Raster Devices and Images
A raster image is 2D array storing pixel values at each pixel
virtually all graphics systems are raster based

**Scanner**
linear array of pixels swept across page to create grid of pixels

**Printer**
image is made by depositing ink at points on a grid

**Display**
shows images as a rectangular array of pixels

**Digital Camera**
image sensors made of grid of light-sensitive pixels
Displays are either transmissive or emissive

one pixel of an LCD display

**on state** liquid crystal rotates the polarization of the light so it can pass through the front polarizer

**off state** front polarizer blocks light that passes the back polarizer

LED display

each pixel is composed of one or more LEDs, semiconductor devices that emit light with intensity dependent on current
Human color vision (Trichromacy)
Color Representation

Additive
RGB

Subtractive
CYMK
Human color vision vs. RGB

sRGB color triangle

comparison of color gamuts

[wikipedia]
Raster Display

get different colors by combining red, green, and blue subpixels
Color Raster Image

- R, G, B values stored at each pixel location
- Each pixel value represents average color of the image over that pixel’s area