PC WEEKLY

INPUT DEVICES

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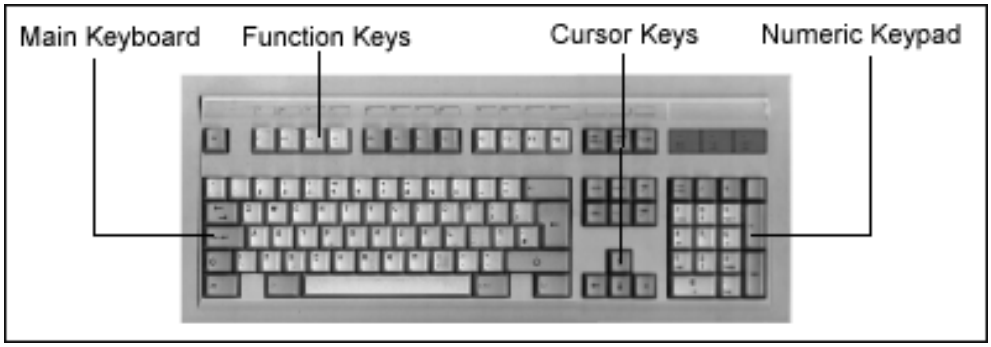
Input Devices

KEYBOARD

This useful device is one of the main and most commonly used input devices. This device is attached to the computer and is used for writing on the computer.

The typical keyboard used by most people is the 'QWERTY' keyboard. It is called 'QWERTY' as these are the first letters in the first row. There are newer keyboards with different designs but most people are familiar with the 'QWERTY' keyboard. A man called Sholes in 1878 developed this keyboard layout. It was originally developed for the typewriter but now is the standard layout for the computer. There are four main parts to a keyboard and they are the main keyboard, numeric keypad, cursor keys and function keys.



<u>An advantage</u>

Most computers have this device attached to it and a skilled typist can enter data very quickly.

<u>A disadvantage</u>

It can be very time consuming to enter data this way, especially if you have not had much practice at typing. It could also cause cramps in the fingers.

MOUSE

The mouse is the most common pointing device. People commonly use a mouse on a small mat and the mouse has a small cursor on the computer. This small cursor called a pointer follows your movements on screen. With this pointer you can select options using icons or menus on screen. To select the icons people will have to click on the 2 or 3 buttons on the mouse. The left button is most used out of the 2 or 3 buttons.

Most mice have a small ball located underneath it. This ball detects your movements. As it detects your movements the small ball is also rotating. The mouse monitors how much the ball is turning and in which direction it is moving. As the mouse does this, it sends this information to the computer so that it can move he pointer.

<u>An advantage</u>
People find it easier to select items and start tasks by clicking icons or choosing form menus rather than typing in commands.

<u>A disadvantage</u>
Mouse balls can become very dirty and stop functioning correctly unless cleaned regularly.

TOUCH PAD

A touch pad is just like a mouse but is used on laptops. Just like the mouse the touch pad a small cursor on a laptop screen. A touch pad works by sensing the users finger movement and downward pressure. As it detects finger movements the pointer, on screen, will move wherever the users finger will move on the touch pad.

Like on mice, there are buttons but on touch pads there are buttons but you really don't need to use them. On laptops you can select an icon or menu just by tapping on the touch pad. This happens by the surface of the touch pad sensing your tapping of the finger.

George E. Gerpheide invented the touch pad in 1988 and in 1994 a company called Apple computer was the first to license a touch pad on its portable computers. Today touch pads are the most used pointing devices on laptops.

<u>An advantage</u>
It is quick and easy selecting icons or menus just by tapping on the touch pad

<u>An disadvantage</u>
The surface of touch may tend to be a bit slippery.

TRACKER BALL

A tracker ball or trackball is another pointing device for laptops, this time the device isn't a built in device. It looks just like small ball from underneath a mouse but this time is facing upwards. The trackball is usually located in front of the keyboard toward the person using it. A tracker ball has a socket, which it is placed it so half the ball is inside the laptop and half is facing outwards.

Using a trackball isn't difficult at all and all a user has to do is roll the ball to direct the pointer, the small cursor on screen, to the icon or menu. Then to select the icon or menu the user has to place the pointer there and click one of two buttons, which is identical to mouse button.

<u>An advantage</u>

Like an ordinary mouse, you can not like lose the ball as it is built in to the device as in mice u can open the device to let the ball out.

<u>A disadvantage</u>

First time users can find it difficult to use.

JOYSTICK

A joystick is used to play computer games. A standard joystick has up to right directions. The joystick sends information to the computer in which direction it is being pulled. After it tells the computer this, the computer uses this information and for example moves the steers the car to the left.

There are also several buttons around the joystick as well. These buttons have particular functions to do as well for example in a car game one button will sound the horn or trigger a missile or something like that.

There are two types of joysticks; they are called the analogue joystick and the track point device. The analogue joystick, whilst it is being moved, measures how far it is being pulled. It does this because in an analogue joystick the further you pull the stick the faster the object goes. A track point device is a small joystick and is sometimes built into laptops as another pointing device.

<u>An advantage</u>

There is an immediate feel of direction due to the movement of the stick.

<u>A disadvantage</u>

They are not particularly strong and can break easily when used with games software.

VIDEO DIGITISER

A video digitiser is a software device, which captures from analogue video still frames. It then converts it to a digital still image. It gets these images from a TV set, video camera, or video recorder, etc., and forwards them to a computer for display, storage, or general manipulation. This kind of technology is done with the aid of computer hardware.

Video digitiser come in colour and it also can capture moving video sequences as well as stil images.

<u>An advantage</u>

Allows us to capture real life images which are often more appropriate than drawing.

<u>A disadvantage</u>

A fast computer with a large memory capacity is required to cope with a large amount of data involved.

DIGITAL CAMERA

A digital camera is used in the same way as an ordinary camera and it even looks like an ordinary camera but it has many different qualities. Digital cameras don't use film like the ordinary camera but they use loads if light sensors built inside it. Once a picture has been taken the light sensors is used to input the photo on a screen on the cameras back. This photo now can be stored in the cameras RAM or saved on to a floppy disc. It can even be transferred on to a computer.

Using a graphics package the image can be transferred on to a computer for editing. This means you could change the background colour of the photo, replace one person's head with another person's head.

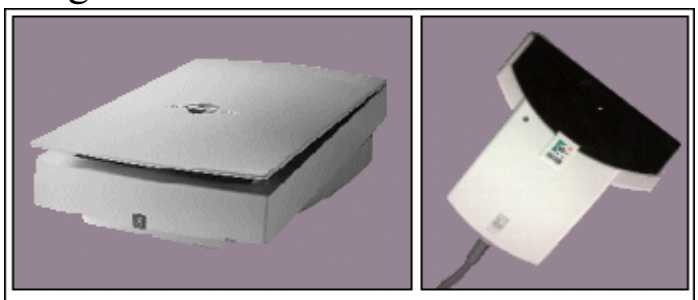
Digital cameras relatively cheaply but these kind of cameras don't have good picture quality. More expensive cameras have better and higher quality of photographs. Digital cameras are really useful for journalists writing newsletters.

<u>An advantage</u>
There are no expensive developing costs, no film is needed and you can insert images directly into a document on your computer.
<u>A disadvantage</u>
The cameras are generally more expensive than ordinary cameras.

SCANNER

A scanner is a input device that can transfer printed pictures and texts of writing into the computer. A scanner can works by shining a light at the printed picture or text being scanned. It then measures how much light is reflected back using an optical sensor. Then the amount of light that is reflected back tells the computer how light or dark the image is at each point. The light and optical sensor scan about one line at a time.

There are two types of scanners. They are called the flatbed scanner and handheld scanner. The flatbed scans images by a user placing an image on top of it. It then scans the image by the light sensor. The scanner moves the light and sensor itself and scans the whole image automatically. A handheld scanner is used by the user moving the scanner itself and pushes the light/sensor along the image.



Flatbed Scanner Handheld Scanner

<u>An advantage</u>

Any image can be converted from paper into digital format and later enhanced and used in other computer documents.

<u>A disadvantage</u>

Images take up a lot of memory space, but it is impossible to reduce the size of the data file of the data file by reducing the resolution (number of dots per inch) or by using different ways of storing the data (different file formats).

REMOTE CONTROL

A remote control is a device for transmitting data when the user is some distance from the processor. A remote control is a device from which, whilst a user is watching T.V. or watching a DVD on the computer, can transmit data. This happens, as there is an infrared sensor on the main processing unit, which picks up the signals that are being sent from the remote when the keys are being pressed.

Items such as video recorders can accept data, which is programmed into the system from a remote control. Special keys for certain tasks or selections are usually found on a remote. These special keys can be keys like a play button or stop button. The main function of a remote control is to select or enter information from a distance.

<u>An advantage</u>

The device provides the user with the convenience of working away from the processing unit.

<u>A disadvantage</u>

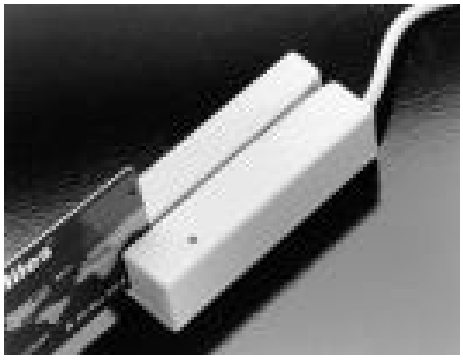
The unit and remote need to be quite near to each other and have no other objects between them, which may interfere with the signals sent.

MAGNETIC STRIPE READER

A magnetic stripe reader is a hardware device, which reads the information off a magnetic stripe, which is located on the back of a plastic card.

This magnetic stripe is used for credit or it is on a credit card. Latest technology has a magnetic stripe contain information about an employee or employer to allow that person into certain parts of a building. They do this by swiping their cards through a magnetic stripe reader. This reader can very quickly read information about the person by quickly and accurately reading the pattern of magnetism.

There are two ways in which a magnetic stripe reader can read information. It either can read it by a card being swiped through it or a card being held next to it.



<u>An advantage</u>

The data from the stripe is read very quickly so it is much quicker and often more convenient to use cards, which have a magnetic stripe, to pay for goods.

<u>A disadvantage</u>

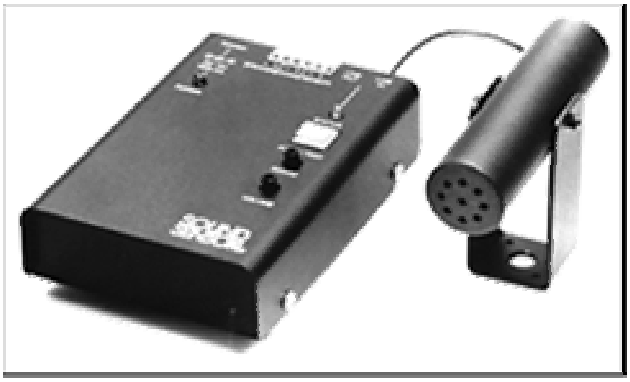
Magnetic stripes may get damaged or the magnetic stripe reader could break down.

SOUND SENSOR

MICROPHONE

It is impossible to record sound if you have a sound card in your computer. A sound sensor is a microphone that detects sound and inputs it into a computer. After that the sound is converted into a digital format. Firstly, the sound waves are in analog format and this format has to be changed into digital format in order to be saved.

Many different types of sound can be recorded including music and human speeches. This means that a large number of digital values can be stored to represent a sound of very good quality. There are many uses for microphone and waves are very unique and ideal for its job, for example a speech recognition system.



<u>An advantage</u>
Recording your own sounds means that you can add spoken messages or music to your own presentations or even emails.

<u>A disadvantage</u>
Sound sampling (converting the analogue sound to digital format using software) often produces very large data files.

MIDI INSTRUMENT

MIDI means Musical Instrument Digital Interface. This device uses musical instruments like keyboards, guitars and drums. These instruments send and receive electronic messages. If for example a musical keyboard is connected to a computer using a MIDI, then the musical information like a pitch can be stored into a computer but like sound sensor microphones has to be converted into digital format. The stored data can be sent back to the musical instrument to reproduce the signal sent to the MIDI is also used to allow different musical instruments, for example an electronic piano and a synthesizer to communicate and work together.

Companies that use MIDI are companies such as the music industry. It uses MIDI to input music directly into a computer so that they can edit the music and even develop the music. The music industry often uses MIDI to mix sounds with other sounds, which are input from a sound sensor microphone. This is called remixing.

An advantage

Once the tune has been played on the musical instrument, all the details are held on the computer, these details may then be changed. It is possible to speed up the tune, slow it down or even make it sound like a completely different instrument.

A disadvantage

A musician is required to play the instrument to acquire the input, so some musical knowledge is required.