen. As you move about the normal screen, the magnifier tracks the cursor or keyboard and displays the local text and graphics enlarged, as if viewed through a magnifying glass.

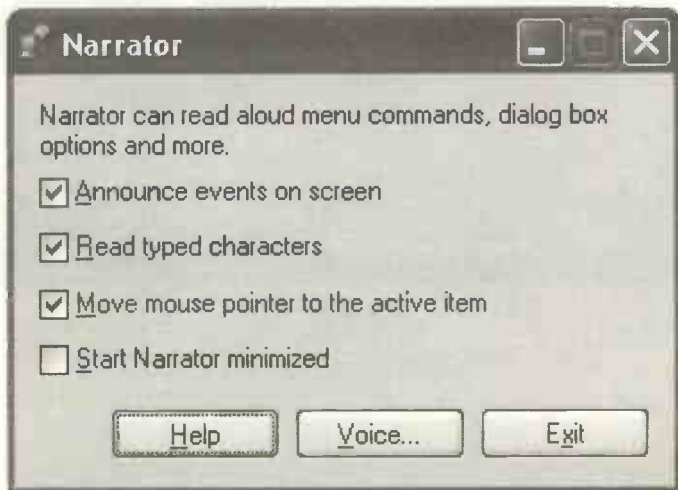


The Narrator

If your computer is fitted with speakers, the Narrator can read out the text in menus and describe features such as buttons in dialogue boxes. The Narrator can also read out the letters and keys pressed as you type them into a document. To start the program, select **start, All Programs, Accessories, Accessibility and Narrator**.

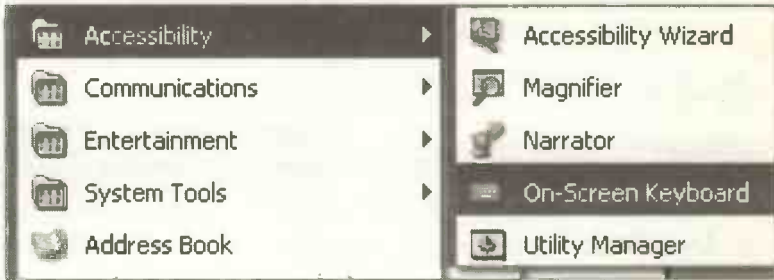


After clicking **Narrator**, an introductory window appears informing you that **Narrator** only works in English and may not work well with certain software. The user is also referred to the Microsoft Web site for details of other “screen reader” software. After clicking **OK** a dialogue box appears allowing the various options to be set in Narrator.



The On-Screen Keyboard

This feature is intended for anyone with mobility problems, who finds it difficult to handle a normal keyboard. The **On-Screen Keyboard** is launched from **start, All Programs, Accessories, Accessibility and On-Screen Keyboard**.

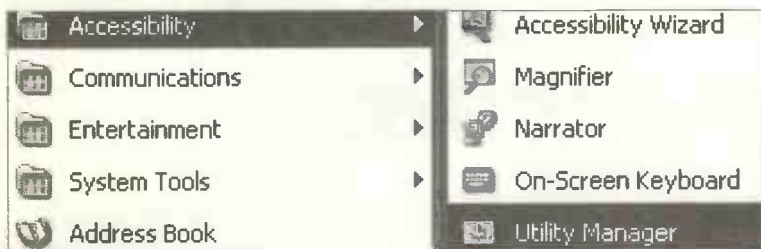


The on-screen keyboard is operated by a mouse or some other pointing device. The cursor is moved over the required letter and the mouse is clicked, causing the letter to appear on the page at the current cursor position.

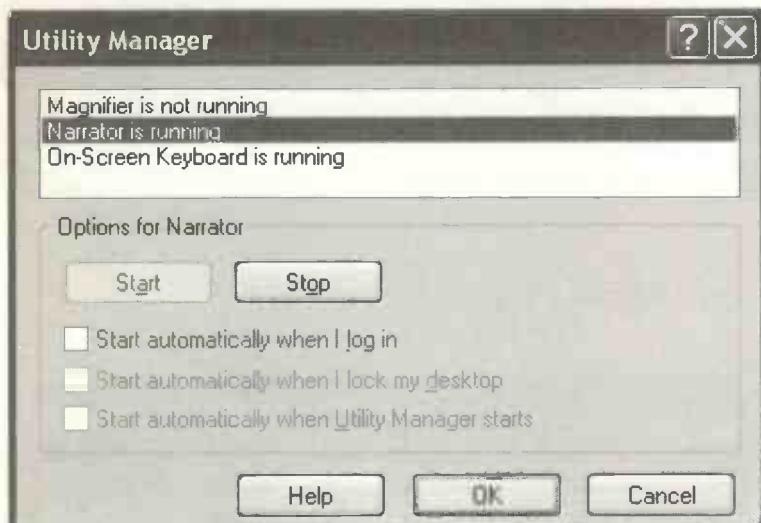


The Utility Manager

The **Utility Manager** is started from **start, All Programs, Accessories, Accessibility and Utility Manager**.



A dialogue box appears showing, within a single window, the special needs programs which are currently running. Here the programs can be started, stopped or configured.



The previous pages describe the special needs features provided free within Windows XP. The Microsoft Web site gives details of additional specialist software and hardware resources to help users with a range of impairments.

Introducing Microsoft Works

Introduction

Microsoft Works is a popular software package which includes just about everything you need to make good use of your computer.



Even if you're using a different package, such as Microsoft Office or Lotus SmartSuite, the methods described in this chapter are still relevant.

If you've just bought a new PC, perhaps for accessing the Internet or sending e-mails to your friends and family, you may well have a copy of Microsoft Works already sitting on the hard disc inside your computer. It's such a popular and useful software package that it's often "bundled" with new computers from the large suppliers.

If Works has already been installed on your computer, you may see its icon displayed on the Windows desktop, as shown on the right. Alternatively you can buy the Works package separately from any of the well-known high street suppliers or mail order companies.



Installing Software – Microsoft Works

It's a very simple task to install Microsoft Works or any other Windows software. The general method is the same whatever the piece of software being installed. This includes copying a lot of files from the installation CD onto your hard disc. The installation process usually places an icon for starting the software on the Windows Desktop. (If not, the method of creating a *shortcut icon on the Desktop* is described on page 100 of this book). Commands to start the various programs will also be placed in the **All Programs** menu accessed from the **start** button.

The Contents of a Software Package

When you buy a package such as Microsoft Works, you will normally receive a box containing the installation CD and a user manual. Nowadays the user manual is often a very slim volume just intended to get you started. A more comprehensive manual may be provided on the CD. This can either be displayed on the screen or printed out on paper. Most software also provides an on-screen **Help** menu which can be viewed while a program is running.

There is often a guarantee registration card in the package, to be returned to the manufacturer. It is also common for you to be given the opportunity to register your purchase of the software as part of the installation process. To achieve this, the computer will be connected to the Internet so that you can enter your details on-line.

During registration, you can choose (or refuse) to be sent details of the company's latest upgrades to the software and other products which may be of interest. Registering the product may also entitle you to free telephone support for an initial period, after which support must be paid for.

The address of an Internet Web site giving answers to FAQs (Frequently Asked Questions) is usually provided. Some packages include a Product Key. This is a long string of letters and numbers which must be entered before the software can be installed. This code is often stuck on a label on the CD case and should be kept in a safe place. The code will be needed if you ever have to re-install the software at a later date. For example, if the original installation should become corrupted or your hard disc has to be reformatted (wiped) for some reason.

The Installation Process

Modern programs are easy to install and users can do the job themselves without seeking expert help.

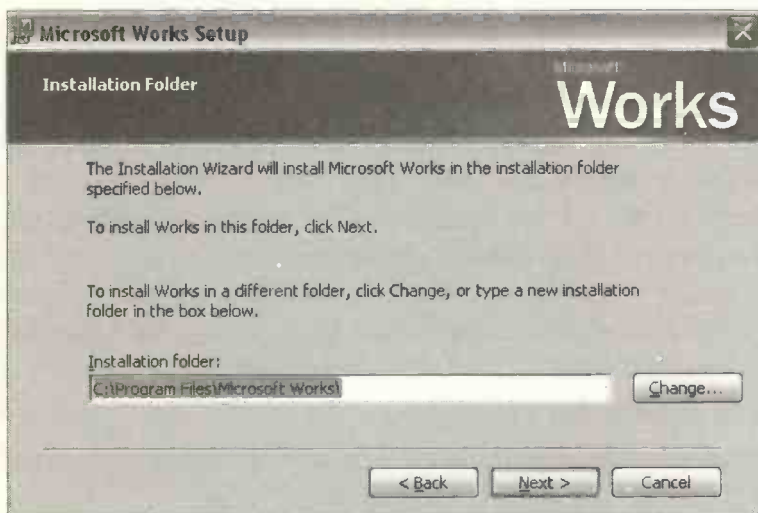
Start the computer and make sure no programs (other than the Microsoft Windows operating system itself) are running. In particular some anti-virus programs can cause problems during software installation and these programs should be temporarily shut down or disabled.

Place the CD in the drive. The CD should *autoboot*, i.e. start up on its own. First there should be a Welcome screen, telling you to click **Next** to start the installation process. Then you are given the name of a folder into which the software is to be installed on your hard disc. This includes the full path down through the folder system on the hard disc or **C:** drive.

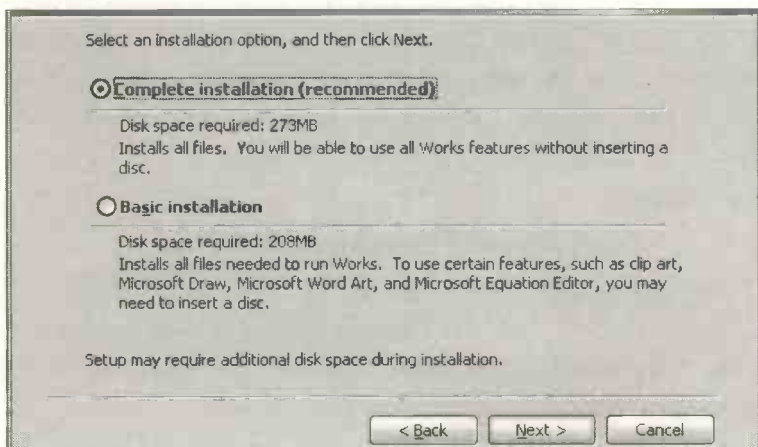
For example:

C:\Program Files\Microsoft Works

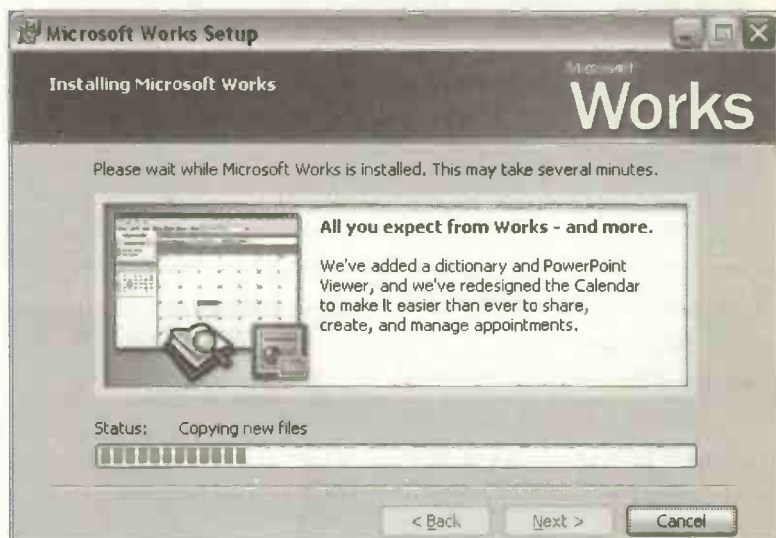
If for any reason you wish to install the software in a different folder, click the **Change** button shown on the next page. I invariably click **Next** to accept the folder specified by the software.



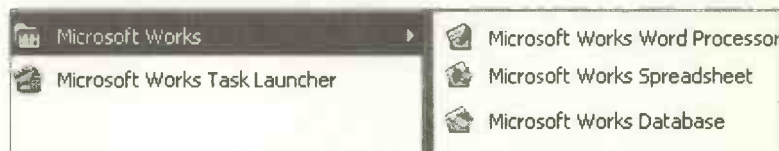
When installing Microsoft Works, after clicking **Next** a dialogue box presents two options, **Complete installation** and **Basic installation**. It is recommended that you choose **Complete installation**, assuming you have the necessary 273 megabytes of free space on your hard disc. Otherwise you can choose **Basic installation** after which the use of some of the less essential features may need the insertion of a disc.



Clicking the **Next** button presents the **Ready to Install** window which informs you that, if necessary, your version of Internet Explorer will be updated during the installation of the Works software. Click **Next** to start the installation process; during the installation various features of the Works software are described and a **Status** bar keeps you informed of progress, as shown below.

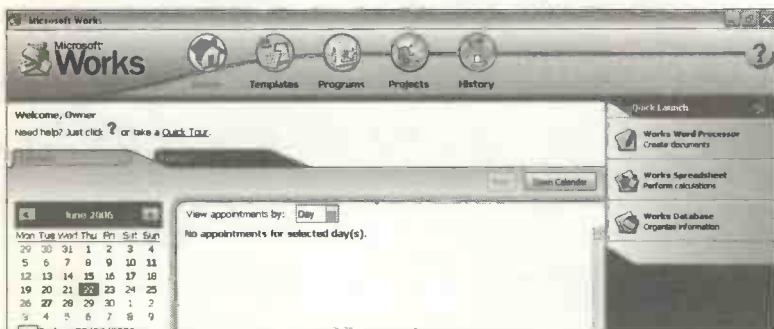


Finally you click **Next** and are told **You're done!** Click **Finish** to complete the installation. You should now have an icon for the Works software on the Windows Desktop and entries for your new software in the **All Programs** menus off the **start** menu as shown below.

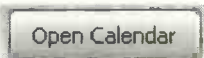
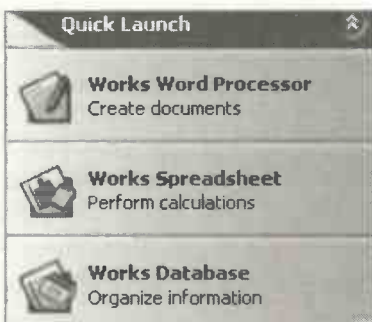


Using Microsoft Works

When you double-click on the Microsoft Works icon on the desktop you are presented with the **Task Launcher** (also accessible from **start** and **All Programs**). This displays the various features which make up the Works package.



You can see icons for the main programs in the **Quick Launch** panel on the right of the screen. These are the word processor, spreadsheet and database, discussed later. Also shown above on the left is the **Calendar**. On the right of the **Calendar** is an appointments list for the current month. If you click the **Open Calendar** button the **Calendar** opens up enabling you to enter new appointments or edit existing ones.

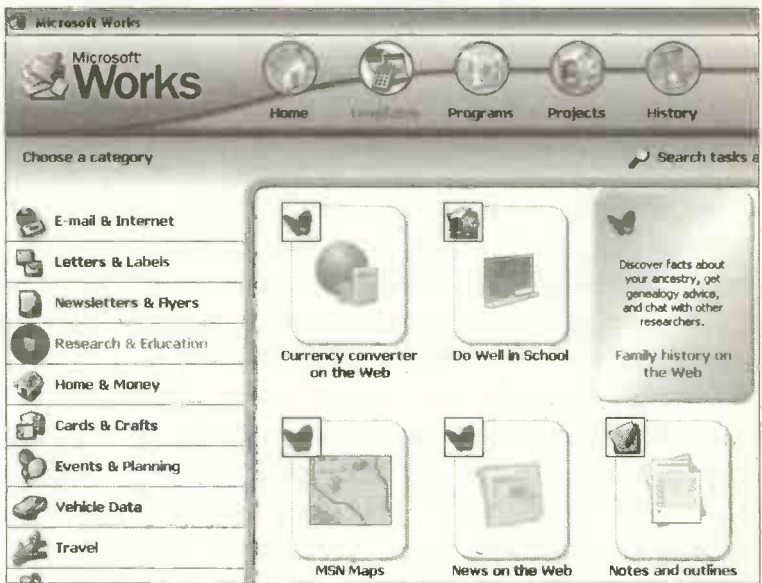


Across the top of the **Task Launcher** screen, as shown below, a row of icons or buttons is provided to launch the main components of Microsoft Works.



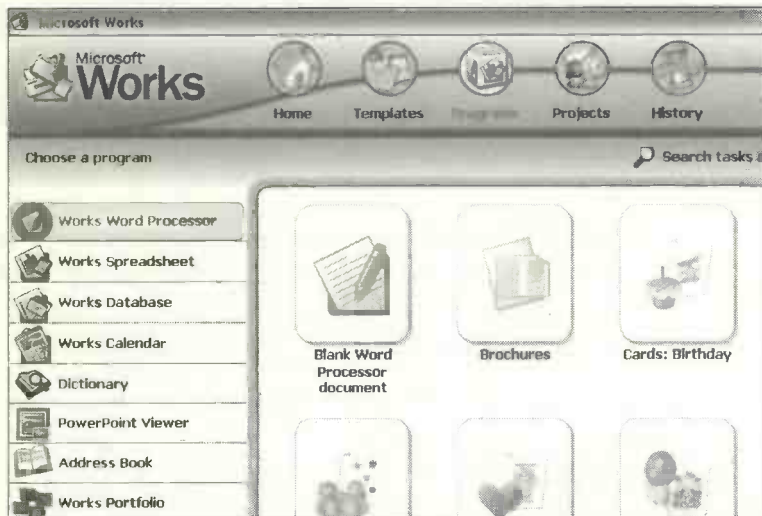
The **Home** button shown above returns you to the opening screen of the **Works Task Launcher**, displaying the **Calendar** and the **Quick Launch** menu shown on the previous page.

The **Templates** button above presents a wide variety of ready-made designs for different types of document and also links to Web sites providing different services such as **Family history on the Web**, shown on the right below.



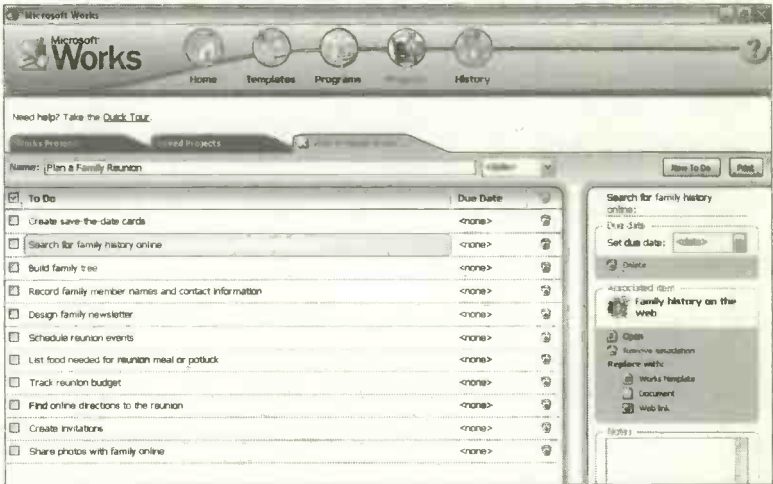
8 Introducing Microsoft Works

If you click the **Programs** button in the **Works Task Launcher** shown below, all of the programs are listed in the left-hand panel, also shown below. The **Works Word Processor**, for example, includes lots of ready-made templates which you can use as the basis of your own documents.

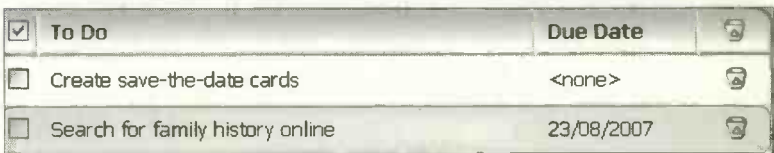


Having selected a topic, such as **Cards: Birthday**, shown above, you are presented with a number of templates giving different designs of birthday card. Select one of the designs and then click **Use this style**. The **Works Word Processor** opens up with the ready-made artwork already inserted. Now enter your own text to complete the card. Similar ready-made templates are available after clicking **Works Spreadsheet** and **Works Database** shown in the left-hand column above. Creating your own word processing, spreadsheet and database files from scratch (i.e. without using ready-made templates) is discussed in much more detail later in this book.

The **Projects** button shown on the **Works Task Launcher** below opens up a list of major planning tasks such as **Plan a Family Reunion** or **Move into a New Home**. When you select a project, a **To Do** list appears as shown below.

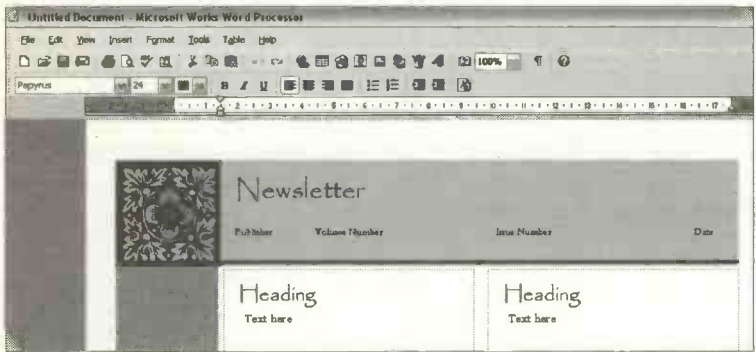


Each entry in the **To Do** list has a slot for you to enter the **Due Date** and a tick box to show when the task is completed. A waste bin icon is provided on the right to delete unwanted **To Do** entries.



Each of the entries in the **To Do** list is a clickable link to further facilities to help with the project. For example, if you click **Search for family history online**, a link appears to the Web site **Family history on the Web**.

Similarly, clicking **Design family newsletter** in the **To Do** list leads to a ready-made newspaper design.



The **History** button on the right of the **Works Task Launcher** shown on the previous page lists all of the files you have created using the various programs in Microsoft Works.

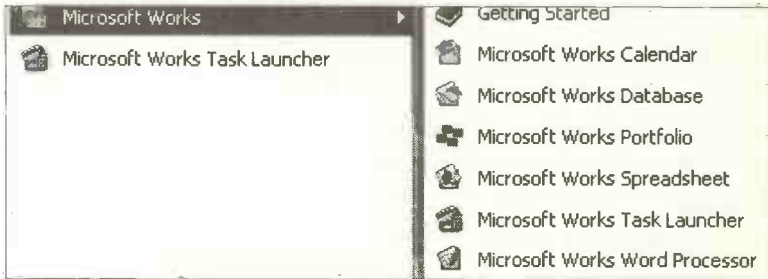
That completes an overview of Microsoft Works and the ready-made templates and wizards provided to help with specific tasks and projects. The next few chapters concentrate on the “content free” software which allows you to create your own documents and files from scratch.

Microsoft Works includes all of the most important software used in large organisations and in the home office, namely:

- The Word Processor
- The Spreadsheet
- The Database

Once you have learned how to use these programs you are well on the way to becoming “computer literate”. In fact these three programs are at the heart of the popular CLAIT (Computer Literacy and Information Technology) course, widely recognized by employers.

Microsoft Works is an example of *integrated* software, since it embraces, in one package, a number of important programs which are also sold and installed separately. As mentioned previously, these are the word processor, spreadsheet and database. These programs are essential for running a small business or performing a range of useful tasks for the home user.



If you are not familiar with the functions of the word processor, spreadsheet or database, brief outlines of their roles are given shortly in this chapter. More detailed explanations and exercises are given in later chapters.

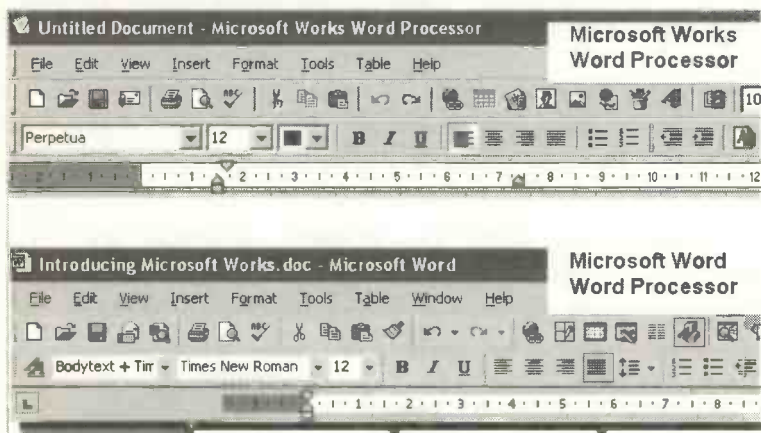
A major advantage of integrated software like Microsoft Works (and its larger relative Microsoft Office) is the common "user interface". This means that all of the programs in the suite have the same look and feel; perhaps more importantly, any work you produce in one program can easily be transferred to another. So, for example, you might produce a set of accounts in the spreadsheet program then incorporate them into a report typed in the word processor. If you were to buy a word processor program from one company and a spreadsheet from another, you might encounter compatibility problems when you attempt to transfer documents or files between programs.

8 Introducing Microsoft Works

Another advantage of Microsoft Works is the price – it can be bought for well under £100. Although it may not have some of the more exotic features of packages costing hundreds of pounds, a typical home or small business user should find Works more than adequate for most general computing needs. Indeed, it has been found that most of us only utilize a small fraction of the features when using modern programs such as Microsoft Word.

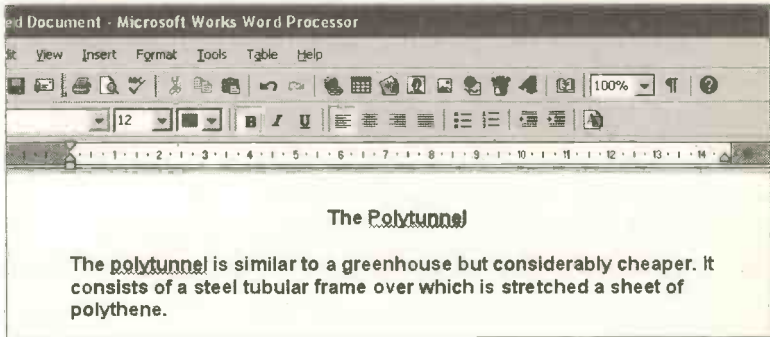
The enhanced version of Microsoft Works, namely Works Suite, includes several extra programs such as Microsoft Word, the program favoured by large organizations and professional users all over the world. This book has been typeset entirely using Microsoft Word, ready for printing directly from a CD.

In fact the ordinary user will probably notice little difference between the software used in the Microsoft Works package and those in the more expensive packages such as Microsoft Office. For example, the menu bars from the Microsoft Works and Microsoft Word word processors are remarkably similar, as shown below.



The Role of the Word Processor

The word processor is a program used for the production of text-based documents. After launching the program you are presented with a blank screen into which you begin typing your document.



Any mistakes can be corrected on the screen and saved on a hard disc, CD, floppy disc, etc., before being printed on paper. There are numerous additional features such as the ability to use different styles of lettering and page layout as well as extra tools like a spelling checker and a thesaurus. The word processor may be used for tasks ranging from a simple letter to a report including graphs and pictures or a flyer including pictures and text in newspaper-style columns. After entering the text, the document is saved on the hard disc. If you want to give a copy of a document to a friend to view or edit on their computer then it can be saved on a removable floppy disc or a CD.

A great deal of time is saved by the fact that documents can be stored on disc then retrieved and used again with only minor alterations, such as the date. This saves retyping the whole document, since, unlike the typewriter, alterations made on the word processor are invisible.

The Role of the Spreadsheet

The spreadsheet greatly simplifies calculations on tables of figures, as required in accounting or managing a household budget, for example. The spreadsheet initially consists of a large blank grid made up of rows and columns. Data consisting mainly of numbers but also text is entered into the blank *cells* or rectangles at the junction of each row and column. First the data is entered by typing into the cells, followed by selection from a menu of the appropriate mathematical functions such as totalling rows or columns.

	A	B	C	D	E	F	G
1							
2		Weekly Spending					
3							
4		Week 1	Week 2	Week 3	Week 4	Total	Average
5							
6	Food	42.65	37.97	46.41	48.57	175.60	43.90
7	Heating	19.28	21.42	23.42	21.48	85.60	21.40
8	Electricity	9.47	11.97	10.97	12.01	44.42	11.11

You can also build up your own formulae for more complex calculations. The spreadsheet saves time by its ability to *replicate*. Having been “told” what to do once, it can then repeat the same calculation down a column or along a row of figures, at lightning speed. Thousands of calculations can be carried out in a few seconds, compared with hours or days required by a human being using more traditional methods.

Data from the spreadsheet can be displayed in various graphical formats such as pie charts and histograms.

The Role of the Database

The database is a collection of similar records, where all the records have exactly the same layout.

The screenshot shows a Microsoft Works Database window titled 'Holidays.wdb - Microsoft Works Database'. The menu bar includes File, Edit, View, Record, Format, Tools, and Help. The toolbar shows the font set to Arial and size 10, along with icons for file operations and text formatting (Bold, Italic, Underline). Below the toolbar is a table with the following data:

<input checked="" type="checkbox"/>	Destination	Date	Departs From	Days	Price
<input type="checkbox"/>	1 Canadian Rockies	18/03/2008	Manchester	11	£829
<input type="checkbox"/>	2 Dublin	25/03/2008	East Midlands	3	£145
<input type="checkbox"/>	3 Prague & Vienna	28/03/2008	Birmingham	7	£435
<input type="checkbox"/>	4 China	18/03/2008	Heathrow	10	£948
<input type="checkbox"/>	5 Eden Project	19/04/2008	(Local Coach)	4	£185
<input checked="" type="checkbox"/>	6 Rome & Venice	29/05/2008	East Midlands	7	£265

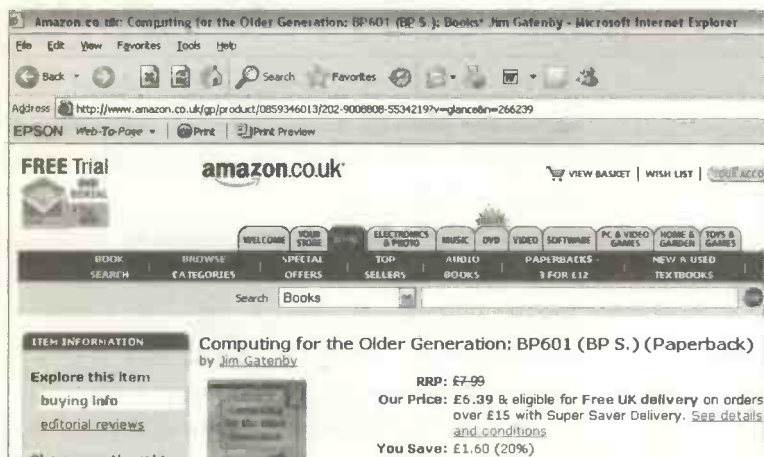
However, the modern database program is much more than a replacement for the simple card index system. Apart from the ability to *search* for records meeting certain criteria, the records can be automatically *sorted* into a particular order such as date or alphabetical order.

Records may be *edited* to reflect any changes in the data. For example personnel records must be updated when a person moves house or changes jobs. An important feature of the Works database is the ability to generate both *graphs* and *reports*. These enable the results of any information retrieval operations to be presented in a clear and attractive format which is easy to understand.

A database file can be saved on a hard disc, CD or floppy disc, etc., and retrieved and edited at a later date, before printing on paper. Extracts from a database file can be transferred to the Works word processor for inclusion in a document such as a sales report.

Internet Explorer and E-mail

Also included in the Works package are the well-known Internet Explorer Web browser and the Outlook Express e-mail program. If your computer has a modem fitted, Internet Explorer will connect to the Internet and browse the Web pages for information. You can search for the latest information on any subject under the sun, such as health, travel, gardening or researching your family tree. You can even find a weekend break and reserve accommodation at one of the many on-line hotels and guest houses. Or you can make a purchase from one of the on-line stores such as books and CDs from Amazon.



Outlook Express is an e-mail program allowing you to communicate using text messages, with friends, relatives or colleagues anywhere in the world. These can include file *attachments* such as documents produced in other Works programs, like the word processor, spreadsheet or database. You can even send photographs and video clips down the telephone lines as attachments to your e-mails.

Word Processing

Introduction

Word processing is probably the most frequently used computing application in the office and in the home. Many new computer systems are supplied with word processing software already installed on the hard disc, frequently as part of the popular Microsoft Works suite of software.



Some versions of Microsoft Works also include Microsoft Word, the most popular word processing program in the world. This chapter is based on the standard word processor included in Microsoft Works. However, the methods and principles described in this chapter are relevant to all of the popular word processing software, such as Microsoft Word and Lotus WordPro.

Word processing is far more than simply a replacement for the typewriter as a means of entering text. Some of the advantages of the word processor, compared with the typewriter, are as follows:

- Corrections can be made on the screen before printing on paper, so there is no evidence of any alterations. Several copies can easily be printed.
- Documents are saved on disc, then retrieved later. This allows a document to be used again, perhaps with small changes such as a new date. There is no need to retype the whole document.
- Text can be *edited* more easily – whole blocks of text can be inserted, deleted or moved to a new position in the document.
- The *Find and Replace* feature enables a word (or group of words) to be exchanged for another word or words, wherever they occur in a document. For example, replace “house” with “property”.
- Text can be formatted with effects such as bold and italic and in various fonts or styles of lettering as shown below.

Brush Script

- The layout of the page can easily be changed, with different margins, line spacing, graphical effects and newspaper-style columns.
- Modern word processors contain many additional features such as spelling and grammar checkers, a thesaurus and a word count facility.

Typical uses for a word processor are:

- Typing letters and reports.
- Producing a document including tables, graphs, and pictures.
- Editing a magazine or newsletter for a club, society or neighbourhood.
- Printing certificates of achievement, etc.



- Preparing a cover sheet or text for a fax or e-mail.
- Addressing envelopes.
- Producing a flyer or leaflet using special text and graphical effects.

WordArt

- Creating and editing a Curriculum Vitae.
- Typesetting a full size novel or text book (such as this one) or a college dissertation or thesis.

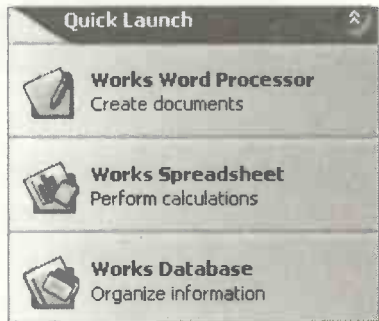
Preparing a Letter

For many people, keeping in touch with family and friends with a well thought out letter is preferable to a hastily drafted e-mail. If you are a setting up a new venture, a well-presented business plan and correspondence is essential if you are to have a professional image.

The next few pages go through the main steps in using the word processor to produce a simple document such as a letter. Initially it is suggested that you read through the text to get a feel for the skills involved. Then you may wish to attempt the exercise at the end of this chapter and complete the skills checklist.

Starting a New Document

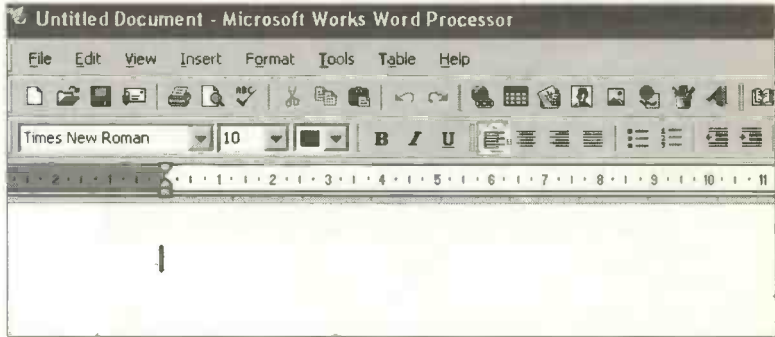
The Microsoft Works word processor can be started from the **Task Launcher** by clicking **Works Word Processor** on the **Quick Launch** panel on the right of the **Task Launcher** screen, shown here on the right.



Alternatively, the word processor can be started by clicking the **start** button in the left-hand corner of the screen, then selecting **All Programs**, **Microsoft Works** and **Microsoft Works Word Processor**, as shown below.



You are presented with a blank screen ready to start typing.

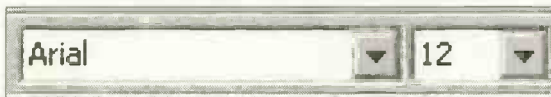


A word processor must start with numerous *default settings*, such as the page margins. You may wish to change these later, but for the time being, you can safely accept most of the default values which Works provides.

The default lettering style or *font* (normally **Times New Roman**, size 10 shown above) can easily be changed after clicking the down arrows shown right and on the toolbar below.

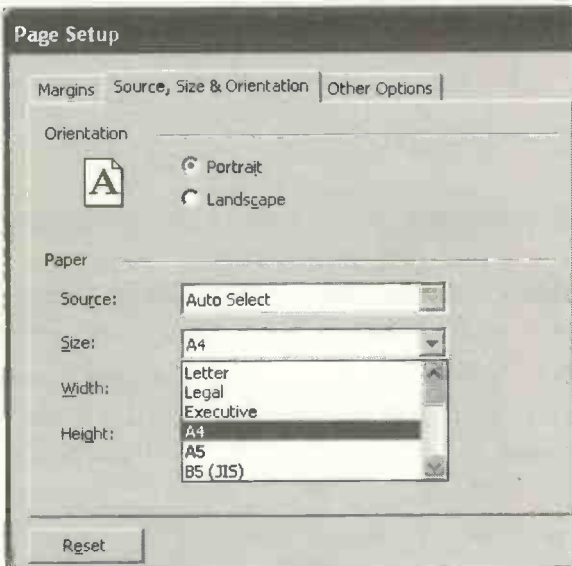


A popular font for this type of document is **Arial** size 12.

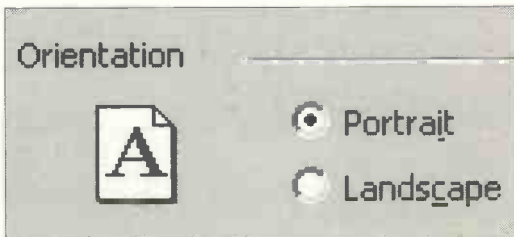


Setting the Paper Size

You need to ensure that the paper size in your document on the screen matches the actual paper used by your printer. Select **File, Page Setup...** and **Source, Size & Orientation**. Choose the size of the paper you are using in your printer, usually **A4**, as shown below.

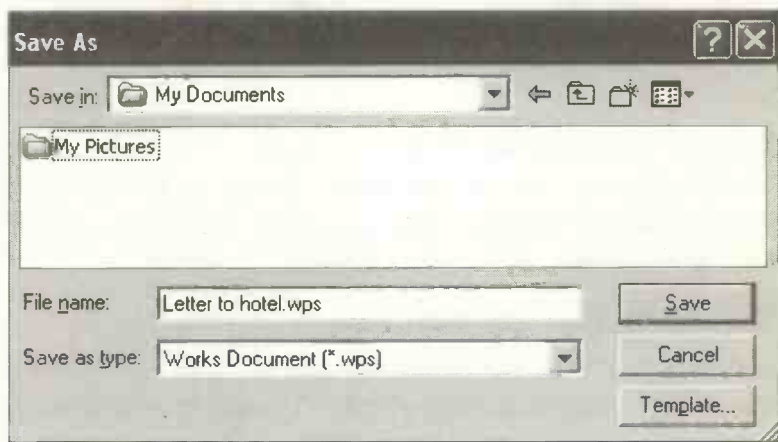


Orientation in the above **Page Setup** dialogue box refers to whether the finished printout should be viewed with the paper in the **Portrait** position (long sides vertical) or **Landscape** (long sides horizontal).



Creating a New File Using Save As...

Before you start entering the actual text of a document it's a good idea to create a file with a suitable name. Then it's a simple matter to quickly save the document at intervals while you are entering the text. Select **File** and **Save As...** and enter a meaningful **File** name such as **Letter to hotel**. File names can be up to 255 characters long.

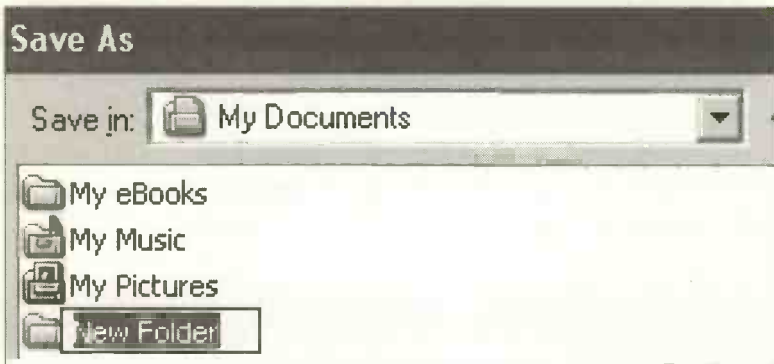


Creating a New Folder

Note that by default the document will be saved as a file in the folder **My Documents**, unless you have selected another folder. You can create a new folder within the folder **My Documents** after clicking on the icon shown on the right and also shown in the **Save As** dialogue box above.



A highlighted name, **New Folder** appears, as shown on the next page.

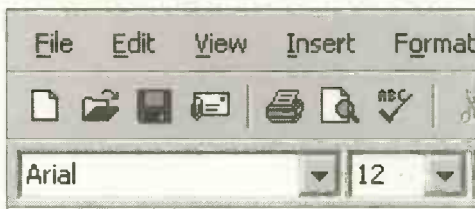
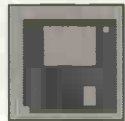


Replace the words **New Folder**, by typing in your own name for the folder, such as **Holidays**. Saving and organizing your work into folders which you have created is covered later in this book.

Regular Saving – the Quick Save

Suppose you work for a long session, say 2 or more hours, and don't bother to save your work. A sudden power cut or computer "glitch" could cause all that effort to be wasted. Regular saving every few minutes is quick and easy and can prevent this unnecessary frustration.

After the initial **Save As...**, when you give the file a name, all subsequent saves can be achieved by simply clicking the disc icon on the toolbar shown right and below.



Entering the Text

Shown below is a short sample letter. In the exercise at the end of this chapter you will be asked to enter this letter or make up a similar one of your own.

Dove Cottage

Rudyard

Staffordshire

SB5 NJ6

5 January 2006

The Manager

The Milton International Hotel

Ontario

Canada

Dear Sir/Madam

I am planning to attend a family reunion in Ontario in June of this year and your hotel has been recommended by one of my relatives.

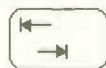
I would be most grateful if you could send me a copy of your latest brochure, including details of your facilities for the disabled and car hire.

Yours faithfully

John Williamson

Hints for Absolute Beginners:

- You don't need to press the **Enter** or **Return** key at the end of a line. Just keep typing and the word processor takes care of everything in a process known as *word wrap*.
- You only need to press **Enter** or **Return** at the end of a line if you want to start a new paragraph or insert one or more blank lines.
- Use the **Tab** key (shown on the right) to jump across to a fixed point on a line - e.g. to vertically align the left-hand edges of the lines of an address.

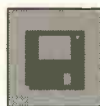


Tab to each line of
the address

Dove Cottage
Rudyard
Staffordshire
SB5 NJ6
5 January 2006

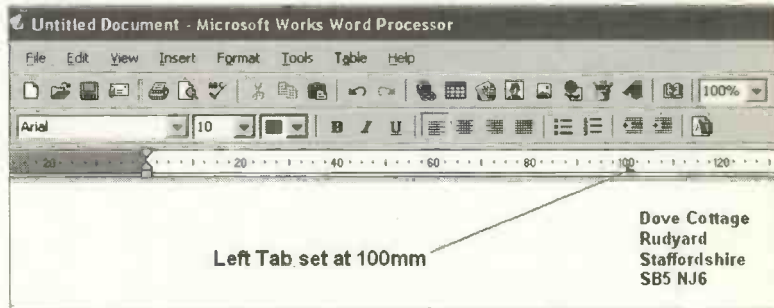
Correcting Mistakes While Typing

While you're entering the text, correct any typing errors by deleting the mistake then typing the correct text. Words to the *left* of the cursor are deleted with the backspace key (shown left), while the **Delete** key removes text to the *right* of the cursor. Periodically, while you are entering text, click the floppy disc icon on the toolbar to carry out a quick save. Printing can sometimes result in a computer "crashing" or locking up, causing the current document in the memory to be lost. So it's best to save your work before attempting to make a printout on paper.



Setting Your Own Tab Stops

When you need to start several lines of text a long way from the left margin, the **Tab** key is used to make sure that successive lines all start in exactly the same place. For example, ensuring the lines of an address are vertically aligned on the left. Beginners often use the space bar to move across the screen to the point where text is to start. Unfortunately, using this method, the alignment is often lost when the document is printed on paper. Using the **Tab** key however, the cursor jumps across to exactly the same position on every line on the screen and the alignment is maintained on the printout on paper.

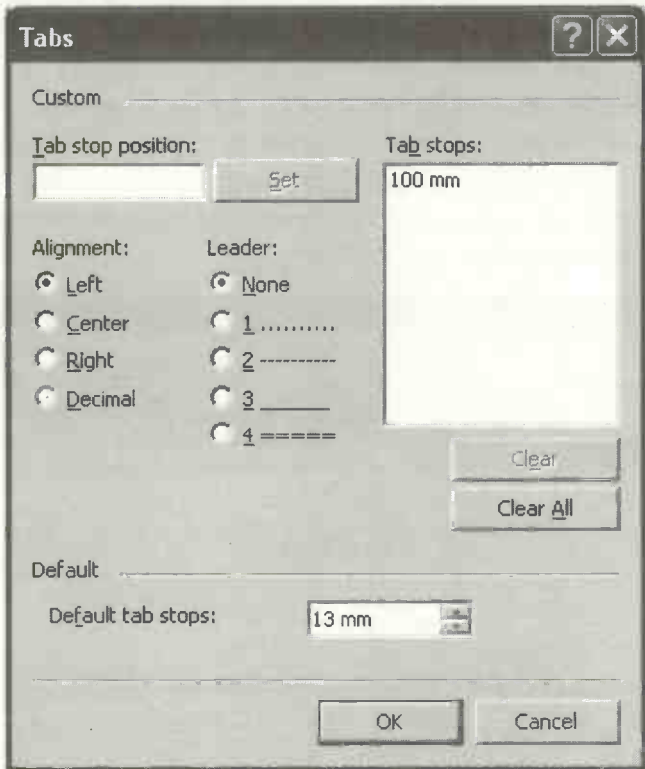


In the screenshot above a *Left Tab* has been set at 100mm. (As described shortly, you can change the units to inches or centimetres if you prefer).



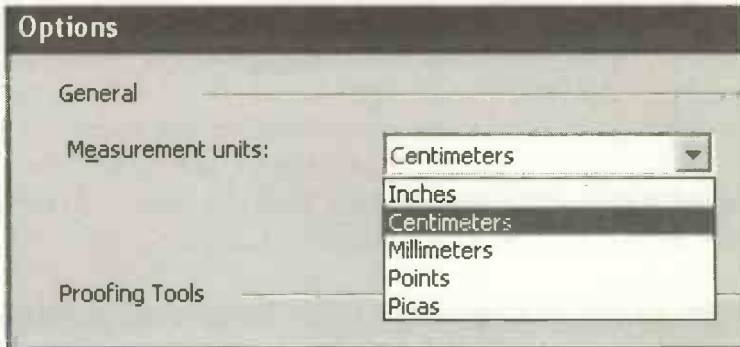
9 Word Processing

Word processors normally have several default **Tab** stops already set. However, it's useful to be able to set your own using the **Tabs** dialogue box shown below and accessed from **Format and Tabs...**



Enter the required measurement in **Tab stop position:** and click **Set** and **OK**.

If you prefer to work in inches or centimetres, select **Tools, Options...** and click the downward pointing arrow to the right of **Measurement units:**. Now you can change the units using the drop-down menu as shown below.



Having set a **Tab** stop, press the **Tab** key to move to the required starting position in the document. Notice in the **Tabs** dialogue box on the previous page, there are four different types of **Tab** stop, allowing you to align the text on the **Right**, **Left** or about the **Center**. The **Decimal Tab** causes columns of **numbers** to be vertically aligned about the decimal point.

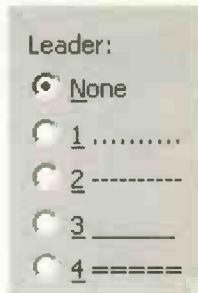


Leaders

Referring to the **Tabs** dialogue box on the previous page, the radio buttons under the word **Leader** enable the **Tab** position to be preceded by a choice of dotted or continuous lines. This idea is often used in the contents page of a book, for example.

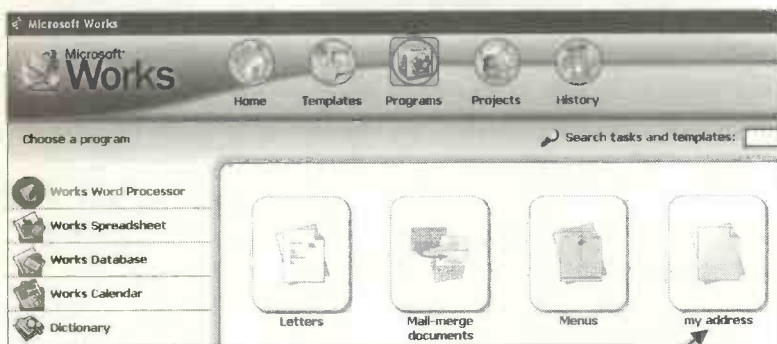
Chapter 785

Leader

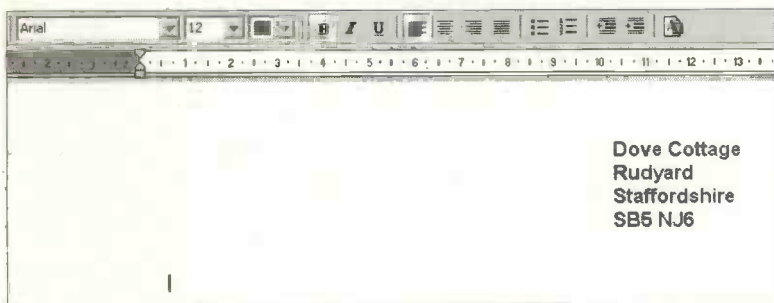


Creating a Template for Your Own Headed Paper

To save typing in your address at the top of every letter you write, you could make a template for headed paper containing your address and any other information. Start a new document and use the **Tab** key to set up your name and address. Then select **File** and **Save As...** and click the **Template...** button. Save the template with a name such as **my address**. Whenever you want to start a new letter, from the **Works Task Launcher**, select **Works Word Processor**, **File** and **New...** and you should see your new template (such as **my address**) in the grid of templates displayed as shown below.



Click the template, in this example called **my address**, to launch the new document with your address already in place, ready for you to begin typing, as shown below.



Print Preview

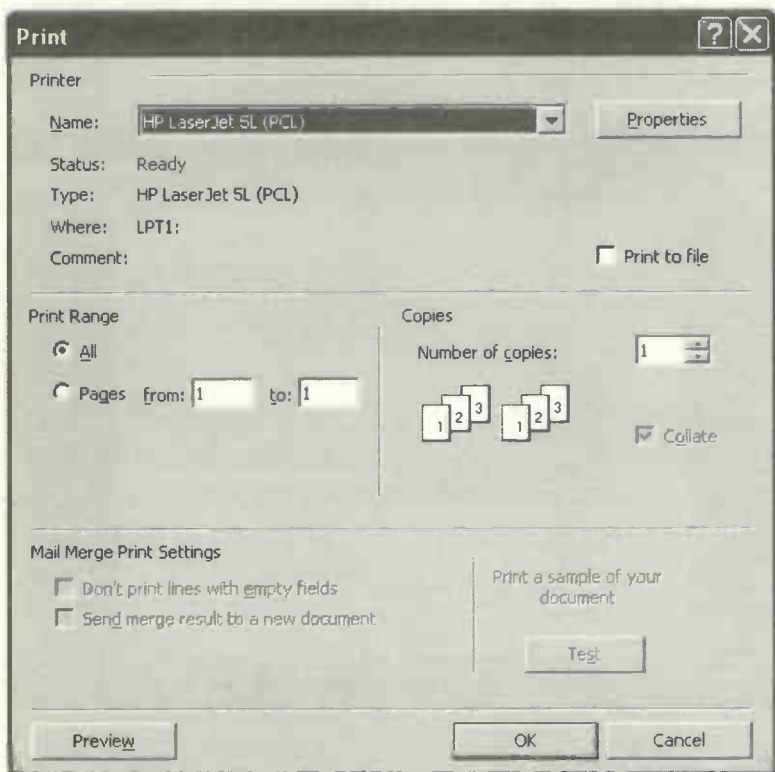
Before you make a printout on paper, you might wish to select **Print Preview** to give a screen view of how the document will print on paper. Click **File** and **Print Preview** from the word processor menu bar. Alternatively, use the **Preview** button on the main **Print** dialogue box accessed via **File** and **Print....** Or click the **Print Preview** icon on the word processor toolbar.



The **Print Preview** allows you to check the layout of your document before it is printed on paper. You may, for example, decide to insert a few blank lines here and there just to make the document more readable. When you are finished with the **Preview** click **Close** to return to the main word processor window.

Printing on Paper

Use **File** and **Print...** then click **OK** to make a copy of your letter on paper. Notice that there are options to specify the number of copies and the particular page(s) to be printed, in the case of longer documents.



Alternatively, if you just want a quick print using the existing **Print** dialogue box settings, click the **Print** icon on the word processor toolbar.



Practice Exercise

You may wish to copy the letter on page 135 or alternatively make up a letter of your own. To complete the whole of this exercise you need to have a printer attached to your computer. Although the exercise is based on the Microsoft Works word processor, the basic operations are similar for word processors in general.

1. Start up your word processing program and open a blank document.
2. Set the text font, e.g. **Arial 12**.
- X 3. Set the paper size to match the paper in your printer, e.g. **A4**.
- ✓ 4. Create a new file, e.g. **Holidays 2007**.
- ? 5. Set a **Tab** stop ready for the address on the letter.
6. Enter the text for the letter.
7. Practise using the **Delete** key and backspace keys to delete or correct words as you are typing. Also practise inserting words.
- X 8. Save the work at regular intervals and also after you have finished entering text.
9. Check the layout using **Print Preview**.
10. Make any necessary adjustments, e.g. increase the spacing by inserting blank lines using the **Enter** key.
11. Make a printout on paper.

Keyboard Shortcuts

Save: **Ctrl+S**

Print: **Ctrl+P**

Checklist: Basic Word Processing

If you have successfully completed the previous exercise you should now be able to use a word processor to produce a basic text document, such as a letter. You may wish to use the following list to tick off the skills you have already acquired and possibly revisit any which need more time.

Word Processing Skills	Achieved
Start a new word processing document.	
Set the text <i>font</i> , i.e. the style and size of lettering.	
Set the paper size to match the paper in your printer.	
Create a new file with a meaningful file name.	
Set a Tab Stop using suitable units of measurement	
Use the Tab key to vertically align text.	
Enter text using upper and lower case letters.	
Correct errors as they occur during the entry of text.	
Save a document at regular intervals.	
Use the Print Preview feature.	
Print a document on paper.	

The next chapter covers more advanced topics such as altering the content and appearance of a document.

Editing a Document

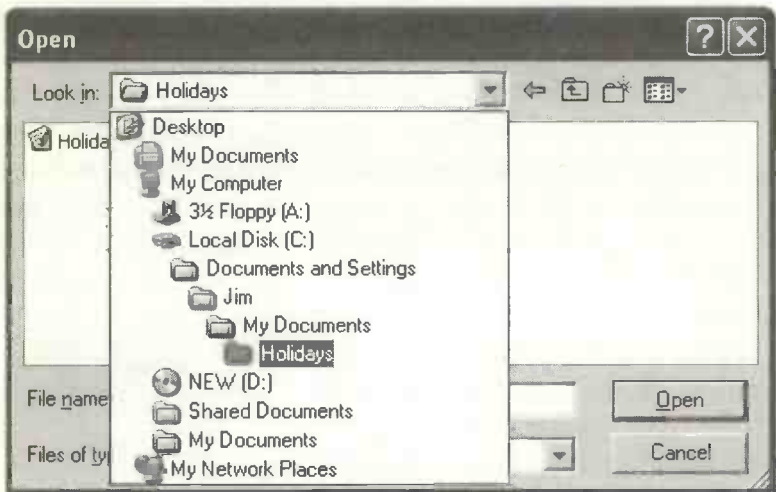
Introduction

One of the best things about the word processor is the fact that if you don't like the content or appearance of a document you can easily change it. You can take a document saved on your hard disc, open it in your word processor and carve it about as much as you like. There's none of the mess associated with old fashioned "cutting and pasting" with scissors and glue. Then when you have finished editing you simply print out the revised version incorporating all of the changes. In fact, "cutting and pasting" is still used to describe moving a piece of text within a document or between documents. This is done using the cutting, copying and pasting icons from your word processor toolbar as shown on the right and below. This topic is described in detail later in this chapter.

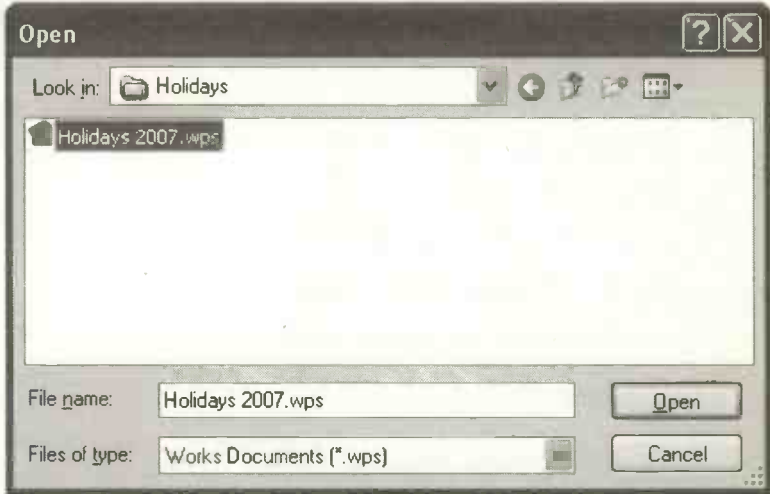


Retrieving a Document from the Hard Disc

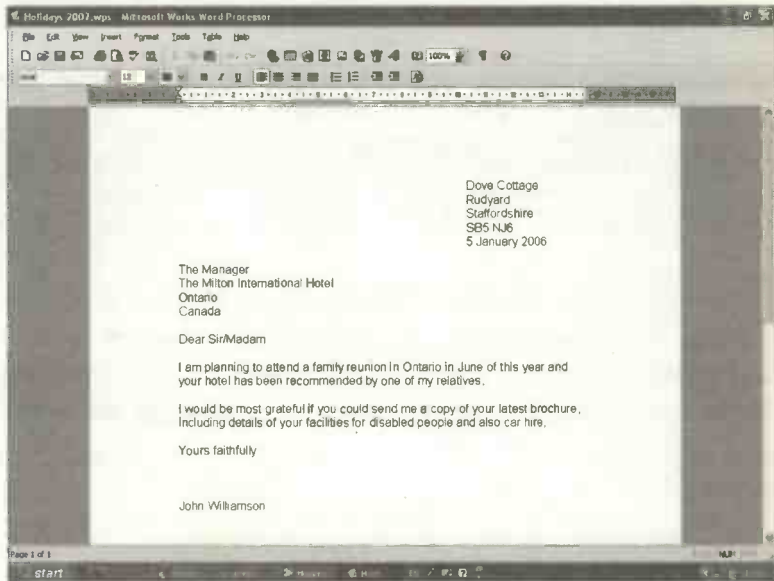
Having created a document and saved it on disc you can retrieve it at any time. From the menu bar select **File** and **Open**. As discussed in the previous chapter, a letter was saved with the name **Holidays 2007**. It was saved in the folder **Holidays**, which was created in the folder **My Documents**. You may need to click the down arrow to the right of the **Look in:** bar, shown below, to select the required folder on your **C:** drive (hard disc). If necessary please see the previous chapter, for more information on files and folders.



When you have located the required folder containing your file, click on the filename so that it appears in the **File name:** slot, as shown on the next page.



Now click **Open** for the document to be opened up in your word processor.



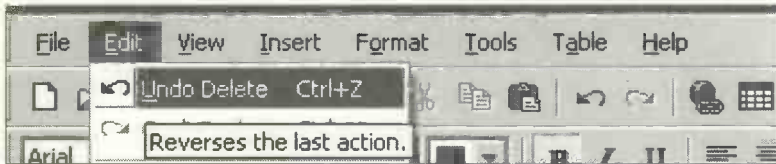
10 Editing a Document

Then you might wish to proof read the document and improve it using editing operations as follows:

- Deleting text.
- Replacing text.
- Moving blocks of text.
- Inserting words or blocks of text.
- Correcting spelling mistakes.
- Adding text to extend a document.

Undoing Actions

When editing a document it's easy to make a mistake like deleting the wrong words. Fortunately the **Undo** feature accessed off the **Edit** menu shown below allows you to reverse *the last action*. Or you can use the **Undo** icon off the word processor toolbar, shown right and below.



Please note that the **Undo** feature can be used to reverse a variety of editing tasks, not just deleting text as in this example. Please also note that if you prefer you can use the keyboard alternative **Ctrl+Z**, which means “Hold down the **Ctrl** key and press **Z**”.

Block Operations on Selected Text

A lot of small editing tasks can be achieved by simply moving the cursor to the appropriate place and deleting or inserting text. However, you may wish to delete or move entire lines, paragraphs or even pages of text. For these tasks you first *select* the text, so that it's *highlighted* against a black background, as shown below.

The Polytunnel

The **polytunnel** is similar to a greenhouse but considerably cheaper. It consists of a steel tubular frame over which is stretched a sheet of polythene.

The main use of the polytunnel is to grow plants and shrubs and many polytunnels are now in use with both private and commercial growers. The polytunnel, despite some early reservations, has proved to be durable and able to withstand the worst of Britain's weather.






Apart from its use in horticulture, the **polytunnel** can be found in a variety of situations. Some **polytunnels** are used to provide shelter for farm animals such as sheep, while others provide a sheltered work space or storage area. Others are used as covers for outdoor swimming pools.

Selecting Text Using the Mouse

- To select any piece of text, keep the left mouse button held down while moving the pointer across the whole of the required text.
- To select an individual word double-click over the word.
- To select a line of text, make a single click in the left margin of the document.
- To select a paragraph, double-click in the left margin.
- To select the whole document, treble-click in the left margin or use **Edit** and **Select All** off the menus.

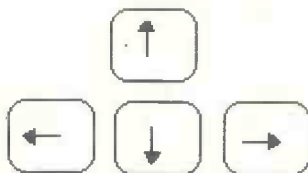
Selecting Text Using the Keyboard

In general, each of the Works menu options has a keyboard alternative, as shown on the right. So, for example, you can also select the whole document using **Ctrl+A**, as shown on the **Edit** menu on the right. This means, while holding down the **Ctrl** (Control) key, press the letter **A**. Another method is to place the cursor at the beginning of the required

<u>E</u> dit	<u>V</u> iew	<u>I</u> nsert	<u>F</u> orm
 <u>U</u> ndo Typing			Ctrl+Z
 <u>R</u> edo	<u>D</u> elete		Ctrl+Y
 <u>C</u> ut			Ctrl+X
 <u>C</u> opy			Ctrl+C
 <u>P</u> aste			Ctrl+V
			Paste <u>S</u> pecial...
			<u>C</u> lear
			Del
			<u>S</u> elect All
			Ctrl+A



block of text then, while holding down the **Shift** key, shown left, use the arrow keys, shown below, to select the required block of text.



Deleting a Block of Text

Select the required text and press the **Delete** key. (Or place the cursor on the left of the required text and hold down the **Delete** key.)

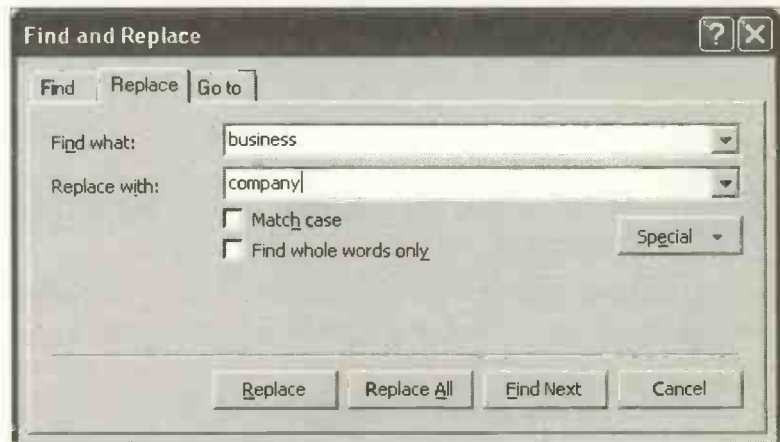
Inserting Text

Insert text by placing the cursor where the new text is to begin then start typing. The new text should force its way in without deleting any of the old text. If the new text *over-types* and replaces the existing text rather than pushing its way in, press the **Insert** key to switch off over-type mode.



Search and Replace

To replace a word or group of words wherever they occur in a document, select **Edit and Replace...** to open up the **Find and Replace** dialogue box. For example, to replace the word “business” with “company” throughout a document. Enter the old word in **Find what:** and enter the new word in **Replace with:** as shown in the next dialogue box.



Now click the **Replace All** button to replace the old word(s) with the new word (s) throughout the document. Notice in the above dialogue box there are options to match the case (i.e. capital or small letters, also known as upper and lower case) and also to match only whole words.

10 Editing a Document

Moving a Block of Text – Cut and Paste

Select the block of text to be moved as shown below.

The polytunnel is similar to a greenhouse but consists of a steel tubular frame over which is stretched a sheet of plastic.

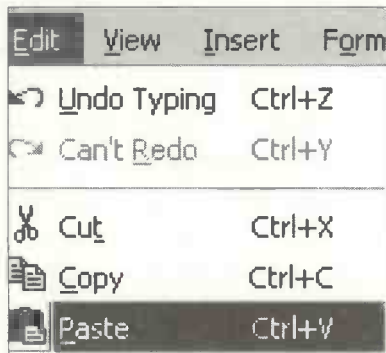
The main use of the polytunnel is to grow plants in winter. It is now in use with both private and commercial growers. It has proved to be durable and suitable for Britain's weather.

Now click the scissors icon on the Works toolbar. This removes the selected text and stores it on the *clipboard*. The clipboard is a temporary storage location where text (and graphics) can be held until you are ready to place them somewhere else in the document.



Next move the cursor to wherever you want the selected text to start. Now click the paste icon on the toolbar (shown left) to place the text in its new position.

Cutting and pasting can also be achieved using the **Edit** menu after you have selected the piece of text to be moved.

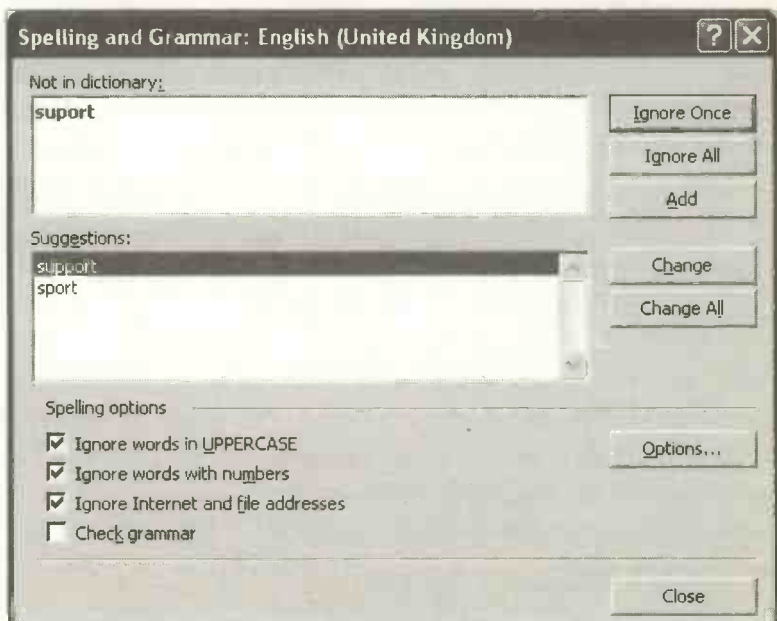


If you want to *duplicate* a piece of selected text rather than *move* it, then use the copy icon off the menu bar shown right or the **Copy** command off the **Edit** menu shown on the previous page. **Cut and Paste** using the clipboard is a very useful skill in a variety of Windows applications, not just for moving text within a document. For example you can move a graphic by copying it from a paint program to the clipboard and then pasting it into a word processing document. You can also use cut (and copy) and paste to move and copy files between your folders in the Windows Explorer.



Checking Spelling

The spelling checker invoked from **Tools and Spelling and Grammar...** suggests alternative spellings, improvements in grammar and spacing between words.



Formatting a Document

After you have checked the content and spelling, you may want to change the appearance of a document. This is known as *formatting* and includes different fonts or styles and sizes of lettering and text effects such as bold, italics and underlining. Formatting also includes page layout features such as the margins between the text and the edges of the page, alterations to the space between lines of text and various ways of aligning the vertical edges of the text.

If you know the formatting you want to use, it can be set before you begin typing. For example, you could switch italics on before typing a particular word then switch it off again. Alternatively, you can enter the text of your document without any effects and then apply the formatting afterwards.

The Formatting Toolbar



On the left of the toolbar above is the font name and size, changed by clicking the down arrows and selecting from the drop-down menus. The next drop-down menu, obtained by clicking the down arrow shown on the right, allows you to change the text colour.



Next are the three main text effects bold, italic and underline. These effects can also be switched on by holding down the **Ctrl** key and pressing either **B**, **I** or **U**. Effects like these operate as “toggles” – you use the same method to switch them on as to switch them off.



The icons on the right of the formatting toolbar represent different methods of text alignment.

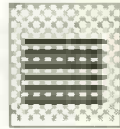


Reading from left to right, the actions of the 4 icons on the right and their alternative keyboard shortcuts are:

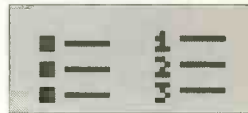


- Aligned left edge, ragged right. Ctrl+L
- Aligned to the centre. Ctrl+E
- Aligned right, ragged left. Ctrl+R
- Justified text (aligned left and right). Ctrl+J
- Remove any of the above. Ctrl+Q

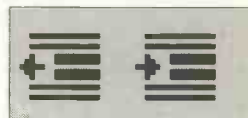
The problem with fully justified text is that in order to achieve the vertical alignment on the right-hand edge, the text may be filled with too many spaces between words producing unsightly “rivers of white”.



The next two tools on the right of the formatting toolbar allow lists to be highlighted with either bullets or numbers.



The last two formatting tools shown are used to decrease or increase the indent at the start of a paragraph.

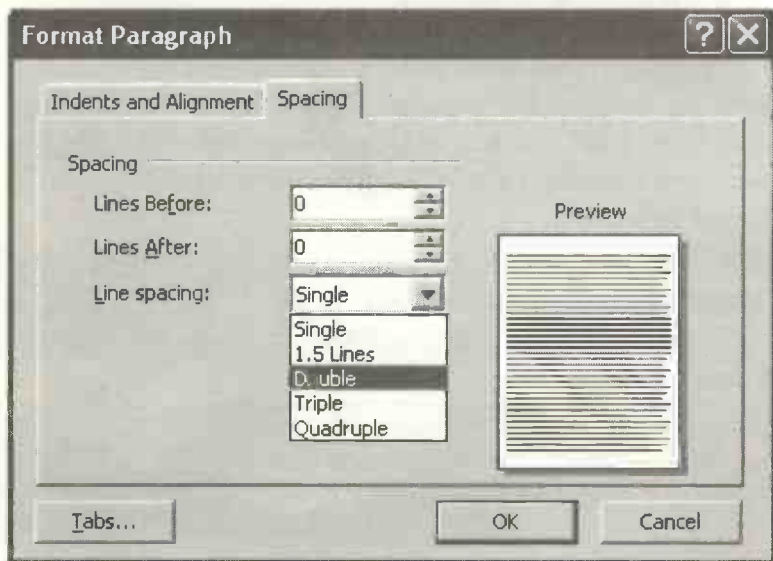


Applying Formatting Effects:

- 1 Select (or highlight) the required block of text.
- 2 Apply the formatting by clicking the appropriate icon on the toolbar, or selecting the relevant menu command or using the equivalent keyboard shortcut.
- 3 When the formatting has taken effect, remove the highlighting by clicking outside of the selected area.

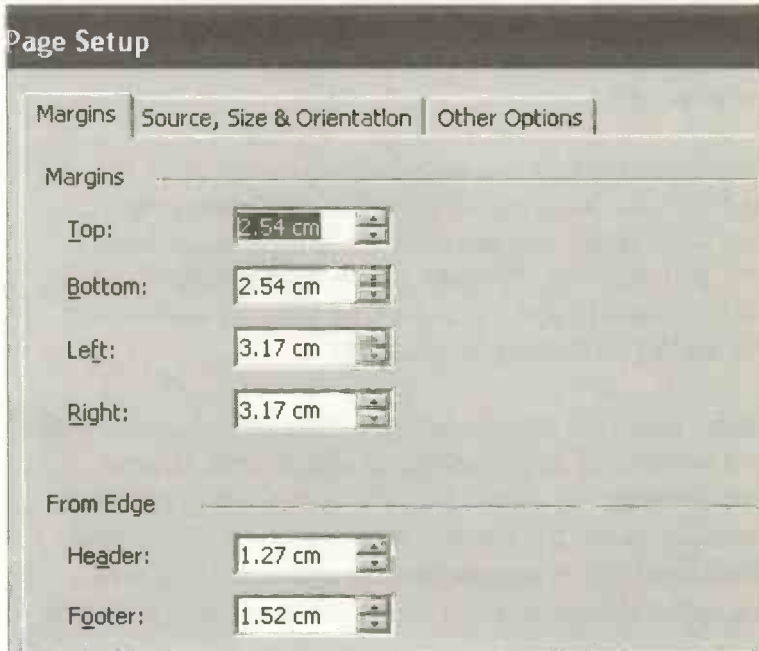
Changing Line Spacing

Sometimes you may want to set a paragraph or indeed a whole document with extra spacing between lines. Double spacing, for example, is often used on draft documents to allow extra space for comments and suggestions to be added by hand. Line spacing can be adjusted after clicking the **Spacing** tab in the **Format Paragraph** dialogue box shown previously. **Lines Before:** and **Lines After:** allow you to adjust the space above and below a paragraph.



Changing the Page Margins

The margins around the text are set by default at 2.54cm (or 1 inch) for the top and bottom and 3.17cm for the left and right. (Please see the note on page 139 if you prefer to work in inches). You might want to increase the size of the margins to allow comments to be written on a draft document or decrease them to allow more text to fit on a page. To change the margins select **File, Page Setup...** and the **Margins** tab.



Header: and **Footer:** shown above refer to text which you can place in the top and bottom margins, as discussed later in this chapter. For example, in this book the title of each chapter is placed in the header and the page number is placed in the footer.

Practice Exercise – Word Processing

In order to practise the skills covered in this chapter, you may wish to copy the following text into your word processor. Then apply the editing and formatting skills given in the exercise. Alternatively make up a short document of your own, consisting of a few paragraphs.

The Polytunnel

The polytunnel is similar to a greenhouse but considerably cheaper. It consists of a steel tubular frame over which is stretched a sheet of polythene.

The main use of the polytunnel is to grow plants and shrubs and many polytunnels are now in use with both private and commercial growers. The polytunnel, despite some early reservations, has proved to be durable and able to withstand the worst of Britain's weather.

Apart from its use in horticulture, the polytunnel can be found in a variety of situations. Some polytunnels are used to provide shelter for farm animals such as sheep, while others provide a sheltered work space or storage area. Others are used as covers for outdoor swimming pools.

The practice exercise is given on the next page.

1. Open up your word processor program and copy the notes on the polytunnel on the previous page. Centre the title using the centring icon. Change the font and apply bold and italics.
2. Save the text as a file with a suitable filename in the folder **My Documents** or in a folder of your choice.
3. For practice close the file down by clicking the **X** in the top right-hand corner. Then practise retrieving the file using **File** and **Open** from the menu bar.
4. Select the whole document and set it to fully justified text.
5. Select the last sentence and delete it. Practise the **Undo** feature by reversing a delete action.
6. Make up a new paragraph and insert it after the first paragraph. Set the new paragraph in double-line spacing.
7. Select the paragraph starting **The main use of...** and use “cut and paste” so that it becomes the last.
8. Use the indent tool on the formatting toolbar to indent the second paragraph.
9. Use **Edit** and **Replace** to change the word **polytunnel** to **poly-tunnel** throughout the document.
10. Make a deliberate spelling mistake and correct it using the spelling checker.
11. Change the margins on your document.
12. Save the document on your hard disc and make a printout on paper.

Checklist: Editing a Document

If you have worked through the practical exercise in this chapter you will have covered a lot of essential skills for editing documents in a word processor. You may wish to use the following list to tick those skills you have successfully accomplished and perhaps have another attempt at any which need more practice.

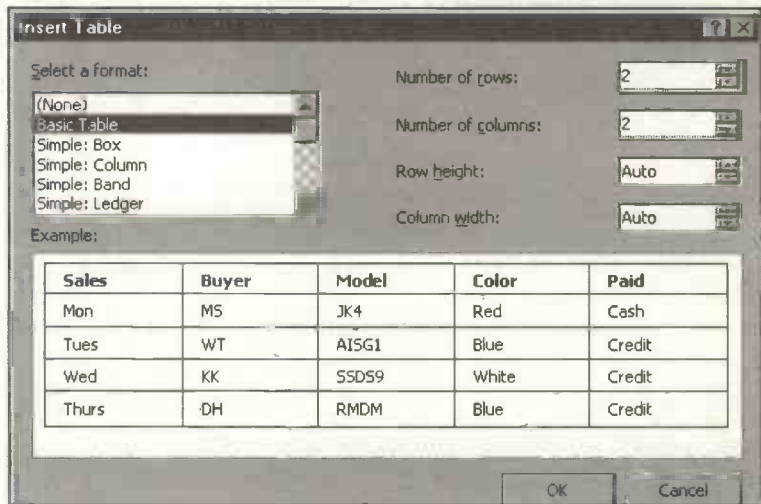
Word Processing Skills	Achieved
Retrieve a previously saved file from disc.	
Select, i.e. highlight, words, paragraphs, documents.	
Change the appearance of text using different fonts and effects such as bold and italic.	
Delete and insert words and blocks of text.	
Replace words throughout an entire document.	
Use "cut and paste" to move text within a document.	
Use the spelling checker to find and correct mistakes.	
Format a paragraph using justification and indentation.	
Change the spacing between lines.	
Change the page margins.	
Use the undo feature to reverse an action.	

Further Word Processing Skills

The next few pages cover some miscellaneous word processing skills which can be used to enhance a document.

Inserting a Table

The word processor has a table feature which is easy to use. From the **Table** menu on the word processor menu bar, select **Insert Table....** The following dialogue box appears:

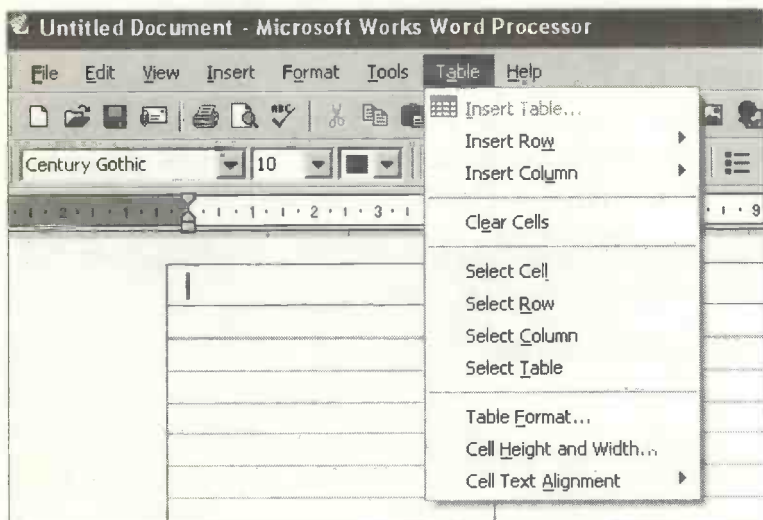


Several styles of table are available under **Select a format:** and you can specify the number of rows and columns. The **Row height:** and **Column width:** are specified at this stage or they can be adjusted later by dragging with the mouse.

When you have selected the format and number of rows and columns, etc., click **OK** to insert the table in your document. The cursor appears in the top left-hand cell, ready for you to start entering the data into the table.

10 Editing a Document

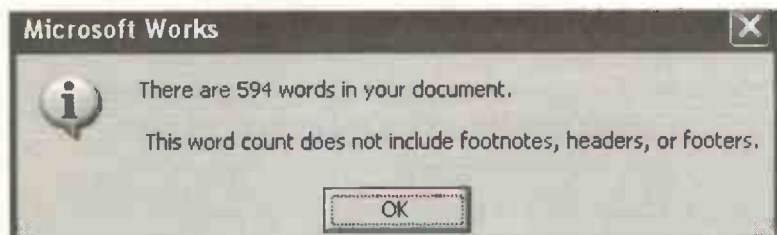
The cells in a table can be selected and edited using the drop-down **Table** menu shown below.



In the **Table** menu shown above, when you choose to **Select** an object such as a cell or row, etc., the selected object is highlighted on the screen. Then the contents of the selected cell(s) can be formatted or deleted, as required.

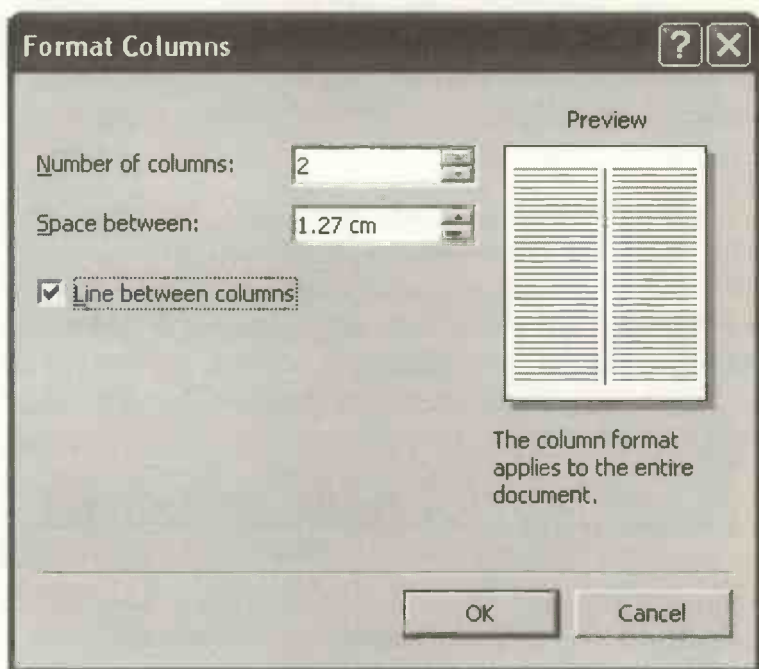
Word Count

Sometimes a document is limited to a prescribed number of words – as in the case of an article for publication in a magazine. Select **Tools** and **Word Count** to find how many words have been written.



Using Columns

Text can be set in two or more newspaper style columns, by clicking **Format** and **Columns...** on the word processor menu bar. The columns can be set before typing the text or after selecting an existing piece of text by dragging over it with the mouse. In the Works word processor the columns apply to the whole document and can include a dividing line in the adjustable space between columns.



In the Microsoft Word word processor, if you choose to work in two or more columns, you can choose to apply the columns to the whole document or **This point forward**. So, for example, you could have a title or opening paragraph all the way across the page followed by text in two columns.

10 Editing a Document

Headers and Footers

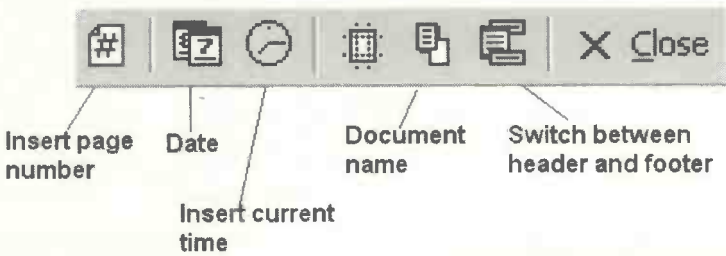
These are used in longer documents and allow a title and information such as the page number, document name or date to be added along the top or bottom of every page.

For example, on the pages of this book, the chapter title, e.g. “10 Editing a Document”, has been set up as a header. The page number has been set up as a footer.

From the word processor menu bar, select **View and Header and Footer**. Empty boxes for the header and footer appear on the page.



You can type your own text freely into the header and footer boxes, as shown above. Or you can use the header and footer toolbar, shown below, which appears automatically on the screen, after you click **View and Header and Footer**. This allows you to insert information in the header and footer on every page, such as the page number or current date.



After you have selected the required information from the icons on the toolbar shown above, click **Close**. The selected information will now appear in the headers and footers on every page, with page numbers automatically incremented.

Keyboard Shortcuts

You may prefer to use the following keyboard shortcuts as an alternative to mouse operations. For example, to switch bold lettering on (and off), use **Ctrl+B**. This means “While holding down the **Ctrl** key, press the **B** key.”

Ctrl+C	Copy text
Ctrl+X	Cut text
Ctrl+V	Paste text
Ctrl+Z	Undo previous action
Ctrl+A	Select entire document
Ctrl+B	Switch bold text on and off
Ctrl+U	Switch underline on and off
Ctrl+I	Switch Italic text on and off
Ctrl+E	Centre paragraph
Ctrl+J	Justify paragraph
Ctrl+L	Align paragraph left
Ctrl+R	Align paragraph right
Ctrl+Q	Remove paragraph formatting
Ctrl+1	Single-spaced text
Ctrl+5	1½ spaced text
Ctrl+2	Double-spaced text
Ctrl+N	Open new (blank) document
Ctrl+O	Open existing document
Ctrl+S	Save document
Ctrl+P	Print document

In general, the above keyboard shortcuts are applied after first selecting the block of text. As described earlier, text is selected with the mouse or by holding down the shift key and traversing the text with one of the arrow keys. Effects such as **Bold**, *Italic* and Underline can also be switched on before the text is typed.

10 Editing a Document

Desktop Publishing

Introduction

Desktop publishing involves the use of various software tools to change the appearance and layout of text. Originally, word processors were used for the creation of documents using only plain text, similar to the output from an ordinary typewriter. Documents using more elaborate effects such as graphics and different styles of text required special desktop publishing software. Modern word processors, however, contain many desktop publishing features, so that quite impressive documents can be created. This book, for example, was typeset entirely in Microsoft Word, which is very similar to the word processor in Microsoft Works.

The desktop publishing features covered in this section are:

- Text in different sizes and styles of letters or *fonts*.
- Borders and background shading.
- Pictures inserted into the text in documents.
- Bullets and numbering to highlight lists.
- Microsoft WordArt, a feature used to manipulate text into various shapes.

Care has to be taken with the use of fonts. It's easy to spoil a serious document with the over-zealous use of fancy lettering. The more exotic fonts are best kept for more light-hearted publications such as greeting cards, flyers and invitations.

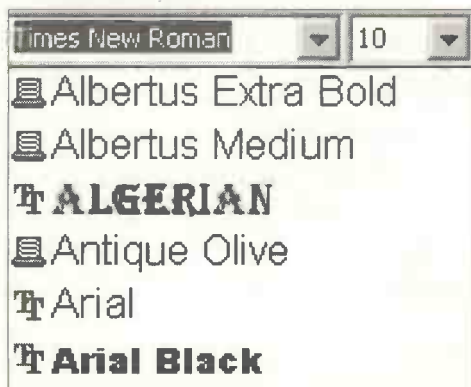
Fonts

When Microsoft Windows is first set up on a computer, a large number of fonts are installed as part of the process. Many of these are known as TrueType fonts and are *scalable*. This means the lettering can be enlarged or reduced without departing from the original design.

A font is a particular design or style of lettering in a particular size. The size is measured in units called *points* where 72 points are equal to one inch. So if you wanted to print a title, say, in letters $\frac{1}{2}$ an inch high, you would set a font size of 36 points. This is shown in the example below, which uses the Times New Roman font.

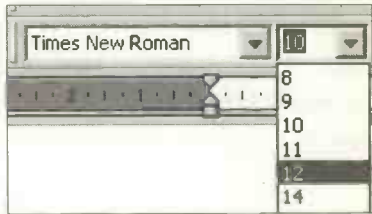
Milton Orchid Club

The fonts used by Microsoft Works are part of the Windows operating system. To examine the list of installed fonts, click the down-arrow to the right of the current font on the word processor toolbar – in this case Times New Roman. Below is just a small sample of the available fonts – scrolling down the list reveals many more.

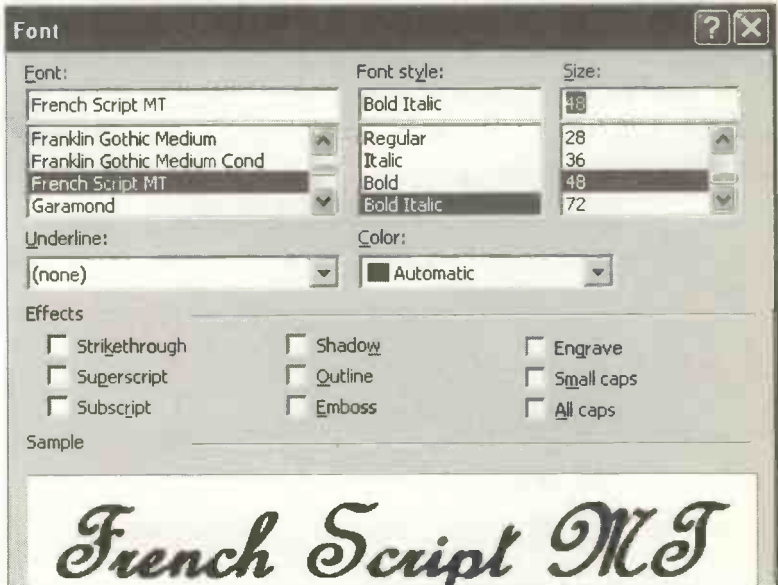


Although your computer probably contains far more fonts than you'll ever need, you can add even more using the **Fonts** folder in the **Control Panel** – accessed from the **start** menu. In fact, if you look at any professional publication you'll find that very few different font designs are used – frequently only one or two per document. Books and newspapers frequently use the Times New Roman and Arial fonts, as used in this paragraph

A choice of font sizes appears when you click the down-arrow to the right of the current font size on the word processor toolbar.



Further options for changing the fonts and applying different effects are available in the **Font** dialogue box accessed from **Format** and **Font...** on the word processor menu bar.



11 Desktop Publishing

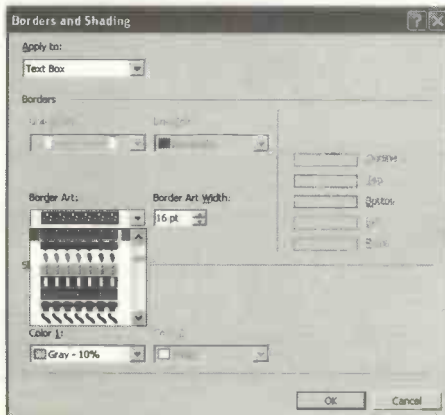
You can see that in addition to changing the font name and size you can use several other text effects. For example, the **Subscript** effect could be used for the ₂ in H₂O. These effects can be switched on before you begin typing text. Alternatively they can be applied to existing text by selecting the text and then switching on the effect.

Borders and Shading

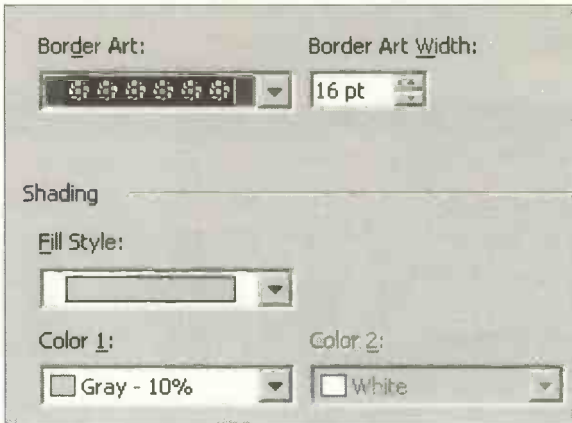
To emphasise a piece of text, you can enclose it within a border and set the text against a background. A simple method is to insert a **Text Box** using **Insert** and **Text Box** off the word processor menu bar. An empty box appears which you can drag to the desired size and shape, before entering the text.



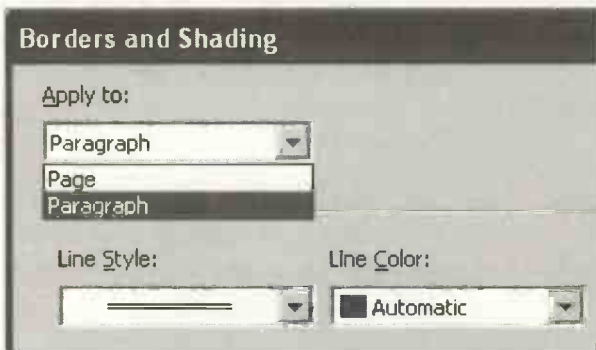
Then you can choose the border and shading from the dialogue box shown below, obtained by selecting **Format** and **Borders and Shading**....



Choose the border and shading from the drop-down lists under **Border Art:**, **Fill Style:** and **Color 1:**

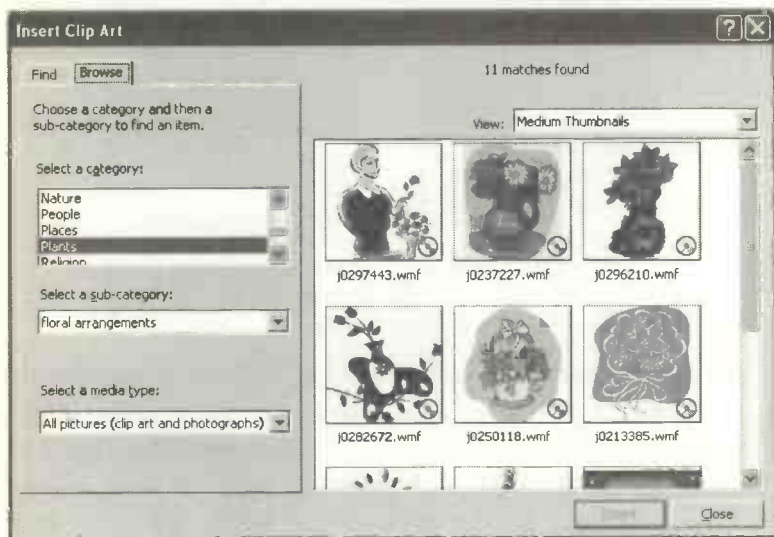


You can also apply a border to a highlighted paragraph or to the whole page. From the word processor menu select **Format and Borders and Shading...** The **Apply to:** menu at the top of the **Borders and Shading** dialogue box allows you to place the border around the whole **Page** or just around the **Paragraph**.



Inserting Pictures

Microsoft Works (and many other programs) include a library of pictures known as *clip art*. These can be inserted into a document to illustrate the text.



When you insert a picture onto the page of the word processor, the picture is *embedded* so that it becomes an integral part of the page. Apart from clip art, pictures may be inserted from several other sources such as the scanned pictures and photographs saved as files on your hard disc.



Enter the clip art library by clicking the **Insert Clip Art** icon on the word processor toolbar. Alternatively you can insert pictures (also known as *objects*) from various sources by selecting **Insert** and **Picture** from the menu bar.

Apart from the **Clip Art** option, you can insert pictures **From File...**, i.e. pictures and photographs which have been saved in folders on your hard disc.



WordArt... in the above menu refers to special text manipulation effects and these are discussed later in this chapter.

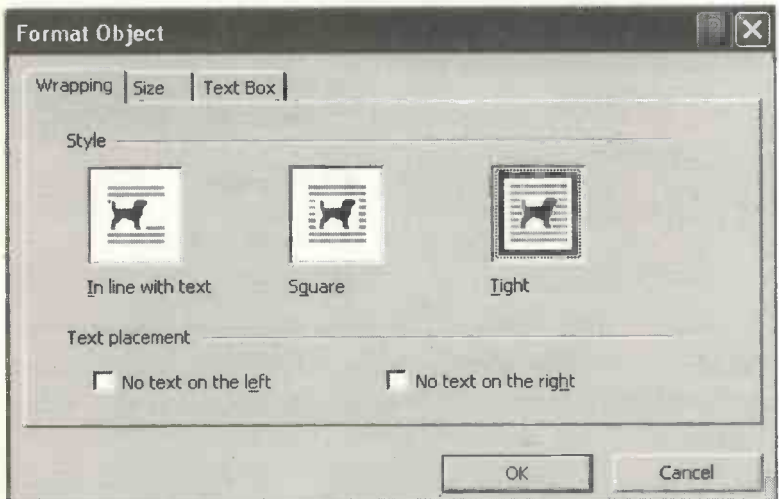
New Drawing... and **New Painting...** in the above menu allow you to create your own pictures from scratch using the drawing and painting tools provided in Works and Microsoft Windows.

Having selected the picture you want from whatever source, and clicked **Insert**, the picture is embedded on the page. The picture can then be enlarged or made smaller using grab handles around the frame. The picture can be moved by selecting it then dragging with the mouse. However, for more precise movement of the picture you need to specify the way the text flows around it.




11 Desktop Publishing

This is known as *wrapping* and is set using **Format and Object...** from the menu bar. The **Format Object** dialogue box is shown below.



The picture of the flowers below was selected from the **Plants** section of the Works Clip Art. Then the wrapping was set to **Tight** using the **Format Object** dialogue box.

The Milton Orchid Club was formed in 1972 by a few enthusiasts wishing to share a common interest in these beautiful plants. New members are always welcome, whether gardening expert or complete beginner. Some of the activities of the club are as follows: talks from visiting speakers, trips to major orchid shows, special deals on gardening supplies, workshops and clinics to solve problems and share ideas. If you would like further information please contact the Secretary on 01239

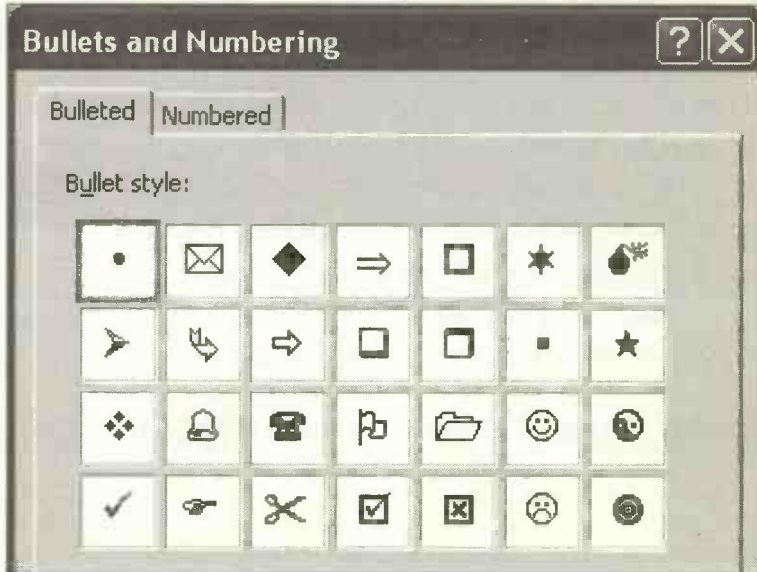
A detailed black and white illustration of an orchid plant in a decorative, rounded pot. The plant has several long, slender leaves and a cluster of small, five-petaled flowers at the top.

Bullets and Numbering

These effects are used to highlight items in a list. A similar method can also be used for applying numbers to a list. Suppose you wanted to highlight the key points in attracting new members to the orchid club:

- Talks by visiting experts
- Trips to major orchid shows
- Special discounts on garden supplies

To create a bulleted list, first select the list of items. Then select **Format** and **Bullets and Numbering...** from the word processor menu bar. There is a huge range of bullets to choose from, as shown below. Similarly, if you select the **Numbered** tab, you are presented with several different styles of numbered list. Click **OK** to apply the bullets.



Line Spacing

In order to further highlight the items in the list, you may wish to increase the line spacing (as described earlier in this book). Select the text in the list then from the menu bar click **Format, Paragraph..., Spacing** and choose the spacing required from the drop-down **Line Spacing:** menu. Alternatively use the keyboard shortcuts, i.e. select the text then press the **Ctrl** key followed by a number, e.g.:

Ctrl 5 1½ line spacing

Ctrl 2 Double line spacing

Microsoft WordArt

This Works feature allows you to manipulate words into different shapes. WordArt is a separate program called up from within the word processor. After you have created the piece of modified text it becomes an *object* which is inserted into the page like a picture. Then it can be enlarged, made smaller or moved.



To start the WordArt program, click its icon on the word processor toolbar or use the menu options **Insert, Object...and Microsoft WordArt 2.0**.

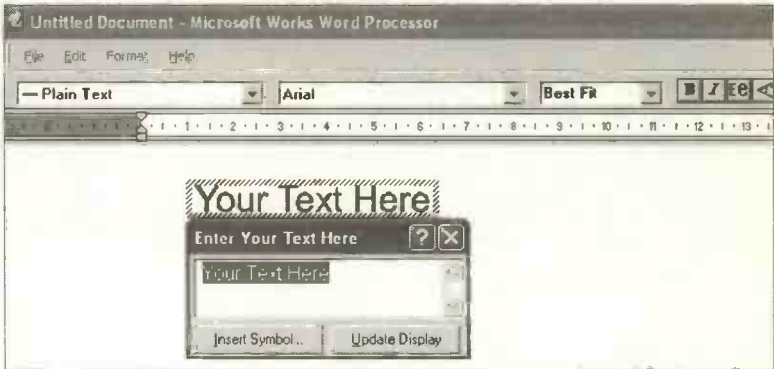


Two things happen when you invoke WordArt:

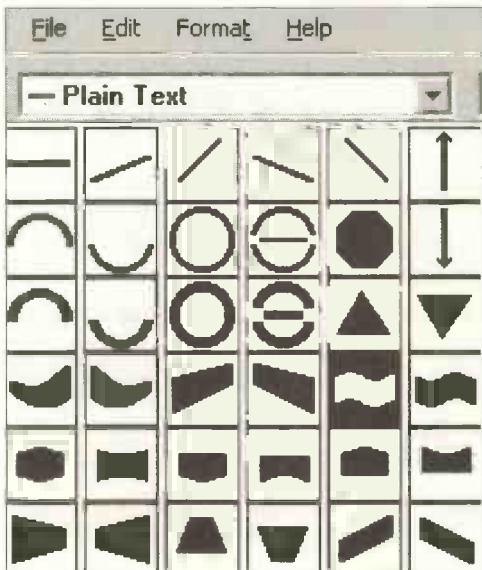
1. The menu bar across the screen changes to the special WordArt menu, shown below.



2. A small window appears in the word processor page into which you enter the text for your WordArt.



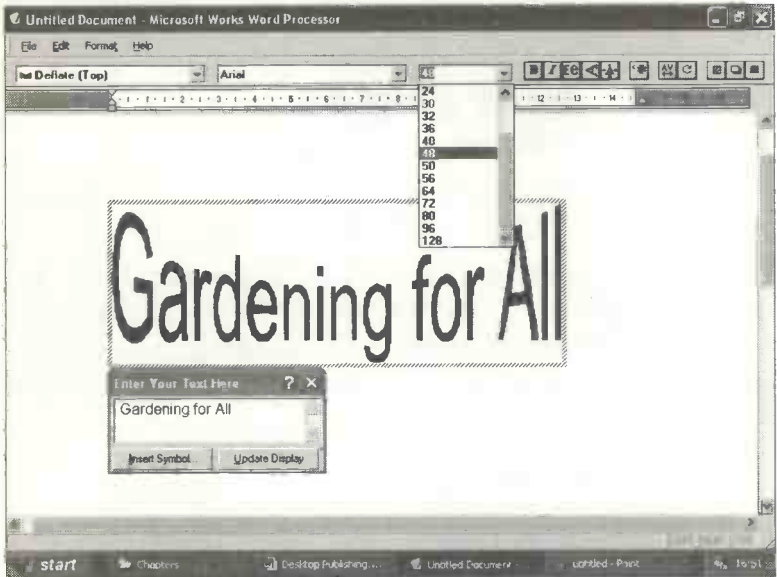
First you enter the required words to replace **Your Text Here**. Then you select the way the text is to be arranged – for example in an arc or slanted. The menu shown below appears after clicking the down-arrow to the right of **Plain Text** in the bar shown above on the left and below.



11 Desktop Publishing

By default the text size is adjusted to fit the WordArt box but you can alter the font size by clicking the down-arrow to the right of **Best Fit** shown on the previous page.

The example below shows the way words can be arranged in a style known as **Deflate (Top)**.



When you click the cross in the corner of the WordArt window, you are returned to the word processor with the WordArt object embedded in the page. Then the WordArt object can be resized like any other graphical object. However, before you can move the WordArt object freely and precisely around the screen you need to set the wrapping to **Square** or **Tight** in **Format, Object...** and **Wrapping**. If you want to edit the WordArt object, double-clicking inside the frame will return you to the WordArt program.

There are many other effects available in WordArt, (in addition to **Bold** and **Italic**) such as the ability to rotate text and to add shading and shadow effects. These are selected from the icons on the right of the WordArt menu bar.



You may wish to experiment with the effect of these icons after placing a piece of text in the WordArt window.

The skills covered in this chapter can be practised by designing a flyer to recruit members to the orchid club.

Milton Orchid Club

The Milton Orchid Club was formed in 1972 by a few enthusiasts wishing to share a common interest in these beautiful plants.

New members are always welcome, whether gardening expert or complete beginner. Some of the activities of the club are as follows:





- Talks from visiting experts
- Trips to major shows and exhibitions
- Discounts on gardening supplies

If you would like further information, please contact the Secretary on 01239 564721.

Gardening for All

Practice Exercise

You may wish to copy the flyer on the previous page or make up a flyer or leaflet of your own.

1. Enter the title in its own text box using **Insert and Text Box**.
2. Choose a suitable font – **Times New Roman** size 28 is used in this example.
3. Complete the title box with a border and background shading (**Format and Borders and Shading...**).
4. Type the body text into the word processor page. Select the body text and experiment with different choices from **Format and Bullets and Numbering...**
5. Select the list of features (starting “Talks from visiting...”) and experiment with different line spacings. (**Format, Paragraph..., Spacing**).
6. Insert a picture from the clip art library (**Insert, Picture, Clip Art...**) or click the clip art icon. Once on the page, resize the picture as necessary and move it to its final position. 
7. The curved lettering “Gardening for All” is produced using the WordArt feature described earlier. 
8. Place a border round the whole page using **Format, Borders and Shading...** and **Apply to: Page**.
9. Preview the layout and spacing using **File and Print Preview** and make any necessary alterations.
10. Save the document on your hard disc and make a printout on paper.

If you have completed the above exercise you should now be able to practise the skills on some flyers and posters of your own design. Have a look at some good quality professional documents to get ideas for layout and design and the sensible use of fonts.

Checklist: Desktop Publishing

If you have worked through this chapter and completed the practice exercise, you will have acquired many basic desktop publishing skills. You may wish to tick off those skills which you have successfully accomplished and perhaps revise any which need more practice.

Desktop Publishing Skills	Achieved
Change the fonts, i.e. different sizes and styles of letters.	
Create, resize and move a text box.	
Apply background shading to text.	
Apply a border to a text box and to a page.	
Emphasize a list with bullets and extra line spacing.	
Insert a picture or clip art, into a document.	
Alter the “wrapping” or flow of text around a picture.	
Resize a picture and move it around the page.	
Use WordArt to manipulate text into different shapes and apply effects.	

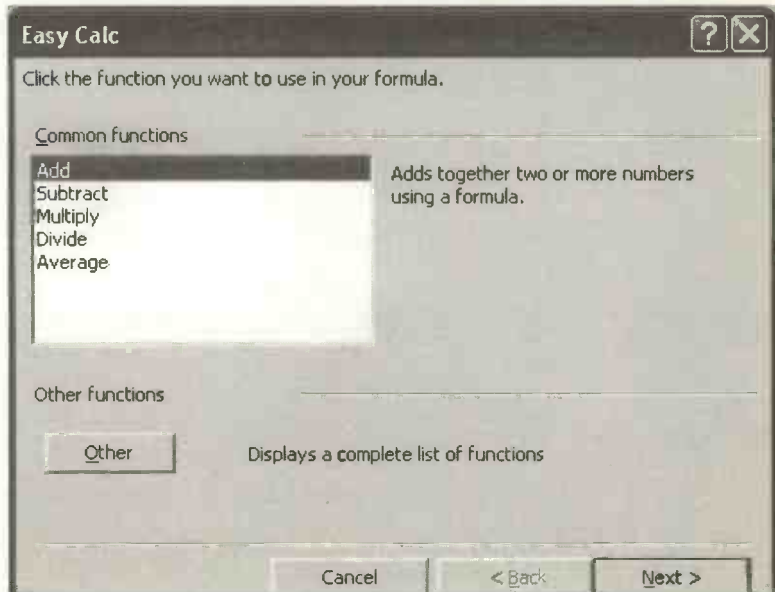
11 Desktop Publishing

Using a Spreadsheet

Introduction

The spreadsheet program is used when *calculations* are needed in tables of figures. A spreadsheet program enables huge tables of figures to be easily displayed, calculated, sorted, printed and presented as graphs and charts.

For anyone who doesn't like mathematics, the spreadsheet is a blessing. This is because the program takes care of all the calculations – you simply tell it what you want to do. The spreadsheet program in Microsoft Works makes this especially simple with a feature called **Easy Calc**, which allows you to select from a menu the calculation you want to perform on a set of figures, as shown below.



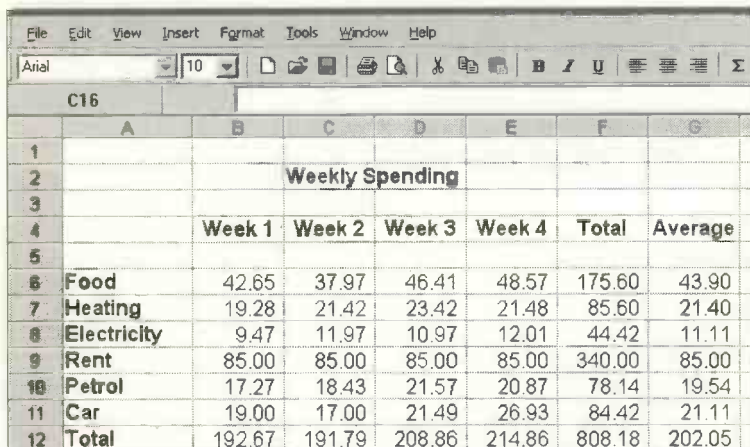
12 Using a Spreadsheet

Although the spreadsheet examples in this chapter are based on the Microsoft Works spreadsheet program, working through this chapter will give you the basic skills that are relevant to spreadsheets in general. Indeed, the spreadsheet in Works is very similar to its famous relative Microsoft Excel, the leading business spreadsheet program.

Monitoring Household Spending

Most people need to keep a check on their weekly spending, particularly in later life when income is usually greatly reduced. At the time of writing there is much concern about the reduced value of pensions and there are moves by some companies to reduce their support for employees' pensions.

Whatever your income it's a good idea to monitor your spending and the spreadsheet is designed for just this sort of task. Shown below is a spreadsheet based on the spending of an entirely fictitious household.



C16								
	A	B	C	D	E	F	G	
1								
2		Weekly Spending						
3								
4		Week 1	Week 2	Week 3	Week 4	Total	Average	
5								
6	Food	42.65	37.97	46.41	48.57	175.60	43.90	
7	Heating	19.28	21.42	23.42	21.48	85.60	21.40	
8	Electricity	9.47	11.97	10.97	12.01	44.42	11.11	
9	Rent	85.00	85.00	85.00	85.00	340.00	85.00	
10	Petrol	17.27	18.43	21.57	20.87	78.14	19.54	
11	Car	19.00	17.00	21.49	26.93	84.42	21.11	
12	Total	192.67	191.79	208.86	214.86	808.18	202.05	

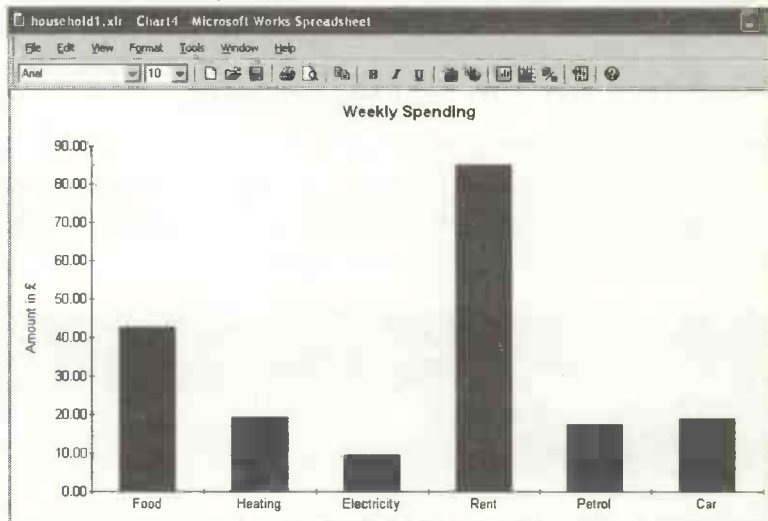
Step-by-step instructions for creating this spreadsheet are given later in this chapter.

Recalculation

The spreadsheet allows you to speculate on the effect of possible changes, such as an increase in the price of food. These changes can be fed into the spreadsheet, which automatically recalculates all of the totals, etc., affected by the change. The *recalculation* feature is one of the main advantages of spreadsheet programs and can save many hours of work compared with traditional methods of calculation using pencil and paper or pocket calculator.

Graphs and Charts

Apart from the ability to perform the whole range of mathematical calculations, data can be presented in the form of pie charts, bar charts and line graphs, etc.

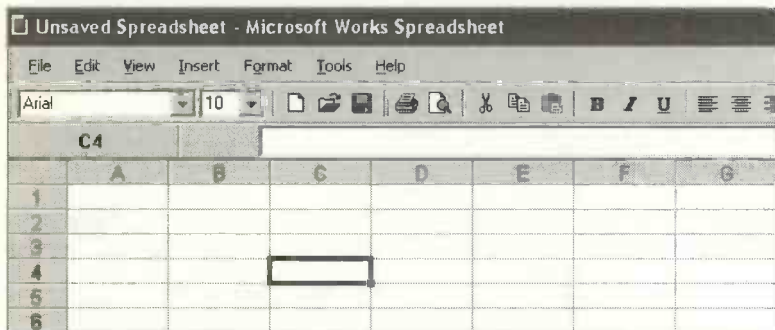


Both the spreadsheet itself and the charts produced from it can be imported into documents in a word processor. This feature is useful, for example, when producing a report on sales performance in a business.

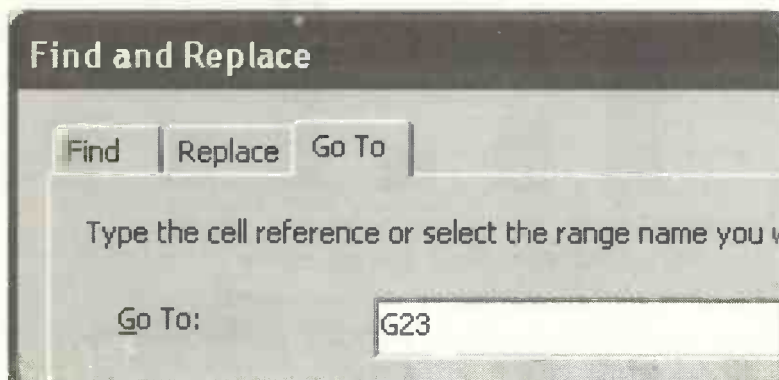
12 Using a Spreadsheet

Spreadsheet Basics

The spreadsheet itself is a grid of horizontal rows and vertical columns. Shown below is part of the Microsoft Works spreadsheet, which can extend to a maximum of 16384 rows and 256 columns.



The boxes at the junction of rows and columns are known as *cells* and each cell is uniquely identified by its "grid reference" such as **C4** or **E5**. You can move the cursor from cell to cell using the arrow keys, the **Tab** and **Enter** keys, and the mouse. Or use **Edit** and **Go To...** to move to a cell with a particular reference such as **G23**.



Cell Contents

Various types of data can be entered into a cell:

- *Labels* or text providing headings for rows and columns, e.g. **Food, Heating, Week 1**.
- *Numbers* forming the basic data to be used in calculations.
- *Formulas* to perform calculations like adding up a row or column, e.g. **=SUM(B6:B11)**.

The spreadsheet is a very versatile and forgiving tool; if you make a mistake it's easy to make a correction using the **Delete** key or **Edit** and **Clear** from the menu bar. The spreadsheet itself can be saved as a file on disc and retrieved and printed in a similar way to a word processing document, for example.

Creating a New Spreadsheet

You can start a new spreadsheet by selecting **start**, **All Programs**, **Microsoft Works** and **Microsoft Works Spreadsheet**. Alternatively, double-clicking the **Microsoft Works** icon on the Windows Desktop brings up the **Works Task Launcher** shown below. Then select **Works Spreadsheet** from the **Quick Launch** menu on the right.



12 Using a Spreadsheet

From the **Task Launcher** you can have a look at some sample spreadsheets after clicking **Programs** and **Works Spreadsheet**. These show what can be achieved with a spreadsheet program and provide quick solutions to specific problems. However, they do not enable you to acquire the skills to create your own spreadsheets from scratch, which are valuable in many situations.

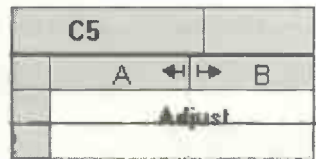
Entering Labels

The example on page 184 uses household spending to demonstrate the creation of a simple spreadsheet. First you would open a blank spreadsheet from the **Task Launcher** or from **start, All Programs, Microsoft Works** and **Microsoft Works Spreadsheet**.

It doesn't matter which cell you start entering the data into – you can always add or delete rows and columns later. Referring to the data on page 184, you would first enter the title **Weekly Spending** and **Week 1, Week 2, etc.**, across the top and **Food, Heating, etc.**, down the side.

Altering the Size of Columns and Rows

If you need to increase or decrease the width of a column, place the cursor on the vertical line between two column headings, e.g. **A** and **B**. Two



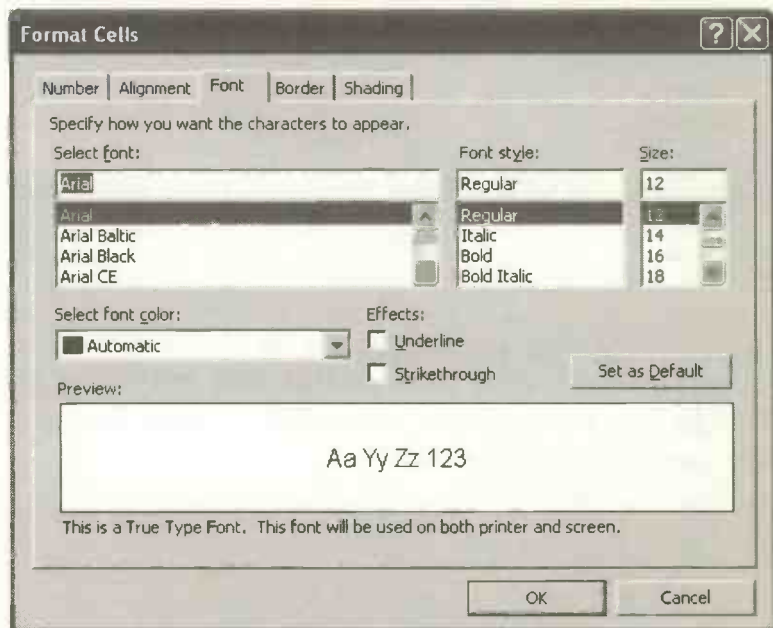
arrows appear which can be dragged to give a column of the required width. The height of rows can be increased or decreased in a similar manner.

Formatting Cells

Common formatting tasks such as bold, italics, centring and justification can be applied by selecting the cell then clicking the appropriate icon on the spreadsheet toolbar, shown right and below.



Alternatively you can apply the entire range of cell formatting effects from the drop-down menu accessed from **Format** and **Font** on the spreadsheet menu bar.



12 Using a Spreadsheet

Selecting Rows and Columns

Entire rows or columns can be selected or highlighted by clicking in the cell containing the row or column heading. For example to centre all the **Week** labels click the row header cell (containing the number 4 in this case) to select the row. Then click the centre icon on the toolbar to centre the labels.



household1.xls - Microsoft Works Spreadsheet

File Edit View Insert Format Tools Help

Arial 12

A4:IV4

	A	B	C	D	E	F	G
1							
2			Weekly Spending				
3							
4		Week 1	Week 2	Week 3	Week 4	Total	Average
5							
6	Food	42.65	37.97	46.41	48.57	175.60	43.90
7	Heating	19.28	21.42	23.42	21.48	85.60	21.40
8	Electricity	9.47	11.97	10.97	12.01	44.42	11.11
9	Rent	85.00	85.00	85.00	85.00	340.00	85.00
10	Petrol	17.27	18.43	21.57	20.87	78.14	19.54
11	Car	19.00	17.00	21.49	26.93	84.42	21.11
12	Total	192.67	191.79	208.86	214.86	808.18	202.05

To select the whole spreadsheet, use the mouse to drag the cursor across the entire sheet or click **Edit** and **Select All** from the menu bar. (Or use the keyboard **Ctrl+A**, i.e. hold down the **Ctrl** key and press **A**.)

Inserting and Deleting Rows and Columns

Often, after keying in the layout of a spreadsheet, an extra row or column is needed. These can be inserted using the drop-down **Insert** menu on the spreadsheet menu bar.

To insert a row, first select the row *below* where the new row is to appear, then click **Insert** and **Insert Row**. To insert a new column, first select the column to the *right* of where the new column is to appear. Then click **Insert** and **Insert Column**.

For example, to add another week's spending figures after **Week 4**, we would place the cursor somewhere in column **F** and then select **Insert** and **Insert Column**. Both the menu and the newly inserted blank column are shown below.

household1.xls - Microsoft Works Spreadsheet

File Edit View **Insert** Format Tools Help

Arial

F6

Insert Page Break
Delete Page Break

Insert Row
Delete Row

Insert Column
Delete Column

Function...
Range Name...

Inserts columns.

		Monthly Spending				
		Week 2	Week 3	Week 4		Total
6	Food	97	46.41	48.57		175.60
7	Heating	19.28	21.42	23.42	21.48	85.60
8	Electricity	9.47	11.97	10.97	12.01	44.42
9	Rent	85.00	85.00	85.00	85.00	340.00
10	Petrol	17.27	18.43	21.57	20.87	78.14
11	Car	19.00	17.00	21.49	26.93	84.42
12	Total	192.67	191.79	208.86	214.86	808.18

As can be seen from the **Insert** menu above, there are also **Delete Row** and **Delete Column** options.

12 Using a Spreadsheet

Entering and Formatting Numbers

You enter the numbers for your spreadsheet by simply typing them in – the program is able to differentiate between numbers and the text or labels already entered. However, spreadsheets allow numbers to be formatted in many different ways. In this example we might want to add a £ sign and use a fixed number of decimal places after the point, as shown below.

When entering numbers representing money into a spreadsheet *do not type a £ sign*, otherwise the program will treat the cell's contents as text and no calculations will be possible. Simply type the raw numbers, without adding any extra 0s or decimal points. Then select or highlight all of the numbers. Now click on the **Currency** icon on the spreadsheet toolbar (shown on the right). This will automatically insert the £ sign and format the numbers to 2 decimal places as shown below.



household1.xls - Microsoft Works Spreadsheet

File Edit View Insert Format Tools Help



Arial 10

	A	B	C	D	E	
1						
2			Weekly Spending			
3						
4		Week 1	Week 2	Week 3	Week 4	
5						
6	Food	£42.65	£37.97	£46.41	£48.57	
7	Heating	£19.28	£21.42	£23.42	£21.48	
8	Electricity	£9.47	£11.97	£10.97	£12.01	
9	Rent	£85.00	£85.00	£85.00	£85.00	
10	Petrol	£17.27	£18.43	£21.57	£20.87	
11	Car	£19.00	£17.00	£21.49	£26.93	
12						

Practice Exercise

Entering Labels and Data and Formatting Cells

You may wish to use the data on page 192 or make up your own data in order to follow this exercise.

1. Start up the spreadsheet program and open a blank spreadsheet.
2. Enter the title of the spreadsheet and the labels **Week 1**, etc. and **Food**, etc. If necessary increase the column width by dragging the dividing line at the top of the appropriate columns as shown on page 188.
3. Centre the labels **Week 1**, etc., by clicking at the beginning of the row then clicking the centre icon on the toolbar. Similarly you could make the labels bold. 
4. Now enter the figures without adding a £ sign. You need not add 00's after the decimal point. Format the numbers by selecting all of the number cells and clicking the **Currency** icon on the spreadsheet toolbar. You should see a similar result to the spreadsheet on page 192. 
5. Now save the spreadsheet with a suitable name such as **Weekly Spending**. (Then it can be retrieved later for the work on calculations that follows).
6. Make a printout on paper.

If you have time, experiment with the various cell formatting options obtained from the **Format** option on the spreadsheet menu bar. Also make sure you can edit the contents of a cell and insert and delete rows and columns.

12 Using a Spreadsheet

Calculated Cells

The general method of performing calculations is:

- Select the cell in which the answer is to appear.
- Select the formula from **Easy Calc** or type it in.
- Ensure that the formula and the range of cells are correct before accepting the calculation.

Although the spreadsheet is capable of complex calculations, this shouldn't deter non-mathematicians. The **Easy Calc** feature in the Works spreadsheet reduces most calculations to a simple task of selecting data and clicking the name of the required calculation.


Column Totals

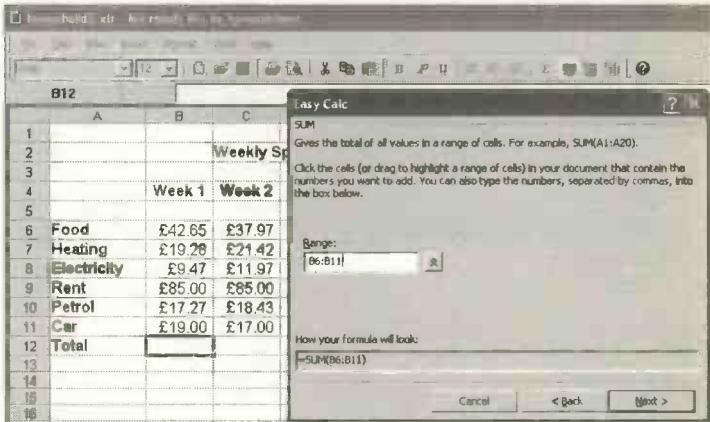
Returning to the **Weekly Spending** spreadsheet shown on page 192, we can easily calculate the totals for each of the week's spending.

B6:B11		X ✓ ?	=SUM(B6:B11)			
	A	B	C	D	E	
1						
2			Weekly Spending			
3						
4		Week 1	Week 2	Week 3	Week 4	
5						
6	Food	£42.65	£37.97	£46.41	£48.57	
7	Heating	£19.28	£21.42	£23.42	£21.48	
8	Electricity	£9.47	£11.97	£10.97	£12.01	
9	Rent	£85.00	£85.00	£85.00	£85.00	
10	Petrol	£17.27	£18.43	£21.57	£20.87	
11	Car	£19.00	£17.00	£21.49	£26.93	
12	Total	=SUM(B6:B11)				
13						

First enter the label **Total** in cell **A12**. Next the calculation of the total for **Week 1** has to be entered in cell **B12**. There are various methods, discussed shortly, that free the user from actually typing in formulas. However, you need to check that the *range* of cells, which the program automatically assumes, is correct. The convention for a cell range in spreadsheets is usually **B6:B11**, for example.

Method 1 – Easy Calc

1. Place the cursor in the cell where the answer is to appear.
2. Click the **Easy Calc** icon on the toolbar. 
3. Select the **Add** function and then click **Next**.
4. Drag the mouse over the range of cells to be added or enter the **Range:** manually into the range box.



5. Check that the range of cells is correct, in this case **B6:B11**. Edit the **Range:** box if it is incorrect.



12 Using a Spreadsheet

6. Click **Next** and you are asked to ensure that the cell in which the answer is to appear is correct – edit the cell reference if necessary.

Click the cell in your document where you want the result to display. You can also type the cell reference into the box below. For example, type A5.

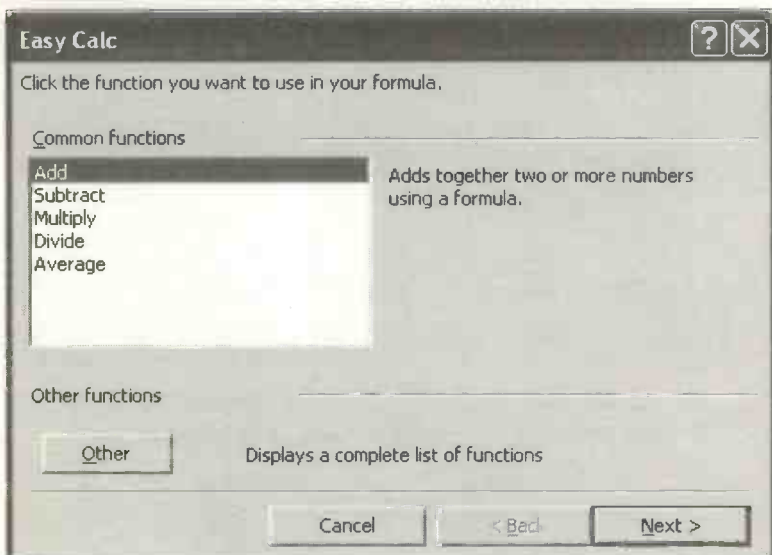
Result at:

A12

7. Click **Finish** to complete the calculation.

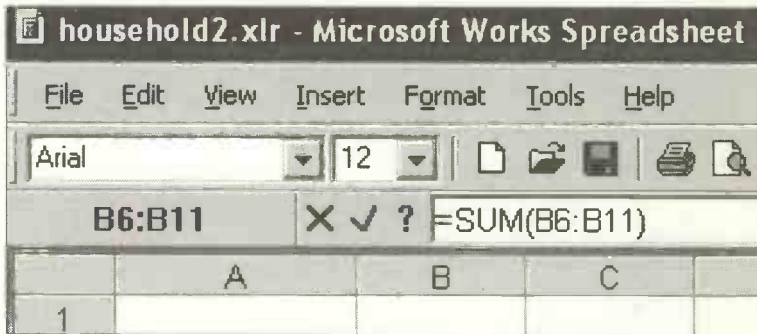
Note that the *answer* to a calculation is displayed in a calculated cell, not the formula itself.

Easy Calc provides buttons for the most common tasks such as **Add**, **Subtract**, **Multiply**, **Divide**, **Average** under the heading **Common functions**. There is also a library of additional functions accessed from the **Other** button.



Method 2 – Using the AutoSum Icon

Totaling rows and columns is a frequently needed task, so it has its own icon on the toolbar (called **AutoSum**). Place the cursor in the cell where the first total is to appear (in this case **B12**) then click the **AutoSum** icon. This automatically places the formula **=SUM(B6:B11)** in cell **B12** and in the *entry bar* shown below.



If the formula and range of cells is correct press the **Enter** key or click the tick next to the spreadsheet entry bar, shown above, to complete the calculation. To cancel a calculation click the **X** shown above.

Any formula such as **=SUM(B6:B11)** can be edited in the entry bar as shown above. First select the cell containing the formula (**B12** in this example) and then click in the entry bar. Click the tick to accept a formula after editing. You can also edit or delete a formula in its cell, after double-clicking the cell.

12 Using a Spreadsheet

Method 3 – Typing the Formula into the Cell

This is the traditional method and requires you to know the formula for the operation you wish to perform. (Unless you are doing very specialized work it will be generally be simpler to stick to **Easy Calc.**)


Select the cell in which the answer is to appear. Then type = followed by the formula. (All formulas begin with = to distinguish them from ordinary text or labels.) In this example we type **=SUM(B6:B11)** into the cell then press **Enter** or click the tick on the entry bar. Note that you can construct your own formulas using all of the usual mathematical operators. Please also see page 200. Note that multiply uses * and divide uses /. Care must be taken with the use of brackets to ensure the correct order of calculations.

Replication

We should now have the total of the first column in cell **B12**. This is where the spreadsheet appears to demonstrate “learning”. Having already calculated one column total, it can apply the same method to the other three columns with very little further assistance.

Place the cursor in the bottom right-hand corner of cell **B12** until a small cross appears, with the word **FILL** underneath. Now use the mouse to drag this cross across cells **C12**, **D12** and **E12**.

9	Rent	£85.00	£85.00	£85.00	£85.00
10	Petrol	£17.27	£18.43	£21.57	£20.87
11	Car	£19.00	£17.00	£21.49	£26.93
12	Total	£192.67			
13					
14					



When you release the mouse button the answers should appear in the cells along row 12 as shown below.

The screenshot shows a spreadsheet window titled "household2.xlr - Microsoft Works Spreadsheet". The menu bar includes File, Edit, View, Insert, Format, Tools, and Help. The toolbar shows various icons for editing and formatting. The active cell is G19. The spreadsheet data is as follows:

	A	B	C	D	E	F
1						
2		Weekly Spending				
3						
4		Week 1	Week 2	Week 3	Week 4	
5						
6	Food	£42.65	£37.97	£46.41	£48.57	
7	Heating	£19.28	£21.42	£23.42	£21.48	
8	Electricity	£9.47	£11.97	£10.97	£12.01	
9	Rent	£85.00	£85.00	£85.00	£85.00	
10	Petrol	£17.27	£18.43	£21.57	£20.87	
11	Car	£19.00	£17.00	£21.49	£26.93	
12	Total	£192.67	£191.79	£208.86	£214.86	

Row Totals

You can use a similar method to calculate the row totals. Start a new column (F in my example) and enter the label **Total** in F4. Then use **Easy Calc** or one of the other methods to total the first row and place the answer in F6. Then use replication by dragging the cross from F6 to complete the row totals down column F.

Averages

To calculate the average weekly expenditure on **Food**, first enter the label **Average** in cell G4. Then place the cursor in cell G6. Now select **Easy Calc**, as previously described, and the **Average** function, to place the average in G6. Replicate the averages down column G.

12 Using a Spreadsheet

The completed household spending spreadsheet is shown below.

	A	B	C	D	E	F	G
1							
2		Weekly Spending					
3							
4		Week 1	Week 2	Week 3	Week 4	Total	Average
5							
6	Food	£42.65	£37.97	£46.41	£48.57	£175.60	£43.90
7	Heating	£19.28	£21.42	£23.42	£21.48	£85.60	£21.40
8	Electricity	£9.47	£11.97	£10.97	£12.01	£44.42	£11.11
9	Rent	£85.00	£85.00	£85.00	£85.00	£340.00	£85.00
10	Petrol	£17.27	£18.43	£21.57	£20.87	£78.14	£19.54
11	Car	£19.00	£17.00	£21.49	£26.93	£84.42	£21.11
12	Total	£192.67	£191.79	£208.86	£214.86	£808.18	£202.05
13							

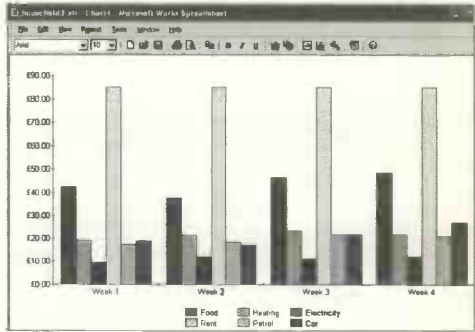
Entering Your Own Formulas

Provided you know the correct method you can do any calculation by entering the formula in the cell where you want the answer to appear. First, you must start the formula with the = sign. Here are a few common examples:

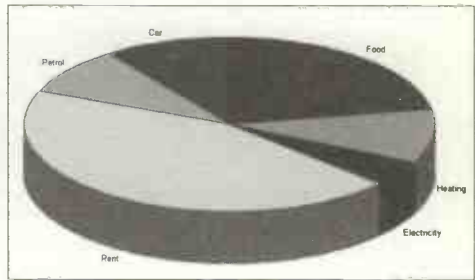
- =G5+G8+G9** Add together the contents of these cells.
- =F5-F6** Subtract the contents of F6 from F5.
- =M5*P8** Multiply the contents of these cells.
- =D5/D8** Divide the contents of D5 by D8.
- =C9*1.175** Multiply the contents of C9 by 1.175 (as in the case of VAT).
- =SUM(C3:C11)** Add together the contents of all cells in the range C3 to C11 inclusive.

Creating Graphs and Charts

The spreadsheet is a very efficient way to store tables of figures and to calculate results. However, it's not easy to look at a row or column of figures and draw any immediate conclusions. Presenting numbers as graphs and charts makes it much easier to interpret the figures and to make comparisons *at a glance*. The spreadsheet in Microsoft Works allows all sorts of charts and graphs to be drawn. These include the *bar chart*, shown on the right, which enables different quantities to be compared side by side.



The *pie chart* is used to show how a total quantity is made up of various parts. The relative size of each part is represented by the size of the slice of the pie.

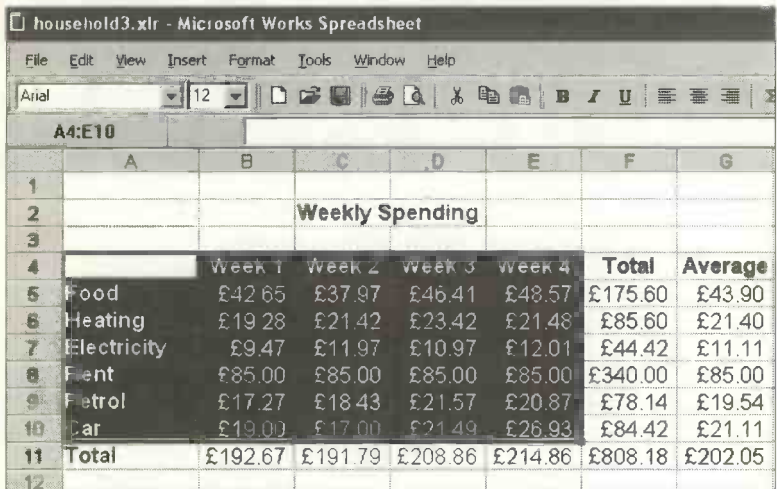


If you've drawn graphs and charts manually you'll know that the hardest part is working out the scales and plotting the points. The charting feature in a spreadsheet program does all of this for you, saving hours of exacting work. You can add titles and labels and apply different colours and shading to the columns or slices. Once complete the chart can be saved on disc, printed on paper or inserted into a page in a word processing document.

12 Using a Spreadsheet

Creating a Bar Chart

With the spreadsheet program running and the appropriate spreadsheet table open, highlight the rows or columns of data to be used, including any labels. In the example below I have opened the **Weekly Spending** spreadsheet previously described and selected the four weeks' spending, *including the row and column headings*. (The blank line which was under the row **Week 1**, etc., has been deleted as it causes unnecessary space in the finished graph.)

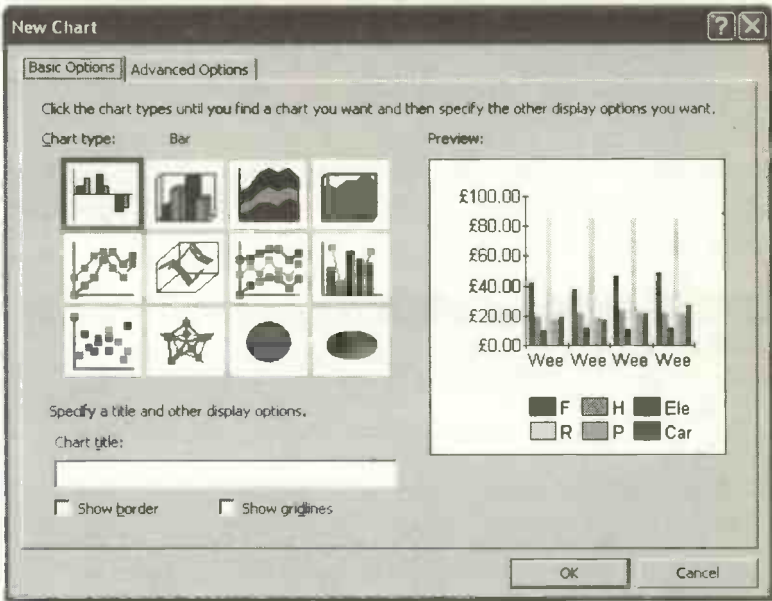


The screenshot shows a Microsoft Works Spreadsheet window titled "household3.xls". The menu bar includes File, Edit, View, Insert, Format, Tools, Window, and Help. The toolbar shows various icons, including a "New Chart" icon. The spreadsheet data is as follows:

	A	B	C	D	E	F	G
1							
2			Weekly Spending				
3							
4		Week 1	Week 2	Week 3	Week 4	Total	Average
5	Food	£42.65	£37.97	£46.41	£48.57	£175.60	£43.90
6	Heating	£19.28	£21.42	£23.42	£21.48	£85.60	£21.40
7	Electricity	£9.47	£11.97	£10.97	£12.01	£44.42	£11.11
8	Rent	£85.00	£85.00	£85.00	£85.00	£340.00	£85.00
9	Petrol	£17.27	£18.43	£21.57	£20.87	£78.14	£19.54
10	Car	£19.00	£17.00	£21.49	£26.93	£84.42	£21.11
11	Total	£192.67	£191.79	£208.86	£214.86	£808.18	£202.05
12							



Start the charting feature by clicking on the **New Chart** icon on the spreadsheet toolbar. Alternatively select **Tools** and **Create New Chart...** from the spreadsheet menu bar. A dialogue box opens, offering a choice from a vast array of different types of chart, as shown on the next page.



After selecting the type of chart you want, you can add a **Chart title**: and switch on effects such as a **Border** and **Gridlines**. The panel on the right of the **New Chart** dialogue box gives you an idea of what your graph will look like. You may find that the small preview graph shown in the panel does not display the data in the way you intend. This can be corrected in the **New Chart** dialogue box after selecting the **Advanced Options** tab. You may need to change the selected radio button as shown below. In the above spreadsheet, the series are **Food**, **Heating**, etc., and the data goes across in rows.

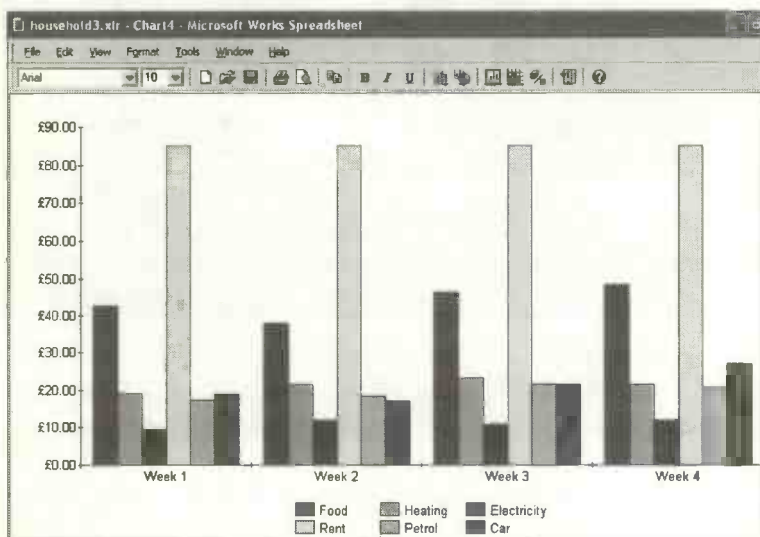
The series data in the spreadsheet is organized:

- Across in rows
- Down in columns

12 Using a Spreadsheet

At this stage it's a good idea to check the organization of the labels and the legend (or key) to each of the columns on the bar chart. However, many of these settings can be altered later after selecting **Edit** or **Format** off the chart menu bar.

When you are happy with the layout of the chart, click **OK**. The sample bar chart based on the **Weekly Spending** spreadsheet is shown below.



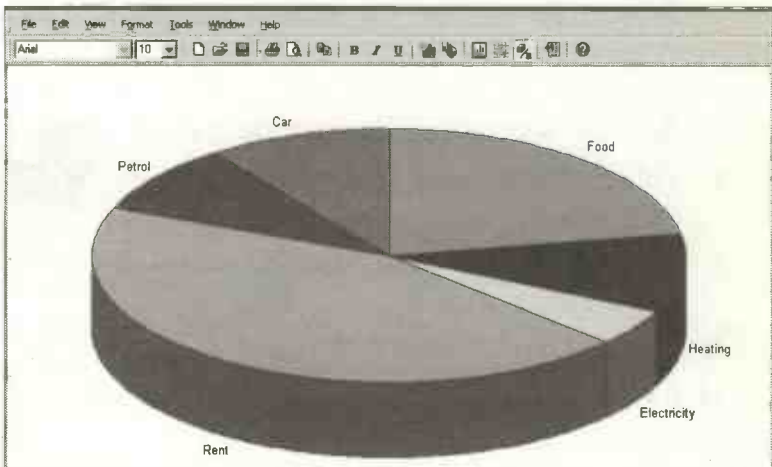
Please note that the bar chart is drawn in its own window with a full menu bar and toolbar across the top. This includes the usual **File** menu with options such as to **Save** and **Print** the chart. You can also change the colours and apply patterns of shading to the columns shown above. With the bar chart displayed, select **Format**, then **Shading and Color...** A dialogue box appears allowing you to select patterns and colours for the six series **Food**, **Heating**, **Electricity**, **Rent**, **Petrol** and **Car**.

Creating a Pie Chart

The pie chart is an ideal way to show how various items contribute to a total. The pie chart shown below is based on the spending on **Food, Heating, Electricity, etc., in Week 1**.


	A	B	C	D	E	F	G
1							
2		Weekly Spending					
3							
4		Week 1	Week 2	Week 3	Week 4	Total	Average
5	Food	£42.65	£37.97	£46.41	£48.57	£175.60	£43.90
6	Heating	£19.28	£21.42	£23.42	£21.48	£85.60	£21.40
7	Electricity	£9.47	£11.97	£10.97	£12.01	£44.42	£11.11
8	Rent	£85.00	£85.00	£85.00	£85.00	£340.00	£85.00
9	Petrol	£17.27	£18.43	£21.57	£20.87	£78.14	£19.54
10	Car	£19.00	£17.00	£21.49	£26.93	£84.42	£21.11
11	Total	£192.67	£191.79	£208.86	£214.86	£808.18	£202.05

When you have selected the two columns containing the labels and the data, click the chart icon on the spreadsheet toolbar to display the **New Chart** dialogue box shown on page 203. Select the type of pie chart you want. After you click **OK** the pie chart is drawn in its own window with a menu bar and toolbar across the top.



Practice Exercise – Spreadsheets

1. Use **File** and **Open...** to retrieve the spreadsheet which you may have saved previously with a name such as **Weekly Spending**. Alternatively type in the spreadsheet data on page 192.
2. Enter the label **Total** in cell **A12** (or thereabouts).
3. Select the cell where the first column total is to appear, such as **B12**, for example.
4. Use **Easy Calc** or **AutoSum** to calculate the first column total in **B12**.
5. Move the cursor to the bottom right of the calculated cell until the cross appears. Complete all of the column totals by “dragging” the cross along the **Total** row.
6. Now enter a new **Total** label in cell **F4** (or thereabouts) and complete all of the *row totals* in the new column. Use **Easy Calc** or **AutoSum** for the first row total then use dragging to replicate the other row totals down the column.
7. If you have used the spreadsheet data given in this chapter, the row and column totals should be the same as those in the example on page 200. Check the totals and repeat any calculations if necessary.
8. Enter a label for the average column in **G4** (or thereabouts).
9. Select the cell where the first average is to appear, such as **G5**.
10. Click the **Easy Calc** icon and select **Average**.
11. Check the range that **Easy Calc** has suggested.

12. Correct the range, if necessary, in the **Range:** box in **Easy Calc.** (It must not include the **Total** column.)
13. Click **Next** and check that the cell reference given in **Result at:** is correct. Alter the cell reference if necessary.
14. Click **Finish** to complete the first average.
15. Select the cell containing the first calculated average. Move the cursor to the bottom right of the cell until the cross appears. Drag the cross down the column then release to complete the averages column.
16. If you have used the data given in this chapter, the averages should be as shown on page 200.
17. Save the spreadsheet on your hard disc with a name such as **Weekly Spending.**
18. Make a printout on paper.
19. With your spreadsheet open select, i.e. highlight, several columns of data and their labels. Click the chart icon then  select a bar chart from the **New Chart** dialogue box. Enter a **Chart** title and look at the small graph to check that the display is correct. Otherwise alter the display after selecting **Advanced**, as discussed on page 203.
20. Click **OK** to display the bar chart.
21. Save the chart and make a printout on paper.
22. Create a pie chart to show a breakdown of the various items of expenditure **Food, Heating, Electricity, Rent, Petrol and Car.**
23. Save and print the pie chart.

Checklist: Using a Spreadsheet Program

This chapter has covered most of the basic spreadsheet skills. You may wish to use the following tick list to review what you've learned.

Spreadsheet Skills	Achieved
Enter labels and headings and apply text formatting.	
Enter and format numbers including currency format.	
Carry out calculations such as totals and averages.	
Replicate formulas along a row and down a column.	
Edit the contents of a cell.	
Insert and delete rows and columns.	
Save and retrieve a spreadsheet file.	
Print a spreadsheet on paper.	
Create a bar chart.	
Create a pie chart.	
Save and print a chart.	

Creating a Database

Introduction

A database program is used in situations where you might otherwise keep large numbers of records on cards. For example, the patients' records in a medical centre or the customers' records in a business. On a personal level, you could create a database file to keep details of all of your favourite music CDs, cooking recipes, plants or house contents.

The database is far more useful than a stack of cards in a drawer. For example, the database file can be *edited*, i.e. modified, electronically so there are no messy alterations. You can *search* for records fulfilling particular criteria and *sort* into a particular order such as alphabetical or numerical.

A database *file* is a large collection of similar records, saved on a disc. In this chapter, we will look at a file of holiday records. In practice, a database file might extend to hundreds or even thousands of records. The example below shows a small sample of records from a file of holidays.

<input checked="" type="checkbox"/>	Destination	Date	Departs From	Days	Price
<input type="checkbox"/> 1	Canadian Rockies	18/03/2008	Manchester	11	£829
<input type="checkbox"/> 2	Dublin	25/03/2008	East Midlands	3	£145
<input type="checkbox"/> 3	Prague & Vienna	28/03/2008	Birmingham	7	£435

13 Creating a Database

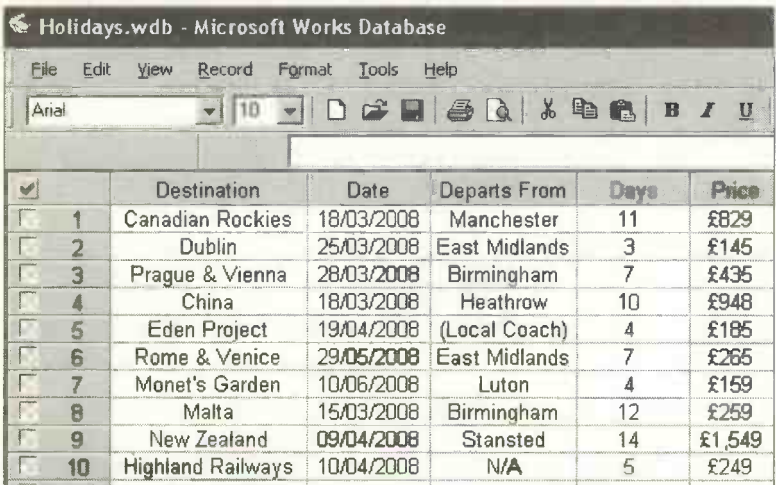
A *record* is one complete row across the list, such as record number 2, the **Dublin** holiday.

2	Dublin	25/03/2008	East Midlands	3	£145
---	--------	------------	---------------	---	------

A *field* is one of the sub-divisions of the record, such as **Destination** and **Date** shown on the previous page. The data in the fields consists of text or numbers or a mixture of both. Databases also allow special field types such as dates and currency, discussed later.

Viewing Records

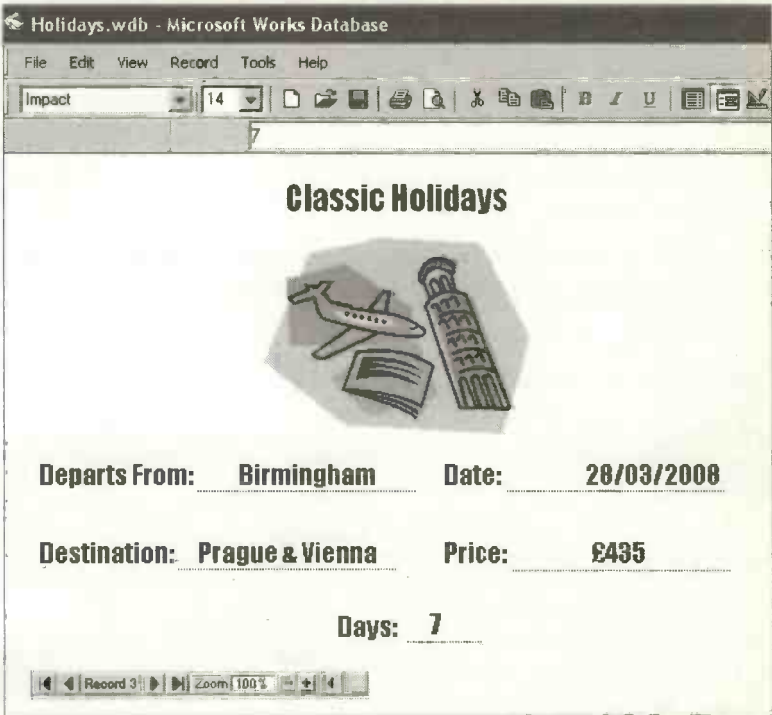
There are two basic layouts in which database records may be viewed. **List View**, shown below, displays all of the records laid out in a table similar to a spreadsheet, enabling you to scroll down the entire file to browse through the records.



The screenshot shows a window titled "Holidays.wdb - Microsoft Works Database". The menu bar includes File, Edit, View, Record, Format, Tools, and Help. The toolbar shows various icons for file operations and text formatting. Below the toolbar is a table with 6 columns: a checkbox, Destination, Date, Departs From, Days, and Price. The table contains 10 records, with record 2 highlighted.

<input checked="" type="checkbox"/>	Destination	Date	Departs From	Days	Price
<input type="checkbox"/>	Canadian Rockies	18/03/2008	Manchester	11	£829
<input checked="" type="checkbox"/>	Dublin	25/03/2008	East Midlands	3	£145
<input type="checkbox"/>	Prague & Vienna	28/03/2008	Birmingham	7	£435
<input type="checkbox"/>	China	18/03/2008	Heathrow	10	£948
<input type="checkbox"/>	Eden Project	19/04/2008	(Local Coach)	4	£185
<input type="checkbox"/>	Rome & Venice	29/05/2008	East Midlands	7	£265
<input type="checkbox"/>	Monet's Garden	10/06/2008	Luton	4	£159
<input type="checkbox"/>	Malta	15/03/2008	Birmingham	12	£259
<input type="checkbox"/>	New Zealand	09/04/2008	Stansted	14	£1,549
<input type="checkbox"/>	Highland Railways	10/04/2008	N/A	5	£249

Form View enables individual records to be displayed one at a time on the screen, as shown below.



Arrows at the bottom left of the window allow you to scroll forwards and backwards through the records. Alternatively you can use the keys **Ctrl+Page Up** and **Ctrl+Page Down** to move through the records.

The **Form Design** feature (discussed shortly) enables borders and shading to be applied. In **Form Design** mode (accessed by the toolbar icon shown right) the records can be enhanced by inserting objects such as clip art or pictures, as shown in the holiday record above.

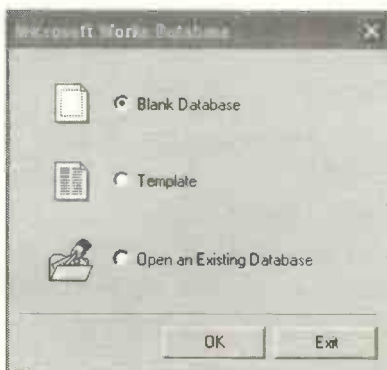
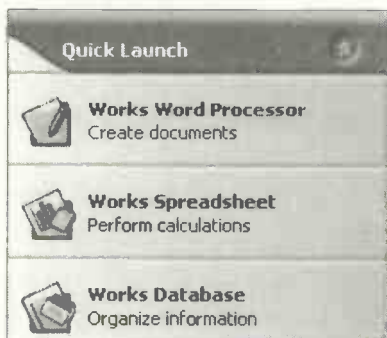


Designing a Database File

The database application is one in which careful planning is needed before work even starts on the computer. First you need to decide on the field names, which will be exactly the same for every record. For example, in the holidays file, the field names are **Destination**, **Date**, **Departs From**, **Days** and **Price**. In some files, you might, to save typing time, wish to use codes for data which is often repeated such as **M** for **Male** and **F** for **Female**. Once you have completed the planning of your field names you can start the program and begin setting up the new file.



In the case of the Microsoft Works database, start the **Task Launcher** by double-clicking the **Microsoft Works** icon (shown left) on the Windows desktop. Then select **Works Database** from the **Quick Launch** menu shown on the right. This opens up the **Microsoft Works Database** dialogue box with options to start a new **Blank Database**, use a ready-made database **Template** or **Open an Existing Database** file which has been prepared and saved earlier. Starting with a blank database and also opening an existing database file are discussed shortly.



Select the **Template** radio button shown on the previous page and click **OK** to have a look at some ready-made designs which can be adapted for your own records. There are templates on various subjects such as recipes, wine collection and a home inventory for keeping track of household items, as shown below.

The image shows a screenshot of a 'Home Inventory' form template. The form is titled 'Home Inventory' in a dark header bar. To the right of the title is a small illustration of a person standing next to a tree. Below the title, the form contains several input fields:

- Description: _____
- Category: _____
- Location: _____
- Manufacturer: _____
- Model: _____
- Serial number: _____
- Purchased from: _____
- Purchase date: _____ Purchase price: _____
- Current Value**
- Value: _____ Condition: _____
- Cost to Replace: _____ Entry date: _____
- Insured?: _____
- Comment: _____

The record structure, i.e. field names, etc., of each of the sample databases provided in Microsoft Works is already set up – all you have to do is enter the data.

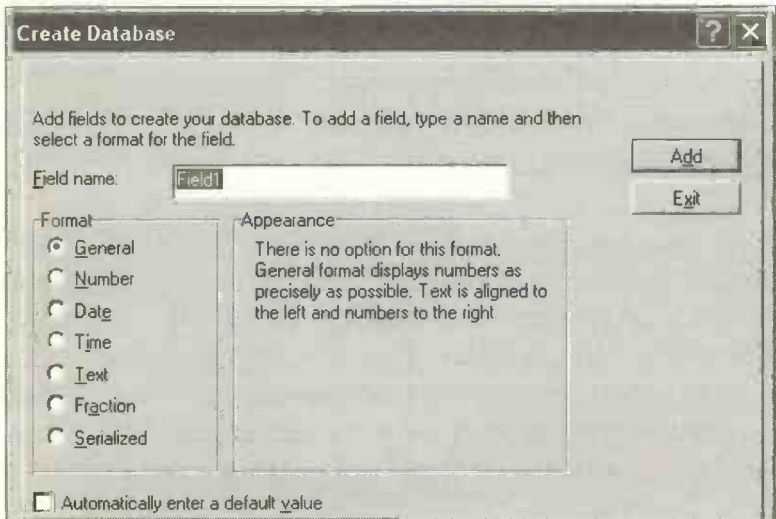
The database templates in Microsoft Works are worth looking at for ideas about presentation. They are also useful if you need to create a database file on the specific topics covered by the samples. However, the templates don't enable you to set up your own database applications from scratch, tailor-made for your particular subject. This "blank canvas" approach is covered in the next section, Creating a New Database file.

Creating a New Database File

To create a new database of your own in Microsoft Works you need to click **Blank Database** from the dialogue box shown at the bottom of page 212. This can be launched by clicking **Works Database** from the **Task Launcher** or by selecting **start, All Programs, Microsoft Works and Microsoft Works Database**.



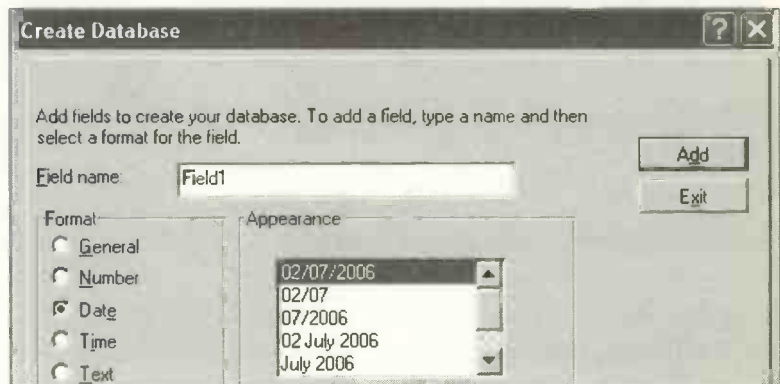
Click **Blank Database** from the dialogue box that appears. This opens the **Create Database** dialogue box shown below.



The **Create Database** dialogue box shown on the previous page is used to enter the field names and also specify the **Format** of the data, such as **General**, **Number**, **Date**, etc.

You simply type in your first **Field name**:, such as **Destination**, replacing the name **Field1** in the slot. If later you find a make a mistake or wish to change the field name or format, you can return and make alterations.

Please note that field names (**Destination**, **Date**, etc.) can be up to 15 characters long. In the **Holidays** file, the first field name, **Destination**, is entered and the radio button next to **General** is left switched on. The **General** format aligns letters on the left and numbers on the right. Then click **Add** and enter the next field name, **Date** and this time select **Date** as the format. Choose from one of the several date formats available, shown on the right below.



The **Days** field is set to the **Number** format. This will allow the database to be searched for, say, holidays of less than 5 days or more than 10, for example. As holidays are all whole days, in this case the field can be set to no decimal places as shown for the **Price** field on the next page.

13 Creating a Database

The **Price** field must also be in the **Number** format, since you might wish to produce a list of holidays sorted into numerical order of price. Or you might want a printout of all holidays in answer to a query such as “Which holidays are priced at less than £400?” So the **Price** field is set to the **Number** format by switching on the appropriate radio button. This displays a choice of numerical formats and also an opportunity to alter the number of **Decimal places**. In this case the currency format with a £ sign is chosen, as shown below.

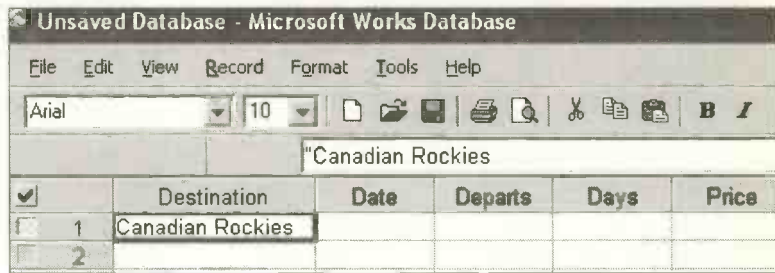
The screenshot shows a dialog box for configuring a field named "Price". The "Format" section has radio buttons for "General", "Number", "Date", "Time", "Text", "Fraction", and "Serialized". The "Number" radio button is selected. The "Appearance" section shows a list of numerical formats: "1234.56", "1,234.56", "£1,235" (which is highlighted), "€ 1,235", "123456.00%", and "1.23E+03". At the bottom right, the "Decimal places" is set to "0" with up and down arrows.

If you want to include pence in the data in the price field, set the **Decimal places:** to 2 by clicking the arrows shown above on the bottom right of the graphic.

This completes the entry of the field names for this simple file of holiday records. Please note that the structure of the records just created is not set in stone. After the initial creation of the file, you can always return and edit the field names and insert or delete fields whenever necessary.

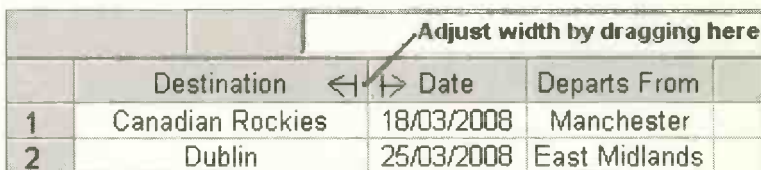
Entering the Data

Having created a database record structure with a number of fields of various formats, click **Done**. This closes the **Create Database** dialogue box and opens up the database in **List View** as shown below. The field names for the new file are displayed across the top with a grid of blank cells underneath, ready for you to start typing in the records.



Entering data into the cells of the database is similar to entering data into the spreadsheet table as discussed in the previous chapter. After typing the data into the first field, pressing **Enter** moves the cursor down the column to the record below. Alternatively move across from left to right using the **Tab** key or move in any direction using the four arrow keys or the mouse.

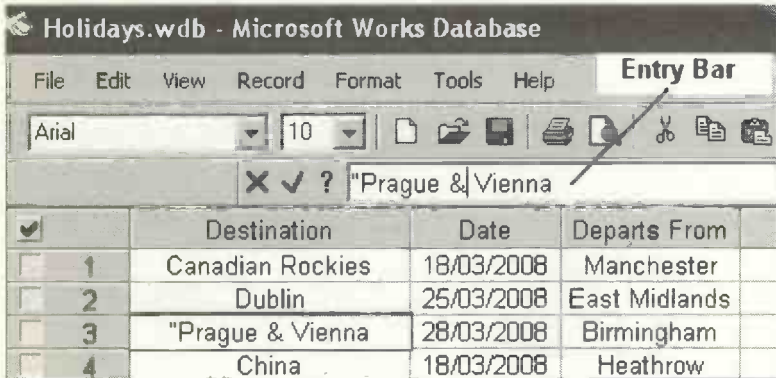
You can alter the width of the columns for each field by dragging on the vertical line between two adjacent field names such as **Destination** and **Date** (similar to the method for the spreadsheet shown on page 188).



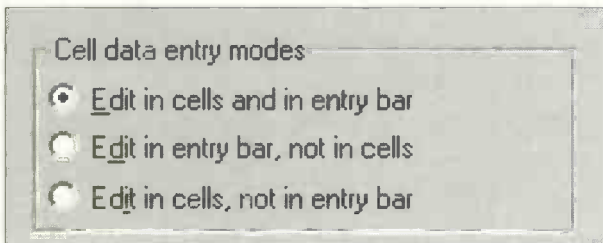
13 Creating a Database

Correcting Mistakes

You can always go back to a cell to edit the data. Double-click the cell or click in the *entry bar* at the top of the screen, as shown on the right below.



After editing a cell, click the tick on the left of the entry bar shown above or press **Enter**. You can choose where editing may take place by selecting **Tools** and **Options...** and the **Data Entry** tab.



By default the data can be edited in the cells and in the entry bar as shown above.

Alignment of Data

You can alter the alignment of data in a cell. When entering data in the **General** format, letters are aligned on the left and numbers on the right. To alter the alignment of the data in an entire field, such as **Departs From** shown below, first select the appropriate field by clicking in the field name at the top of the column. Now select **Format and Alignment...** from the menu bar.

Destination	Date	Departs From	Days
Canadian Rockies	18/03/2008	Manchester	11
Dublin	25/03/2008	East Midlands	3
Prague & Vienna	28/03/2008	Birmingham	7
China	18/03/2008	Heathrow	10

Format

Field Alignment Font Border

Sets the positioning of text and values in selected spreadsheet cells or database fields.

<p>Horizontal</p> <p><input type="radio"/> General</p> <p><input type="radio"/> Left</p> <p><input type="radio"/> Right</p> <p><input checked="" type="radio"/> Center</p>	<p>Vertical</p> <p><input type="radio"/> Top</p> <p><input type="radio"/> Center</p> <p><input checked="" type="radio"/> Bottom</p>
--	---

Then choose the **Horizontal** alignment you want, **Left**, **Right**, **Center**, etc., by switching on the appropriate radio button.

£ Sign

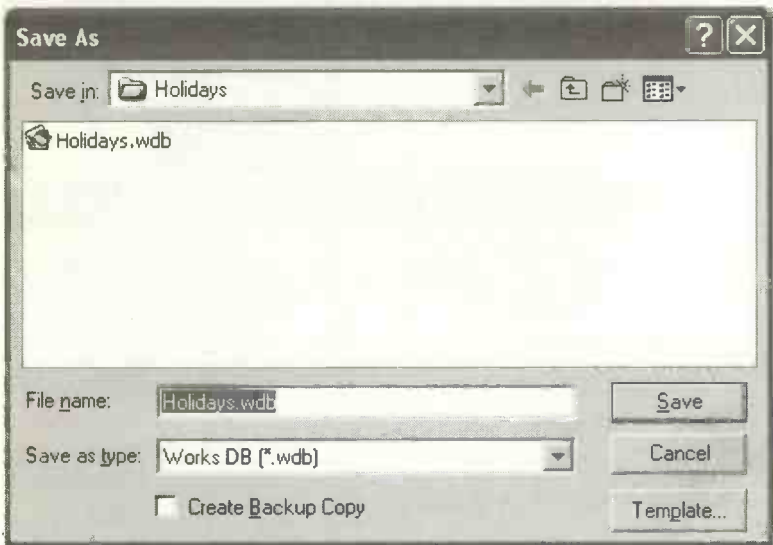
Please note that when entering the data in the **Price** field in the holidays file, having already selected a currency format which includes a £ sign, there is no need to type a £ sign. In this case the £ sign is entered automatically.

13 Creating a Database

Saving a Database File

It's a good idea to save the database as a file on disc at an early stage and subsequently at regular intervals during the entry of data. This doesn't take long and can prevent the loss of hours of work – especially when creating large databases. (The need to create backup or duplicate copies of important files is discussed later in this book).

Select **File** and **Save As...** from the menu bar.



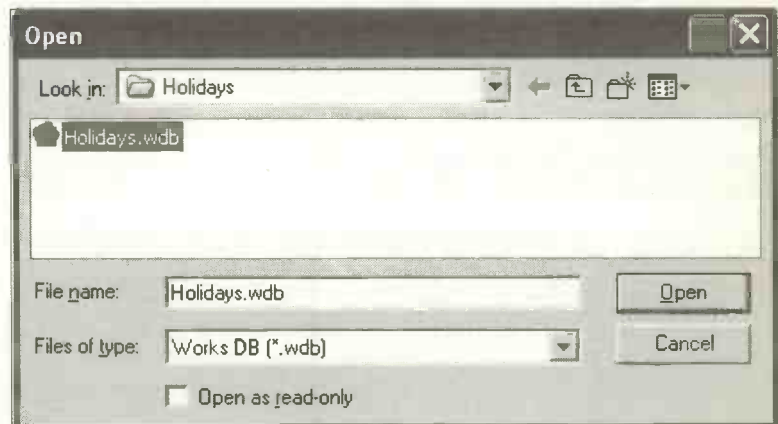
The first time you save the file you will need to enter a suitable file name, such as **Holidays**. The database extension **.wdb** is supplied automatically.



Further saving of the file can be achieved quickly and easily by simply clicking on the disc icon on the database toolbar, shown left.

Retrieving a Database File

From the **Quick Launch** menu on the **Task Launcher** select **Works Database** and **Open an Existing Database**. In the **Open** dialogue box which appears, browse to the folder containing your database file, such as **Holidays.wdb** in the **Holidays** folder shown below. Click the file name so that it appears in the **File name** bar shown below, then click **Open**.



The database file is displayed on the screen as shown below in **List View**. You can scroll up and down the list and check the records.

Holidays.wdb - Microsoft Works Database

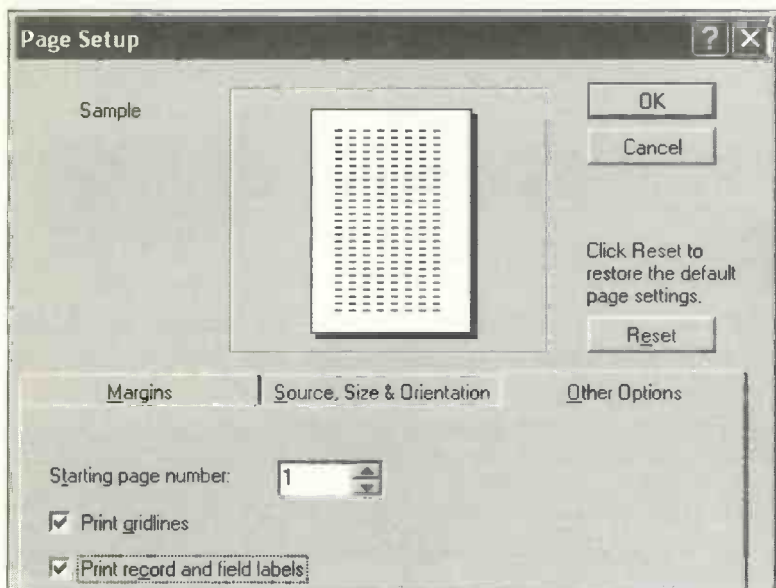
File Edit View Record Format Tools Help

Arial 10

✓	Destination	Date	Departs From	Days	Price
1	Canadian Rockies	18/03/2008	Manchester	11	£829
2	Dublin	25/03/2008	East Midlands	3	£145
3	Prague & Vienna	28/03/2008	Birmingham	7	£435
4	China	18/03/2008	Heathrow	10	£948
5	Eden Project	19/04/2008	(Local Coach)	4	£185
6	Rome & Venice	29/05/2008	East Midlands	7	£265
7	Monet's Garden	10/06/2008	Luton	4	£159

Printing a Database File

You might wish to make a printout using the normal **File** and **Print...** from the menu bar, as in most applications. However, if you print a file on paper with the default settings, you may find there are no field headings or grid lines printed. In Microsoft Works, to switch these on before printing on paper, from the database menu bar select **File** and **Page Setup....** Now select the **Other Options** tab and make sure there are ticks in the boxes next to **Print gridlines** and **Print record and field labels** as shown below, then click **OK**.



Next time you print the file on paper the field names and gridlines should be printed as well as the actual records.

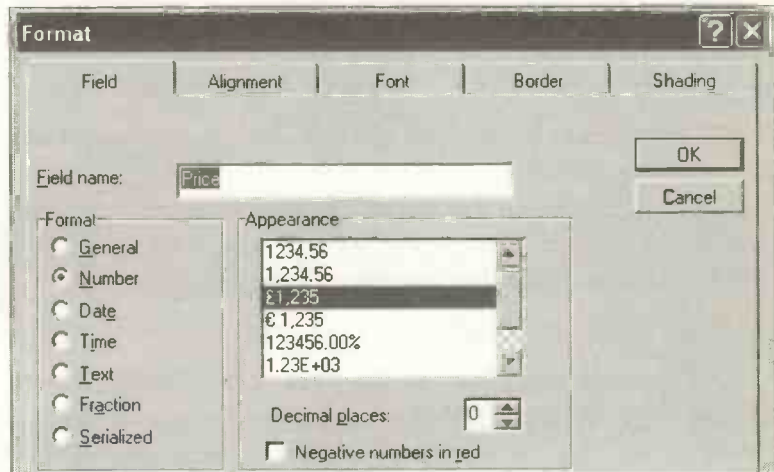
Editing a Database File

Editing the Data

After reviewing the file you may need to correct data in the cells. As described during the section on entering the records, the data in any field can be edited in the cell after double-clicking the appropriate cell. Or you can select the cell then edit the data in the **Entry bar** near the top of the screen as shown on page 218.

Editing the Field Names

If you want to change a field name or format, click a cell anywhere in the field. Then select **Format, Field...** and change the **Field name:** on the resulting **Format** dialogue box which appears, as shown below. You can also change the **Format** at this stage, i.e. **General, Number, etc.**



When you've finished editing, click **OK** to return to the database, updated to include the changes you have made.

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Inserting Fields and Records

Frequently, after entering all of the data, you may decide one or more extra fields are necessary. Select the field next to where you want to insert a new field. From the menu bar click **Record** and **Insert Field** then either **Before...** or **After...** as shown below.



The **Insert Field** dialogue box then appears, allowing you to enter the field name and select the format for the new field. Click **OK** to return to the database file with the new field name inserted and a blank column ready for the new data.

A new record can be inserted after clicking anywhere in the record *below* the chosen position for the new record. Then select **Record** and **Insert Record** from the menu bar as shown above, or click the **Insert Record** icon, shown on the left, on the database toolbar.



Deleting Fields and Records

Place the cursor anywhere in the field to be deleted. Select **Record** then **Delete Field** from the menu bar as shown above. Click **OK** in response to **Permanently delete this information?** and the entire field is removed. To delete a record, click anywhere in the record then use the **Delete Record** option in the **Record** menu shown above. All of the above operations can be cancelled using **Edit** and **Undo**.

Form View and Form Design

List View discussed previously allows you to view and print all of the records in horizontal rows in a table format.



Form View presents one record on the screen at a time in a vertical format.



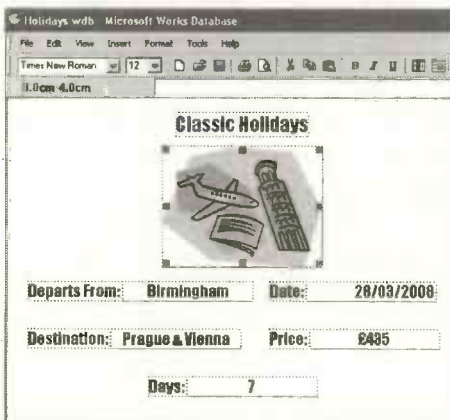
Form Design is a view which allows you to make alterations to the layout of **Form View** and to insert labels and pictures.



Switching between **List View**, **Form View** and **Form Design** is achieved by clicking on the toolbar icons shown above and on the right of the toolbar below. Alternatively click **View** on the menu bar and then choose the required view.

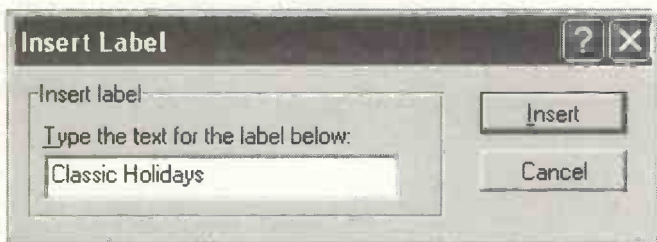


In **Form Design** (shown below) you can move the fields about by dragging and dropping with the mouse. Any field can be selected then formatted with fonts, borders and shading, using **Format** on the database menu bar.



13 Creating a Database

Descriptive headings and labels can be added to the **Form Design** from the **Insert, Label...** option on the menu bar.



After clicking **Insert**, the label is placed on the **Form Design** at the current cursor position. It can be moved to a different position by dragging and dropping, then formatted with fonts, border and shading.



Various objects can be inserted into the **Form Design** using the **Insert** menu. For example, by selecting **ClipArt...** you can choose a picture from the Works **ClipArt Library**. After inserting the picture into the **Form Design** it can be moved to its final position and resized. When you have finished the **Form Design**, click the icon, shown right, to return to **Form View**. You should see



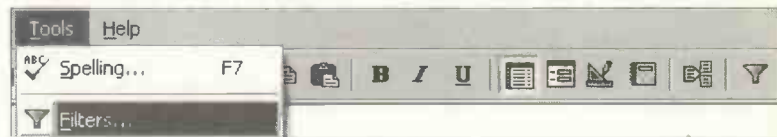
your new design with the data for one of the records inserted as shown on page 211.

Move through the records using the arrows at the bottom. The data for each of the records in turn is infilled into the new form design.

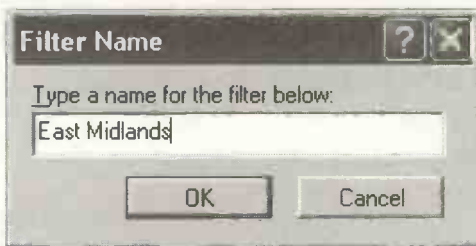
Searching a Database File

One method of searching a large database might be to scroll through the file in **List View**, looking for records which match the required criteria. However, a database program such as the one in Microsoft Works provides fast and sophisticated methods of searching for particular records. In the holiday file, for example, we might wish to find all holidays departing from the East Midlands Airport.

The criteria for the search are set up in a **Filter** and this can be saved with its own name then retrieved and used again. The first part of a search is to set up the filter. With the database open, you can select the **Filter** dialogue box from **Tools** and **Filters...** on the menu bar or from the **Filter** icon on the toolbar, shown right and below.



First you are required to enter a name for the filter. As several other filters may be created for this database, try to use a meaningful **Filter Name**.

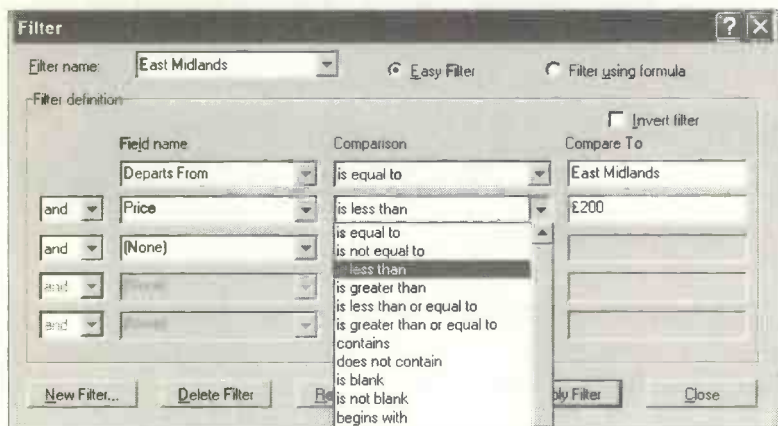


After you click **OK** the **Filter** dialogue box opens up as shown on the next page.

13 Creating a Database

The **Filter name:** slot below shows the current filter, **East Midlands**, and also allows previously saved filters to be selected from the drop-down menu.

The **Field name** slot allows you to select the field or fields on which the search is to be based. In a complex search involving more than one field, you would complete two or more rows across the **Filter** dialogue box. In the drop-down **Comparison** menu shown in the middle of the **Filter** dialogue box below, you select the method by which the records are to be compared with the search criteria. In this example we need to use **is equal to**.

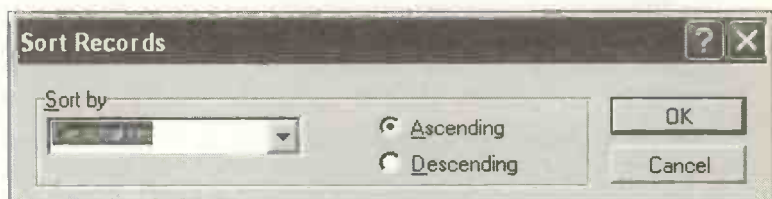


Finally we need to enter our search criteria **East Midlands** in the **Compare To** slot. A second line has been added above to find **East Midlands** holidays where the **Price** is **less than £200**.

When you have completed setting up all of the criteria, click the **Apply Filter** button. Almost immediately you are presented with the database file showing the reduced set of records produced by the filter.

Sorting Records in a Database File

Sorting involves arranging records in alphabetical or numerical order, based on a particular field or fields. For example, when looking at a list of names or places, it is convenient if they are listed in alphabetical order. The sorting feature in the Works database is invoked from **Record** on the menu bar, then **Sort Records....** This opens up the **Sort Records** dialogue box shown below, in which you specify the fields to be sorted and either **Ascending** or **Descending** order.



In this example, the holidays are sorted into alphabetical order of **Destination**. When you click **OK**, the following sorted list is produced:

Holidays.wdb - Microsoft Works Database					
File Edit View Record Format Tools Help					
Arial 10					
	Destination	Date	Departs From	Days	Price
<input type="checkbox"/>	1 Canadian Rockies	18/03/2008	Manchester	11	£829
<input type="checkbox"/>	2 China	18/03/2008	Heathrow	10	£948
<input type="checkbox"/>	3 Dublin	25/03/2008	East Midlands	3	£145
<input type="checkbox"/>	4 Eden Project	19/04/2008	(Local Coach)	4	£185
<input type="checkbox"/>	5 Highland Railways	10/04/2008	N/A	5	£249
<input type="checkbox"/>	6 Malta	15/03/2008	Birmingham	12	£259
<input type="checkbox"/>	7 Monet's Garden	10/06/2008	Luton	4	£159
<input type="checkbox"/>	8 New Zealand	09/04/2008	Stansted	14	£1,549
<input type="checkbox"/>	9 Prague & Vienna	28/03/2008	Birmingham	7	£435
<input type="checkbox"/>	10 Rome & Venice	29/05/2008	East Midlands	7	£265

Practice Exercise: Creating a Database File

1. In this exercise you may wish to use the **Holiday** data given on page 210 or alternatively make up a file of your own.
2. Start up the program ready to create a database file.
3. Enter each **Field name** and **Format**.
4. Click **Done** and start entering the data for the records in the blank database table which appears.
5. As you are entering records, correct any typing errors in the cell or in the **Entry bar**.
6. When you have entered all of the records, save the database with a meaningful file name.
7. Make a printout on paper to include gridlines and field labels.
8. **Check** the database for errors in the data. Make some changes in the cells, even if there are no actual mistakes. Use both the cell and the **Entry bar** for editing the data.
9. Insert a new *field* and enter a set of data.
10. Insert a new *record*.
11. Practise deleting fields and records. (You can restore them if you select **Edit** and **Undo** straightaway).
12. Save the new version of the file and make a printout.
13. Use **Form Design** to lay out individual records and then check the display in **Form View**.
14. Practise searching for records meeting certain criteria.
15. Sort your file into alphabetical and numerical order on different fields.

Checklist: Database Skills

If you've worked through the last two chapters, you'll have covered most of the basic database skills. You may wish to use the following checklist to tick off those skills you have already acquired and highlight any skills requiring further work.

Database Skills	Achieved
Create a file with numeric and text fields.	
Enter the data and save as a file on disc.	
Retrieve a database file from disc.	
Edit the data, including inserting and deleting records.	
Edit the field names, also inserting and deleting fields.	
Display the file in List View and Form View .	
Format the file with fonts, borders and shading.	
Use Form Design to add labels and pictures.	
Use a filter to find records matching a single criterion.	
Use a filter to find records matching multiple criteria.	
Sort the records on an alphabetical field.	
Sort the records on a numeric field.	
Print records on paper.	

13 Creating a Database

Ideas for Database Files

The following list of possible files may trigger off ideas for your own databases. In each case, the field names are given with a sample record underneath. In practice, you will be able to include many more field names, if you wish.

House Contents File

Description	Date	Manufacturer	Value
Grandfather clock	1847	Henderson	£2500

Trees & Shrubs File

Name	Description	Height	Site
Camellia	Flowering Shrub	8 feet	Light shade

Classic Car File

Make	Model	Year	Value
Jaguar	E Type	1969	£29,500

CD Collection File

Title	Performed by	Genre	Composer
The Four Seasons	The Milton Philharmonic	Classical	Vivaldi

Looking After Your Work

The Need for Backups

If you've spent a lot of your valuable time creating any sort of document, whether text, spreadsheet, database, DTP or graphics, the worst thing that can happen is that you "lose" it. Imagine working on a project for several weeks or months then suddenly losing all of the files. If you're not careful, it's very easy to lose a file or folder saved on a hard disc. As a teacher, I frequently heard remarks like "The stupid computer has wiped my work..." – quite untrue, of course. However, a moment's carelessness when copying or deleting files or a system crash can easily destroy hours of work.

While small files like a letter or simple spreadsheet can be created again very easily, this is not the case with, for example, your memoirs or a parish magazine, your family tree or a set of accounts accumulated over a long period. In many cases the value of the data files stored on the hard disc will be far in excess of the value of the computer itself. Imagine working on a book for a year, only to lose the lot – this really has happened.

So it makes sense to devise a strategy for making regular backups, i.e. duplicate copies of your files. Then you can be confident that your precious work is safe.

The hard disc inside your computer is the equivalent of the traditional filing cabinet. Apart from *data files* representing your hours of toil, the hard disc also contains all of the *systems software* or *programs* such as the Windows XP operating system and applications like Microsoft Office. It's essential that all of your original software packages (including CDs and documentation) are stored in a safe place, so that the programs can be re-installed later if a disaster occurs.

Ways to Lose Your Data

- The computer or some of its internal components such as the hard disc drive may be stolen.
- You may accidentally delete important files by giving the wrong command.
- Someone might maliciously wipe the hard disc.
- The data on the hard disc may be corrupted by a software error or a failure in the power supply.
- The data may be damaged by one of the many computer viruses which can attack your system from various sources, such as a malicious e-mail.
- The hard disc may be damaged by the spilling of liquids or corrupted by exposure to a magnetic field.
- The computer itself may be totally destroyed by events such as fire, flood, earthquake or explosion.
- After several years' faithful service, the hard disc may reach the end of its useful life and expire.

Although the above list of potential disasters looks pretty daunting, most can be avoided by the regular use of a few cheap and simple backup procedures, as described in the remainder of this chapter.

Choosing a Backup Medium

In commercial organizations it's usual to back up an entire hard disc onto special high capacity tapes overnight. This is necessary in business where large numbers of computers are connected on a network. Tape backup was a method I used at one time, using a tape drive unit built into the computer, similar to a disc drive. However, the widespread use of writeable CDs has simplified life considerably and I personally no longer use tape backup systems at all. Below are some backup precautions which have served me well in the production of numerous books – so far avoiding the loss of a single file.

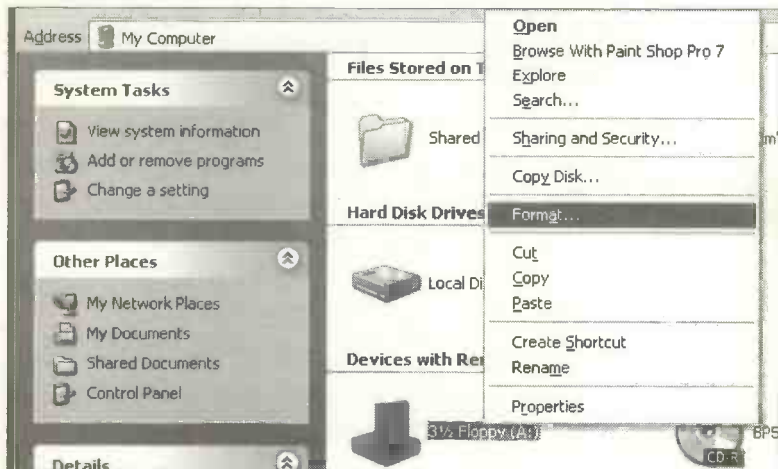
- All original CDs containing software (Microsoft Windows, Office, etc.,) are stored in a safe place. Should the hard disc need to be reformatted (thereby wiping it), the programs can be re-installed from the CDs.
- Small backups of data files, such as word processing documents, etc., are copied onto floppy discs. The latest USB flash drives are a very fast and convenient way of copying large quantities of data, particularly for transferring between computers and making temporary backups.
- Larger backups are copied onto CDs, using Windows XP. For example, one CD can easily accommodate several books, such as this one.
- All backup floppy discs, CDs and original software CDs are kept in a different location from the one in which the computer is based. If there is a fire or someone steals the computer, you will still have copies of your precious work.

Backing Up to a Floppy Disc

The floppy disc is a convenient way to make a backup of a small amount of data such as a single file and for transferring files between computers. The disadvantage of the floppy disc is that its capacity is only 1.44MB and it is therefore losing ground to the CD and USB flash drive, etc.

Formatting a Floppy Disc

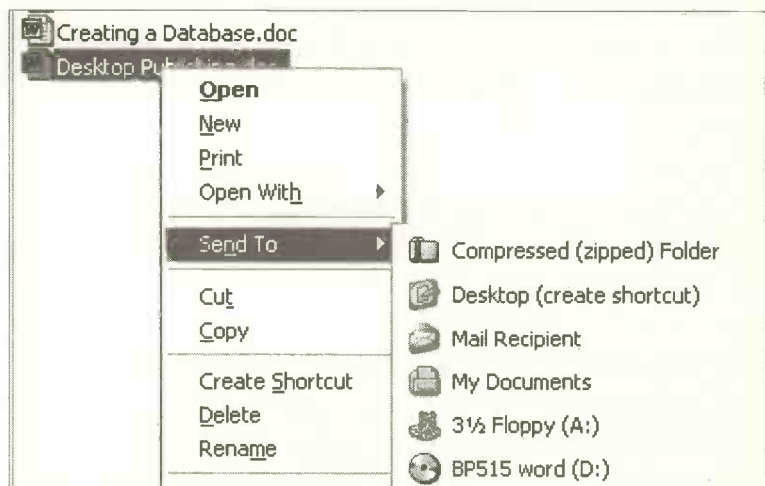
Before you can use a floppy disc it must be prepared by a process known as *formatting*. This process can also be used to rejuvenate (and sometimes repair) a used floppy disc. To format the floppy disc, place the disc in the floppy disc drive and select **My Computer** from the **start** menu. Right-click over the floppy disc drive icon which appears and select **Format...** from the pop-up menu as shown below.



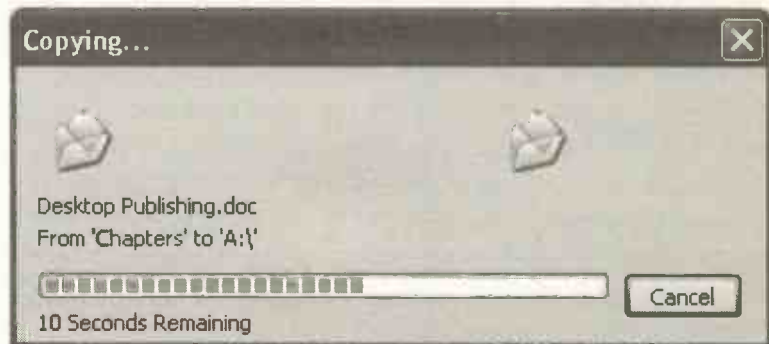
Click **Start** from the next menu and the disc will be formatted ready for use. A **Quick** format is available to remove files from floppy discs which have been formatted before and are known to be undamaged.

Copying a File to a Floppy Disc Using Send To

Open up the **Windows Explorer** or **My Computer**. Now right-click over the file (or folder) you wish to copy. This brings up the menu shown below.



From the **Send To** menu shown above, select **3½ Floppy (A:)**. The file is then copied to the floppy disc, with progress indicated by the window shown below.



Backing Up Your Work to a CD

New computers are usually equipped with CD drives capable of writing files to a CD. This makes the CD an excellent backup medium. There are two main types of writable CD, the CD-R and the CD-RW. The CD-R can be written to only once. The CD-RW can be written to many times. I use the CD-R for backup work, for the following reasons:

- The CD-R can cost as little as 20p at the time of writing, especially if you buy a pack of 10 or more.
- The CD has a very useful 700MB storage capacity, compared with the meagre 1.44MB of the floppy disc. You can easily store the equivalent of several books like this one, for example, on one CD.
- CDs in my experience are extremely reliable, accurate and virtually indestructible. Unlike the floppy disc or USB flash drive, once files have been saved on the “read-only” CD-R, they cannot be deleted, making the CD-R an ideal archive medium.

A Simple Backup Routine

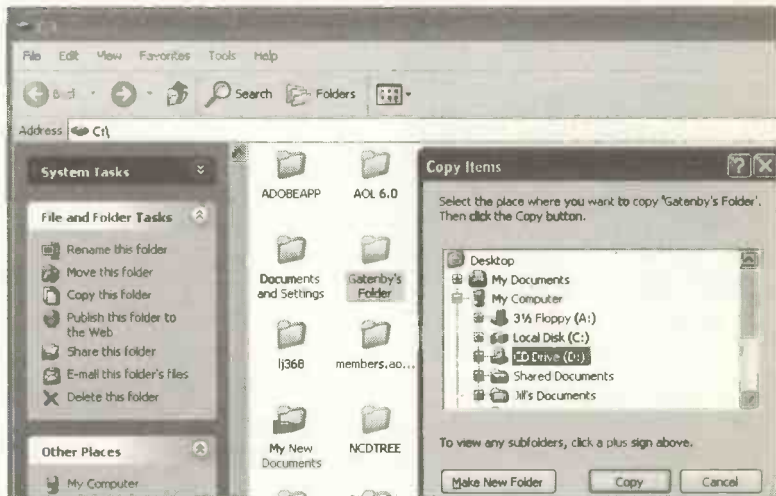
My own routine is to make a daily backup of the current chapter onto a USB flash drive, in addition to the main copy on the hard disc. The next day the latest file can be used to overwrite the previous file on the USB flash drive. At the end of each week I copy the whole project from my hard disc onto a CD-R. For peace of mind, it is always a good idea to check that the backup was successful. Try opening the copies of the files from the backup media. This can be done using **File** and **Open...** from Word, etc., or by double-clicking the file names or icons in the **Windows Explorer** or **My Computer** as discussed on page 243.

CD Writing Software

Earlier versions of Microsoft Windows did not include CD writing or “burning” software, so it was necessary to purchase a third-party product. Two of the most popular packages are Easy CD Creator from Roxio (formerly Adaptec) and Nero from Ahead Software. The CD burning software built into Windows XP is a version of the Roxio software and is an extremely useful backup tool. (Using Windows XP to create *audio* CDs is discussed later in the chapter on Windows Media Player).

Using Windows XP’s Own CD Burning Software

Open **My Computer** and double-click the hard disc drive (**C:**) icon to display the folders. Find the files and folders you want to copy to the CD and highlight them. Select **Copy this folder (or file)** from the **File and Folder Tasks** menu on the left of the window as shown below.

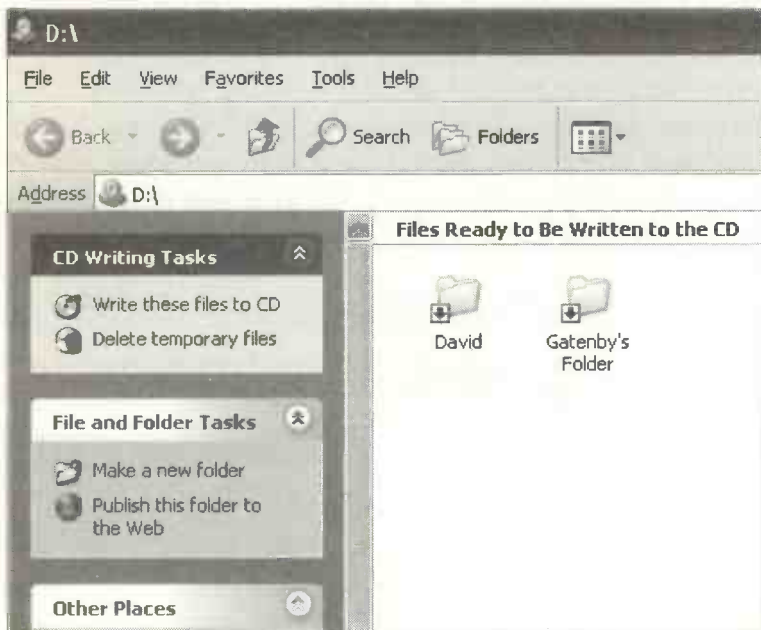


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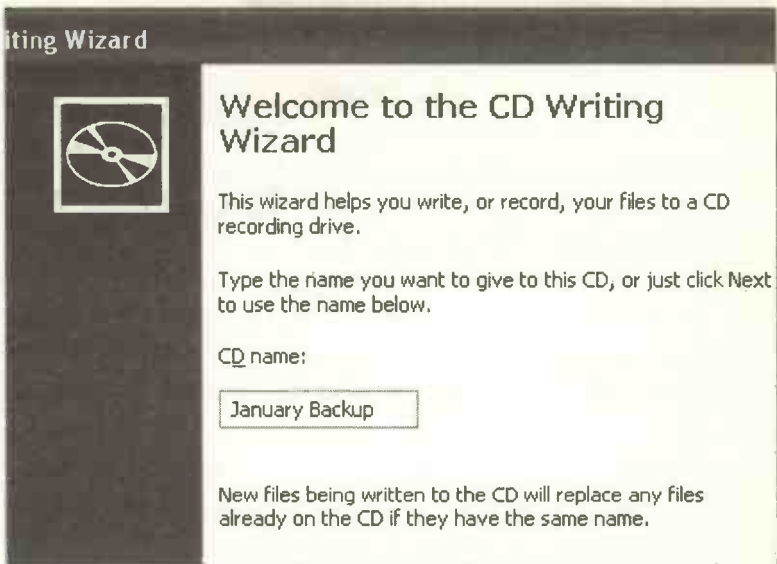
Next select **CD Drive (D:)** from the **Copy Items** window shown on page 239 and then click the **Copy** button.

Alternatively you can use **Send To** as discussed earlier and select the CD drive (**D:**) as the destination.

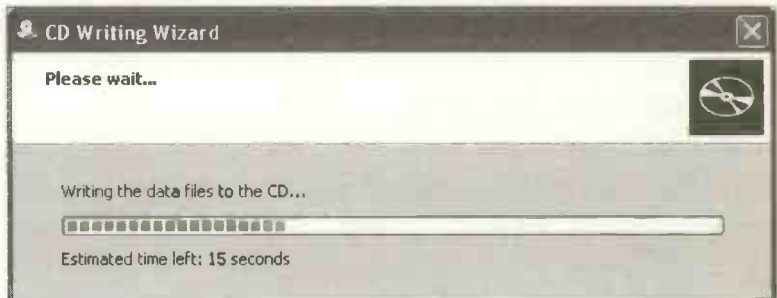
The files to be copied to the CD are first copied to an image file on your hard disc, prior to copying to the CD. A new window should appear with the files listed under the heading **Files Ready to be Written to the CD** as shown below.



Now highlight the files and select **Write these files to CD** from the **CD Writing Tasks** menu shown on the left-hand side above. This starts the **CD Writing Wizard** shown on the next page, where you are able to give a name to the CD if you don't want to use the default name supplied.



After clicking **Next** a window appears showing the progress being made in the copying process.



After the files have been copied, a window appears telling you that the copying process has been successful. The CD should now be labelled and stored in a safe place.

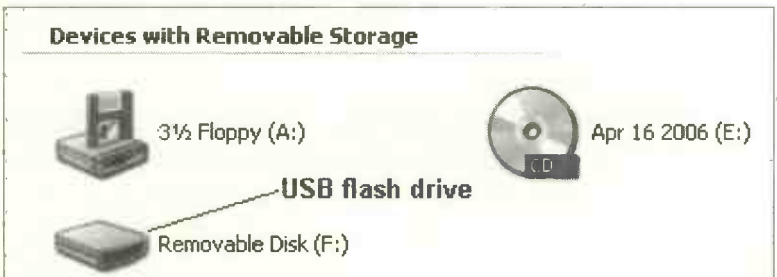
The USB Flash Drive or “Dongle”

These devices have become very popular in the last few years and are an extremely fast and convenient form of storage. They take the form of a *dongle*, a small device which plugs into one of the rectangular USB ports on the computer, as shown on page 14. The USB dongle is very easy to plug in and remove and, being roughly the size of your little finger, fits comfortably into a pocket. The flash drive is a USB device and so can be “hot-swapped”, i.e. plugged in while the computer is up and running.



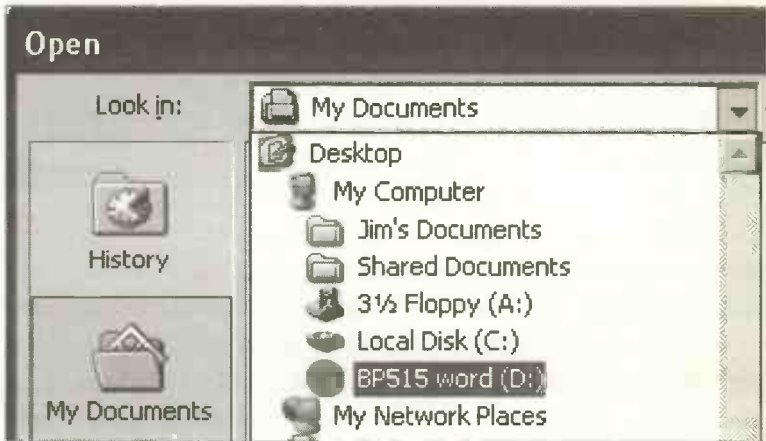
The USB flash drive can be used as a form of *temporary* backup storage and is available in a range of sizes from 256MB to 5GB with prices starting from a few pounds to around £100. Obviously if you need to build up a large *permanent archive* for, say, all of your music or photographic collections or data files, a large number of cheap CD-Rs is a better solution. However, the USB flash drive is ideal for anyone on the move, wanting to move files quickly between computers or share files with friends or colleagues in a fast and easy fashion.

Both the USB flash drive and the CD-R appear as additional disc drives in the Windows Explorer and My Computer, as shown below in My Computer.



Recovering Files from a Backup CD or Disc

If you need to restore the files you've backed up onto a CD, etc., place the disc in the drive and use the standard **File and Open...** commands which appear on the menu bar of most programs. Select the required drive (**D:** or whatever), from the drop-down menu in the **Look in:** bar shown below.



Another way to open a file from a hard disc, CD (or any other disc such as a removable USB flash drive) is to display the file name, e.g. **Tuscany.doc** shown below, in **My Computer** or the **Windows Explorer**. Drive **F:** in this example (shown below) is a USB flash drive

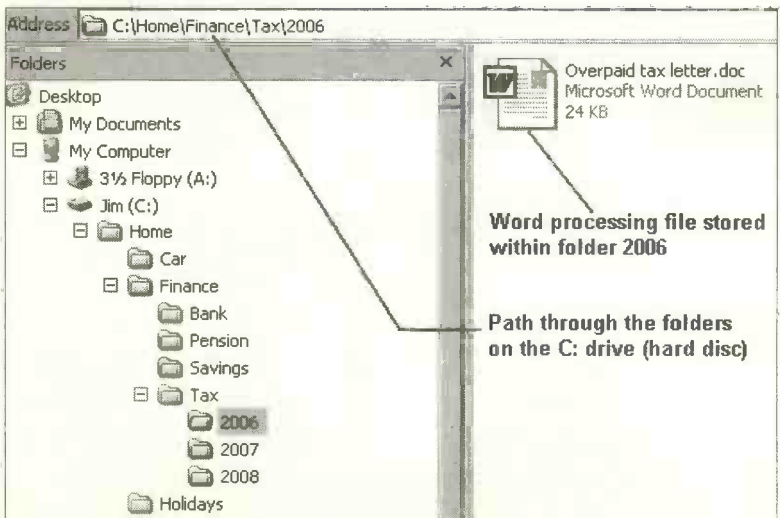


Then if you double-click the file name or icon as shown above, the file will be opened in the program which created it. So, for example, double-clicking a database file will start the database program running and open the database file.

Managing Your Files and Folders

As discussed earlier in this book, you can save your files of work in the default folder **My Documents**, which Windows provides for you. However, when you have created a lot of different files on all sorts of subjects, you may wish to save them in your own system of folders. By placing the files into folders representing different categories this should make your files easier to locate.

As described on page 133, folders can be created after clicking the **Create New Folder** icon in the **Save As** dialogue box. This will place the new folder within the folder currently selected, i.e. the folder named in the **Save As** dialogue box. At the same time you can give the new folder a meaningful name. This will allow you to make up your own system of folders, including *sub-folders* or folders within folders. As described on page 83 and 84, this hierarchical or branching system can be viewed in **My Computer** or the **Windows Explorer**.

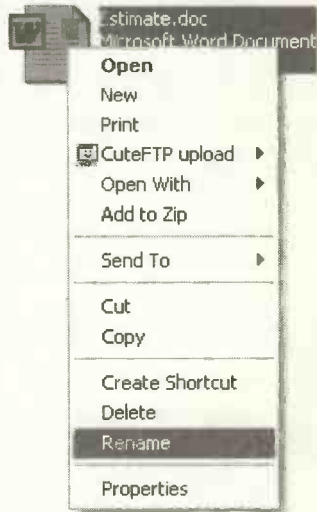


Common File and Folder Tasks

The last screenshot shows the hierarchy of folders and a file displayed in the **Windows Explorer** or **My Computer**. These two Windows features (**Explorer** and **My Computer**) are both used to manage your files and folders. **Windows Explorer** is launched by selecting **start**, **All Programs**, **Accessories** and **Windows Explorer**. Or you can right-click over the **start** button and select **Explore** from the small menu which pops up on the screen. **My Computer** can be selected directly from the **start** menu. Many of these management tasks can also be carried out using the new **File and Folder Tasks** pane introduced in Windows XP and discussed in detail shortly.

Renaming Files and Folders

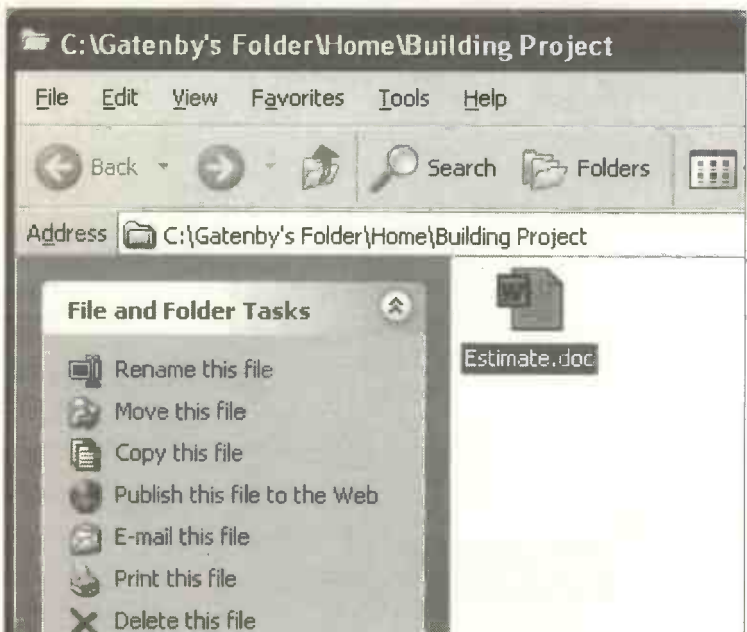
A folder or file can be renamed by right-clicking over its name or icon in **My Computer** or the **Windows Explorer**, then selecting **Rename** from the menu which appears (shown on the right). Alternatively the folder or file name can be highlighted, followed by selection of **File** and **Rename** from the menu bar across the top of the **Explorer** or **My Computer** window. The folder or file name appears in a rectangle with a flashing cursor. Rename the folder or file by deleting the existing name and typing in the new one, then press **Enter**.



Deleting Files and Folders

Highlight the file or folder in the Windows Explorer or My Computer then press the **Delete** key. Or you can select **Delete** from the **File** menu. (The **File** menu can be selected from the menu bar or by right-clicking over the file or folder). When you delete a folder in Windows XP then all of the subfolders and files contained within are also deleted, i.e. moved to the **Recycle Bin**. Some earlier versions of Windows require a folder to be empty before it can be deleted.

To delete files in Windows XP (in the Windows Explorer or My Computer) you can highlight the file or folder and select **Delete this file** from the **File and Folder Tasks** menu on the left of the screen, as shown below. If this menu does not appear, select **View, Explorer Bar** and click the word **Folders** in the drop-down menu, to remove the tick.



Undoing a Delete Operation

If you make a mistake and delete the wrong folders or files, you can use the **Undo Delete** option in the **Edit** menu (provided you spot the mistake straightaway.) Fortunately files and folders are not lost forever when they are deleted. Windows XP merely transfers them to its **Recycle Bin**. Once in the Recycle Bin files and folders can be left for a time, but as they are still taking up hard disc space they should eventually be permanently deleted. There is also an option to restore files from the Recycle Bin to their original location on the hard disc.

The Recycle Bin

The Recycle Bin is invoked by clicking its icon on the Windows Desktop. It is effectively a folder into which all deleted files are initially sent. As shown below, you can view the contents of the Recycle Bin at any time by clicking its icon on the Windows Desktop.



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Files which have been “deleted” remain in the Recycle Bin until you decide to empty it. This is done by selecting **Empty the Recycle Bin** from the **Recycle Bin Tasks** shown in the previous screenshot or by selecting **File** then **Empty Recycle Bin** off the menu bar at the top of the Recycle Bin window. The Recycle Bin should be emptied regularly since files in the Recycle Bin are still taking up disc space. Individual files can also be highlighted and deleted.

Should you wish to reinstate files which have been consigned to the bin, open up the Recycle Bin window by clicking its icon on the Windows Desktop. Then highlight the file to be restored and select **Restore this item** from the **Recycle Bin Tasks** menu. Alternatively select **File** and **Restore** from the menu bar for the Recycle Bin. The files will be restored to their original locations on the hard disc.

Moving and Copying Files and Folders

The following tasks are described in the context of files, but the methods apply equally to folders.

Moving a file deletes the file from its original location and places it in a new location.

Copying a file places a replica of the file in a new location and leaves the original edition of the file in the original location.

Files may be copied or moved between different locations on the same hard disc, between two hard discs in the same computer or between different media such as a hard disc, CD, floppy disc or a USB flash drive, for example.

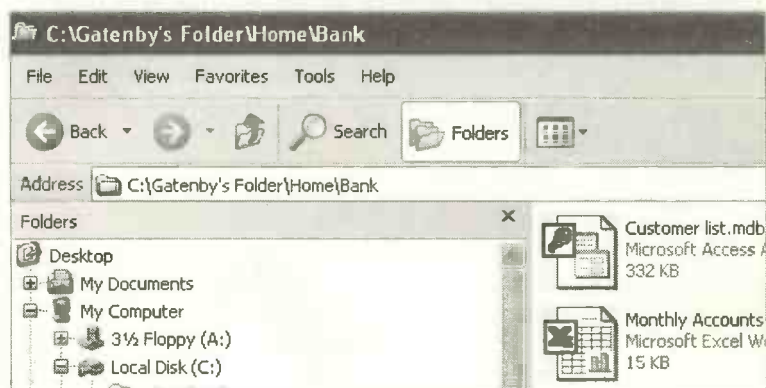
Dragging and Dropping

A common copying method is to drag the file or folder and drop it over the new location. Different results are obtained depending on whether you are dragging and dropping to the same or a different medium:

- The file is *moved* if it is dragged and dropped into a different location on the *same* hard disc.
- The file is *copied* if it is dragged and dropped onto a different disc drive, CD, floppy disc, etc.

To *copy* files within the same hard disc the **Control** key (marked **Ctrl**) must be held down while dragging with the left-hand mouse button.

Files and folders can be copied in the Windows Explorer or My Computer. You can copy between different locations on the main hard disc drive **C:** or to and from any other drives such as the floppy disc or CD. Open the Windows Explorer and make sure the folders or files you wish to copy or move are visible in the right-hand panel. If you can't see the resources such as the hard disc (**C:**), floppy disc drive (**A:**), etc., in the left-hand panel as shown below, select **View**, **Explorer Bar** and make sure **Folders** is ticked.



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Now highlight the file(s) or folder(s) to be copied or moved. (To highlight multiple files and folders, hold down the **Ctrl** key continuously while clicking with the mouse.) Next hold down the left-hand button and drag the highlighted files and/or folders to their destination in the left-hand panel. Release the mouse button to drop the files into the new location.

This method would typically be used to copy some files onto a floppy disc, CD, or flash drive, etc., in order to transfer the files to another computer.

Using the Right-hand Mouse Button to Copy or Move Files

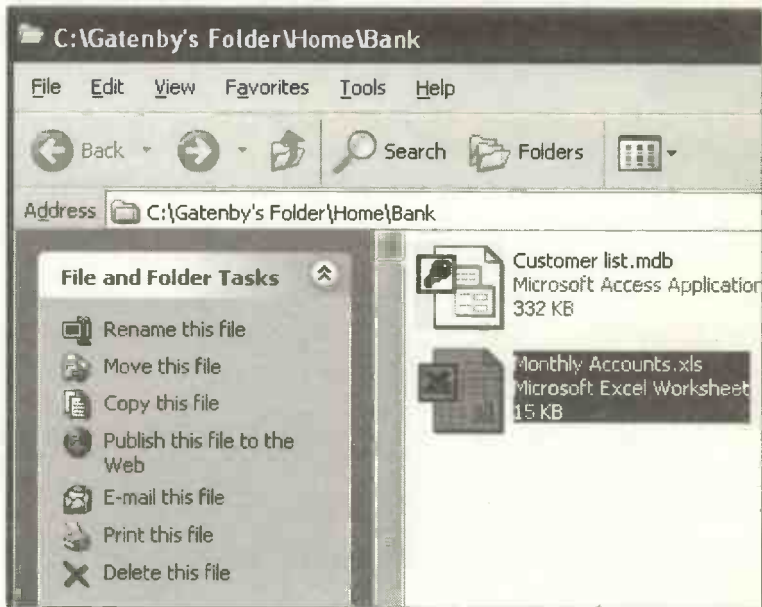
Drag the icon for a file or folder using the right-hand button on the mouse, then release the button to drop the file over its new location. The menu shown on the right appears, allowing you to choose whether the file is to be moved or copied.



You can also copy and move files in the Windows Explorer or My Computer by using the **Edit** menus in the respective windows for the source and destination folders. Select the file(s) then use **Edit** and either **Copy** or **Cut** in the first (source) window followed by **Edit** and **Paste** in the destination window.

The File and Folder Tasks Menu

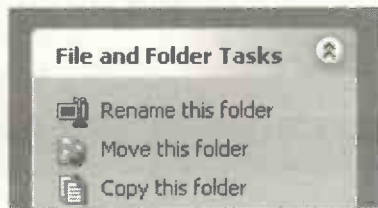
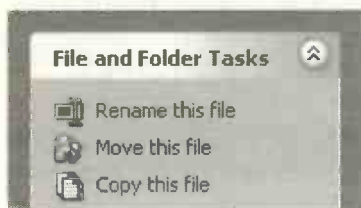
Windows XP has made many file and folder tasks much simpler. This has been done by the addition of the **File and Folder Tasks** pane on the left of the Windows Explorer and My Computer screens. The **File and Folder Tasks** pane, shown below, can be switched on and off in Explorer or My Computer by clicking **View, Explorer Bar and Folders**.



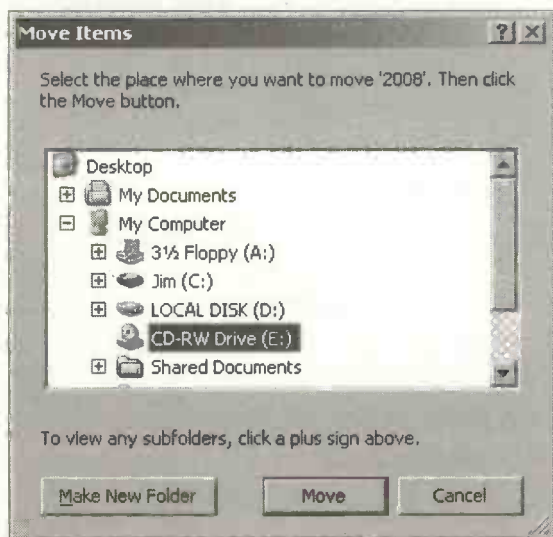
Please note that if a *file* is highlighted in the right-hand pane above, a list of tasks appropriate to *files* appears in the **File and Folder Tasks** pane on the left above. If a *folder* is highlighted in the right-hand pane shown above, a list of tasks appropriate to *folders* appears in the **File and Folder Tasks** pane on the left above. This is shown in the two panes on the next page.

14 Looking After Your Work

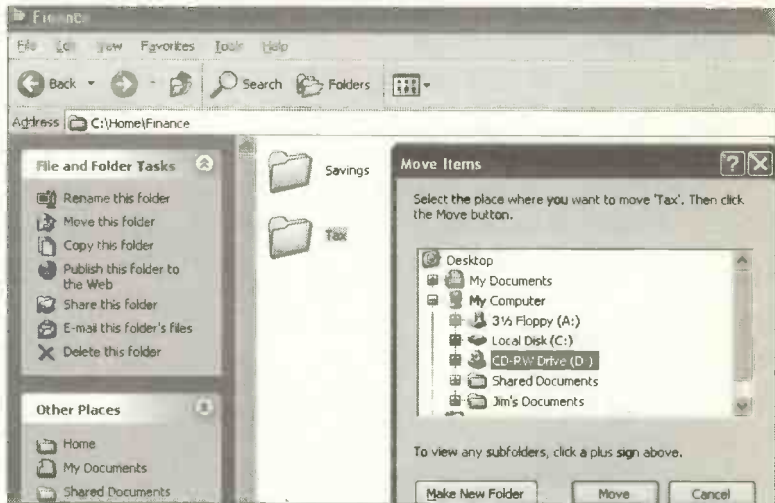
Apart from options such as to **Rename** and **Delete**, **E-mail** and **Publish on the Web** as shown on the previous page, files and folders can also be moved or copied very easily using the **File and Folder Tasks** pane.



Moving or copying is made easy with special **Copy Items** and **Move Items** windows appearing when either **Move this file** (or **folder**) or **Copy this file** (or **folder**) are selected. As shown above the same method is used for both *files* and *folders*, depending which has been highlighted in Explorer. The **Copy Items** and **Move Items** windows allow the destination to be selected, as shown below.



For example, the folder called **Tax**, shown highlighted below, is to be moved. **Move this folder** is selected from the **File and Folder Tasks** panel shown on the left below. Then the **Move Items** dialogue box appears enabling you to select the destination for the folder being moved. This could be another folder on the **C:** drive, a floppy disc or writable CD in drive **D:**. Click the **Move** button to complete the operation. The **Copy** process is carried out in a similar way.



Warning: Don't Re-organize Your Program Files!

Please note that operations to move, delete and rename files and folders should only be used to organize your *data files*, i.e. the work that you have created such as word processing and spreadsheet files and pictures and photographs, etc.

Under no circumstances should you attempt to move, organize or "tidy up" any files or folders which are part of programs such as Microsoft Word or Office, etc. This will stop the programs from working and require the software to be re-installed.

Protection Against Viruses

A virus is a small computer program written maliciously to damage software and data and to cause inconvenience to the user. Unfortunately the files on your hard disc are vulnerable to attack from computer viruses, unless you take precautions to protect them. Viruses are generally known as *malware*, an abbreviation for *malicious software* and have names such as Mydoom, Melissa and Bagel, for example.

The virus enters a computer system insidiously, often from a rogue floppy disc or an e-mail. If not detected the virus multiplies and spreads throughout a hard disc. Some viruses may only cause trivial damage – such as displaying a so-called “humorous” message – while others, such as the virus known as “Trojan.Frozzie”, shown below, can cause Internet Explorer to freeze and also severely damage the performance of the computer.

Trojan.Frozzie

Risk Level 1: Very Low

Printer Friendly Page 

SUMMARY

TECHNICAL DETAILS

REMOVAL

Discovered: July 15, 2006

Updated: July 15, 2006 03:38:55 PM GDT

Also Known As: DoS.Frozzie

Type: Trojan Horse

Systems Affected: Windows 2000, Windows 95, Windows 98, Windows Me, Windows Server 2003, Windows XP

When a user visits a malicious Web site using Internet Explorer, Trojan.Frozzie performs the following actions:

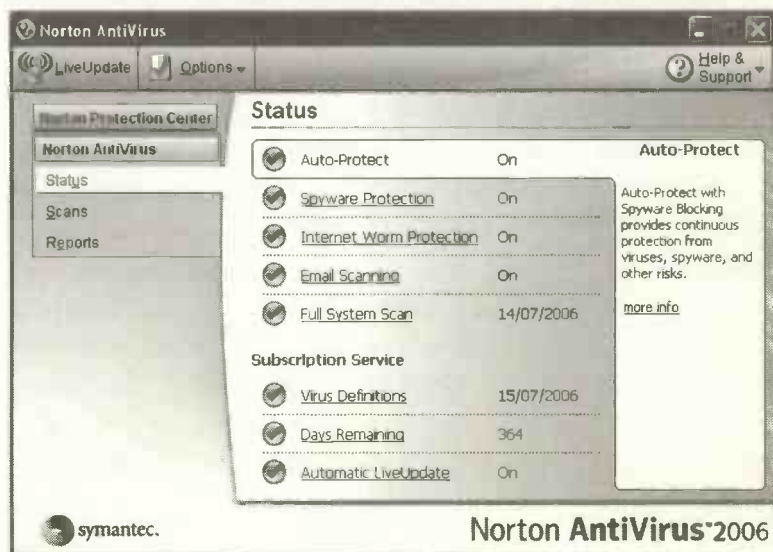
1. Freezes Internet Explorer.
2. Performs a denial of service attack on the compromised computer by degrading performance.

Even when a virus doesn't do any serious damage to files and software, getting rid of it may waste a lot of valuable time – not to mention the anxiety caused if you fear the loss of files which may be very important to you.

Writing viruses is an act of vandalism and can result in a prison sentence. Viruses can exist on floppy and hard discs. They can also reside temporarily in the computer's memory – but they are removed from the memory when the computer is switched off. Viruses do not permanently damage the physical parts of a computer – the hardware components such as the memory or the printer.

Viruses can also enter your system from the Internet, perhaps through e-mail *attachments*, the programs or documents “clipped” onto an e-mail (discussed later).

The **Auto-Protect** feature in the Norton AntiVirus program works constantly in the background checking the computer for viruses from all possible sources such as the Internet, removable discs, documents, etc.



Types of Virus

The File Virus

File viruses attach themselves to *program* or *executable* files. These files (having file name extensions such as **.EXE**, **.COM**, **.SYS**, etc.) are part of programs like Microsoft Word or Excel. The file virus (also known as the *program virus*) does not infect the *documents* produced using the software, although documents can be infected by the *macro virus* discussed next. (In this context, the term *document* includes not only text produced in a word processor but other types of file saved on disc, such as Excel spreadsheets.)

The Macro Virus

This type of virus has been designed to infect the *documents* produced using programs such as Word and Excel. These programs have their own inbuilt programming language. This allows the advanced user to write small sets of instructions known as *macros*. Unfortunately the virus writers have found ways of writing viruses in the macro language. So, for example, documents produced in programs like Word and Excel can contain viruses.

It's therefore possible for your hard disc to be infected with viruses spread in document files received via the Internet as *attachments* to e-mails (as well as files transferred from another computer via a floppy disc or CD.)

Needless to say, great care must be taken when sending files to anyone else on a disc or CD. If the recipient is a company or organization with a network, there is a danger of a large number of computers being infected. (In theory, any well-run business should have installed its own anti-virus software and systems to stop the import of files from discs and CDs of dubious origin.)

Boot Sector Viruses

The *boot sector* is an area of a floppy or hard disc and contains information needed when the computer is started up or “booted”. (The term originates from the expression “pulling yourself up by your own bootstraps.”)

The use of floppy discs has declined in recent years reducing the risk of attack by boot sector viruses.

Worms

A worm is a computer program which exploits security weaknesses in networks such as the Internet, replicating itself from machine to machine. It was estimated that the Mydoom worm infected a quarter of a million computers in a single day in 2004.

Stealth Viruses

There are many ways in which the virus writer tries to cause damage whilst avoiding detection. The stealth virus actively tries to conceal itself by making the computer behave normally until it’s ready to strike.

Trojans

The Trojan is a program with an apparently genuine function, but really designed to cause damage. It is not a virus since it does not replicate itself.

One such Trojan takes over a user’s e-mail and uses it to send offensive messages – damaging the reputation of the innocent user. Logic Bombs and Time Bombs are Trojans triggered when a certain event or date occurs, such as Friday 13th. BackDoor is a Trojan which connects to a victim’s computer across the Internet, causing damage such as deleting files and generally wreaking havoc.

Anti-Virus Software

The last ten years have seen the evolution of an ever-increasing list of computer viruses. Windows XP does not contain its own anti-virus software. However, several major companies have developed anti-virus software to detect and eradicate virus infection. Three of the leading software packages are Norton AntiVirus, McAfee VirusScan, and F-Secure Internet Security. These provide users with regular updates of virus definitions. Then the latest viruses can be detected and dealt with. Methods of dealing with viruses are discussed shortly.

The anti-virus software must find and destroy the existing base of many tens of thousands of known viruses. A small extract from the Norton AntiVirus Threat Explorer in the Norton Online Virus Encyclopedia is shown below.

Threat Explorer

The Threat Explorer is a comprehensive resource for daily, accurate and up-to-date information on the latest threats, risks and vulnerabilities.

Latest	Threats	Risks	Vulnerabilities	A - Z Threats and Risks	Search
Threats					
Severity	Name	Detected	Protected*		
	Trojan.Frozzle	07-15-2006	07-15-2006		
	Perf.ReumonI	07-14-2006	07-14-2006		
	Backdoor.Bifrose.F	07-13-2006	07-13-2006		
	W32.Docle	07-12-2006	07-13-2006		
	Backdoor.Haxdoor.N	07-12-2006	07-13-2006		
	Trojan.PPDropper.B	07-12-2006	07-12-2006		
	W32.Looked.P	07-12-2006	07-12-2006		
	W32.Looked.O	07-11-2006	07-12-2006		
	Infostealer.Coreplas	07-11-2006	07-12-2006		
	Trojan.Dachri	07-11-2006	07-12-2006		
	Trojan.Mdropper.K	07-10-2006	07-10-2006		
	Backdoor.Sdbot.AU	07-10-2006	07-10-2006		
	Backdoor.Pcdmint.B	07-10-2006	07-10-2006		
	VBS.Bkhlp	07-09-2006	07-10-2006		
	SymbOS.Mablrc	07-08-2006	07-08-2006		
	W32.Jaisbed.B@mm	07-07-2006	07-08-2006		

The anti-virus software must also recognize any “virus-like” activity, possibly caused by new and unknown viruses. Virus-like activity would include the computer trying to alter program files – this shouldn’t happen during the normal operation of the computer.

Some of the functions of anti-virus software are:

- To continually monitor the memory and vulnerable files, to prevent viruses entering the hard disc and spreading, causing havoc and destruction. The Auto-Protect feature in Norton AntiVirus is a *memory resident* program which is always running in the background.
- To allow the user to carry out *manual scans* to check the memory, floppy and hard discs, whenever it is felt necessary.
- To remove viruses by repairing or deleting files.
- To provide a list of definitions of known viruses, regularly updated and distributed to the user, usually via a download from the Internet.

The Anti-Virus Boot Disc or Emergency Disc

Should the hard disc become severely infected, a “bootable” floppy disc or CD containing the main virus repair program may be provided in the anti-virus software package. Alternatively the anti-virus package may provide instructions for downloading and creating an emergency disc.

If a virus strikes, the computer should be shut down to stop the virus spreading. Then the computer can be started from the “rescue” or emergency disc and the virus removed from the hard disc.

Features of Anti-Virus Software

When you buy a complete anti-virus package such as Norton AntiVirus, McAfee VirusScan, or F-Secure Internet Security, the package will usually comprise a suite of programs providing two different modes of scanning:

First, a scan available “on demand”, launched from the Windows menus, like any other piece of software. This is often referred to as a Manual Scan.

Secondly, a virus scanner which starts up automatically and runs continually in the background, checking files before they are used or as they are received from the e-mail server. Norton AntiVirus runs the Auto-Protect feature, shown below, from the time Windows starts up.

Auto-Protect status



symantec.

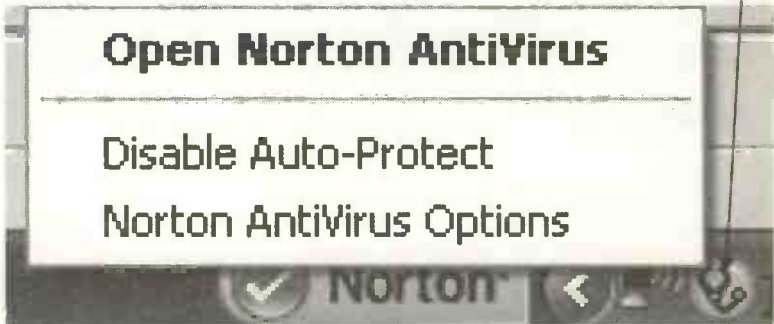
Keep Auto-Protect turned on at all times to prevent viruses from infecting your computer. Auto-Protect works in the background, without interrupting your work.

Auto-Protect does the following automatically:

- Detects and protects you against all types of viruses, including macro viruses, boot sector viruses, and memory resident viruses
- Detects and protects you against all types of Trojan horses, worms, and other malicious code
- Protects your computer from viruses that are transmitted through the Internet by checking all files that you download from the Internet, including Java applets and ActiveX controls
- Keeps your system safe at all times by checking for viruses every time that you use software programs on your computer, insert floppy disks or other removable media, and modify or access documents
- Monitors your computer for any unusual symptoms that may indicate an active virus

Disabling an Anti-virus Scanner

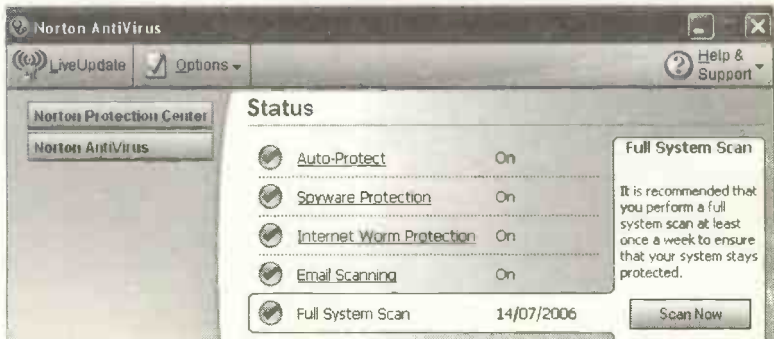
Anti-virus scanners which run continually may need to be temporarily *disabled* (but not permanently removed) while new software is installed. To temporarily disable the Auto-Protect feature in Norton AntiVirus, first right-click over its icon on the Windows XP taskbar.



Then click **Disable Auto-Protect** as shown above. The option menu changes automatically to **Enable Auto-Protect** to allow protection to be restored.

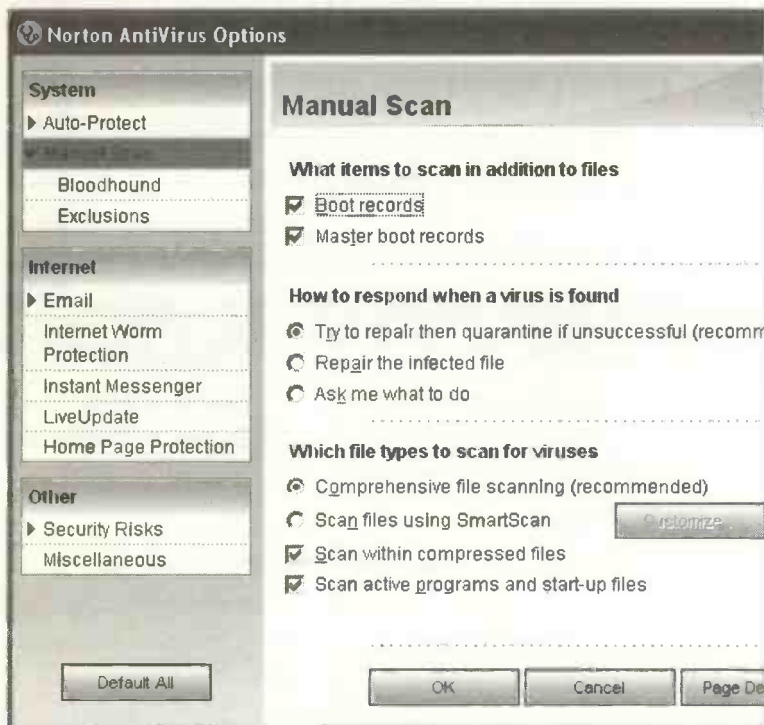
The Manual Scan

You can start this scan from the menu whenever you want, recommended at least once a week. A **Full System Scan** and a **Norton QuickScan** are available. This scanner also carries out the repair of files containing viruses.



If a Virus Strikes

If you suffer a virus infection, a warning message will appear on the screen, possibly accompanied by an alarm sound. The program can be set up to take a specific action if a virus is found, as shown below.



Normally the anti-virus program will try to “clean” the infected file by removing the illicit lines of code which constitute the virus. *Quarantine* in the above screenshot refers to a method of isolating unknown viruses, so that they cannot damage files on the hard disc. If Norton AntiVirus is unable to repair or quarantine an infected file, the file is deleted.

Updating Your Virus Definitions

Since new viruses are discovered constantly, you are advised to update your virus definition list at regular intervals, weekly say. Norton AntiVirus allows your virus list to be updated automatically when you connect to the Internet or when you select a **LiveUpdate** from the main window shown below.



Summary: Protection Against Viruses

- Obtain an established anti-virus package such as Norton AntiVirus, McAfee VirusScan, or F-Secure Internet Security. Install regular upgrades so that the virus definition list is always up-to-date.
- Always run a virus check on all discs acquired from elsewhere, even brand new packaged software.
- Check any files you distribute on floppy disc, CD or via the Internet, to make sure they are virus free.
- Carry out regular (weekly, say) manual or scheduled checks on all hard and floppy discs.
- Make sure you have a clean, i.e. virus free, write-protected anti-virus boot disc. This will allow you to start the computer after a virus attack.
- Arrange for your computer to boot up from the hard disc, in normal use. (You will need to boot from a floppy disc or CD in the case of a virus attack.)

The Phishing Phenomenon

Phishing usually involves the sending of a fraudulent e-mail claiming to be from a bank or building society, etc. The aim is to find out your security details so that they can steal from your account. The scam e-mail may have authentic-looking logos and ask you to verify your password and card details; legitimate organizations make it clear that they never ask for these security details by e-mail. There may be a link to online banking from the e-mail – genuine banks don't do this.

Scam e-mails are sent to a large number of people and the phishers don't know your name or details other than your e-mail address; genuine organizations normally include your name and perhaps your home address in an e-mail. In the past, some scam e-mails have included a lot of elementary spelling mistakes which the real organization wouldn't make. If you suspect an e-mail to be a scam you might forward a copy to your bank for investigation – then delete it from you computer.

Make sure your anti-virus and Internet security software is up-to-date and always download the latest security updates for Windows, etc.

Use a personal firewall, such as the one in Windows XP or F-Secure Internet Security. Keep your password and memorable words a secret and don't write them down. Make sure you are logged on to a genuine site, such as your bank. Unlike the phishers' fraudulent sites, this will display a padlock symbol which can be double-clicked to display a security certificate. Always log off your Internet banking site as soon as you've finished your transactions.



Using the Internet

Introduction

The scope of the Internet is so large that it's difficult for many of us to envisage exactly what it is. Some people think the Internet is too technical and difficult to use. Undoubtedly many people are put off by all the publicity about the widespread transmission of pornography and child abuse via the Internet. Older people may hear about young "whiz kids" hacking into banks and military establishments and think there is very little in the Internet for people of more advanced years.

Nothing could be further from the truth! The Internet and its billions of Web pages can be used for all sorts of everyday, non-technical purposes, which can benefit ordinary people of all ages and backgrounds.

For example, a home computer can be equipped with a cheap *Web camera* which would allow someone to see their grand children "live" in Australia while talking to them through a simple microphone.

At least one enterprising "retired" couple have set up a thriving business selling porcelain worldwide across the Internet – all from the comfort of their own home.

My own family are certainly not fanatical about the Internet and no-one spends more than an hour or two a week on the Net. However, listed on the next page are just a few of the things we have used the Internet for in the last few years.

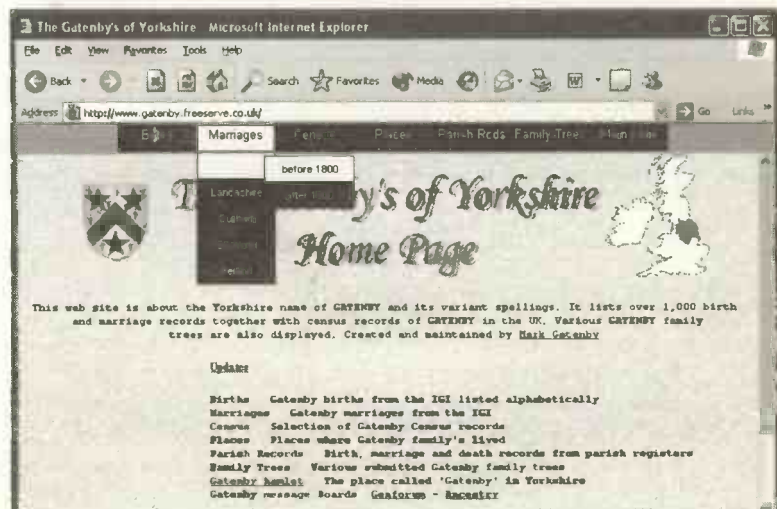
One Family's Use of the Internet

- Booked holidays after checking availability and “virtual tours” of the accommodation and locality.
- Found latest, high quality and helpful information about serious illness, provided by medical experts.
- Ordered weekly supermarket shopping online in a few minutes, saving several hours of “hassle”.
- Traced and renewed contact with a cousin in England, not heard of for nearly 40 years.
- Located unheard-of relatives in Canada. Received messages and family photographs by e-mail.
- Printed out a family tree, otherwise unavailable.
- Used *1901CensusOnline.com* and *1837online.com* to find details of relatives, including addresses, occupations and household members.
- Ordered books and music, delivered the next day.
- Received airline pilot's monthly roster by e-mail.
- Traced the source of the River Dove in the Staffordshire Moorlands.
- Received examination results online, almost 36 hours before a paper copy arrived in the post.
- “Downloaded” software and music from the Internet straight to our computer.
- Found up-to-date information about garden plants, shrubs and gardening equipment.
- Opened Internet bank accounts offering an above-average interest rate and on-line transactions.
- Listened to programmes over the Internet that had been missed when broadcast earlier on the radio.

What is the Internet?

The Internet is a network of millions of computers around the world, connected by cables and satellites. The World Wide Web is a collection of billions of pages of information covering every conceivable subject. A *Web site* is a collection of related pages, belonging to an individual person or an organization. The Web pages are stored on many thousands of computers, known as *Web servers*, scattered all round the world. In order to retrieve information from the Web, we must first log on to the Internet and then connect to the Web server containing the relevant pages. A program called a *Web browser* is used to navigate about the Internet and to view and retrieve information. The most commonly used browsers are Microsoft Internet Explorer (part of Microsoft Windows) and Netscape Navigator, part of the Netscape Communicator suite of programs.

Internet Explorer is shown below displaying a page from a family Web site, accessed by relatives all over the world.

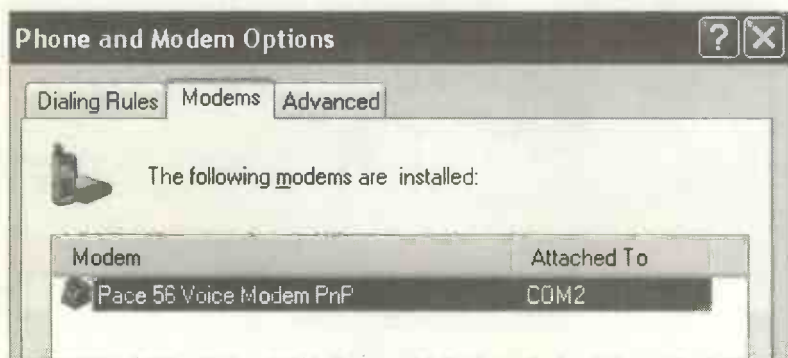


Connecting to the Internet

Most home users connect to the Internet via a device called a *modem* as discussed on page 29 of this book. The modem plugs into your computer either internally or externally. Many new computers are supplied with a modem already fitted. If you don't want to get involved with hardware, any computer shop should be able to install and test a modem in less than an hour. However, if you are happy to use a screwdriver and connect a few cables, it's a fairly simple task to buy a modem and fit it to your machine.

When you start the computer after fitting a modem, the Windows operating system will detect the presence of the new hardware. Windows may contain the necessary "driver" software to enable the new modem to work with your particular computer. Otherwise you will be asked to insert the CD or discs from your modem manufacturer.

When a modem has been installed correctly you can check for its presence by selecting **start, Control Panel and Phone and Modem Options**. (You may need to select **Switch to Classic View in the Control Panel**). If you double-click **Phone and Modem Options** and select the **Modems** tab you should see your modem listed, like the one shown below.



The purpose of a modem is to convert the information coming out of a computer into a form suitable for transmission across the telephone lines. To connect to the telephone lines you need a spare telephone socket in your home. This can be provided by a cheap plastic dual adapter obtainable from any hardware store.

The disadvantage with the modem connected into your only telephone line is that you cannot use the telephone while connected to the Internet. The BT 1571 service provides a way round this by enabling telephone messages to be recorded while you are using the Internet. Another way round this is to install a separate telephone line dedicated to the computer. This is rather expensive, but may be justified if you are using the computer for business or wish to receive a separate bill for the modem line.

Broadband Connections

The traditional *dial-up modem*, also known as the *56K modem*, may be too slow for some of the latest uses of the Internet. This applies if you wish to download, from the Internet to your computer, large files such as software, music, videos or photographs. The answer to this need for more speed is the *broadband* system, introduced by BT and others. A broadband system known as ADSL (Asymmetric Digital Subscriber Line) is widely used by home and small businesses. This converts a standard telephone line into a very fast Internet line. Comparing broadband with a normal dial-up modem line is like comparing a multi-lane motorway with a narrow country lane.

At the time of writing broadband is now firmly established, after a slow start in Britain, although some rural areas still can't access broadband because their telephone exchanges need modification.

15 Using the Internet

To obtain a broadband connection, you will need to subscribe to a broadband Internet Service Provider such as BT Broadband or AOL. You will also need to obtain a special *ADSL modem*. Alternatively, if your road has been dug up to install the cables for cable television, there are Cable Broadband services available from companies such as NTL. This requires a special *cable modem*.

If you are already connected to the Internet with an ordinary modem and want to know more about broadband, the BT Web site (<http://www.bt.com/>) has details of prices and equipment needed, as shown below.

The screenshot shows the BT Total Broadband website. At the top, there is a navigation bar with links for 'Homepage', 'At home', 'In business', 'About BT', 'Site map', and 'Contact us'. On the right, there are links for 'Login' and 'Register'. A vertical menu on the left lists various services like 'BT Total Broadband Broadband packages', 'Wireless Broadband', 'Online Security', etc. The main content area is titled 'BT Total Broadband' and 'Compare BT Broadband packages'. It includes a sub-header 'Monthly Payment' and a table comparing three options. Below the table, there is a section for 'Can you get broadband?' with a form to enter a telephone number or postcode.

	Option 1	Option 2	Option 3
Monthly Payment	£9.95 per month for first 6 months £17.99 thereafter ¹ 18 month contract	£14.99 per month for first 3 months £22.99 thereafter ¹ 12 month contract	£22.99 per month for first 3 months £26.99 thereafter ¹ 12 month contract
Useage	2 GB	6 GB	40 GB
Speed ²	Up to 8 Mb	Up to 8 Mb	Up to 8 Mb
WAP minutes ³	250	250	250

You can also enter your telephone number and find out if your local telephone exchange can deliver broadband.

Can you get broadband?

Enter your telephone number or postcode

Check >>

Here are some of the main features of a broadband Internet connection:

- Broadband can be over 100 times faster than an ordinary dial-up modem, making it possible to view films and music videos “live” from the Internet, a process known as *streaming*.
- Very large files such as software, pictures and graphics and music can be downloaded from the Internet. These are then saved on the hard disc of your computer.
- Once up and running, the computer is *always connected to the Internet*.
- A monthly fee of about £10 – £30 usually includes unlimited access to the Internet.
- You can use the telephone at the same time as the Internet – there’s no need for a dedicated line.

Businesses handling large volumes of Internet data and anyone needing to keep up with the latest technology would normally prefer a broadband connection, if available in their locality.

Of course, if you don’t need to work with large files, music and videos, or you don’t want or can’t afford to spend £10 – £30 a month on your Internet connection, you may well settle for a conventional modem. This will be very much cheaper (typically just a few pounds per month) and should be quite adequate for tasks such as searching the Internet for information and sending and receiving e-mails.

Don’t worry if you’ve not got broadband; although it’s now considered essential for businesses and “power” users of the Internet; many of us managed quite happily without broadband for years and lots of people still do.

Choosing an Internet Service Provider

Typically you pay the Internet Service Providers for their services by a monthly subscription, although in the last few years there has been a spate of “free” connection services. To avoid receiving enormous telephone bills, connection to the Internet via a dial-up modem must be available at the *local* telephone rate.

When you start to set up a connection to the Internet using Microsoft's New Connection Wizard, you are presented with a choice of companies known as *Internet Service Providers (ISPs)* such as America Online (AOL) and The Microsoft Network (MSN). Apart from enabling you to browse the World Wide Web and send e-mails, some of these services contain their own news, entertainment and information pages which are only accessible to subscribing members.

The screenshot shows the AOL UK homepage in Internet Explorer. The browser title is "Welcome to AOL UK - Microsoft Internet Explorer". The address bar shows "http://www2.aol.co.uk/". The page features a navigation menu on the left with categories like Email, AOL Home, Chat & Community, Dating, Entertainment, Games, Homes & Property, Lifestyle, Money, Motoring, Music, News, Shopping, Sport, Women, and Sitemap. The main content area includes a "Welcome" message dated Monday, 10 Jul 2006, a search bar, and a central article titled "Let's talk about, err... money, baby" with a photo of Gordon Gecco. Below the article is a "TOP STORIES" section with links to "Shale gunmen murder 41", "Tourists in Thailand trouble", "No survivors of jet crash", "Island stars share beds", "Nuclear weapons 'anti-God'", and "Eight start for SL shares". At the bottom, there is a "TODAY'S FORECAST: London 19°C" and a "SHOPPING" section with "Summer's hot bikkis" and "Weekend breaks".

Many of the Internet Service Providers offer a free evaluation period (120 hours, say) but you will still need to give your credit card details at the outset. If you don't wish to continue at the end of the evaluation period you need to cancel your membership to avoid charges.

CDs containing Internet connection software are often provided free on the front of magazines and in shops and supermarkets. Or you may receive Internet free trial CDs in the post, if your name and address have found their way onto the Internet Service Provider's mailing list.

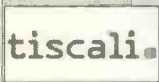

Some criteria for choosing an Internet Service Provider might include:

- Speed and reliability when connecting to the Internet.
- Telephone access numbers available at *local* telephone rates (if using a dial-up modem).
- The monthly or yearly subscription charges.
- The number of e-mail addresses per account.
- The quality and cost of the telephone support service.
- Support for the latest technology, including broadband.
- In the case of services providing content, the quality and quantity of the pages of information – news, sport, travel, weather, etc., and their value for research and learning.
- The amount of Web space available for subscribers to create their own Web sites and any charges for this facility.
- Controls available for parents (and grandparents) over children's access to inappropriate Web sites.

15 Using the Internet

It's very easy to be confused by the large number of competing deals offered by the Internet Service Providers. A good source of help is the computing press, which regularly publishes helpful comparisons of the various ISPs and their charges. If possible talk to people who have experience of using various Internet Service Providers.

If you already have access to the Internet, perhaps through your local library or an Internet café, you can find a lot of information about Internet Service Providers by simply entering the abbreviation ISP into a search engine such as Google or MSN. This finds lots of Web sites giving comparisons of the major Internet Service Providers such as BT, AOL and Tiscali. It also states whether broadband services are available in your area of the country

	<ul style="list-style-type: none">• £14.99 per month for unlimited 2Mb (40x speed) broadband + phone bundle including free weekend calls• £17.99 per month for unlimited up to 8Mb (160x speed) broadband + phone bundle including free weekend calls• £19.99 per month for unlimited 2Mb (40x speed) broadband + unlimited free local and national UK calls• Free connection - save £50• Free modem - save £50• Free local and national phone calls every weekend - savings on standard BT call rates at other times• Free e-mail anti-spam & anti-virus service <p>Got any questions about ordering Tiscali Broadband? Call FREE on 0800 458 1800 to speak to the Tiscali Broadband sales team and order broadband today. (Lines are open 8am to 10pm, seven days a week)</p> <p>www.tiscali.co.uk/broadband</p> <p>Click here for more information on this offer</p>
	<ul style="list-style-type: none">• £9.95 per month up to 8Mb (160x speed) BT Total Broadband - special offer for first 6 months (usually £17.99 per month) - upgrade to BT Home Hub wireless for only £30 (on-line orders only) - <i>2GB monthly usage allowance included (regular user)</i>• £14.99 per month for up to 8Mb (160x speed) BT Total Broadband - special offer for first 3 months (usually £22.99 per month) - free wireless BT Home Hub router (on-line orders only) - share your broadband connection without wires - free PC security software from Norton + identity theft support - <i>6GB monthly usage allowance included (heavy user)</i> - <i>upgrade to 40GB monthly usage allowance for £22.99 per month</i>

Making a Broadband Internet Connection

Major broadband Internet Service Providers include AOL, Tiscali and BT. For a listing of their offers, log on to Web sites such as www.broadbandchecker.co.uk or UKOffer.com. These and similar sites can be found by entering the abbreviation **ISP** into a search engine such as Google. A major consideration is the speed of data transmission, ranging from 1Megabit/sec to 8Megabits/sec with a corresponding range of prices from about £10 to £30.

When you subscribe to a service such as BT Broadband, you will be supplied with a kit containing everything you need. However, before you can actually make your connection to the Internet, the telephone line from the exchange to your house has to be *activated* or “broadband enabled”. The BT Broadband Pack includes a special ADSL modem which plugs into a USB port on your computer. There should also be a *filter*, a small plastic box which enables both the ADSL modem and an ordinary telephone to plug into the broadband-enabled telephone line. Finally the broadband pack contains a software CD for “driving” the modem and an easy-to-follow instruction booklet. This explains how to connect the modem and get online with a username and password (if applicable).

Wireless (Wi-Fi) Networking

If you have two or more computers, a *wireless router* allows several machines to share a single broadband Internet connection. The router may be “standalone” or part of an ADSL modem connecting one machine to the broadband-enabled telephone line. Each of the other machines is fitted with a *wireless (Wi-Fi) LAN adapter* in the form of an expansion card or a *dongle* which plugs into a USB port in the computer

Making a Connection Using a Dial-up Modem

This section applies to computers fitted with a dial-up or 56K modem and running Microsoft Windows with a Web browser such as Microsoft Internet Explorer or Netscape Navigator. There are several ways to make a new dial-up connection with an Internet Service Provider. All of them require you to provide the same information, i.e. your name and address, telephone number and credit card details.

During the creation of the new connection you will set up a *User Name*, i.e. the name you use to log on to the Internet. You will also create or be assigned a unique *Password* and one or more *E-mail Addresses*.

There are several ways to launch the process of connecting to an Internet Service Provider. You can use a free CD from the Internet Service Provider or you can use the **New Connection Wizard** in Windows XP. Additionally, if you know the telephone number of your chosen ISP and have obtained a User Name and Password the connection can be set up manually.

Creating an Internet Connection Using a Free CD

You can often pick up a free CD in many of the big supermarkets and computer stores. This will enable you to connect to an ISP such as AOL and may give a free trial period of perhaps 30 days or so. Place the CD in the drive and wait for it to start up automatically (a process known as “autobooting”).

You will be asked to enter a temporary User Name (sometimes also called a *User ID* or a *Reg Number*). You may also be asked to enter a temporary password. This temporary information is normally printed on the cardboard case of the free CD. With this information you will be able to connect to the ISP and enter all of your personal information and credit card details. You should also be able to set up your own personal User Name and Password and also your e-mail address. At the same time make a note of the telephone number for cancelling this Internet account, if it is a time-limited free trial which you may not wish to continue at the end of the trial period.

Using the Windows New Connection Wizard

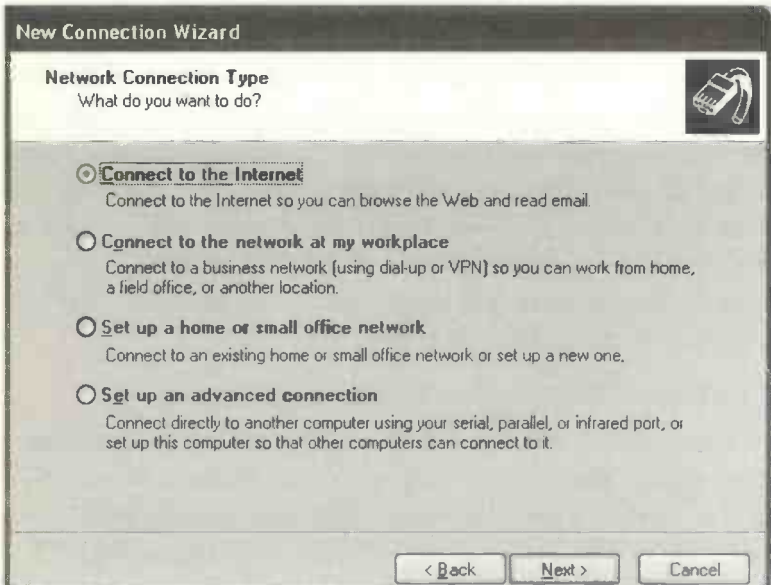
If you haven't obtained a free CD you can use the **New Connection Wizard** in Windows XP to obtain a list of ISPs in your area. Then choose an ISP and complete the new connection by entering all of your details on-line. The process can be started by launching the **New Connection Wizard** from **start, Connect To, Show all connections and Create a new connection**, as shown below.



Choose **Connect to the Internet** from the **New Connection Wizard** shown above.

15 Using the Internet

On clicking **Next**, the wizard presents a choice of the types of connection shown below.



After selecting **Connect to the Internet** then **Next** you are asked to choose a method to set up your Internet account. Select the first option, **Choose from a list of Internet service providers (ISPs)**. This involves connecting to the Microsoft Internet Referral Service for a choice of available Internet Service Providers. Then you must select between:

- **Get online with MSN.**
- **Select from a list of other ISPs.**

Choosing the first option above will enable you to sign-up for the Microsoft Network. Taking the second option above will create a temporary dial-up connection to the Microsoft Internet Referral Service, which displays a list of Internet Service Providers accessible to your part of the country.

Setting Up an Internet Connection from a List of ISPs

The left-hand panel of the Microsoft Internet Referral Service lists the available Internet Service Providers. The right panel presents the packages on offer by the ISP currently highlighted in the left-hand panel. If you select one of the ISPs in the left-hand panel, then click **Next**, you are presented with a form requesting your name and address, etc. After completing the form you will be connected to the ISP server where your User Name, Password and E-mail are set up and you will be required to give details of your credit card. You may also be able to choose, from a list, the phone number which your computer will use to connect to the Internet Service Provider.

You are advised to check with your telephone company that all Internet connections will be charged at the *local rate*. If you're a BT subscriber, you might wish to add your ISP's phone number to your list of BT Friends and Family frequently-used numbers attracting discounts.

Using Your New Internet Connection

At the end of the connection process you should be able to log on to your chosen Internet Service Provider and, amongst many other things, "surf" the Internet, search for information and send and receive e-mails, as discussed shortly. You may also wish to create your own Web site or take part in the latest "blogging" phenomenon.

These subjects are also discussed in more detail in my companion books "The Internet for the Older Generation", reference BP 600 and "How to Make Your Own Web Site for the Older Generation", reference BP 610, both part of the very successful Older Generation series from Bernard Babani (publishing) Ltd.

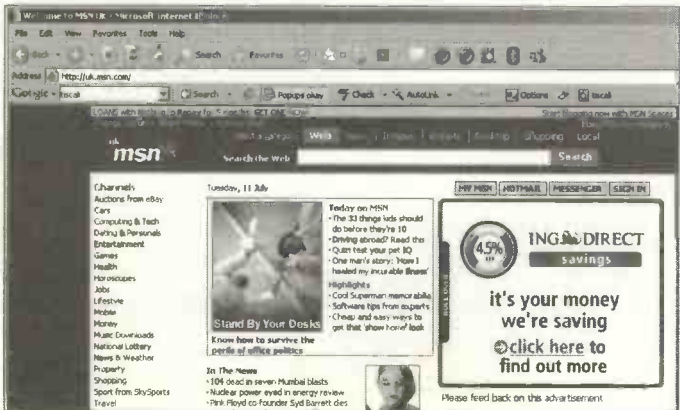
15 Using the Internet

Finding Information

Searching for information is carried out using a Web browser such as Internet Explorer, part of the Windows operating system. First you need to launch the browser from the **start** menu or perhaps an icon on the Windows Desktop. Then you will need to enter your user name and password and connect to the Internet. You may also need to click a **Connect** or **Dial** button at some stage.



Once you are connected to the Internet, you will see the Home Page of your ISP, such as MSN, shown below.



Apart from a large number of advertisements, you can read the latest news items and select pages on topics as diverse as business, health and beauty and travel.

Using a Web Address to Connect to a Web Site

Every Web site has a unique address such as:

http://www.mywebsite.com

If you know the address of the required site, enter this into the address bar at the top of the Web browser as shown below.



When you press **Enter** your Web browser should find the Web site and display its Home Page on the screen. You can then move about the Web site by clicking on various *links*



to other pages. Links are usually words which are underlined when the cursor is passed over them. Also, when you pass the cursor over a link, the cursor changes to a hand. Pictures are also used as links.



If you find a Web site which you think may be useful in future, a link to the site can be saved using the **Favorites** menu on the menu bar in Internet Explorer as shown on the left.

15 Using the Internet

To return to the Web site at a later date, log on to the Internet, click **Favorites** on the menu bar and then select the required site in the drop-down list of **Favorites**. This should connect your computer to the required Web site.

Key Word Searching

You can find information about virtually every subject under the sun by entering key words into the search slot in your Web Browser as shown below.



After clicking the **Search** button shown above, the Internet is searched and a list of results is presented as shown below. Each item in the list is an extract from a Web site containing references to the key word or words.



You can see from the previous list of search results that the search found 81,865 Web sites all containing references to the words **Greater spotted woodpecker**. One such search result is shown below.

British Garden Birds - Lesser **Spotted Woodpecker**

The male Lesser **Spotted Woodpecker** both drums its bill an Lesser **Spotted Woodpecker**:

www.garden-birds.co.uk/birds/lesser_spotted_woodpecker.htm 

Clicking on any of the links in the search results (shown underlined above) takes you to a Web site, e.g. www.garden-birds.co.uk/, etc., shown above.

You may well wonder how anyone can make any sense of 81,865 search results. In fact, a search can be narrowed down to eliminate the least relevant results. When we searched for **Greater spotted woodpecker**, the search would find all those Web pages which contained the words **Greater, spotted and woodpecker** *anywhere* within them. For example, a Web site containing the sentence "I spotted a woodpecker in Greater Manchester" would also match the key words as entered, but would probably not be very relevant. We can avoid this and narrow down the search by enclosing the key words in inverted commas:

Web Desktop News Images Local Encarta

"Greater spotted woodpecker"

Search 

+Search Builder Settings Help

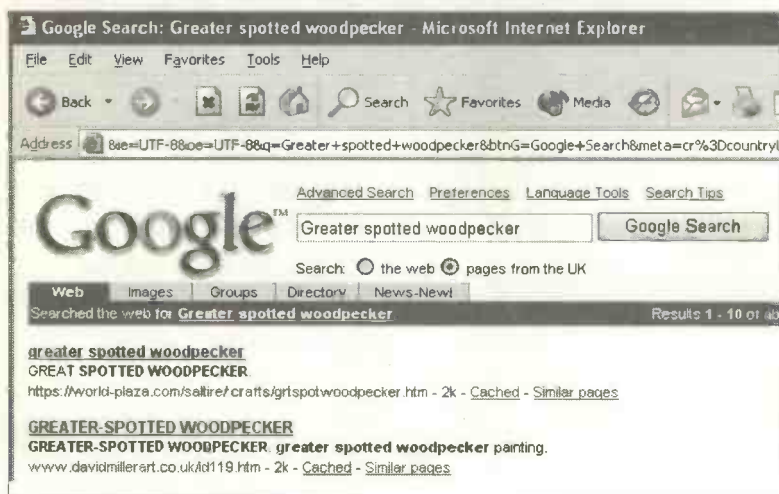
Only from United Kingdom

15 Using the Internet

The inverted commas mean the results will include only those Web sites where the words **Greater spotted woodpecker** appear next to each other and in that order. After carrying out this modified search only 3,293 Web sites were found. By careful choice of key words for your searches you can eliminate many irrelevant entries in the search results.

Using the Google Search Engine

Apart from the search facilities built into Web browsers like Internet Explorer, there are a number of independent programs which can be used separately. Google is a very powerful, easy to use and popular “search engine” and can be accessed from <http://www.google.co.uk>.



Searching is covered in more detail in the companion volume to this book, entitled “The Internet for the Older Generation” from Bernard Babani (publishing) Ltd, reference BP600.

Tracing Your Family History

The Internet has made tracing your ancestors much easier. For example, typing a relative's name into a key word search (as discussed previously) is quite likely to yield some relevant information. You will probably need to narrow it down with additional key words such as place names. If the person has been involved in sport, clubs, academic research, business or great disasters, for example, you are likely to find plenty of references.

The 1901 Census Online allows you to find family groups living at particular addresses. For each family member you can find their name, place of birth, occupation, age and marital status, etc. You can view copies of the handwritten forms completed by the census enumerators in 1901.

Some useful Web sites including hints and tips about researching family history are:

www.census.pro.gov.uk

www.ancestry.com

www.genuki.org.uk

www.familyrecords.gov.uk

www.lookupuk.com

www.rootsweb.com

You may find that someone has already started a Web site for your family and saved you a lot of hard work. This was the case in my own family, where a very comprehensive site has been created by Mark Gatenby. The site includes a *forum* (shown on the next page) where notices can be posted asking for information about relatives. Through the forum I was able to re-establish contact with a cousin not seen for nearly 40 years and also exchange e-mails with previously unknown relatives in Canada. Mark's site can be found at:

www.gatenby.freemove.co.uk

Gatenby Family Genealogy Forum (25 Latest Messages)

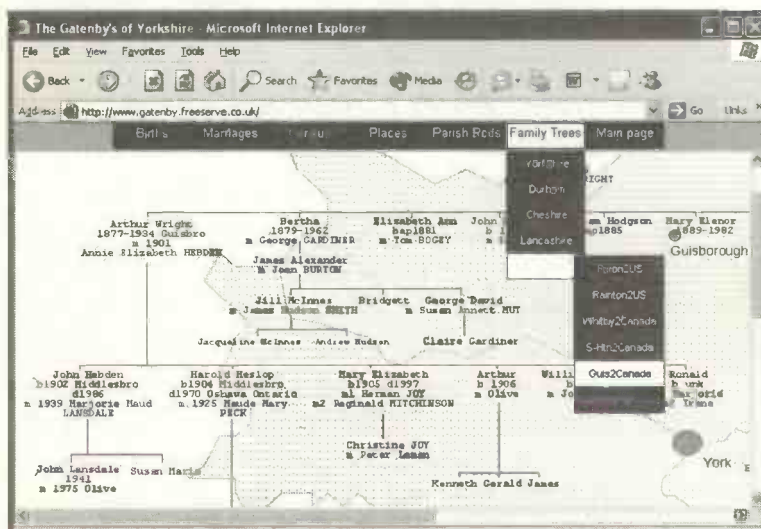
[Post New Message](#)
[Latest Messages](#)
[Today's Messages](#)
[Last Seven Days](#)

[Return to Main Page](#) | [Next Page](#)

- [Re: Victor Gatenby/Minam Scriminger married Leeds 1906 - Teresa Rossi 3/03/06](#)
- [Re: Victor Gatenby/Minam Scriminger married Leeds 1906 - Mark 3/02/06](#)
- [Re: Victor Gatenby/Minam Scriminger married Leeds 1906 - Teresa Rossi 3/01/06](#)

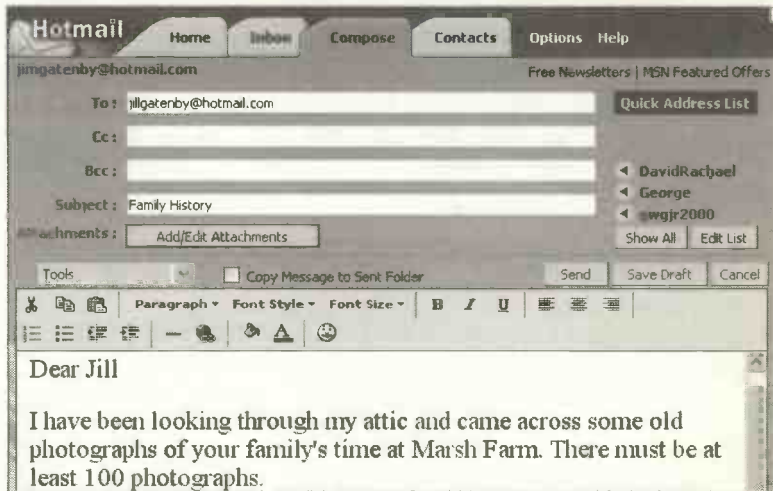
This Web site has numerous pages of family records accessed via menus such as Births, Marriages, Census, Places, Parish Records and Family Trees, as shown below.

From this I was able to view (and print out) my own family tree, "Gatenbys from Guisborough and to Canada".



Using E-mail

E-mail is a method of communicating between people around the world. Most e-mails consist of a text message, typically a paragraph or two long. Longer documents can be sent as e-mail *attachments*, as discussed shortly.

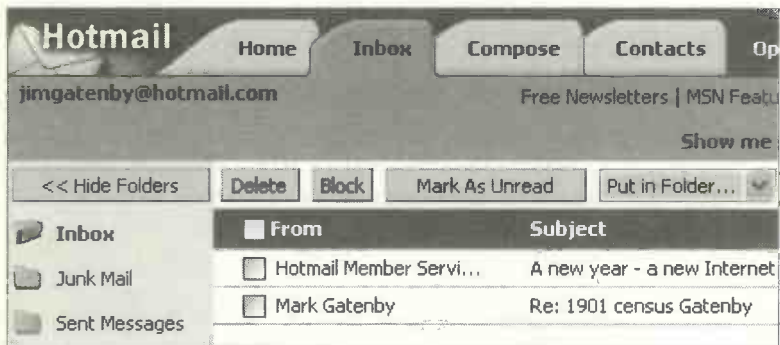


Simply type in your message as shown above. You must enter the e-mail address of your intended recipient(s) in the **To:** slot and make an entry next to **Subject:**. **Cc:** and **Bcc:** allow you to send “carbon copies” to other people. After you have typed in your message click the **Send** button and the message will travel *almost instantly* to the Internet Service Provider used by the person receiving your e-mail.

- If your e-mail contact is not currently logged on they will receive your message next time they connect to the Internet and read their e-mail.
- If your contact is logged onto the Internet they should be able to read the message almost immediately.

15 Using the Internet

The new mail will be saved in the **Inbox** of the recipient. From here they can read the message, delete it, print it on paper or save it in a folder.



Windows comes with the e-mail program, Outlook Express. If you subscribe to an Internet Service like AOL, this has its own e-mail program, often called an e-mail *client*.

To start sending and receiving e-mails you will need:

- A computer with a connection to the Internet via a modem.
- An e-mail program such as Outlook Express included as part of Microsoft Windows.
- An e-mail account set up with an Internet Service Provider, including a *user name* and *password*.
- You own unique e-mail address such as **johnsmith@hotmail.com**.
- The e-mail addresses of people you wish to correspond with.

E-mail Addresses

When you sign up for an Internet account you will be able to choose, or be given, your own e-mail address. This is a unique location enabling your mail to reach you from anywhere in the world.

Common types of e-mail address are as follows:

stella@aol.com

james@msn.com

enquiries@wildlife.org.uk

The part of the e-mail address in front of the @ sign is normally your Internet *user* name or *login* name. The second part of the address identifies the mail server computer at your company, organization or Internet Service Provider. The last part of the address is the type of organisation providing the service. In the previous addresses **.com** refers to a commercial company. Other organisation types include:

.edu education

.gov U.S. government

.org non-profit making organisations

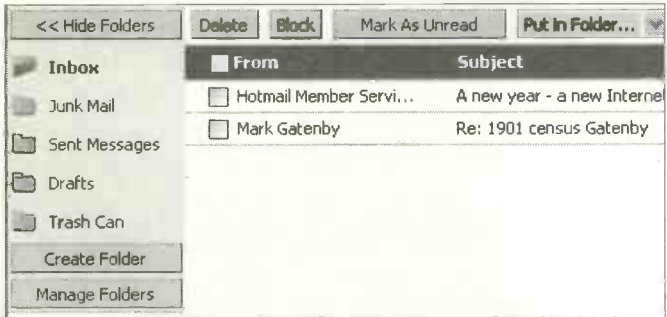
.co UK commercial company

A two-digit country code such as **uk** or **fr** may be added to the end of the e-mail address.

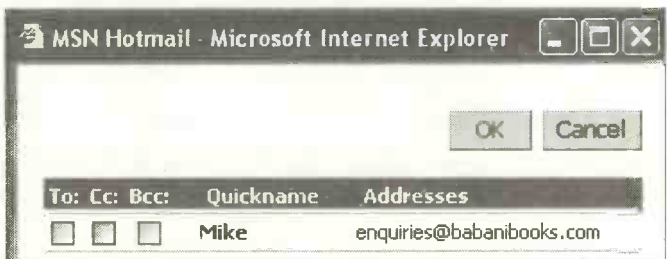
15 Using the Internet

Some of the main features of e-mail programs are:

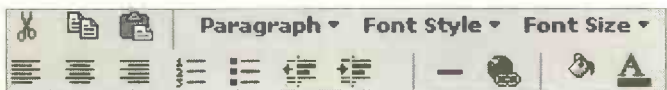
- Copies of **incoming** and **outgoing** messages are saved in special folders such as the **Inbox** and **Outbox** or **Sent Messages** folder. You can also create and manage your own folders for organising your e-mail, as shown below.



- An *address book* can be created listing all of your contacts. This saves typing their address every time you send them a message – you simply select it from the address book and click **To:**, **Cc:** or **Bcc:**.



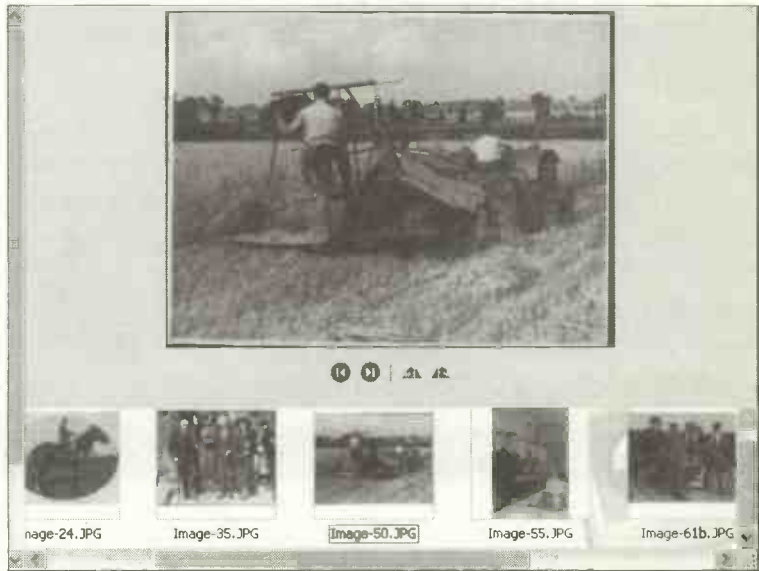
- Text in messages can be enhanced with the help of a range of different formatting and editing tools.



E-mail Attachments

An attachment is a file which is “clipped” onto an e-mail and sent with it. The attachment could be a report done on a word processor, a spreadsheet, a drawing or a photograph. This would enable you, for example, to send a family photograph to friends or relatives in Australia or America.

If you do a lot of work with photographs, Windows XP has a **Filmstrip** option in the **View** menu allowing you to scroll through your photograph collections on CD or hard disc.



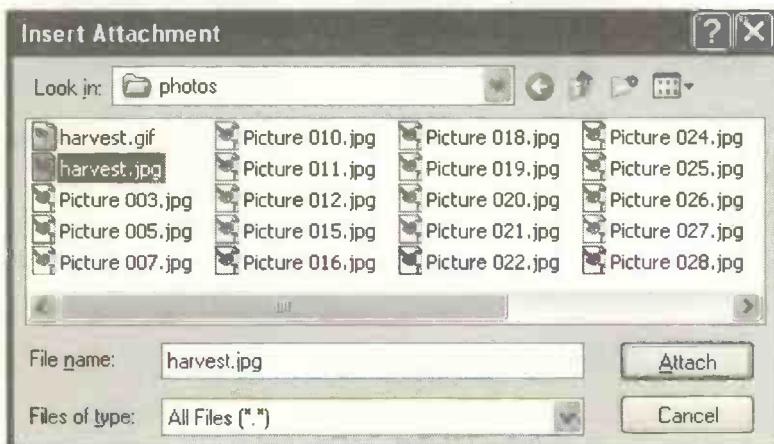
If you are planning to send a lot of photographs or very large files as attachments to e-mails, it is worth considering a broadband connection as discussed earlier. Photographs can take a long time to send and receive by e-mail, using an ordinary modem. Broadband would enable you to send photographs to friends and relatives around the world in a fraction of the time taken using a conventional modem.

15 Using the Internet

If you do send photographs by a conventional modem, they should have been saved as .jpg (or .jpeg) files. This is a special compact file format used for photographs. You might also *compress* photographic files using a program such as Paint Shop Pro. This program can also be used to save photographs as files in the .jpg format. For example, a photograph might have been originally saved as a .bmp file, the standard Windows graphics file format. The .bmp file would be loaded into a program like Paint Shop Pro. Then it is re-saved in the normal manner but with the file name extension .jpg added, such as **harvest.jpg**, for example.

Sending an Attachment

The general method for sending an attachment is the same whatever e-mail program you are using. The new e-mail message is addressed in the **To:** bar and the text typed in the usual way. Then you select the **Attach:** menu option or click the **Attach** icon to bring up the **Insert Attachment** window shown below. This allows you to browse through the folders on your hard disc to find the file you wish to attach to your e-mail.



After clicking the **Attach:** button shown on the previous screenshot, the name of the attached file appears in the **Attach:** bar in the e-mail window as shown below.



As shown above, you can test your system by sending a message, with an attachment, to your own e-mail address.

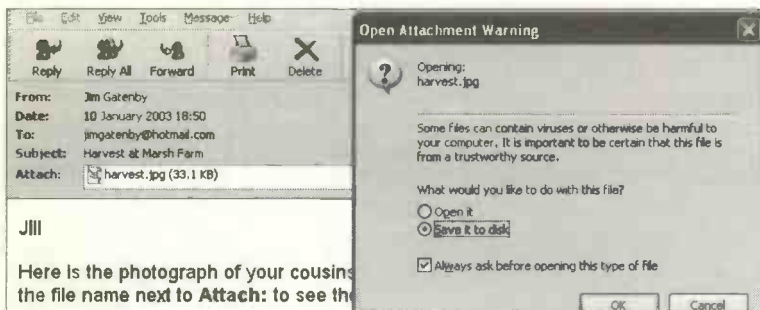
Receiving an E-mail Attachment

After you click **Send**, the e-mail and its attachment will travel to the **Inbox** of your intended contact. The presence of the attachment in the **Inbox** is indicated by a paperclip symbol next to the entry for the e-mail as shown below.

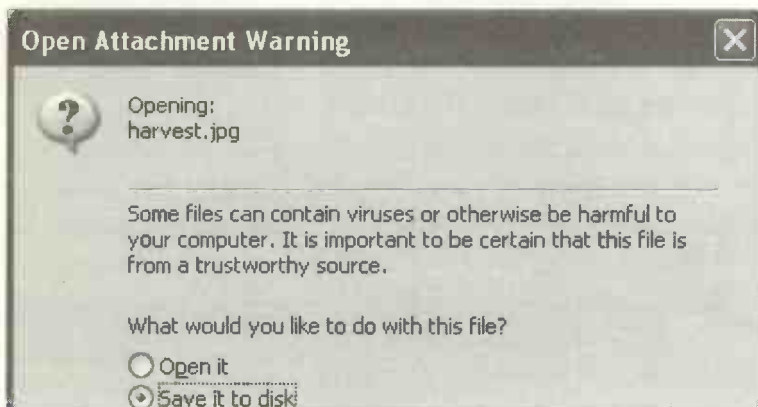


When the e-mail is opened by double-clicking its **Inbox** entry as shown in the above screenshot, the name of the attachment appears in the **Attach:** bar as shown in first two screenshots on the next page.

15 Using the Internet



First you need to double-click the name of the attachment, **harvest.jpg**, as shown above and on the right. Then, in Outlook Express, the **Open Attachment Warning** shown below asks you to either open the attached file or save it to a folder on your hard disc.



All e-mail attachments should be checked before opening them, using an anti-virus program like Norton AntiVirus or F-Secure Internet Security. If you are using MSN Hotmail, incoming and outgoing attachments are checked automatically using McAfee VirusScan.

The Windows Media Player

Introduction

Windows XP and Windows Me include the popular feature, Windows Media Player. Amongst other things, this allows you to create a library of your favourite music and play video clips on your computer. So, for example, a relative could e-mail a video clip of their children which you could view on your own computer. You can choose from a long list of designs, known as *skins* for the appearance of your virtual media player, such as the Windows Classic design shown below.



16 The Windows Media Player

The Windows Media Player is far more versatile than a conventional music centre or video player. The following is a list of some of the things you can do with the Windows Media Player:

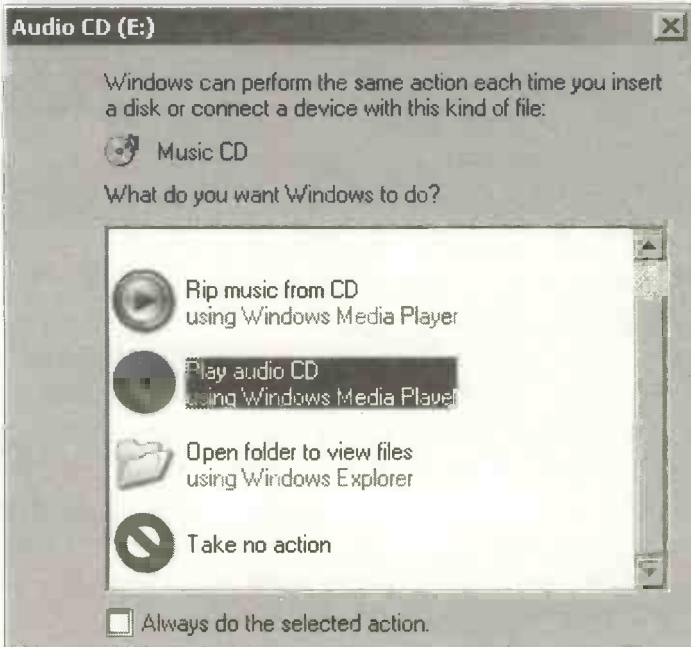
- Play your favourite music in the background while working away at the computer on a task such as word processing, etc.
- Copy music from CDs to your hard disc, so that you no longer need to find and insert CDs.
- Organise and manage audio and video files by creating your own playlists in the **Library**.
- “Burn” your own audio CDs by copying music from your hard disc to the CD.
- Download or “stream” (play directly) audio and video clips from the Internet.
- Use the **Radio Tuner** to find and listen to radio stations of all types on the Internet across the world.
- Choose from a range of **Visualisations** – animated patterns which move in time with the music. An ample number of visualizations are supplied and you can download even more from the Internet.
- Change the styling of your on-screen media player using the **Skin Chooser**.
- Watch video clips and edit them in Windows Movie Maker. (Part of Windows XP rather than the Media Player but included as it is a multi-media feature).

Starting to Use the Media Player

The media player is part of Windows XP and Windows Me and can be launched from **start**, **All Programs** and **Windows Media Player**. (If you do not have Windows XP or Windows Me, the media player is available separately).



The media player can also be started by placing an audio CD in the drive, then selecting **Play Audio CD...** as shown below in the **Audio CD** window which appears.



To use the media player for background music while freeing the screen for other tasks, click the minimize button (shown right) on the top right of the window. The media player will continue in miniature (shown right)



on the Windows Taskbar at the bottom of the



screen. Click the icon on the bottom right to restore the media player to its full size.

Skin Mode

The media player can be switched between the Full Mode (shown previously) and the Skin Mode shown below. This is done by selecting Skin Mode from the View menu across the top of the media player window in Full Mode or by clicking the icon (shown right) on the lower right of the media player. In the screenshot below the Windows Media Player is shown in Skin Mode against a background of the Windows Desktop.



Copying Music from CDs to Your Computer

It's very convenient to make copies of your favourite CD tracks onto your hard disc. This means that the music you enjoy is always available while you are working at the computer. You don't have to search around for CDs and keep swapping them in the drive. You can also copy just a selection of your favourite tracks and it's possible to organize these into personalized playlists.

To begin the copy process, place the required CD in the drive and select **Rip music from CD** from the **Audio CD** dialogue box which pops up, as shown on page 297. Alternatively you can click the **Rip** button near the top of the screen or the **Rip Music** button at the bottom right. By default, all of the tracks are ticked, but you can exclude tracks by clicking to remove the tick.



Rip music from CD
using Windows Media Player



The Library

After you have copied the CD, its details are displayed in the **Library**, accessed via its own button as shown below. Down the left-hand side of the library is a list of folders similar to the Windows Explorer.



Your music is categorized automatically into the **Genre** – Classical, Jazz, Rock/Pop, etc., and you can also select records by **Artist**, **Composer**, **Year Released**, etc.



The **Library** lists all of your audio and video files and allows you to compile your own playlists, or groups of your favourite records. Then you can select a playlist and listen to just those particular records whenever you want.

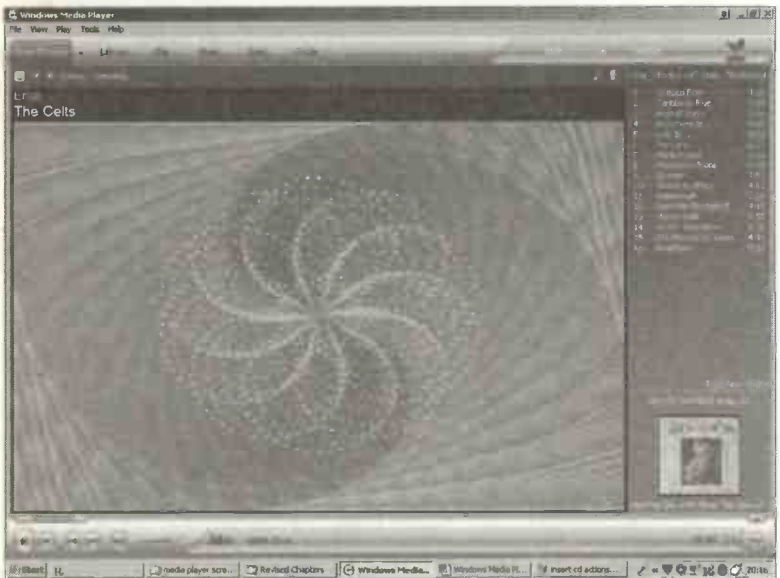
16 The Windows Media Player

Playing Music from CD or Hard Disc

To play music from a CD, simply insert the CD in the drive and the media player will start up automatically with the **Now Playing** feature selected. To play music which has been copied to your hard disc, start the media player and open up the **Library**. Select the required playlist or album from the left-hand panel and click the **Play** button to start the music.



Click the **Now Playing** button to display the currently selected visualization as shown below.



You can cycle through the visualizations using the arrows, shown, in this example, next to **Ambience: Random**.



The Guide

Clicking this button connects you to the Internet and the Windows Media Guide.

On this page there are links to various multimedia sources. Here you can select



from a range of online music stores and purchase and download music to be saved on your hard disc. You can also connect to various online radio stations and listen to music directly. You can watch videos using a process known as “streaming”; the multimedia files are not recorded on your hard disc but instead you watch them as they are being downloaded. If your Internet connection is via a dial-up modem, the performance of streamed video is very limited. *Broadband connections*, such as ADSL and cable modems, operating many times faster than the traditional modem, are much more suitable for streaming.

Copying Music from Your Hard Disc to a CD

Windows XP includes its own CD burning software, described earlier in this book, for the copying of data files to CD. CD-R media can only be used for one recording session, while music copied to the reusable CD-RW may not be compatible with certain types of CD player.

Place a blank CD in the CD drive. Now click the **Burn** button and then click **Burn List**. Select the required playlist from the list which appears on the left of the screen; the titles of the selected records should be listed in the left-hand panel of the **Burn** screen. Now click **Start Burn** to copy the selected music to the CD.

You should only use the **Burn** feature in the Windows Media Player to make a single CD copy of music you have bought legally, perhaps from an online music store.

Windows Movie Maker

This component of Windows XP and Me allows you to view and edit videos. The program is launched from **start, All Programs, Accessories and Windows Movie Maker**. You may be able to view a sample video provided in Windows XP by selecting **File, Import..., My Documents and My Videos** then selecting **Windows Movie Maker Sample File.wmv**. (File may not be installed on every computer)



Select **Open** and a series of clips are created as shown above in the middle panel. The video is divided into clips for ease of editing. A clip can be edited by cutting or trimming and a voice-over can be added.

The *timeline* along the bottom simulates a piece of film. Clips can be dragged and dropped onto the timeline to make a film in a particular sequence. Then the complete film can be played by selecting **Play Entire Storyboard /Timeline** from the **Play** menu. Video clips can be sent to friends and relatives as e-mail **attachments**.

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