

University of Sydney

School of Public Health

Introductory computer and Internet skills tutorial



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Introduction to computers

A Personal Computer (PC) comprises computer hardware and software. The hardware for a basic system is made up of the system unit (memory, central processing unit and disk drives), screen, keyboard and mouse. The software refers to programs which are required to make the hardware function. Most PC systems use Microsoft Windows software as the Operating System. The operating system is the basic interface between the computer hardware and the user, and performs basic functions such as organising files and running applications. Applications programs are required for tasks such as word processing, email, statistical analysis and database management.

Hardware

Central Processing Unit (CPU)

The CPU performs all calculations as well as coordinating the operation of the computer. When you hear a PC referred to as a Pentium III, or Celeron etc, this is a reference to the CPU model. Any numbers after these terms (such as 1.6 GHz) refer to the speed of the CPU.

Memory

Random Access Memory (RAM) is used to store information that is required while software is running. This memory is temporary, and only functions when the power is on. Disks are used for long-term storage of information (see below).

Disks / Disk Drives

Disks are used for long-term storage of information. Most PCs have a hard disk which is in the system unit. This is usually known as the C: drive. Some systems may also have D:, E:, F:, H: or G: hard disks.

Organisation of Information on Disks

Files

Information is stored on disks in the form of a file, where a file contains information such as a letter, a program or a set of data. In Windows, files are given names that can be up to 255 characters long, and may contain spaces, for example

Introduction to PCs and Windows - 2004.wpd is a valid file name.

A file name should be chosen which makes the nature of the information readily identifiable.

Folders

When there are a large number of files on a disk (particularly a hard disk), it is sensible to organise them into logical groups. This is done by creating sections on a disk called folders and storing groups of files which logically belong together in this folder. Similarly, folders can be further subdivided into sections called subfolders. Under Windows, folders and subfolders can have long names (up to 255 characters) just like filenames.

Every file has a unique 'address' known as a path name. The path name indicates which folder (or subfolder) contains the file. The path name starts with the drive that the file resides on, followed by a colon. For example:

A:\TEST.DAT refers to a file called **TEST.DAT** on a floppy disk in the **A:** floppy disk drive.

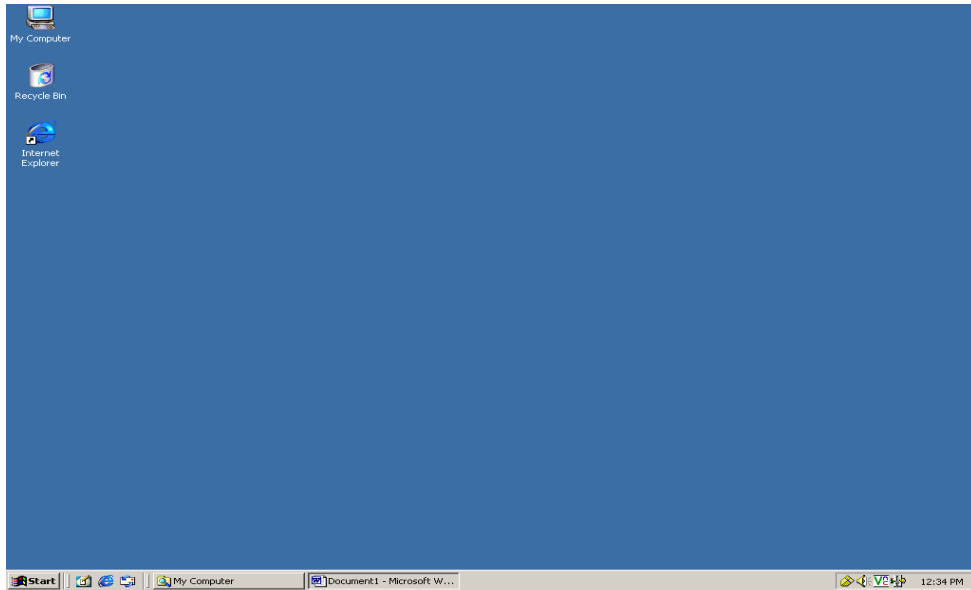
Folders and subfolders are indicated by a backslash "\". For example,

G:\PUBLIC\REPORTS\FINAL DRAFT.DOC refers to a file called FINAL DRAFT.DOC which resides in a subfolder called REPORTS, within the PUBLIC folder on the G: drive (hard disk).

(NOTE: Use the backslash "\" when specifying a path name).

Introduction to Windows

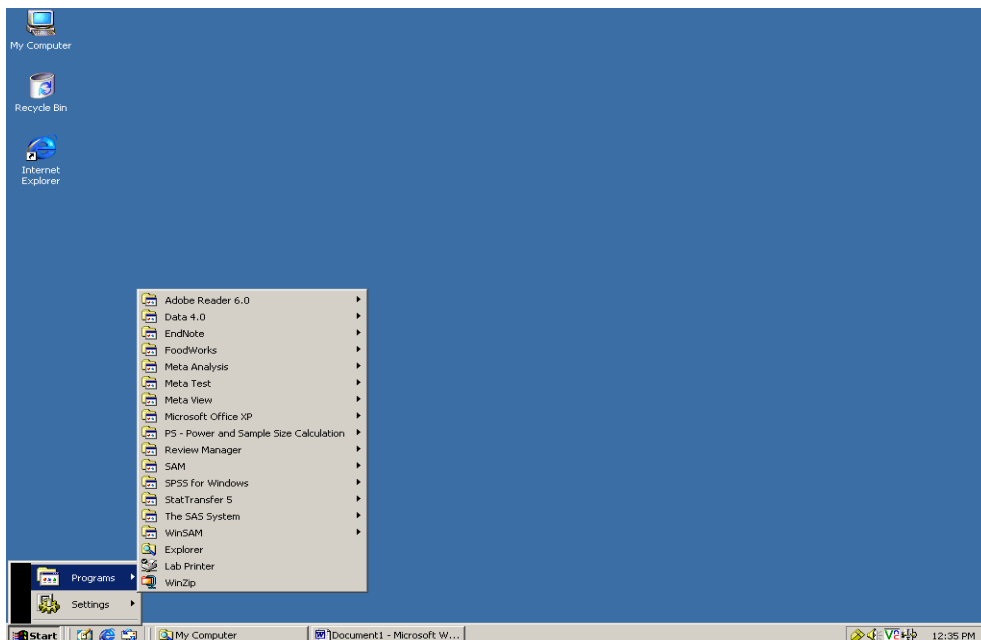
The Windows operating system is designed to be "user friendly", and relies on the mouse for most of the actions. Below is the Windows XP desktop for the SPH-LAB computers.



Note: The term *desktop* refers to the entire screen. This is what you will see when you successfully login.

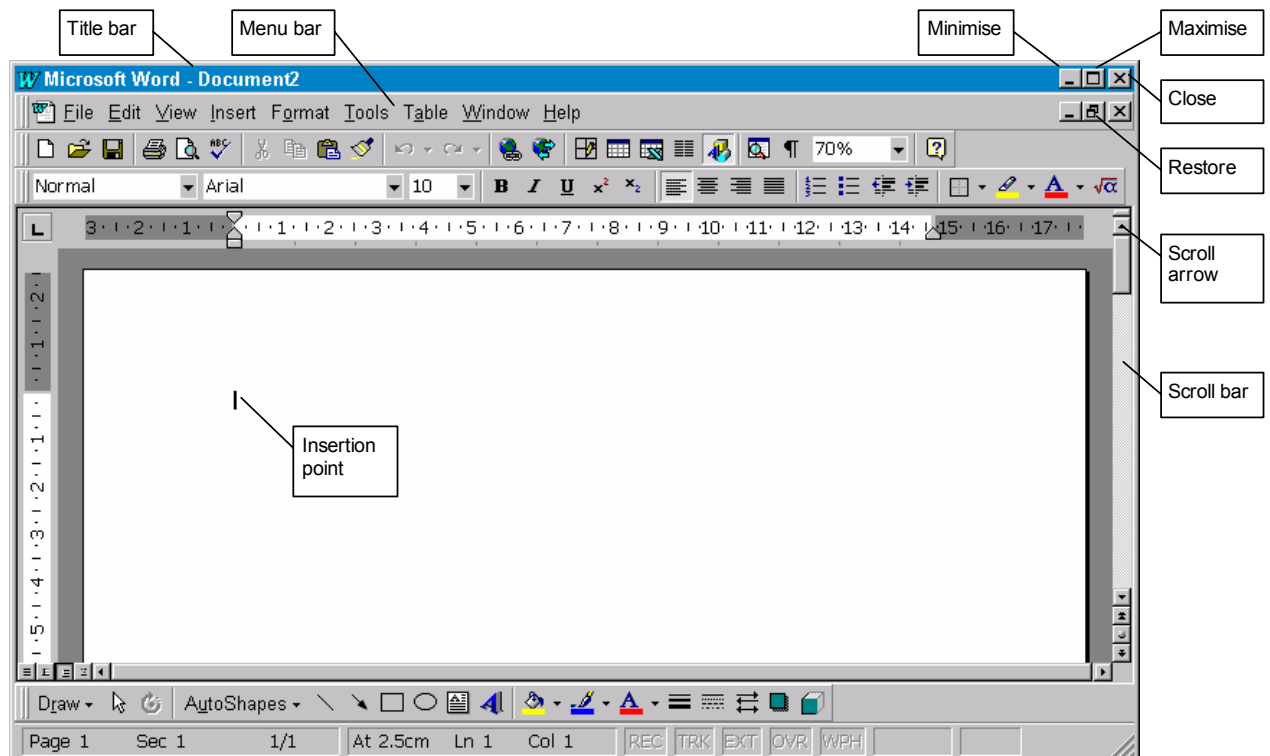
Parts of the Desktop

The start button: in the bottom left corner of the screen is the start button. Click this to gain access to all of the programs, shutdown and settings. The start button sits on the **task bar**, which is always visible at the bottom of the screen.



Click on the program folder, and follow the ► to the application you require.

Parts of a Window



A window is part of an application that is running. All windows contain certain controls that perform the same function, no matter which application is running.

- **Title bar:** The window can be moved on the screen by dragging on the title bar. The title bar of the active window will differ in colour from the other windows. The title bar also contains information about the application.
- **Maximise:** Click this button to enlarge the window to take up the whole screen.
- **Minimise:** Click this button to reduce the window to a small icon at the bottom of the screen. The application in the window will continue running. Click the icon to enlarge the window again and return you to that application.
- **Restore:** Click this button to restore a maximised or minimised window to its original size. This option is only available in a maximised or minimised window.
- **Close:** The close button will terminate the application.

- **Menu bar:** Click a word on the menu bar to display a pull-down menu. Menus allow you to access all available commands that a window has to offer. Most windows have file, edit and help menus. Click the menu item you require or, if you don't want any of the items, move the pointer out of the menu and click anywhere in the work space to return to the window.
- **Scroll bar:** Some windows have a vertical and/or horizontal scroll bar to allow you to scroll through the contents of a window. Click the scroll arrow to scroll the contents of the window in the indicated direction. The scroll box indicates the current position (e.g. top, bottom or half way in) the contents of the window. Dragging the scroll box will also scroll the contents of the window.
- **Insertion point:** This flashing vertical bar shows where text will appear when you type at the keyboard. The insertion point can be moved by clicking at another point in the workspace or by using the arrows.
- **Mouse pointer:** This pointer moves as you move the mouse to let you click objects on the screen. The graphic image of the pointer changes depending on where it is on the screen and what is happening.

Windows applications

Applications are programs used for word-processing, statistical analyses, file management etc. To start an application from within Windows, click the START button, in the bottom left of the desktop. When you work with Windows, you often have more than one application running. An application may either be running in a window or minimised as an icon at the bottom of the screen. The window you are working in is called the active window. In order to make a window active, click anywhere within that window. To close an application, click the Close menu button in the top right of its window.

To switch between applications that are running, click on their icons on the Task Bar at the bottom of the desktop, or hold down the **Alt** key, and tap the **Tab** key to cycle through all applications that are open.

Microsoft Word

Word is a word processing program which allows you to create and modify documents. To start Word:

Open the folder on the desktop by clicking:

START ► PROGRAMS ► MICROSOFT OFFICE ► ... WORD ...

SPSS

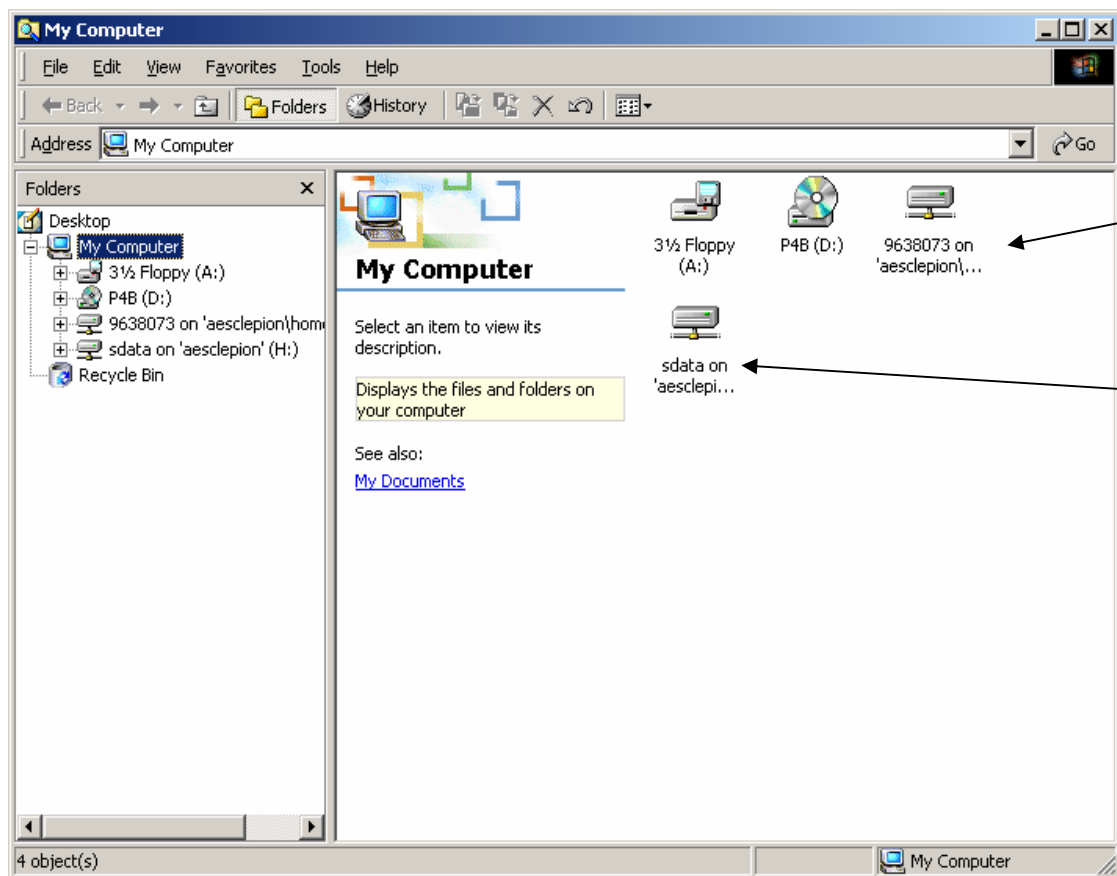
SPSS is a statistical package used for data analysis. To start SPSS:

Open the folder on the desktop by clicking:

START ► PROGRAMS ► SPSS FOR WINDOWS

Windows Explorer

Windows Explorer allows you to manage files and folders. It can also be used to rename, copy and delete files, create folders and format disks. There are many ways to open Explorer, but the easiest is by right-clicking the My Computer icon in the top left of the desktop, and choosing Explore.



The left pane shows you the drives that are available on your system. The right pane shows the contents of the selected drive or folder. To move down through the subfolders of a drive in the left pane, click the small '+' to the left of the **folder** name and the **subfolders** will be shown. (Look at drive **H:** in the above image.)

Note that when you click a drive or folder, the subfolders are shown in the right window. To create a new folder, right click in the right hand window, choose New, then Folder. Type in the name of the new folder, and press enter.

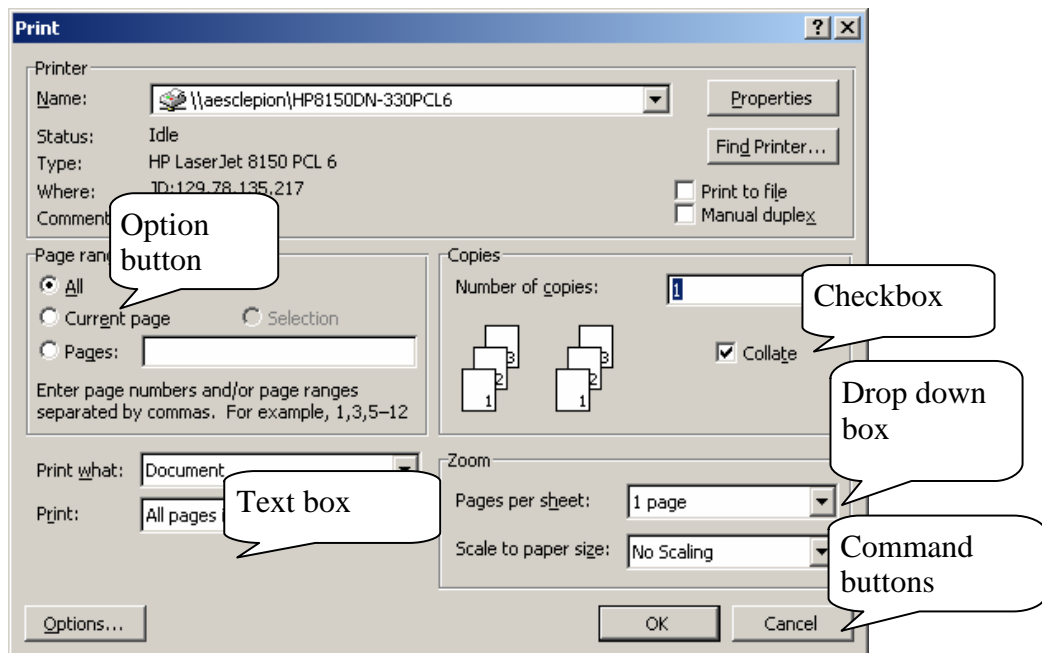
You can also rename files in Explorer. Right click a file name, and choose Rename. The filename will appear in a small box, with a cursor for you to type the new name in.

To copy a file in Explorer, select the file you want to copy, and choose **Edit ► Copy**. Open the folder you wish to copy the file into, and choose **Edit ► Paste**.

Using Windows

Dialog Boxes

Dialog boxes appear whenever you choose a menu item that is followed by three dots. They are used by Windows programs when you need to provide more information before the selected command can be carried out, e.g. to type in a file name. They also allow you to make choices or set options.



The dialog box may include:

- **Option buttons:** To select one of a number of options, click the appropriate button. A dot will appear in the middle of the selected button.
- **Check boxes:** Clicking a check box will select/de-select that option. A selected option will have a tick in the box.
- **Text box:** Click the text box and then use the keyboard to type the required information, e.g. type 1-4 in the Pages text box.
- **Drop down list box:** Click the arrow key to display the available choices. Click up or down arrow to scroll through choices. Click the required option.

- **Command buttons:** Click a command button to take that action, e.g. "OK" will put into effect the selected options, "Cancel" will remove the dialog box and cancel any changes to the options.

Copying information between applications

The **clipboard** is one of the most useful features in Windows. It allows you to transfer information between applications, e.g. to copy output from SPSS to a Word file. The basic steps are:

- **Copy to the clipboard:** Copy (or cut) the information onto the clipboard by selecting the text (click and drag over the required area). Click Edit on the menu bar. Click copy to copy the selected text to the clipboard. The difference between copy and cut is that copy leaves the original text in place, while cut removes the text from the original position. Cut is useful to move a section of text to another area within the same application, whereas copy is useful for moving between applications.
- **Paste from clipboard:** Go to the application you want to transfer the information to and position the insertion point at the appropriate location. Click Edit on the menu bar. Click Paste.

Switching Between Applications

On the taskbar at the bottom of the screen, there is an icon for each application that you have running. Click on the program icon that you would like to switch to.

Alternatively you can hold down the **Alt** key and press **Tab** to switch between active programs.

WEB BROWSER (Internet Explorer)

Internet Explorer is what is known as a Web Browser. It is an application that allows you to browse the World Wide Web (WWW). It is your window to the vast amount of information that is available on the internet. These notes will give you an introduction and reference for common tasks in Internet Explorer.

Student Internet usage is monitored regularly to check for excessive usage. Any student whose traffic for a month exceeds 100MB will be asked to explain why their usage is so high. Any student whose monthly traffic exceeds 100MB thereafter, will have their Internet access removed and will be required to pay an administration fee of \$100 to have it restored

The Internet

In essence, internet could stand for international network. In the same way as all the computers in this building are linked together using cabling to form a network of computers, millions of these networks around the world are linked together to form the internet. By doing this, a world-wide communications link is formed. There is a standard set of rules, or transmission protocols, for sending information across this link. These transmission protocols define the format of the information to be transferred. In the same way that Microsoft Word can only open and display a file of a certain format, information sent across the internet must conform to certain rules to be usable at the receiving end. These rules also ensure that the information is as widely accessible as possible, from any country and by anyone with any type of computer.

The way the information is exchanged is similar to making a telephone call. When you dial a number on your telephone, you send a request to the Telephone Exchange. The exchange attempts to connect you with the number you have dialled, wherever it be: local, interstate, or international. If it is successful, the two parties are connected and can communicate. This communication doesn't have to be spoken voice; it could be a facsimile (fax), someone using a tone sender to retrieve messages from their answering machine etc. The important concept to understand here is that several different types of information are sent using the same information link, the telephone line. The internet is the same, several different types of information such as email, web pages or files passing over the same link.

Starting Internet Explorer

To start Internet Explorer, click **START ► PROGRAMS ► Internet Explorer** on the Desktop.

The WWW and URLs

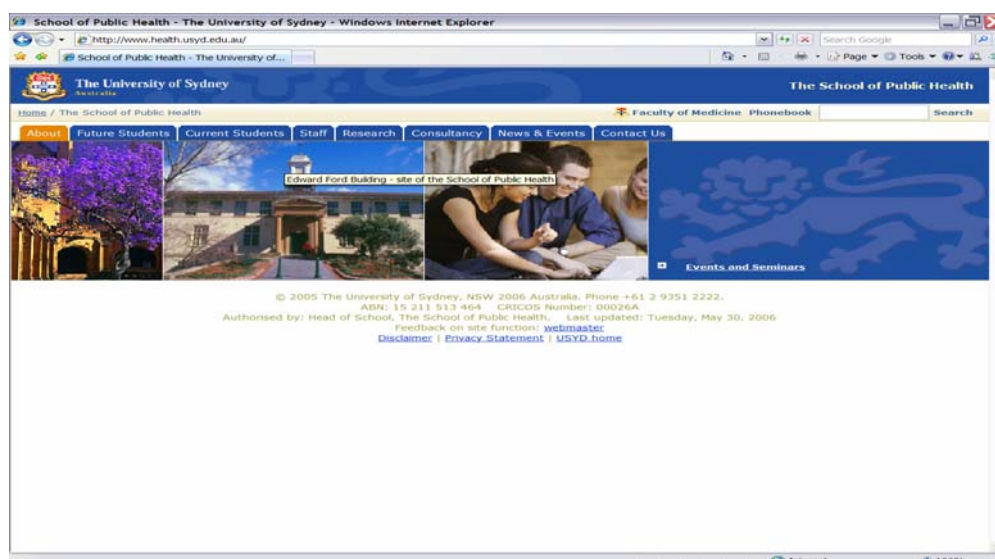
The WWW has developed based around a standard protocol, called Hypertext markup language, abbreviated as HTML. HTML is a simple text-based standard, that uses simple text codes to produce the formatting in a document. Essentially, a web browser is a program capable of taking an HTML document, interpreting the codes and displaying it on the screen.

URL is an abbreviation for universal resource locator. You can think of a URL as an address, which gives a unique location of an internet resource, such as <http://www.health.usyd.edu.au>. This is the internet method of specifying an HTML location. Working backwards through the URL given above, we can tell that the resource is in Australia ([.au](#)), an educational institution ([.edu](#)), specifically the University of Sydney ([.usyd](#)), the School of Public Health ([.health](#)), and lastly, an HTML location ([http://](#)) within that Department/ School identified by [www](#) ([www.](#)).

When entering a URL, it is important to enter the address exactly as it appears. Changing one character could result in an invalid URL, or put you somewhere entirely unexpected.

Opening a Location (URL)

First, a quick look at the screen below:



The important things to note on this screen are the Menu bar, the Toolbar icons, the Bookmarks and Location icons.

To open a location, type the URL into the Location box, e.g. type <http://www.health.usyd.edu.au>, and press enter. Internet Explorer will attempt to connect to the location requested, and display the requested file on the screen. You can omit the <http://> from the beginning of a URL, and Internet Explorer will assume that you meant to type <http://>. In other words, you could have just typed www.health.usyd.edu.au in the box, for the same result. Note that some locations you may request could be coming from other countries, and may take some time to download; please be patient.

Browsing the WWW

HTML documents contain hyperlinks, or text that when clicked, will open up a new page of information, or take you to another location. Generally, any underlined text is a hyperlink, and many images are too. You can identify hyperlinks by resting the mouse cursor on them. If the object is a hyperlink, the mouse cursor will change from an arrow to a hand and the URL of the link is displayed in the bottom bar of the Internet Explorer screen. This leads to the concept of 'surfing' the WWW, where you follow the hyperlinks in pages from location to location. This is not the most effective way to find information, but can lead to locations that you may not otherwise have seen.

Navigating Back and Forward

When you follow links through HTML pages, you create a trail of pages that you have visited. The browser keeps a list of these pages, and gives you the option to go backwards through this, and then forwards again if you choose. Consider the case where you click on a hyperlink, and the location you are presented with is not what you are interested in. By clicking on the Back button on the toolbar, you can go back to the last page you visited, and try a different link. Similarly, once you have gone Back, you can then go Forward through your history. Right-clicking either the Back or Forward button will display a small drop-down list of the last locations you have been. Move the cursor down the list, release the button and you can move to the exact location in your trail that you wish.