

Computer Science

Monitors Types and overview

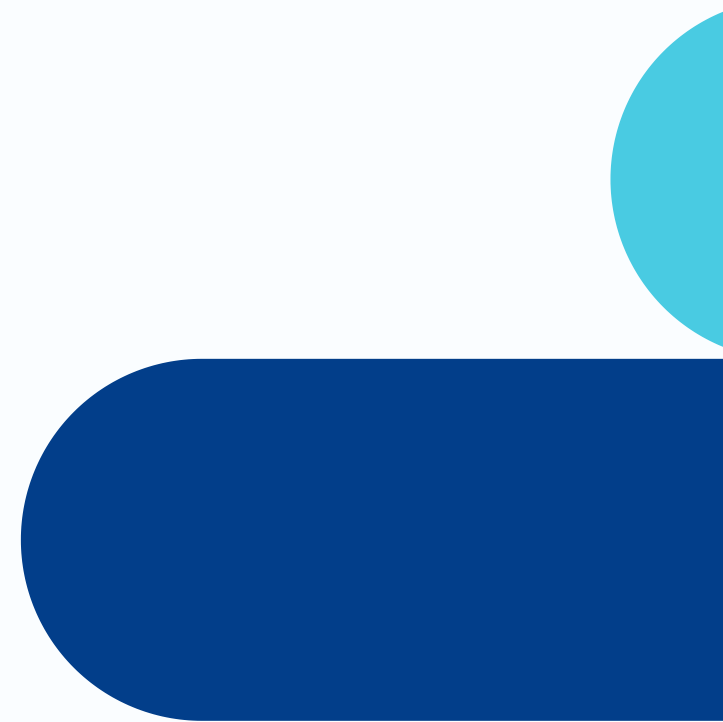


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Let's Dive Into Monitors



Monitors

belongs to the category of **output devices**. It is a hardware device which is used to display output. The monitor can display all the graphics and information to the user through the video card. In traditional desktop computers, separate monitors are connected to the other devices with the help of cables. In **laptops and tablets**, the monitor is built. The monitor is similar to a TV but has a higher resolution.



Types of Monitor



Cathode Ray Tube Monitors



Liquid Crystal Display

Types of Monitor



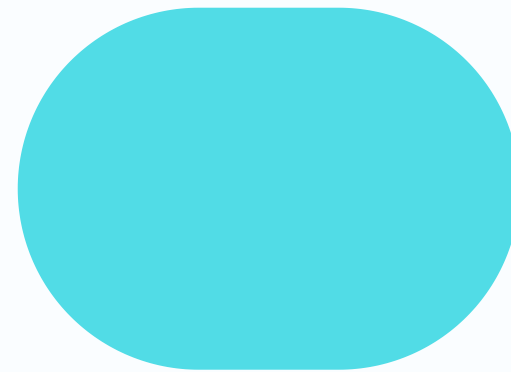
Light Emitting Diode



Organic Light Emitting Diode

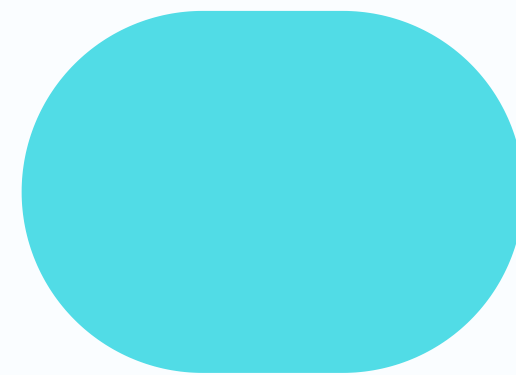
Cathode Ray Tube Monitors

CRT Are those monitors that were used in earlier versions of computer. They are heavier and consume more energy. These monitors produce images through manipulation of electronic beams. CRT monitors are no longer commonly used due to their size and energy consumption. The first monitor display was introduced on 1 March 1973. The 1024x768 resolution display on colour CRT displays was supported in the late 1980s.



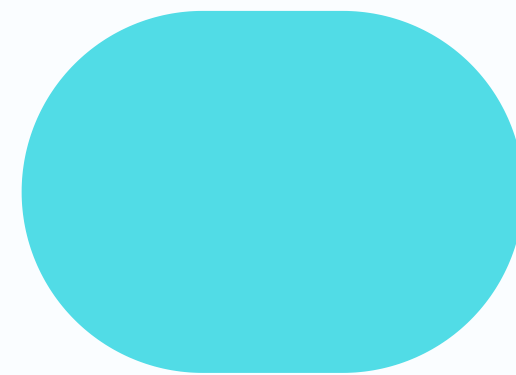
Liquid Crystal Display

LCD monitors are the most popular type of monitors today. These monitors are thinner as compared to Cathode Ray Tubes. They have higher resolution, consume less energy and take up less space. The LCD uses liquid crystal sandwiched between two panes of polarized glass. One of the panels in LCD is in-plane switching (IPS). Apple was the first company that started producing desktop computer colour LCD monitors in 1998.



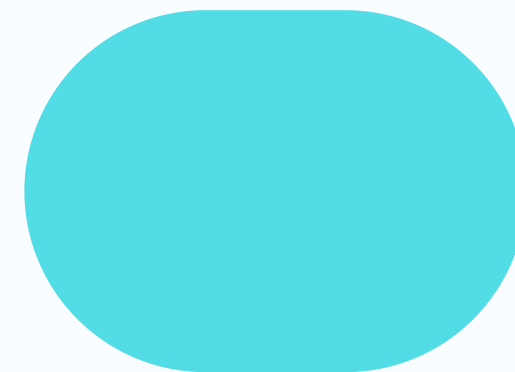
Light Emitting Diode

LED it uses light emitting diode for backlighting. LED Monitor provides upto 4K resolution and is much more environment friendly as it consumes less energy. Typically have better contrast ratios. The LED monitor with its new-gen technology was first introduced in 2008.



Organic Light Emitting Diode

OLED Organic materials include wood, plastic, polymers etc. These monitors are foldable as compared to traditional LCD or LED. It is thinner and is excellent for watching movies. However its lifespan is very less and are expensive. They offer superior image quality with vibrant colors, high contrast ratios, and faster response times compared to LCD and LED monitors.



Curved monitors

Curved monitors have a slight curve to the screen, which is designed to provide a more immersive viewing experience by wrapping the display around the viewer's field of vision.



main characteristics to consider when evaluating computer displays

- **Display size:** The display size is the diagonal length of the screen from one corner of the screen to the opposite corner.
- **Aspect ratio.** This measurement is the ratio that compares an image's width and height. Many of today's displays have an aspect ratio of 16:9, which is the same as high-definition television ([HDTV](#)). Aspect ratios have varied over time as technologies evolved

main characteristics to consider when evaluating computer displays

- **Resolution.** The resolution is the number of pixels displayed on the screen, typically measured in terms of width and height. The higher the resolution, the better the image detail. For example, a resolution of 1920 x 1080 (1080p) offers better quality than 1280 x 720 (720p).
- **Image technology.** This will primarily come down to choosing one of the available types of LCD or LED display.

main characteristics to consider when evaluating computer displays

- **Pixel density.** The pixel density refers to the number of pixels per inch (ppi). The ppi is based on the display size and resolution. For example, a 14-inch screen with a resolution of 3024 x 1964 has a 258 ppi, but a 17-inch screen with the same resolution has only a 212 ppi. If the ppi gets too low, the display quality will suffer.
- **Connectivity.** DisplayPort is generally favored over HDMI for computer monitors, . VGA is seldom a consideration.

main characteristics to consider when evaluating computer displays

- **Refresh rate.** Measured in hertz (Hz), the refresh rate is the number of times the display is completely refreshed in a second. The higher the refresh rate, the smoother the transitions between shifting images. Refresh rates typically range from 60 Hz to 120 Hz. Some displays offer higher refresh rates, but those generally target specific use cases, such as advanced graphics or [gaming](#).

We Should To Know

Monitors are connected to a computer either through a VGA, DVI, HDMI, DisplayPort, or USB connection. The resolution of a monitor refers to the number of pixels it can display, such as 1920x1080 (Full HD) or 3840x2160 (4K). The refresh rate of a monitor indicates how many times per second the screen is redrawn, typically measured in Hertz (Hz).



كُن مِهْنَدِسًا يَتْرُك بَصْمَةً و لَيْسَ مُجَرَّد شَخْصٍ يُنْفِذ التَّعْلِيمَاتِ!

