what is raster graphics?

Ans:

Raster graphics, also known as bitmap graphics, are images composed of a grid of pixels. Each pixel (short for "picture element") is a tiny square or dot that contains a specific color value. When these pixels are arranged in a grid, they form the basis of a digital image.

In a raster graphic, the image is represented as a series of rows and columns of pixels, where each pixel's color value is stored individually. The resolution of a raster image is determined by the number of pixels per unit area, typically measured in pixels per inch (PPI) or dots per inch (DPI). Higher resolutions result in sharper and more detailed images, while lower resolutions may appear pixelated or blurry.

Raster graphics are commonly used for photographs, digital paintings, and complex images where fine detail is important. However, because raster images are resolution-dependent, they can lose quality if they are resized or scaled up, as the individual pixels become more visible. Additionally, raster graphics are not easily scalable without losing quality, unlike vector graphics, which retain their sharpness regardless of size.

Common file formats for raster graphics include JPEG, PNG, GIF, BMP, and TIFF. These formats store the color values of each pixel in the image, allowing them to be displayed and edited using various software applications.