Unit 1: Introduction to Computer Literacy

ICT 1.1 Computing Basics

Student Support Material

Acknowledgements

PASTEP

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Unit outline

Unit		Modules
Unit 1 **Introduction to Computer Literacy**	**1.1**	**Computing basics** **(Core)**
	1.2	Finding computer based information (Core)
	1.3	Using Microsoft Word (Core)
	1.4	Using Microsoft Excel (Core)
	1.5	Using Microsoft Outlook for email (Optional)
	1.6	Making presentations using Microsoft PowerPoint (Optional)

Icons

📖	Read	or	Research
✍	Write	or	Summarise
☞	Activity	or	Discussion
💻	A computer activity		

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Introduction

This module is the first in the Introduction to Computer Literacy unit. In undertaking this unit you with gain some basic skills in using computers that you will use in your learning and academic work broadly across the College curriculum.

This module is taught through face-to-face contact in lectures and tutorials using written as well as computer based materials. In addition to these face-to-face sessions, you should also spend at least one hour in practice and work on a computer for every hour in a timetabled class, though this will depend on the access that you have to the Learning Centre. The way that you will learn best about using computers is by using them; therefore, many of the activities in this unit will require you to do things on the computer.

Glossary

Byte	A measurement of memory capacity or file size. Normally we use kilobytes, megabytes and gigabytes.
CDRom	A plastic disc very similar to an audio compact disc (CD) that has information stored on it. The stored information is read by a laser beam in the computers CD drive.
Central Processing Unit (CPU)	The CPU coordinates many of the computer's activities. The CPU needs instruction to make it work.
Data	Electronic information. We normally refer to information stored on the computer as data
Database	An organized store of information usually by categories (fields). Microsoft Access is a database.
Desktop	Windows uses the idea of a 'desktop' where we work or study. The desktop of Windows is the view we get when we first start up the computer and log on.
Dialogue box	A dialogue box is used by software like Windows to get information from the user about what actions to take.
Hardware	This is any equipment that makes up a part of a computer system, such as the monitor, keyboard etc.
Icon	A little picture that represents something, eg. = the Windows operating system.
Internet	A worldwide communication and data network consisting of millions of computers connected to each other. These computers can communicate with other computers on the network.
Intranet	This is a network of computers that allows Internet type communications but it is not connected to the broader Internet.
Pane	This is a window within a window
Server	A Server is a computer that has other computers connected to it in a network. The Server performs a number of tasks for these computers, for example, printing, distributing e-mail and distributing information across the network.
Software	This is the set of instructions that are used to tell the computer

	what to do. There are many different types of software. Some software is the operating system (eg Windows 2000), while other software are application to do specific jobs (eg Microsoft Word or Excel).
Spreadsheet	An application that is used to do mathematical calculations and to store and present information. Microsoft Excel is a spreadsheet.
Virus	A program in a computer that causes damage or trouble
Window	This is a page from an application that is displayed on the computer screen
Wordprocessor	An application (software) that is used to generate text documents and to layout text in interesting and clear ways. Microsoft Word is an example of a wordprocessor application.

Topic One: Computers in Education

Learning outcome
You will identify and state the main reasons for using computers in education

Why should we learn about computers and using computers?

There are two main reasons why it is important for you to learn about computers and learn to use computers at the college. Skills and knowledge about computers will help your learning and will give you some skills for living and survival in a society that is increasingly using computers.

1. Skills for learning. Computing skills can be very useful in helping us learn.

Learning is something that takes place in the learner. Teaching is something that helps to bring about learning. We like to think of teaching as facilitating learning—it helps learning to happen. We use different types of technology in teaching. Some of this technology might be thought of as traditional teaching technology such as note books, pens, blackboards and libraries etc. Other technology that we can use in teaching is new or uses special equipment such as a radio or cassette player. These are some of the tools that teachers use to facilitate learning. We apply particular teaching and learning approaches for each of the technologies that we use to facilitate learning. For example, the layout of the classroom and the location of the black board affect the way we might organize and run a class discussion or lecture. There are teaching and learning implications for each technology that teachers use. Teachers and learners make technology choices to facilitate learning. Some technology has advantages over others, as well as disadvantages. Sometimes we cannot use some technology, as it is not available even though it might be better for learning.

Computers are tools that can be used to help people in many different ways. They are used in businesses, governments and organizations to help people do their job, for example, to prepare documents—here, the computer is used as a word processor. Just as we can use computers to help with work in businesses and other organizations we can use computers to help us in education, for teaching, learning and administration. Computers can be very useful in helping learning. There are many ways in which computers can help students learn.

Information storage. We can use a computer to store lots of information. Computers can store information in written or text form, as pictures, and as sounds and movies.

Media for instruction. Computers are electronic machines. They can be used to generate and display information using different media, for example, text, sound, pictures, video.

Tools for data analysis, organization and presentation. Computers give us tools to help us organize information in different ways so that we can understand things better.

Tools to aid and promote thinking. Computers give us tools to help us think better. When you learn to use a computer to do certain tasks you will also be learning problem solving skills. When you use a computer as a word processor you will have a tool that will help you think about your writing and help to make it better because you are able to easily edit your work as you do it. Computers cannot think for us, they can only help us in what we do.

Educational management tool. We can use computers to help us manage learning; to store information that we need, for example, student records; to keep our assessment records or the school financial accounts information or the assets register.

> **The main reason why the Learning Centre has been established is to help you learn better at college**.

2. *Skills for living and survival in society.*

Papua New Guinea is already a computer based society in that many institutions, communications and interactions are computer based. Airlines use computer for issuing tickets and working out timetables and bookings. Banks use computers to keep track of transactions. Businesses use computers to manage stock. Some small trade stores even have computer cash registers. Our telephone and power networks are managed by computers. Additionally, skills in using computers are becoming useful in society; it is not just specialist workers who use computers these days. Many schools now have computers. Most high schools have computers in the office and many now have computers for staff and increasingly for students. As this technology becomes more available in schools (and this is happening) teachers will benefit from having computer literacy skills. Though there are few community schools with computers this will change if experiences in other countries are a guide. Having some skills now will put you in a better position to make use of computers wherever you might come across them.

> Remember, the main purpose of this unit is to given you some basic skills to help your learning at college and in your use of the computers in the Learning Centre and not to prepare you for using computers in schools.

☞ 1.1 Activity One

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In groups of four, talk about where you have had contact with computers before. Make a list of examples where you have seen computers used in education. Draw some pictures or cartoon of the use of computers in education.

Topic Two: Care of Computers

Learning outcome
You will demonstrate a positive attitude towards the use and care of computers

Care and maintenance
Computing equipment is expensive and requires particular care and maintenance. Users of computers should have some basic understanding of the importance of caring and maintaining computers and associated equipment and facilities. If you treat the computer carefully and follow the rules of the Learning Centre, the equipment will last many years. The Learning Centre and College Computer Use Policy outline what you should do and not do when using the equipment in the Centre. You will need to help keep the equipment clean, follow rules of the Centre, report problems, follow guides/instruction booklet, demonstrate good posture/eye care, electrical safety etc. Your lecturer will be observing you when you are using the equipment to see that you are using it correctly and carefully. If you break the rules of the Centre or mistreat the equipment, you may not be able to use the Centre.

Below are some general rules for the Learning Centre. However, make sure that you follow the rules for your centre.

The general Rules of the Learning Centre

No eating, drinking, smoking or chewing in the Centre

Logon to your own account and log off when finished

Start up and shut down computers correctly

Follow lecturer's directions

No running or playing in the Centre

Check power cords and other connections are correctly installed

In case of fire or emergency follow the correct evacuation procedure

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☞ 2.1 Activity Two

In groups of four, talk about your Centre rules. Write down a reason for each of these rules.

# Topic Three: What is a Computer?

Learning outcome
You will identify computer parts and describe their functions, and use common computing terms competently

In our lives we use many tools to help us in our work and learning or just to make our life easier and more interesting. We sit on chairs, use pens to write with, use telephones to communicate and watch television and listen to the radio. These things are all tools. Some tools are simple, such as a fishing hook and line to help us catch fish, while others are complex, such as an aircraft. A computer is a tool. *A computer is not intelligent and definitely not alive.*

Computers are very complex tools with lots of parts working together. Computers are made up of *hardware* and *software* parts. The hardware is the electronic and mechanical parts of the computer. The software is the instructions that tell the hardware what to do. We do not have to understand all of the parts of a computer or how they work in order to use one, just like we do not need to know all the parts of a car in order to drive one. It will make it easier to understand computers and how they work if we have some understanding of what the main computer parts are and what they do. We will also introduce some new terms for you and these are also included in your Glossary.

Computers have very small electronic 'chips'. This is a CPU chip
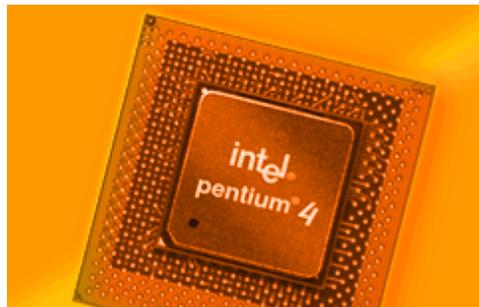
Hardware components

Each hardware part of the computer has a different job. Some hardware parts are on every computer while others are on just some computers. Sometimes it is useful to think about the hardware components by the role that they perform. These roles are *processing, input, output, storage,* and *support*.

1. *The processing unit*: the controlling part of the computer; here the Central Processing Unit (CPU) is a key component. The CPU coordinates many of the computer's activities. The CPU needs instructions from software and an operator (or user) to make it work. The Random Access Memory (RAM) is where instructions and information are temporarily stored. If the power goes off the CPU and

Central Processing Unit (CPU)

the RAM stop working and any information not saved is lost. The processing unit is usually a large rectangular box that all of the hardware components plug into.

2. *Input devices*: these are hardware parts that allow us to put information into the computer or give the computer instructions. The keyboard, scanner and mouse are the main input devices. The keyboard is like a typewriter in that it has keys we can type to input characters ('Q','W', 'E', 'R', 'T', 'Y', etc) and numbers. The keyboard also has some special keys such as 'Enter', 'Shift', 'Ctrl' etc that allow us to do some special things. The mouse allows us to move a pointer on the computer screen so we can give the computer instructions and also to do some other things. We will use the mouse and the keyboard a great deal when using the computer. A scanner allows the computer to read printed text or to take a picture of a document. It is a little bit like a photocopier for a computer. Some other input devices are the 'still' and 'video' cameras which we can use to input still photographs (images) and video (moving images and sound) into the computer.

A computer mouse

3. *Output devices*: these hardware devices allow the computer to present information in ways that we can read or understand. Some of the main output devices are the monitor (Visual Display Unit or VDU), speakers and printer. The VDU allows us to see what the computer is doing and how we are preparing documents and also allows us to read and see information that the computer has stored. The printer allows us to print a document that we can see on the screen. Some printers allow us to print in colour while others only print in black and white. As paper and the ink for the printer is expensive we need to be careful about how much we print. Your lecturer will explain the Centre rules about printing. Some of the software that we are using will have a sound output, and so we can use the external speakers or earphones connected to the processing unit to monitor the sound.

Speakers are output devices

A floppy disk drive

4. *Storage devices*. The computer has various ways it can store information. The RAM in the CPU is used as a temporary storage place for software and information. However, when the power is turned off this memory is cleared or lost. The computer can store more permanent information in a Hard Disk (or Hard Drive) that is located in the central processing unit box. Information can also be stored on floppy disks and on CDRead-Only-Memory (CDRom) discs.

5. *Support components*. We can use computers with the above components but sometimes we may use other components as well. An uninterrupted power supply (UPS) is used to protect the computer and keep it going if the power goes off. Computers that are connected together are called a network of computers or a 'network' for short. Each computer in a network can communicate and share information with others via a special cable (or sometimes via a radio network). In a network one computer, called a server, is used to coordinate some things like printing and sharing of information. The server can also handle and coordinate email, Intranet and Internet communications. In the Learning Centre, the server also is a place where we store lots of information that users can access.

6. *Software:* This is the electronic instructions that tell the computer what to do. There are two main types of software:

    *   *The operating system*; such as Windows 98 or Windows 2000. This software is the main set of instructions controlling all of the computer activities. When we turn a computer on it automatically loads the operating system into the computer's RAM

    *   *Programs or applications*; such as MSWord, PowerPoint and Excel. The programs are the tools that allow us to do special things with the computer. A computer is not alive and it will only do what the software instructs it to do and what we tell the software to do. If there are problems it is most often because we have given the computer the wrong instructions, though occasionally there will be a problem with the computer's software.

Microsoft makes many computer applications

☞ 3.1 Activity Three

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In pairs identify and name all of the parts that you can see on the computer in the Learning Centre using the following list

> *Keyboard*
> *Mouse*
> *The processing unit*
> *Uninterrupted power supply*
> *Monitor*
> *Printer*
> *Server*

Where are all the following components located:

    Hard Drive
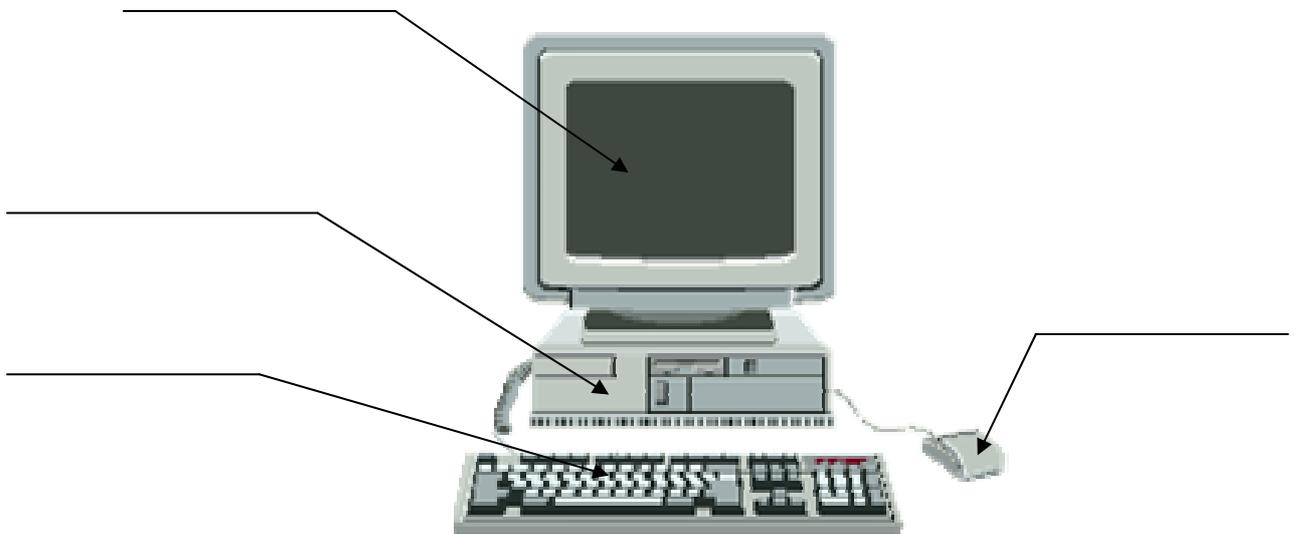   *Central Procession Unit*
    CDRom drive

Write the full names for the following:

RAM
ROM
CDRom
CPU
UPS
VDU

In your own words, briefly explain what the operating system does

In your own words, briefly explain the difference between software and hardware.

Label the parts on the computer picture below

Topic Four: An Introduction to Windows

Learning outcome
You will start up and shut down a computer correctly and use the basic Windows environment

What is Windows?

Windows is an operating system. The operating system gives instructions to the computer and also is needed in order to use other application software (like a wordprocessor or spreadsheet). There are different versions of the Windows operating system. We are using Windows 2000 in the Learning Centre; however, there is also Windows 95, Windows 98, Windows NT and Windows XP. They all have the same basic way of working and if you learn how to use one it is not so hard to use a different one.

Starting up a computer

4.1 Computer Activity One

Your lecture will take you through the process of starting up and shutting down a computer. The process is presented below for you to follow or for you to refer to later when you do this by yourself.

1.   First of all make sure that the computer power cable (back of the processing unit) is plugged into the UPS and that all power connections are correctly inserted and that the UPS is correctly connected to a power outlet that is turned on. The VDU gets its power from the processing unit and you should check this connection as well.
2.   Press the power button (located on the processing unit) 'on'. A green power light located above the power button should come on. Also a green power light on the VDU should come on. If these lights do not come on check the mains power is working, that the UPS is working and check your connections. **Be careful and follow electrical safety rules.** If the processing unit light comes on but the VDU light does not (or is orange and not green) then press the VDU power button.
3.   The computer will start working. You will hear the hard disk spinning and the computer fan making a noise and the screen will light up.
4.   A 'dialogue box' will appear. It will have space to type in your 'User Account' and your 'Password' (your lecturer will tell you about these). Type these into the

> boxes and using the mouse place the arrow on the screen over the **enter** button and click the left mouse button once.

Shutting down a computer

4.2 Computer Activity Two

1. Ending Windows 2000 and shutting down the computer is also straightforward

2. To shut down; first, move the arrow to the Start button **Start** in the lower left hand corner of your computer screen and click the left hand button on the mouse on top of it. The Start menu will appear as in Figure 1 below. Next click on **Sh<u>u</u>t Down.**
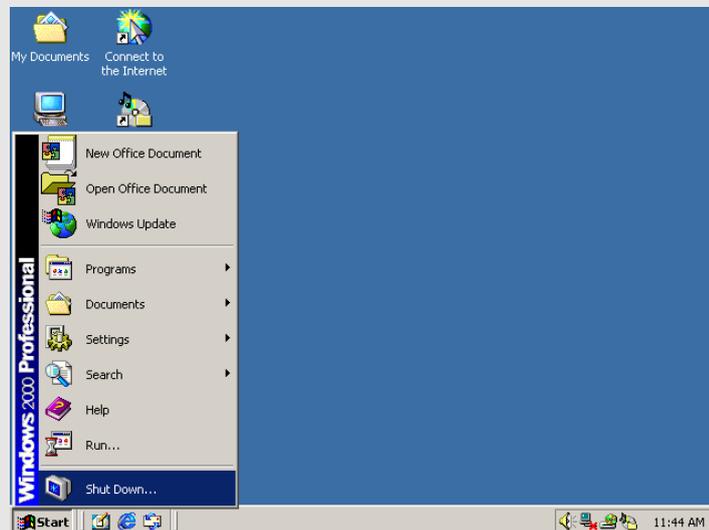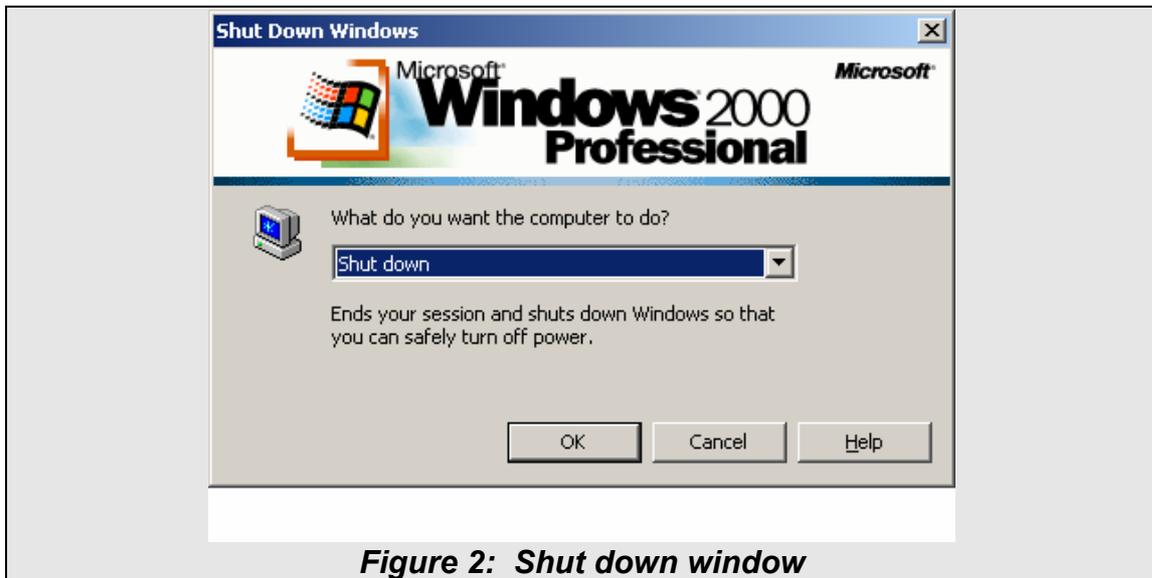

Figure 1: Windows Start Menu

A Shut Down Windows dialog box will now appear as shown in Figure 2. Select the first option, **Sh<u>u</u>t down the computer** by selecting the button (**OK**) shown below. Your computer will now begin to shut down. You can turn off the power switch when the orange or red writing appears saying **"It's now safe to turn off your computer."**

Figure 2: Shut down window

Using the mouse

The mouse makes it easier to use Windows and Windows-based software. It is therefore important that you know how to use your mouse. In Windows the mouse position appears on the screen as an arrow. In other applications, it appears as a different icon.

Five Types of Mouse Actions

The mouse has two clickable buttons on it. You will just need to use the left button for most of the things in this module. The five types of mouse actions are described below.

| *Action*	*Description*	*Example*
Single click	Click once on the left mouse button	Single click on an item on the task bar or from the start menu to start a program
Double click	Click twice in rapid succession on the left mouse button while holding the mouse steady.	Double clicking is used to start programs from the desktop.
Right click	Click once on the right mouse button.	This opens up a menu of functions you can select and immediately perform.
Drag and drop	Click and drag. This is achieved by choosing an item, placing the mouse cursor over it and pressing down on the left mouse button. Do not let go. Drag the object to a new location and release the mouse button.	This is used to move files in Windows Explorer as we will explain later.
Hover	In many applications, holding your mouse over an icon without clicking will bring up a short explanation of the function of the icon.	The navigation icons in Internet Explorer will display more information about themselves when you hold the mouse cursor over them (we will deal with this later).

Using the mouse

4.3   Computer Activity Three

1. Move the mouse around on your desk and see the arrow move to different parts of the screen
2. Move the mouse over the top of the 'Start' button. What message pops up when you 'hover' there?
3. 'Left click' on the mouse while over the 'Start' button

We will be using the mouse a lot so you will learn more about what you can do with it as we go further into this unit. You should take some time to practice using the mouse.
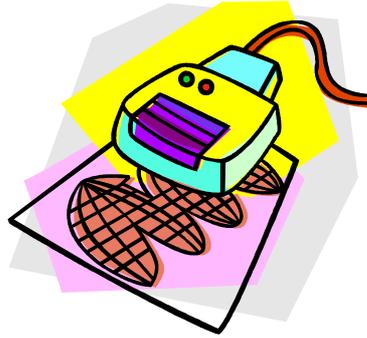
Exploring the desktop

Windows 2000 uses the idea of a desktop. On the top of your desk at college you have the main tools you work with—your pen, folders, paper and other items. The same applies to the Windows 2000 operating system. You have your main tools on the screen of your monitor as shown below. The desktop consists of pictures of objects that give us some idea of what they are or what they do. These pictures are called icons. What you see when the computer starts up and after you have logged onto your account is your desktop and this desktop has some icons on it like in the figure below.
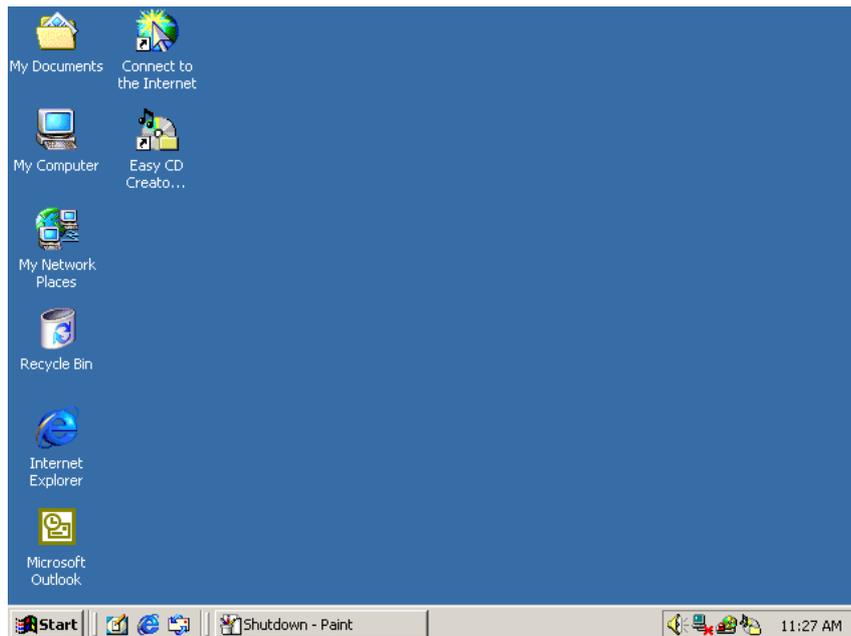

Figure 3: Windows Desktop

4.4 Computer Activity Four

Take a look at the desktop of your computer and see if you can identify any of the parts in the above graphic.

Opening folders

4.5 Computer Activity Five

On the desktop you will see a folder icon titled 'my documents'. This is actually a little picture of a folder. To open this folder use the left mouse button to double click on it. You should now see an image of your open folder, which is empty as you have not put anything in it yet.
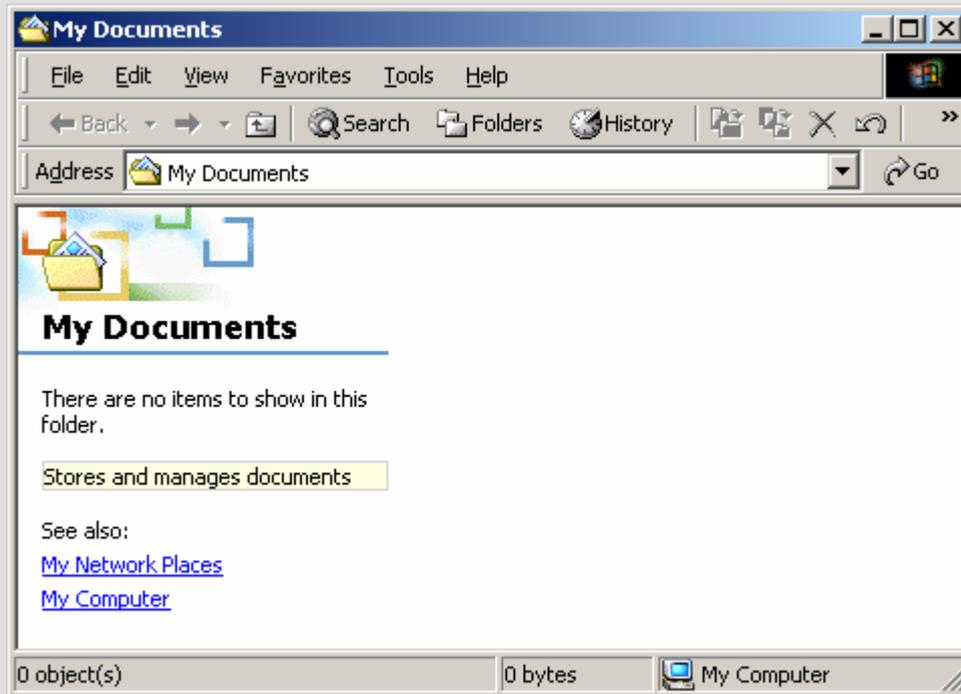

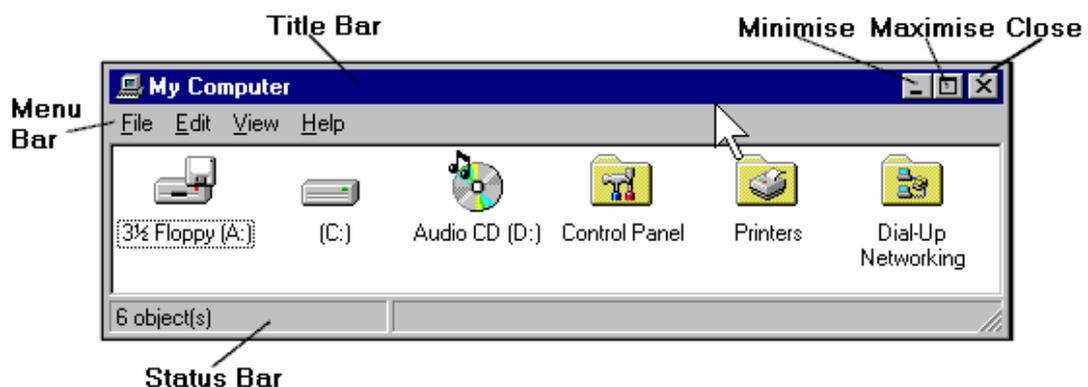*Figure 4: My documents*

Switching between windows

Figure 5: Parts of a Window

Your open folder image is a 'window'. Each window has some standard features. There is a menu with 'File', 'Edit', 'View', 'Favourites' 'Tools', and 'Help' on the top of it. When each of these menu items are clicked on (selected) they will reveal a list of sub items or actions that you can choose from. To open a number of windows or to switch from one open window to another, click on the desired window's icon and name on the task bar at the bottom of the screen. Or if you prefer using the keyboard you can switch between your open windows by holding down the **Alt** key and selecting the **Tab** keys. We will learn more about these things and other parts of each folder as we go through this unit. You should take a look at them though do not select an item yet.

One set of icons on each window is the 'minimize', 'maximize' and 'close' window boxes. They are shown in Figure 5 above and are the three boxes [■] [□] and [✕]. When we 'minimize' a folder you will see that the name of the folder is still in the task bar, which means that the folder is still open, but just removed from the desktop.

4.6 Computer Activity Six

Click on the [■] and [□] boxes in your open folder and see what they do. When you want to close the window completely click on the [✕] box.

The Start menu

The start menu is found by clicking on the start button [🏁 Start]. A number of files and applications are displayed as a menu, as shown by the example below:
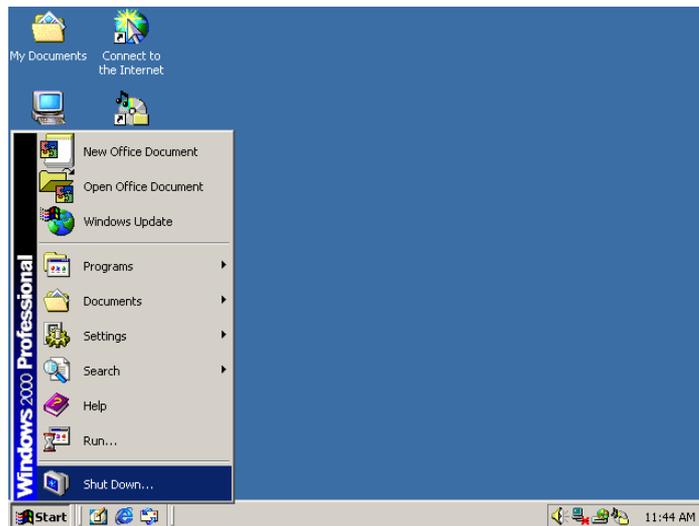
Figure 6: The Start Menu

'Find', 'Help' and 'Run' are applications whereas the others have a little arrow to the right of the menu indicating that they lead to a folder that contains things. To select an application we just click on it.

The desktop appears when you turn on your computer. You can launch a program from the desktop by double clicking on the icon of the program you wish to start. If you do

not see the desktop it is probably because you have programs open. In this case you can launch programs by clicking on the **Start** button at the bottom left corner of your screen or minimize the open window and select the application from the desktop. Move the cursor to **Programs** on the pop-up menu and a list of possible programs will appear. Single click on the one you wish to launch.
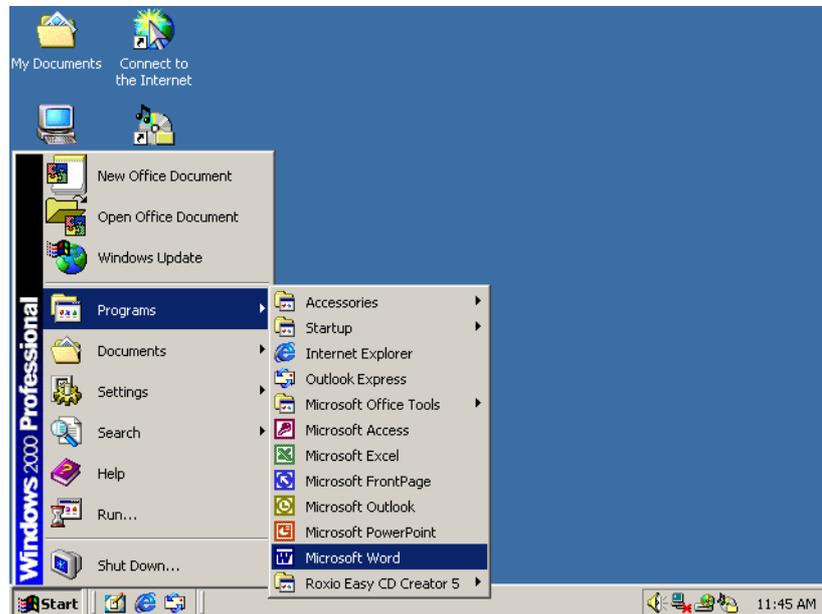

Figure 7: Launching Programs from the Pop-Up Menu in Windows

Opening a program

4.7 Computer Activity Seven

Open the Start Menu
Move the mouse arrow up to programs
Move the arrow across to expose the program menu
Select the program **Microsoft Word** and click in it with the left mouse key

Opening a programme from the task bar

Once programs are opened, they appear on the task bar at the bottom of your screen. To maximise these programs, simply click on the buttons on the bottom of your screen. To open a window from the task bar, click on an item. If the task bar does not appear, select **Ctrl** + **Tab** and it will appear.

Figure 8: The Task Bar

📖

Why save files?

If you wish to keep an electronic copy of your document or data, you must save it before you close the application. You could save files shortly after you start writing them and throughout the process. A good short cut for saving is **Ctrl + S**. Once saved, a file can be retrieved for viewing or editing. You can also send it to another person.

Creating and saving a document

4.9 Computer Activity Nine

This exercise will show you how to create a file. We use the same sort of process for all of the applications in Windows. We will use Microsoft Word to do this.
1.   Open **Microsoft Word**, by selecting the Start button and Programs.
2.   Once Word opens and you have a blank white page, type a short message in the Microsoft Word window. For example "This is my first computer file"
3.   *Select* **File**, **Save As** in the **File Menu**. The Save As window will appear.
4.   If you do not specify the folder in which you wish to save your file, windows will choose a folder. If you want to save it in another folder, select the folder now by changing the location in the **Save in** box. However, you should place your file in the **My Documents** folder. To do this use the little triangle next to the save in window to find the folder **My Documents**
5.   Type a name for your file in the box labelled **File Name** (e.g. 'exercise 1') and click the Save button.
6.   **You need to make very sure you name your file well and remember where you save it otherwise it might be difficult for you to find it again later.**
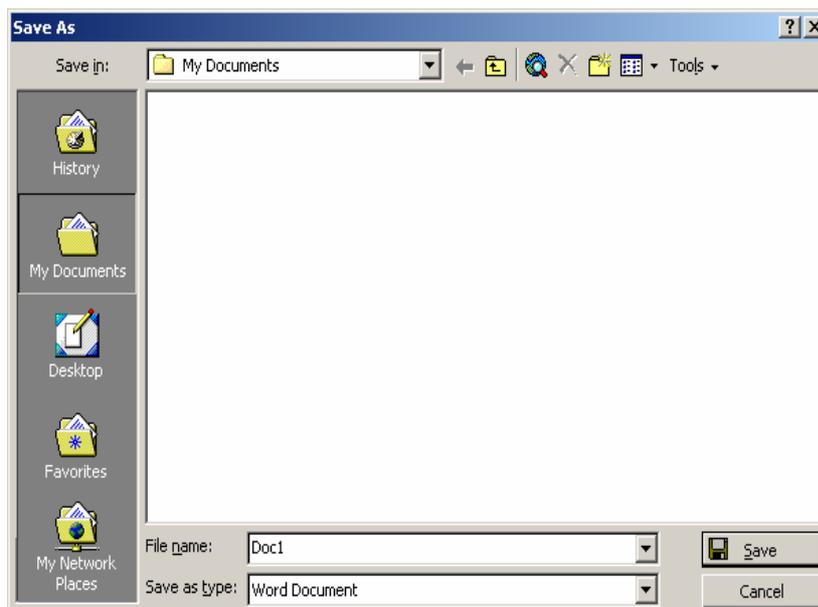
Figure 9: The Save As dialog box

Topic Five: Some Additional Information on Windows

Switching between programs

To switch from one open window to another click on the desired window's icon and name on the task bar at the bottom of the screen. Or if you prefer using the keyboard, you can switch between your open windows by holding down the **Alt** key and selecting the **Tab** keys.

Scroll bar

If the information you are viewing does not fit completely on one screen, you can see more by using the vertical and horizontal scroll bars. When there is no scroll bar on your screen, there is no additional information to access.

Figure 10: The scroll bar

The Recycle Bin

The recycle bin contains files that you have recently deleted. If you delete a file it is placed in the Recycle Bin and is used as a safety net in case you have deleted any files accidentally. To open the recycle bin double click on the recycle bin icon on your desktop.

Figure 11: The Recycle Bin Icon

Un-deleting Files from the Recycle Bin

To undelete a file highlight the file by single-clicking on it with the left mouse button. Then click on **File**, **Restore**. This will undelete the file and put it back in the location from where it was deleted. You can find out where the file was deleted from by looking under the *Original Location* field in the Recycle Bin.

Emptying the Recycle Bin

If you want to permanently delete a file from your computer (a virus infected file, for instance), you have to delete the file from your recycle bin. To delete a file from the recycle bin highlight the file you want deleted and press *delete*. This deletion is permanent and there is no way to get your file(s) back, so make sure you are certain that you do not need the file(s). To remove all files from your recycle bin, click on **File**, **Empty Recycle Bin.** One of the most common reasons for emptying the recycling bin is

when you are low on hard drive memory space and need to find space from somewhere. Otherwise, it is better to leave the Recycle Bin as it is.

Note that not all the files that you delete are in the recycling bin. This is because the bin is set to take up only a certain percentage of your hard drive. If the size of the files you deleted are larger than the recycle bin, the file which you deleted the longest time ago is automatically deleted from the recycle bin to make space for the newly deleted files.