CBAT, KUSHTIA

[Lecture 5: Introduction to Computer] BBA First semester

Questions:

1. **List out some input devices of a computer. Discuss how I keyboard communicates to computer.**
2. **What is keyboard buffer?**
3. **What is a clipboard? Mention its function.**
4. **What arc the difference between ROM and RAM?**
5. **What are the difference between PROM and EPROM?**
6. **What is cache memory? What is the difference between primary and secondary memory?**
7. **Define level-1 and IeveI-2 cache?**
8. **Reading Devices (MICR,OMR and OCR)**
9. **What is Smart Cards.**
10. **What is a monitor? Write down the working principle of a CRT monitor with diagram.**
11. **What factor should you consider for selecting a monitor?**
12. **How picture quality is related with pixel measurement?**
13. **Mention the features of VGA, SVGA & XGA.**
14. **List some output devices of a computer. Discuss how a printer works?**
15. **Discuss how a printer works.**
16. **Briefly discuss the working principle of a lesser printer?**
17. **Discuss the different types of printer?**

- **List out some input devices of a computer. Discuss how keyboard communicates to computer.**

List out some input device of a computer as given below:
1. Keyboard
2. Reading devices
3. Pointing devices,
4. Scanning devices
5. Punched card,
6. Voice input device
7. Touch-Tone device

* How the Keyboard communicates to computers as given below:

- The most common of all input device is the keyboard. Microcomputers offer enhanced keyboard for easy entry of numbers. This is accomplished with a smaller group of keys known as a number is keypad at the right of the keyboard.
-The keyboard arrangement provided as standard on most keyboards is the QWERTY arrangement tamed for the six letters beginning the row at the top left of the keyboard.
- The QWERTY keyboard has been in used for nearly a century.

- **What is keyboard buffer?**

A location in memory where keystrokes from the keyboard arc stored until the computer is able to process them. A keyboard buffer may also refer to a software program or hardware device capable of capturing each keystroke as it is entered into the computer These devices are commonly used to keep a log of data entered into a computer or to spy or steal data as it is entered into the computer.

- **What is a clipboard? Mention its function.**

Clipboard: The clipboard is a temporary storage area for information that you have copied or moved from one place & plan to use somewhere else. You can select text or graphics & then use the cut or copy commands to move your selection to the clipboard, where it will be stored until you use the paste command to insert it elsewhere. For example, you might want to copy a selection of text from a website & then paste that text into an e-mail message. The clipboard is available in most Windows programs.

The Macintosh uses two types of clipboards. The one, it calls the *Clipboard* can hold only one item at a time & is when .you turn the off. The other, is called the, can hold several items at once and retains its contents from one working session to another.

- **What are the difference between ROM and RAM?**

RAM	ROM \
RAM stands for Random Access Memory	ROM stands for Read Only Memory
User can read or write into it	User can only read from it
For any type of processing. User must store program and data into RAM.	Manufacturer stores instruction into the ROM permanently
Temporary or volatile memory	Permanent or non-volatile memory

- **What are the difference between PROM and EPROM?**

PROM: Proms (Programmable Read Only Memory) are blank chips which have nothing recorded on them. Once instruction or recorded into the chip by a special programming device, the PROM chip permanently stores the information link ROM. The,' programming of the PROM chip is general done by the manufacture of computer systems. PROM chips are used primarily to provide special purpose programs, which can be plugged into the main computer board.

EPROM: EPROM (Erasable Programmable Read Only Memory) chips can program, as the PROM chips. But they can be erased and reprogrammed by a special programming device. The contents of an EPROM chips can erased by exposing it to ultraviolet light. The light passing through a quartz window in the plastic container exposes the silicon chips that contain memory calls storied information.

- **What is cache memory? What is the difference between primary and secondary memory?**

Cache memory: As mention earlier the memory is slower than the CPU. System performance suffers when a fast device must wait to access data from a memory system. This may be an I/O device or the CPU, and the memory system may be main memory or an external device. Because computer users always seem to want large memories, computer designers must carefully decide memory cost and performance. One way to improve the performance is to incorporate a cache memory between the CPU and main memory.

Primary Memory	Secondary Memory
(Location): Inside/Outside and directly accessible by CPU.	Outside and indirectly accessible by CPU
(Cost): Most expensive	Less expensive then primary story
(Capacity): Lower as computer to secondary memory	Several thousand time higher as compared primary memory.
(Access time): In billionths of a second.	In millionths of a second.
(Data processing directly): Yes	No. data must first be moved into primary memory.
Semiconductor chips	Magnetic disk. Tape

- **Define level-1 and IeveI-2 cache?**

Ll, or primary cache, is a small, high-speed cache incorporated right onto the processor chip. The Ll cache typically ranges in size from 8KB to 64KB and used the high-speed SRAM instead of the slower and cheaper DRAM.

L2, or secondary cache, is memory between the RAM and the CPU and is bigger than the primary cache 64KB to 2MB. The L2 cache is also a unified, non-blocking cache, which improves performance over cache on motherboard solution through a dedicated 64-bit cache bus.

- **Reading Devices (MICR,OMR and OCR)**

The basic types of character readers are:

- Magnetic-ink reader
- Optical mark reader
- Optical character reader
- Hand written character reader
- Smart cards etc.

Magnetic-ink Character Reader

Magnetic-ink Character Recognition (MICR) was developed by the Stanford Research Institute of USA for use by the Bank of America. This system can read data prerecorded on checks and deposit slips with a special ferrite-impregnated ink. The magnetized characters can be read and interpreted by MICR equipment

The American Bankers Association (ABA), in the mid-1950s, adopted the magnetic-ink character recognition (MICR) technology, as its primary means for processing checks. This technology involves reading of numeric characters and a few special symbols printed on cheques with magnetic ink. The data are divided into five groups:

- ABA transit number
- Customer account number
- Cheque number, and
- Cheque account.

The cheque amount in the bottom-right corner is keyed in manually at the branch where the cheque is received for processing. The advantages of the MICR system are:

Optical Mark Reader

An optical mark reader (OMR) optically reads marks on carefully printed forms. Optical mark forms are relatively expensive, as they must be printed with exact tolerances^he most popular use of such devices is optical readers for scoring examinations in educational institutions^.

Optical Character Reader

Optical character recognition (OCR.) devices can convert data from source documents to a machine-recognizable form. Applications of optical scanning include billing, insurance premium notices, invoices etc. An OCR device can reliably read and interpret script or handwriting. However, to read handwriting certain

general guidelines are observed when the data are"written. Generally, optical character readers are limited with respect to handwritten characters and can only read handwritten digits and some symbols. Many OCR devices are available for reading typed characters, including digits, letters and some special characters. Not all printed characters can be read reliably on OCR readers. Generally, each reader is capable of reading only selected character styles. Even if the character style and spacing are acceptable, errors can result from reading a character that is not written perfectly. To reduce errors, OCR devices generally compare the pattern read with the patterns of acceptable characters. The read character is assumed to be the character whose stored pattern most closely matches the read pattern.

- **Smart Cards**

A smart card is small in size and to use it, the card is inserted into a special card-reading terminal and then a password is entered. The cards have microchips that can keep permanent records, which are updated each time the card is used. The transaction data stored on the card can later be read into the computer to update the user's bank records. Now a days smart cards are used to pay bills, buy merchandise, make phone calls, buy postal money orders, get examination results, store emergency medical information, and to perform some other activities

- **What is a monitor? Write down the working principle of a CRT monitor with diagram.**

The monitor is the commonly used display device. The monitor utilizes a cathode ray tube (CRT) .CRT monitors generally produce images by the raster-scan method. In this method, an electron beam with varying intensity is moved back and forth horizontally across the face of the monitor. As the beam is directed to each spot on the phosphor-coated screen, it illuminates the spot in proportion to the voltage applied to the beam. Each spot represents *a* picture element or pixel. When the electron beam has scanned the entire screen and illuminated each pixel, one cans a complete image. The image that can be seen is the one traced on the retinas of eyes by the light beam. However, this image will fade unless it is refreshed. Thus, the electron beam must scan the screen very rapidly so that the intensity of the image remains approximately the same and screen does not appear to flicker.

The screen resolution of a monitor is determined by the number of pixels making up the screen. Monitors are currently available with 64,000 to more than 2 million pixels per screen. The greater the resolution of a monitor the greater is the storage demand on the computer. This is because the image must be stored in memory before it can be displayed.

* What factor should you consider for selecting a monitor?

There is some most important subject about Monitor, which is essential to consider for selecting a monitor. Some of these are as given below –

- Large size
- High power consumption
- Fragility

- Ocarinas flickering image

These have led to the development of flat panel display. The flat panel display is particularly useful for laptop computers. Which can be used in the office and the taken home or on trip? Producing a truly lop-size, or laptop computer. That is function and light has not been easy and designing the video has been the most difficult problem. The most common flat penal displays:

- Liquid crystal
- Electro luminescent and
- Gas plasma display.

- **How picture quality is related with pixel measurement?**

Some monitors display images in only one color which other are capable of producing images in colors. Monochrome monitors use a single electron beam and display one color, generally green, amber, or white, on a black background. The phosphor composition of the screen determines the color. Color monitors produce multi-color images by combining the red, blue and green colors in varying intensities. Each pixel is made up of three color dots: red, blue and green. It will appear to glow in different colors depending on the intensity of individual dots in the pixel. A critical specification of a color monitor is its dot pitch. Dot pitch is the distance between the phosphor dots that make up a single pixel. A dot pitch no greater than 0.28 mm is very good for *15"* \ monitor.

- **Mention the features of VGA, SVGA & XGA.**

- VGA: Video Graphics Array.
- SVGA: Super Video Graphics Array.
- XGA: Extended Graphics Array.

- **List some output devices of a computer. Discuss how a printer works?**

List some output devices:
1 * Monitor
2* Printer
3* Pen drive
4* Speaker

- **Discuss how a printer works.**

The printer is a common output devise. It produces permanent visual record of the output from a computer. It is capable of producing business reports and documents. Currently available printers are capable of printing from 150 to over 20,000 lines per minute, with each line having up to 150 characters. Thus, a maximum printing speed of approximately 50,000 characters per second is possible.

Printers print on plain paper or on specially prepared single or multiple copy forms, such as invoices, labels, checks, bills and other special-purpose forms used in business and industry.

- **Briefly discuss the working principle of a lesser printer?**

Laser printer technology is much less mechanical than impact printing, resulting in much higher speed and quieter operation. The process resembles the operation of a photocopy machine. A laser beam is directed across the surface of a light sensitive dram and needed to record an image in the form of a pattern of tiny dots. The image is then transferred to the paper, a page at a time, in the same fashion as a photocopy machine, using a special toner. The major advantages of laser printers are;

* Very high speed
* Low noise level
* Low maintenance requirement
* Very high image quality

* Excellent graphics capabilities
* A variety of type sizes and styles

- **Discuss the different types of printer?**

Different types of printer are given bellow:				
Printer Type	Technology	Advantages	Disadvantages	Typical Speed
Thermal	Temperature sensitive, paper changes color when treated, characters are formed by selectively heating print head.	Quiet, high quality color output	Special paper Required expensive, slow	Several dozens to several hundred characters per second
Ink-jet	Electro statically charged ink drops hit paper	Quiet, prints color , Less expensive, fast	Relatively slow, clogged jets, lower dpi	Several hundred characters per second
Laser	Laser beam directed to a drum, etching spots attract toner, which is then transferred	Quiet, excellent quality, very high speed, color or black and white.	High cost	Up to several Hundred pages per minute

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