

Computer Graphics and Animation

Computer graphics involve creating and manipulating visual content using computers. It includes two main types: raster graphics (pixel-based) and vector graphics (path-based). Animation brings graphics to life through sequential images, commonly used in movies, games, and simulations.

Random Scan Display

A random scan display, also known as a vector display, uses an electron beam to draw images directly on the screen. It is mainly used in applications requiring high resolution and precise line rendering, such as CAD systems.

Raster Graphics

Raster graphics are composed of pixels arranged in a grid format. Each pixel holds color and brightness information. Raster images are resolution-dependent and commonly used in digital photos, televisions, and computer screens.

Analog and Digital Signals

Analog signals are continuous and vary smoothly over time, while digital signals use discrete values (0s and 1s). Digital signals are less prone to noise and are widely used in modern communication systems.

Switching and Its Types

Switching is the process of directing data from a source to a destination. It is classified into three types: circuit switching (dedicated path), packet switching (data divided into packets), and message switching (entire message sent at once).

Physical Layer

The physical layer is the lowest layer in the OSI model, responsible for the transmission of raw data over physical media. It includes components like cables, switches, and network interface cards, ensuring bit-level transmission of data.