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ANS o1):

- LIMITATION OF SCANNER:
- Images produced by the scanner can take up a lot of memory space,
- Images lose some quality in the scanning and digitizing process,
- The quality of the final image is dependent on the quality of the original image.
- Emotional value is there in the original image
- Scanner does not support share names of more than 200 characters
- Scanner modifies the access time of directories while traversing the file system.
- II):
- Optical character recognition is use of technology to distinguish printed or handwritten text characters inside digital images of physical documents, such as a scanned paper document.
- The basic process of OCR involves examining the text of a document and translating the characters into code that can be used for data processing.
- OCR is sometimes also referred to as text recognition.
  - HOW OPTICAL CHARACTER RECOGNITION WORKS:

- The first step of OCR is using a scanner to process the physical form of a document.
- Once all pages are copied OCR software converts the documents into a two colors, or black and white version.

The scanned in image or bitmap is analyzed for light and dark areas, where the dark areas are identified as characters that need to be recognized and light are areas are identified as background.

- The dark are then processed further to find alphabetic letters or numeric digits.
- OCR programs can very can vary in their techniques, but typically involve targeting one character, word or block of text at a time.
- Characters are then identified using one of two algorithms.
- Pattern recognition OCR programs are fed examples of text in various fonts and formats which are then used to compare and recognized character in the scanned document.

- OCR USES CASES:
  - OCR can be used for a variety of applications including:
  - Scanning printed documents into versions that can be edited with word processors like Microsoft word or Google docs.
  - Indexing print material for search engines
  - Automating data entry extraction in processing
  - Recognizing text, such as license plates with a camera or software.
  - sorting letters for mail delivery
  - Translating words with in an image into a specified language.
- PART#02:
  - USES OF MAGNETIC INK CHARACTER:
  - Magnetic ink character recognition:

- The machine recognition of numeric data printed with magnetically charged ink
- It is used on bank checks and deposit slips.
- MICR readers detect the character and convert them into digital data although optical methods OCR became as sophisticated as the early MICR technology
- Magnetic ink is still used
- It serves as a deterrent to fraud because a photocopied check will not be printed with magnetic ink

ANS#4):

- TRANSMISSION media are the physical pathway that connect computer, other devices and the people on a network the highways and bypass that comprise the information super highway
- Each transmission medium requires specialized network hardware that has to be compatible with that medium
- You have probably heard terms such as layer 1 layer 2 and so on. These refers to the OSI reference model which defines network hardware in services in terms of the functions they perform'
- Transmission media operate at the layer 1 of the OSI model "they encompass the physical entity and describe the types of highways on which voice and data can travel.
- It would be convenient to construct a network of only one medium but that is impractical for anything but an extremely small network.
- In general networking use combinations of media types:
- There are main categories of media types:
- Copper cable types of cable include UN shielded twisted-pair (UTP) shielded twisted-pair (STP) and coaxial cable.
- Copper base cable are inexpensive and easy to work with compared to fiber –optic cables , but as you I will learn when we get into the specifics, a major dis advantages of a cable is that it offers a rather limited spectrum that cannot handle the advanced application of the future, such as teleimmersion and virtual reality.

- Wireless-media include radio frequencies microwave satellite and infrared.
- Deployment of cable particularly where there is little or no existing infrastructure e.g. Africa Europe etc.
- Wireless is also useful where environment circumstances make it impossible or cost prohibitive to use cable.
- EXAMPLES of storage device:
- One of the most popular types of the most popular storage used
- Floppy disk
- Hard drive
- Magnetic strip
- Super disk cassette tape
- Zip diskette
- Optical storage device
- Blue ray disc
- Cd rom disc
- Memory card
- SSD
- USB flesh drive
- Online and cloud
- Cloud storage
- Network media
- Paper storage
- Punch card
- OMR

ANS02):

- DIFFERENCE BETWEEN PLOTTER AND PRINTER:

➢ PLOTTER:

- The plotter is a computer printer for printing vector graphics,
- In the past plotter were used in application such as computer aided design through they generally been replaced with wide format conventional printers
- A plotter gives a hard copy of the output it draws pictures on a paper using a pen

➢ PRINTER:

- An external hardware device responsible for taking computer data and generating hard copy of that data.
- Printer is one of the most commonly used peripherals and they print text and still images on the paper.

• Printer types:

- IMPACT
- NON IMPACT
- IMPACT:
- Daisy wheel
- Matrix
- NON IMPACT:
- Inkjet
- Thermal
- Laser

B)

➢ Printing process of laser printing:

- ➢ Laser printing is an electrostatic digital printing process
- ➢ It produces high quality text and graphics and moderate quality photographs.by repeatedly passing a laser beam back and forth over a negatively charged cylinder called a drum a define a differentially charged image.
- ➢ Laser printing:1969
- ➢ Solid ink printing:1987

- Inkjet printing:1950
- Digital printing:1991

- Laser printing process and laser printer work:
  - Laser printer uses an electrical charge to attract toner particles onto a roller.
  - The roller transfers the toner image to a piece of paper and heat and pressure permanently fuse the image onto this page.

ANS#03):

- METROPOLITAN PRINTER NETWORK:
  - They are high speed broadband that covers larger geographic area such as city or districts than local area network but smaller than wide area network and providing the ability to integrate multiple services though the transmission of data voice and video on transmission media such as copper fiber optics and microwaves.
  - The term is applied to the single network such as a cable television network or it can be a way of connecting a certain number of LANS in a more extensive network so that resources can share from LAN to LAN and from device to device.
  - For example A company can use a MAN to connects the LAN of all its offices scattered around the city local libraries and government agencies often use a MAN to connect to citizens and private industries
  - It may also connect MANs with in a larger area than LAN
  - The geographic limit if a MAN may span a city
  - A man can wholly own by a private company which will be its operator or it can be a service provided by a public service company such as local telephone company .many telephone companies have a very

popular MAN service called multimegabit data switching services.

- The copper pair technology positioned as the largest network an excellent alternative for the creation of metropolitan networks
- For its low latency excellent stability and the lack of radio interference the MAN loop networks offer speeds of 10 or 20Mblt/s, on copper pairs and 100Mb.

PART#02):

- # TOPOLOGY:
  - Topology is used in many branches of mathematics such as differentiable equations dynamical systems knot theory and Riemann surfaces in complex analysis.
  - It is also used in string theory in physics and for describing the space time structure of universe.
  - ## Five types of topology:
    - ✓ Mesh topology
    - ✓ Star topology
    - ✓ Bus topology
    - ✓ Ring topology
    - ✓ Hybrid topology

In that time mostly used star topology:

- Star topology:

Each device has a dedicated point to point link only to a central controller usually called a hub

The devices are not directly linked to each other

The controller HUB acts as an exchange.