

COMPUTERS

Computers in their basic form are used to create, modify, store and manipulate information.

There are a number of parts which make up a computer – whether it is a desktop, portable or a notebook computer.

Parts you can see

- Screen – visual interface with the computer.
- Keyboard – the main input device.
- Mouse – a pointing device used to select items on the screen. Normally has 2 buttons – the left button is used to select files or items. The right mouse button opens an Options Dialogue box which allows you to copy, rename, delete etc. the selected item.
- Desktop Box – contains all the electronic parts.

DESKTOP BOX COMPONENTS (can't see)

Hard Drive – main (permanent) storage device for the information. If you think of it as a very large filing cabinet with numerous folders holding different information. Each of these folders can have other folders (sub-folders) inside them.

Storage devices are denoted by a letter – if you only have one Hard Drive it will be called the **C:** drive.

If you store (save) information on your hard drive you need to remember which folder/subfolder you stored it in!

Motherboard – a printed circuit board containing most of the electric circuits and electronic components used in the computer. It also holds the processor and the memory.

CPU Processor (Central Processing Unit) – the brain of the computer.

Memory – used to temporarily store information the computer is currently working on.

Graphics & Sound Cards – smaller printed circuit boards which control what you see on the screen and what you hear from the speakers.

CD/DVD Drives

These are optical drives which use a laser beam to 'read' or 'write' information to/from a cd or dvd disk. As with **Hard Drives** the computer denotes these drives by a letter – usually **D:** or **E:**

The system which controls all these parts & information is called the **Operating System**. Most people will know it as Microsoft Windows (2000, XP or Vista) but there are other systems. The operating system is stored in specific folders on the **Hard Drive**.

STARTING A COMPUTER

When you press the start button on a computer the **CPU** loads the **Operating System** from the **Hard Drive** in to the **Memory**. The **Operating System** starts all the other components which, after a couple of minutes, then allows you to start using the computer.

Computer programmes have been developed allowing you to (relatively) easily interact with the computer. These programmes include Word (for writing documents), Outlook (sending e-mails), Media Player (viewing photos, videos etc.), Windows Explorer (to see the folders on your Hard Drive), Internet Explorer (to browse the Web).

The main commercial programmes available for viewing/manipulating photographs are Adobe Photoshop, Serif Photoplus, Corel Paintshop. There are some free programmes which allow limited manipulating of images (Irfanview, Picasa, GIMP etc.) – search for ‘free photo editing software’.

FILE FORMATS/STORING

All information used in computers needs to be in a specific file format so the **CPU** knows which programme to open. For instance all Word information is in document format and the file name has an 3 letter extension of *filename.doc*

Using this system you might name a job application **work_application.doc**

You also need to know where you store it on the **Hard Drive** and it would probably be saved (for me) in the **C:\Users\John\Documents\Work** folder.

This tells us the file is stored on the **C:** hard drive, in the folder **Users**, sub-folder **John**, sub-folder **Documents**, sub-folder **Work**.

Remember the **Hard Drive** is like a very large filing cabinet so try to be aware which folder you save the file in.

Photo/Image File Formats.

There are a number of file formats used for photographs/images including jpeg (photo.jpg), tiff (photo.tif), bitmap (photo.bmp) & gif (photo.gif). All of these formats use some form of file compression which makes the files easier to manage but they do degrade the image slightly.

Most DSLR cameras can shoot in the RAW format which is an uncompressed format meaning no degrading of the image. However this format is larger.

Most photo software (Picasa, Photoshop, GIMP etc) will work with the compressed image formats (jpg, tif, bmp) but often **will not** work with RAW files. In this case you need to use the **File/Save As** command to save a RAW file as a jpeg file.

Data Size (these are approximate sizes)

Byte	=	1 unit	
Kilobyte (Kb)	=	1000 Bytes	
Megabyte (Mb)	=	1000 Kilobyte	(1,000,000 Bytes)
Gigabyte (Gb)	=	1000 Megabyte	(1,000,000,000 Bytes)
Terabyte (Tb)	=	1000 Gigabyte	(1,000,000,000,000 Bytes)

Example File Sizes (these are approximate sizes)

e-mail	=	1 Kb
Word document	=	20 Kb
Music file	=	3 Mb
Photo (.jpg)	=	4 Mb
Photo (RAW)	=	10 Mb
HD Video	=	100 Mb for every minute of video.

Transferring Images to a Computer

Digital cameras store photographs on memory cards which are solid state storage devices. They act like small **Hard Drives** but have no moving parts. Unfortunately there are many types including SD cards, miniSD cards, microSD cards, SDHC cards, Compact Flash cards, memory sticks, Memory Stick Pro etc.

All of these cards have different shapes, sizes and connections – if you are going to buy spares make sure you get the right type!

Cards vary in size up to about 8 Gb. which will hold approx. 800 RAW images!

There are 2 methods of transferring photos from your camera to the computer.

- Connect them using the USB cable supplied with your camera.
- If you have a Card Reader you can plug your memory card into the computer.

After you have connected your Memory Card or Camera to your computer a dialogue box usually opens and the computer asks what you want to do.

If you choose download photographs the computer will save your camera images on to the Hard Drive.

I prefer to open **Windows/File Explorer** which gives a visual representation of all the folders on the Hard Drive. I can then either select the folder I want to save my photos in or even make a new folder.

Copying images to a new folder on your computer.

- Start **File Explorer** – if it does not start on connection hold down the **Winkey** and press the **E**.
- With the left mouse button select the **C:** drive icon.
- With the **C:** drive highlighted go to **File/New Folder** to create our new folder.
- When the folder is created it will be called New Folder. We need to rename it to CCC by clicking on the folder with the right mouse button and selecting **Rename**.
- We could use the above method to create any number of sub-folders in the CCC folder

We have now created our new camera club folder and we are ready to copy our photos from the camera/memory card to our folder.

- Using File Explorer navigate to your Memory Card drive or the Camera folder.
- Open the Camera/Memory Card folders until you find your photographs.
- Select one of the photographs with the left mouse button and then right click your mouse and select **Copy**. The photo is now in the temporary computer memory.
- Now select our new CCC folder, right click again and select **Paste**.
- Our single photo should now be in our CCC folder.
- If you want to copy all the photographs select the first photo with your mouse, hold down the **Shift** key and then select the last photo. All the photos will now be selected, right click to Copy them, select the CCC folder and then right click to Paste.
- If you want to select individual files hold down the **Ctrl** key while selecting files with your left mouse button.
- If you are reasonably confident you can 'Drag & Drop' instead of copying and pasting. Select all the photos from the Memory Card folder you want to transfer and, while holding the left mouse button down, drag the files to the CCC folder. Once there release the left mouse button.