








Output Devices


Device	Description	Advantages	Disadvantages	How it works	Picture
Monitor - LCD (laptops)	LCD (Liquid Crystal Display) Found in Labtops.	Space-saving- takes up less space than normal monitor. Higher resolution than CRT monitors.	Very costly to buy. Pixels can disappear leaving clear dots on screen. Easily broken and costly to repair.	Differ in size and resolution: 1) Size - Measured in inches across the diagonal. A typical general PC monitor has a size of around 17 inches. Laptops have a screen size typically between 13-14 inches across.	
Monitor - CRT (Monitors)	CRT (Cathode Ray Tube) - Found on older monitors. - Uses same technology as TVs.	Cheaper to buy	- Takes up a lot of space. - Resolution can be poor relative to LCD i.e. image may be less clear.	2) Resolution - measured by number of pixels or dots that make up screen. Typical resolution for both types- (1024 X 768 pixels) (800 X 600 pixels) (640 X 480 pixels)	

<p>Monitor - TFT (Flatscreen monitor)</p>	<p>TFT (thin film transistor) is a type of LCD (liquid crystal display) flat-panel display.</p>	<ul style="list-style-type: none"> -Excellent image quality. -Better for fast-moving graphics. - Graphics are smoother and crisper. 	<ul style="list-style-type: none"> - Very expensive to buy. - Uses more power. - Easily broken and costly to repair. 	<p>Increasingly sold as part of a new computer package.</p>	
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<p style="text-align: center;">Dot- Matrix Printer</p>	<p>Also called impact printer.</p>	<ul style="list-style-type: none"> • Cheap to run. • Better for doing large print runs on pre-printed documents. • Ideal for doing wages, invoices. 	<ul style="list-style-type: none"> • Noisy. • Poor quality. • Can be difficult to get ink ribbons for it. • No colour available. 	<p>Come in two main parts:</p> <ol style="list-style-type: none"> 1) Printhead- matrix of pins- either 9 or 24 arranged in a vertical block. 2) Ribbon- a long strip of material with ink on one side. The printhead pins push the ribbon onto the printer paper to print a series of dots. At normal reading distance these dots appear to form characters. 	
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<p style="text-align: center;">Laser Printer</p>	<p>Also called page printers because the data to be printed is sent to the printer in complete pages- one page at a time. Work in a similar way to a photocopier.</p>	<ul style="list-style-type: none"> • Very fast. • Excellent quality. • Pages are dry instantaneously. • Good for printing large volumes of documents. 	<ul style="list-style-type: none"> • Toner is very expensive. • Units are expensive to buy. 	<p><u>Four</u> main parts:</p> <ol style="list-style-type: none"> 1) Electrostatic rotating drum- has an electrical charge. 2) Laser- etches onto the drum a negative image of the page to be printed. 3) Toner cartridge- contains ink. When the drum passes over the toner cartridge the ink is attracted to t onto the charged areas of the drum. The ink is then transferred onto the printer paper. 4) Fuser unit- heats the paper to fuse the ink onto it. 	
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<p>Inkjet Printer</p>	<p>Also known as Deskjet (Hewlett Packard), Bubblejet (Canon).</p>	<ul style="list-style-type: none"> • Cost less than lasers. • Resolution up to 9600 X 2400 DPI. • More jets on an ink-jet than dot-matrix and so better print quality. 	<ul style="list-style-type: none"> • When printing colour, pages can be wet when printed out. • Can be less cost efficient than a laser. 	<p>Main component is the printhead. These have lots of tiny nozzles or sprouts through which small jets of ink are sprayed onto the paper.</p>	
<p>Plotter</p>	<ul style="list-style-type: none"> - Many different types of plotter. - Used for recording real-time measurements such as measuring earthquakes. 	<ul style="list-style-type: none"> - More accurate than laser for certain types of print jobs such as drawings of a house for architects. 	<ul style="list-style-type: none"> - Very large. - Very expensive. 	<ul style="list-style-type: none"> - Most common type is flat-bed plotter. Paper lies on a flat surface and a plotter pen moves over it from left to right. - Popularity will decrease as laser get cheaper. 	

<p>Speaker/ Sound</p>	<ul style="list-style-type: none"> - Sound can be recorded digitally on computer and broadcast through speakers. - Voice synthesisers becoming increasingly common on lifts. Directory enquiries. 			<p>Sound waves are converted to sound bits and stored on computer as data.</p>	
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