



COMPUTER SYSTEMS & PROGRAMMING

Computer Monitor

Zuhaib A. Shaikh,
Asst. Prof., CSE Deptt.,QUEST
Web: zuhaib-shaikh.neocities.org



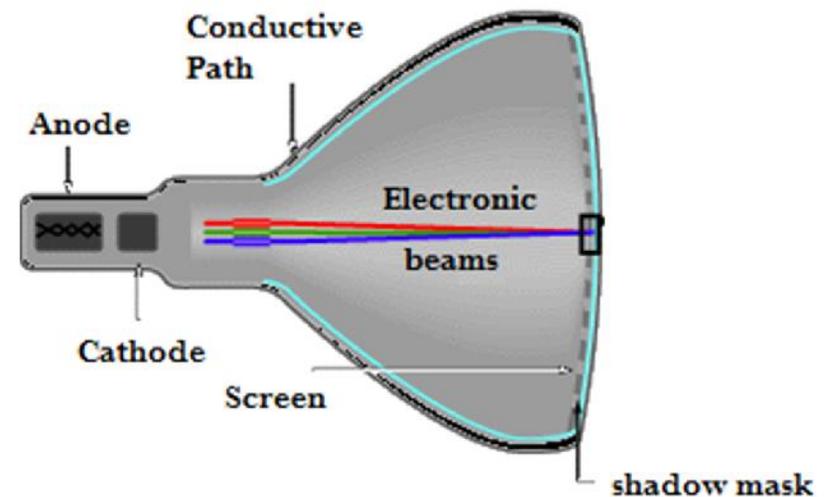
Introduction

- Electronically representation of output of system in visual form
- Initially introduced in late 1960s
- Idea was taken from Televisions
- Visual representation is performed by means of pixel
- Pixel are addressed by means of resolution or aspect ratio
- Side of display screen is considered diagonally
- Color bit depth
 - Monochromic: 2 colors (1-bit)
 - VGA: 256 colors (8-bit)
 - SVGA: 16777216 colors (16-bit)
 - True color: 4294967296 colors (32-bit)
- Interfaces
 - VGA (Video Graphics adapter) – analog output
 - DVI (Digital Video Interface) – Digital Output
 - HDMI (High Definition Multimedia Interface) – Digital output of audio and video
- Types
 - CRT (Cathode Ray Tube)
 - LCD (Liquid Crystal Display)
 - LED (Light Emitting Diode)



CRT Monitors

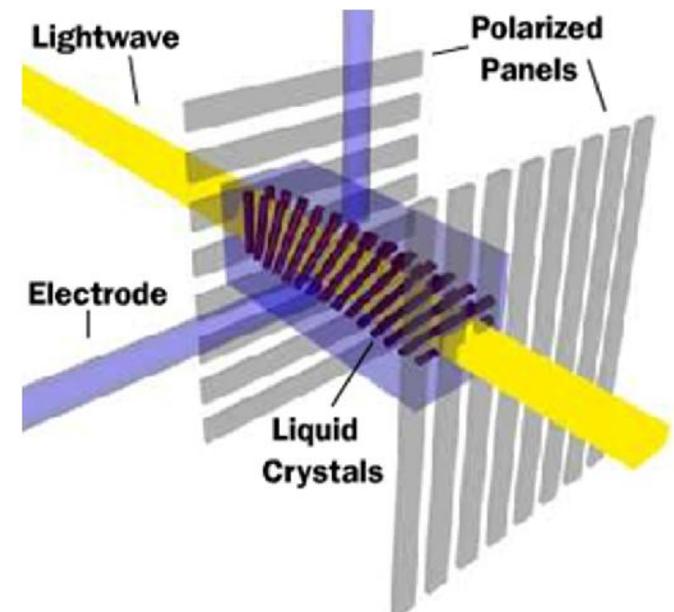
- Initially introduced in 1954
- Uses phosphorous coated screen
- Phosphorous dots glows when electron beam is applied
- Cathode a fulminate material inside a vacuum tube
- The cathode is heated by providing high power where electrons are attracted towards anode
- The Anode takes exited electrons which are pushed towards screen to complete circuit
- Different laser beams of different power produces different colors





LCD Monitors

- Based on blocking light
- Made of two polarized glass filled with liquid crystal material
- Light is passed from 1st to 2nd glass
- Small amount of current is produced to select particular pixel
- The current is produced by thin-film transistor layer (TFT)
- It allows some charges to be applied on particular part of screen with support of charged capacitors
- Current changes the alignment of crystals
- The proper alignment allows to pass specific amount of light hence producing different colors for a particular pixel
- Better Contrast, resolution and positioning





LED Monitors

- Made of Many small LEDs connected in grid form
- These LEDs are also known as OLEDs (Organic LED)
- Organic material glow as LED with specific color
- Several organic material layers are used to display different color combinations
- By changing the amount of electron emitted using TFT layer, different colors are produced
- Advantages:
 - Thinner
 - Less power consumption
 - More brightness
 - More resolution
 - Large field of view



Questions

