

2. Input and Output Devices

Input devices: Uses, advantages and disadvantages: -

Device	Use
Keyboard	Entering text into a word processing document. Applications where text has to be created rather than copied
Numeric keypad	Applications where only numeric data is to be entered. Inserting pin numbers for chip and pin credit/debit cards, or when using an ATM machine to withdraw money or check a bank balance
Pointing devices	All applications which require selection from a graphical user interface. For example: the selection of data from a predefined list or menu
Mouse	Used in most PCs for moving the cursor around.
Touchpad	Used in Laptop computers for moving the cursor around.
Tracker ball	For use by people with limited motor skills e.g. young children or people with disabilities
Remote control	Using remote control devices to operate TVs, video players/recorders, DVD players/recorders, satellite receivers, HiFi music systems, data or multimedia projectors
Joystick	Used by a pilot to fly an aero plane or flight simulator. Used in car driving simulators and for playing games
Touch screen	Selecting from a limited list of options e.g. certain POS uses such as cafes, tourist information kiosks, public transport enquiries. May be used for handwriting recognition in a PDA or Tablet PC
Magnetic stripe reader	At POS terminals, ATMs and in security applications
Smart card	Payment cards, ID cards, door control systems, public transport tickets
Scanners	Entering hard copy images into a computer
Digital cameras	Taking photographs for input to computers, for input to Photo printers
Microphones	Recording of voices for presentation software
Temperature sensor	Automatic washing machines, automatic cookers, central heating controllers, computer-controlled greenhouses, scientific experiments and environmental monitoring
Pressure sensor	Burglar alarms, automatic washing machines, robotics, production line control, scientific experiments and environmental monitoring
Light sensor	Computer controlled greenhouses, burglar alarm systems, robotics, production line control, scientific experiments and environmental monitoring
Graphics tablet	To input freehand drawings or retouch photographs
Magnet Ink Character Reader	To input magnetic characters, such as those found on bank cheques
Optical Mark Reader	To input pencil marks on a form such as a school register, candidate exam answers, any application involving input of a choice of options
Optical Character Reader	To input text to a computer ready for processing by another software package such as word processors, spreadsheets, databases etc.
Bar code reader	To input code numbers from products at a POS terminal, library books and membership numbers
Video camera	To input moving pictures, often pre-recorded, into a computer
Web cam	To input moving pictures from a fixed position into a computer
Light pen	Where desktop space is limited, it is used instead of a mouse or for drawing applications where a graphics tablet might be too big

Output devices:- Uses, advantages and disadvantages

Device	Use
CRT Monitor	Applications where space is not a problem. Applications where more than one user may need to view screen simultaneously such as in design use, e.g. when several designers may need to offer suggestions on a prototype.
TFT Monitor	Applications where space is limited such as small offices. Applications where only one person needs to view the screen such as individual workstations.
Laser Printer	Applications which require low noise and low chemical emissions, e.g. most networked systems. Applications which require rapid, high quality and high volumes of output, e.g. most offices and schools.
Inkjet Printer	Applications which require portability and low volume output where changing cartridges is not an issue e.g. small offices and stand alone systems. Applications which require very high quality output and where speed is not an issue, e.g. digital camera applications.
Dot Matrix Printer	Applications where noise is not an issue and copies have to be made, e.g. industrial environments (multipart forms, continuous stationery, labels etc.), car sales and repair companies, manufacturing sites.
Graph Plotter	CAD applications, particularly where large printouts are required such as A0.
Speakers	Any application which requires sound to be output such as multimedia presentations/web sites including encyclopedias. Applications that require musical output such as playing of music CDs and DVD films

Control Devices in Control Applications

Device	Use
Motors	Automatic washing machines, automatic cookers, central heating controllers, computer-controlled greenhouses, microwave ovens, robotics, production line control.
Buzzers	Automatic cookers, microwave ovens
Heaters	Automatic washing machines, automatic cookers, central heating controllers, computer-controlled greenhouses.
Lights/lamps	Computer-controlled greenhouses.