19CSE367 Digital Image Processing

SARATH TV

Last lecture

- Intensity resolution
- Effect of variation of intensity resolution
- Characteristics of color image.

Color models

- A color model is a system for creating a full range of colors from a small set of primary colors.
- **RGB Color Model**
- **CMYK Color Model**
- **HSI Color Model**

- RGB –each color appears as spectral component of red green and blue.
- In matrix form 3 channel ,one for each R,G and B channel.

CMY-CMYK color model.

- Cyan magenta and yellow –secondary colors of light or primary colors of pigment.
- When a surface coated with cyan pigment is illuminated with white light, no red light is reflected from the surface because cyan subtracts red light from reflected white light.
- Color printer and copiers (deposits colored pigments on paper) require CMY data input or RBG to CMY conversion internally.

HSI model

- RGB and CMY models suited for hardware implementation.
- Cannot describe colors in terms that practical for human interpretation.
- Describe color by its hue ,saturation and brightness.

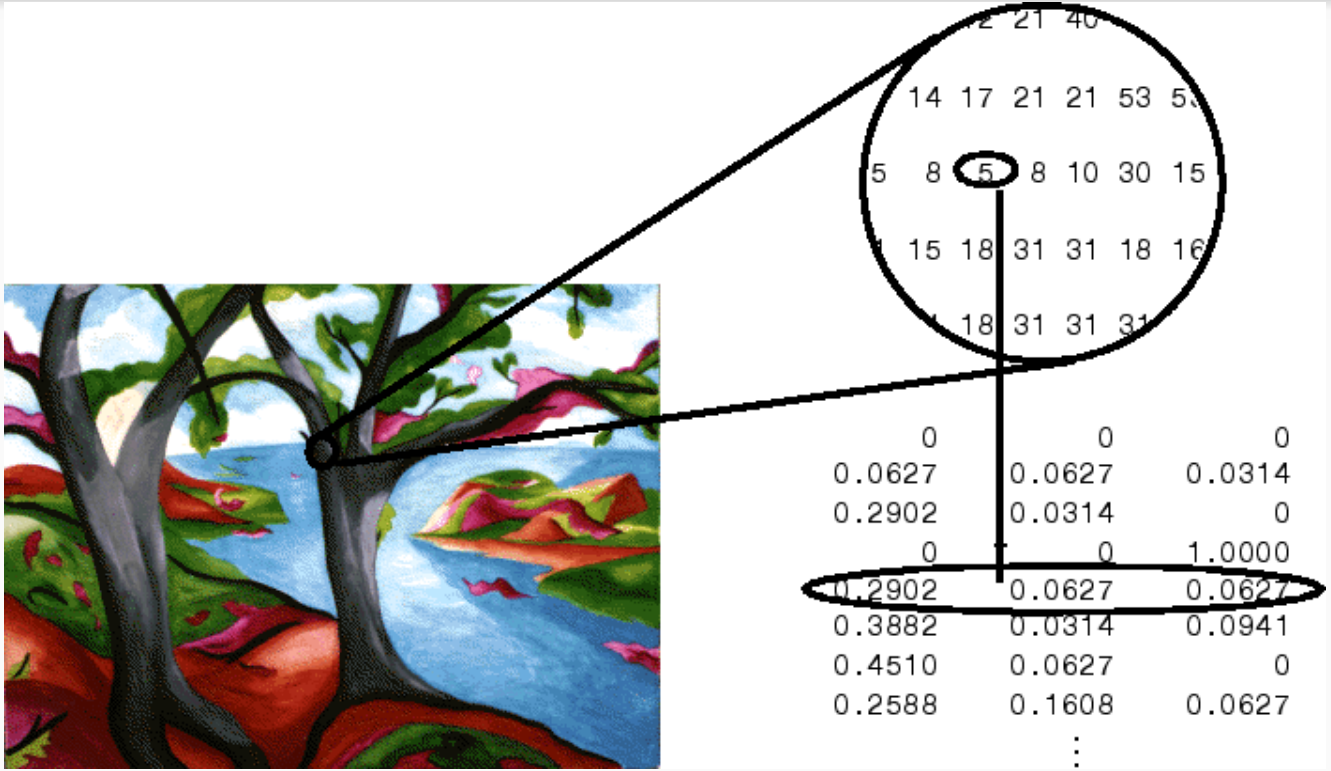
Types of Images

- **Indexed Images**
- **Grayscale (Intensity) Images**
- **RGB (Truecolor) Images**

Indexed Images

An indexed image consists of a data matrix, X, and a color map matrix, map is an m by 3 array of class double containing floating point values in the range 0 1

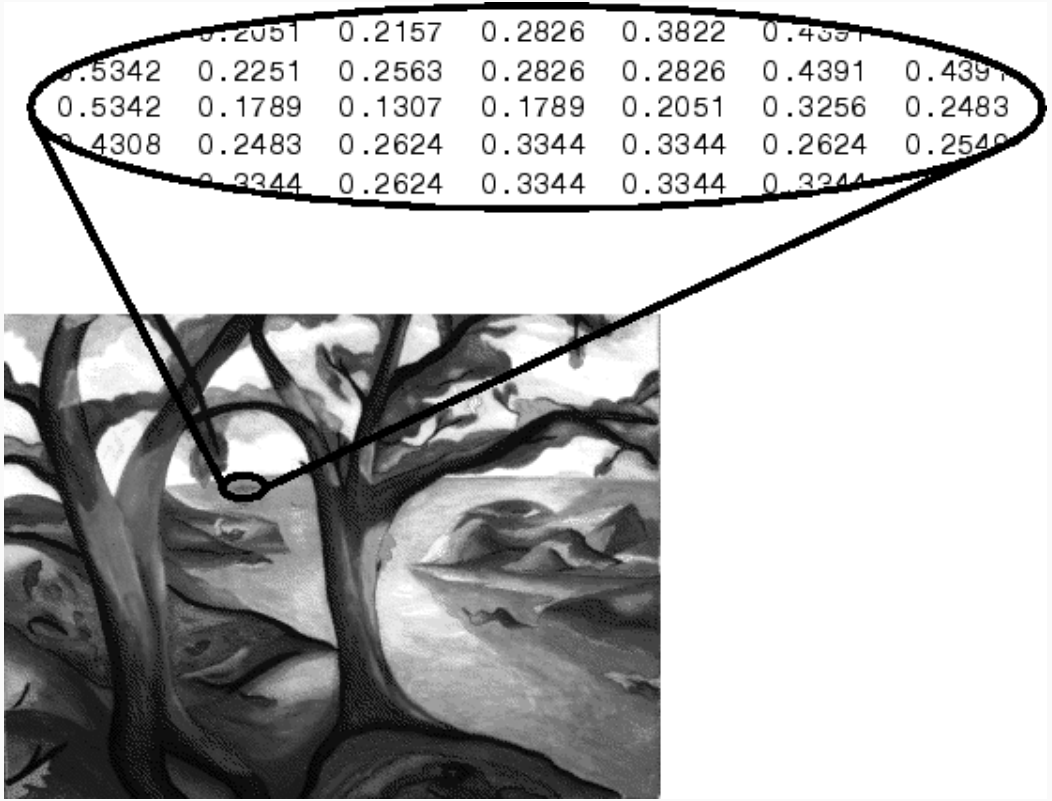
- Each row of map specifies the red, green, and blue components of a single color
- An indexed image uses “direct mapping” of pixel values to colormap values



Grayscale (Intensity) Images

A grayscale image, sometimes referred to as an intensity image, is a data matrix whose values represent intensities within some range

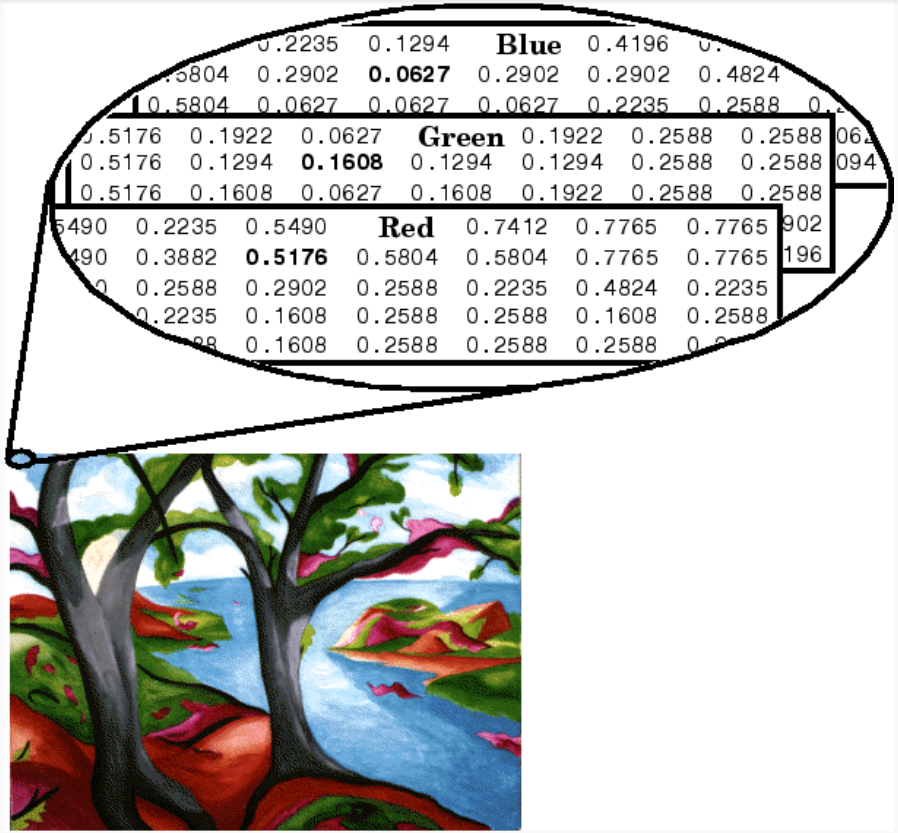
- A grayscale image is represented as a single matrix, with each element of the matrix corresponding to one image pixel



RGB (Truecolor) Images

An RGB image, sometimes referred to as a truecolor image, is stored as an *m* by *n* by *3* data array that defines red, green, and blue color components for each individual pixel

The color of each pixel is determined by the combination of the red, green, and blue intensities stored in each color plane at the pixel's location




THANKYOU!