Desktop Publishing 5N0785

Learning Outcome 2

Monaghan Institute Level 5 Module

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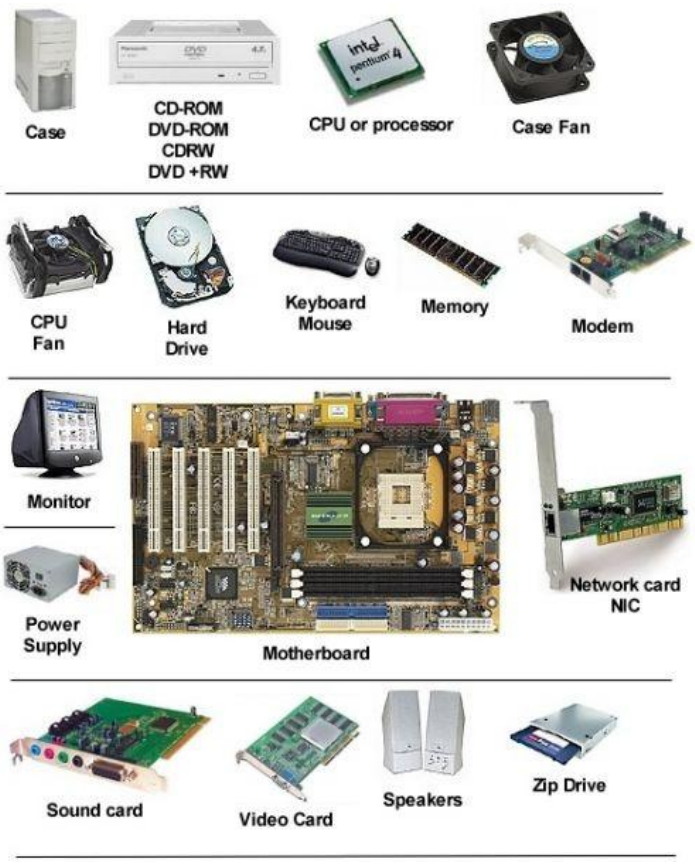

2. Learners will be able to describe the characteristics of key components of DTP systems including those used for input, storage, protection, processing, output, and transmission of images and data.

A. Describe a typical DTP system specification such as operating system, RAM capacity, disk formats and capacities, CPU speed, VDU type, printer type and resolution, scanner type and maximum possible resolution.

B. Components

A computer component is a computer part or hardware. These can be divided into two groups, the components inside the tower and the components we can see.

Main Components of a Computer Processing System – Inside the Tower

a. Hard Drive
b. CPU Central Processing Unit
c. Motherboard
d. PSU Power Supply Unit
e. RAM Random Access Memory
f. Modem
g. Video Card
h. Network Card

Hard Drive

Like the filing cabinet inside your computer. This stores all of your programs and files its size is measured in GB (the more GB, the more you can store). The average size today is upward of 120GB.

CPU Central Processing Unit

The CPU stands Central Processing Unit - the 'brain' of the computer. This is one of the smallest yet most expensive parts of a PC. When people talk about the speed of a computer they are talking about the speed of the CPU. The CPU interprets the instructions you give the computer and then carries out the task. The speed of a CPU is measured in Mhz and Ghz (the more Mhz the faster the PC) and the bigger your CPU the faster a computer can work. Manufactures include Intel, AMD and IBM.

Motherboard

This is the main board on the computer. All the components slot in or connect to the motherboard it is a very complicated and intricate.

PSU Power Supply Unit

This is where the mains power plugs into the computer. It is located at the back of the computer next to the fan which keeps it cool. The PSU has lots of cables connected to it which can plug into the components on the PC including the CD ROM, Hard Drive, Fan and Motherboard.

RAM Random Access Memory

RAM - stands for Random Access Memory. This is a temporary type of memory used while you are working on your computer (where your work is saved before you actually save it). It is the memory a computer needs to run software. When you load or 'run' software, it goes into RAM. If you type something it also goes into RAM before being saved on the hard disk. When you turn your computer off all the data in RAM is lost. The performance of RAM is measured in MB, the more MB of RAM a PC has, the better it can cope with big tasks like having lots of applications open at once, if you have a small amount of RAM the PC will crash and become very slow. RAM can be easily added to a computer to improve its performance.

Modem

This is what is used to connect a computer to the internet it connects though a phone line. The performance of a modem is measured in KB. The speed of modems is limited by phone lines (that is why we now have broadband).

Video Card

A video card sends the picture signals from the motherboard to the monitor. The video card is inserted into the mother board like the RAM. It interprets what needs to be displayed and passes the message on to the monitor. You can get powerful 3D cards for games, some video

cards are so fast they have to have their own fans. Performance of video cards is measured in MB (the more 'MB' the faster the picture appears). Average size today is about 64mb.

Network Card

Network cards (network interface controller) are used to connect computers to a computer network; all the computers in the college have a network card so they can talk to each other. The speed of a network card is measured in MB per second.

C. Input Devices

Keyboard

Keyboards are one of the two basic components used for data entry. Keyboards use the Qwerty typing layout similar to typewriters. Keyboards usually also have a number keypad to the right which can be used to enter numeric data.

Mouse
Touch sensitive screen
Microphone (voice data entry)

Scanner

In computing, an image scanner—often abbreviated to just scanner—is a device that optically scans images, printed text, handwriting, or an object, and converts it to a digital image. Common examples found in offices are variations of the desktop (or flatbed) scanner where the document is placed on a glass window for scanning.

Smart Cards

A smart card, chip card, or integrated circuit card (ICC), is any pocket-sized card with embedded integrated circuits. A smart card or microprocessor cards contain volatile memory and microprocessor components. The card is made of plastic.

Sensors e.g. alarms, climate control

A sensor also called detector is a device that measures a physical quantity and converts it into a signal which can be read by an observer or by an instrument. Sensors are used in everyday objects such as touch-sensitive elevator buttons (tactile sensor) and lamps which dim or brighten by touching the base. There are also innumerable applications for sensors of which most people are never aware. Applications include cars, machines, aerospace, medicine, manufacturing and robotics. A sensor is a device which receives and responds to a signal.

Sensors are used in alarms and in climate control to detect changes and computers can react according to the changes appropriately for e.g. Fire alarm, burglar alarm, air conditioning and a refrigerator.

D. Output Devices - Printers

The three main different types of printers are:

- Ink-jet Printers
- Laser Printers
- Multifunctional

Normally home computer users will use ink-jets as they are relatively cheap but superior in quality to dot-matrix. Laser jets and other printers created by new technology are more expensive and more commonly found in the offices.

Inkjet

Ink-jets(bubble-jets) printers spray ionized tiny drops of ink onto a page to create an image. This is achieved by using magnetized plates which direct the ink's path onto the paper in the desired pattern. Almost all ink-jets offer a color option as standard, in varying degrees of resolution. Ink-jet printers are capable of producing high quality print which almost matches the quality of a laser printer. A

standard ink-jet printer has a resolution of 300 dots per inch, although newer models have improved on that. As a rule color link-jet printers can also be used as a regular black and white printer.

When a Color Inkjet Printer is the Best Choice

Ink jets are a good choice if you are looking for high quality color photo output for a reasonable price. Prices start at around €150.

First, you'll need to decide on the type of machine you want: a standard ink jet for reasonable photos and a low purchase price, or a photo ink jet for superior photo quality. All of the top models offer 4800-by-1200-dpi resolution, but they vary quite a bit in terms of printing speed.

Choose an inkjet printer based on the cost of replacement ink cartridges, and not on the cost of the printer. Over time ink and paper costs can exceed the cost of the printer several times over. Avoid single-cartridge printers which only come with a color cartridge that can't print true color. It is more cost effective to purchase a color inkjet with multiple color cartridges (CMYK), so they can be replaced individually.

Another cost saving tip: Leaving any inkjet idle for even a week or two can allow the ink in the tiny tubes that feed the nozzles to dry. The resulting clogs cause streaks and other anomalies in your pictures. To avoid clogs, print at least once a week. Some printers run a maintenance routine on startup, meaning that you can keep the nozzles clear simply by turning your printer on and off once a week. Check your device's manual to see whether it has this feature.

LaserJet

Laser printers operate by shining a laser beam to produce an image on a drum. The drum is then rolled through a pool, or reservoir, or toner, and the electrically charged portions of the drum pick up ink. Finally, using a combination of heat and pressure, the ink on the drum is transferred onto the page. Laser printers print very fast, and the supply cartridges work a long time. Color laser printers use the same toner-based printing process as black and white (B/W) laser printers, except that they combine four different toner colors. Color laser printers can also be used as a regular black and white laser printer.

When to Choose a Laser Printer

If you do a lot of document printing, don't use an inkjet printer. Use a laser printer. Laser printers cost more to buy but much less to use - they are very cost effective to operate since their toner cartridges are not replaced as often.

With all costs figured in, each document page printed on a typical laser printer costs from 2 cents to 5 cents; on an inkjet, the cost per page can run from 10 cents to 15 cents, depending on the model. (This does not even count the cost of photo printing, which can cost up to a eurp per page on an inkjet when you include the high cost of photo paper and the additional ink that's used in that mode.)

Digital Photo printers

Many middle range printers are now able to print photo quality images. Usually an option with color printers, specialist photo print heads allow a greater resolution to be achieved to improve photo image quality. Photo ink jet printers expand their gamuts by adding additional ink colors, usually light cyan and light magenta.

Multifunction Printer

Multifunction printers combine top-quality color ink-jet or laser printing with plain-paper and PC faxing, color copying and color scanning , telephoning- all in one convenient, space-saving machine. If you work from home or have a small office a multifunctional device may be ideal.

Notes:

LO 2: Revision Questions

1. Name three computer components which would be important to consider when purchasing a personal computer for Desk Top Publishing?
2. What is the difference between a laser printer and an inkjet printer?
3. Explain what a scanner does?
4. Describe the characteristics of key components of DTP systems including those used for input, storage, protection, processing, output, and transmission of images and data