

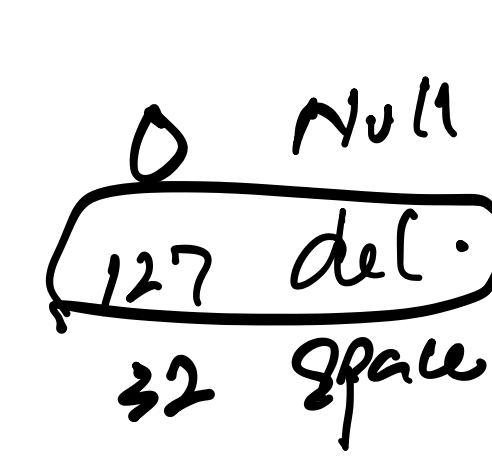
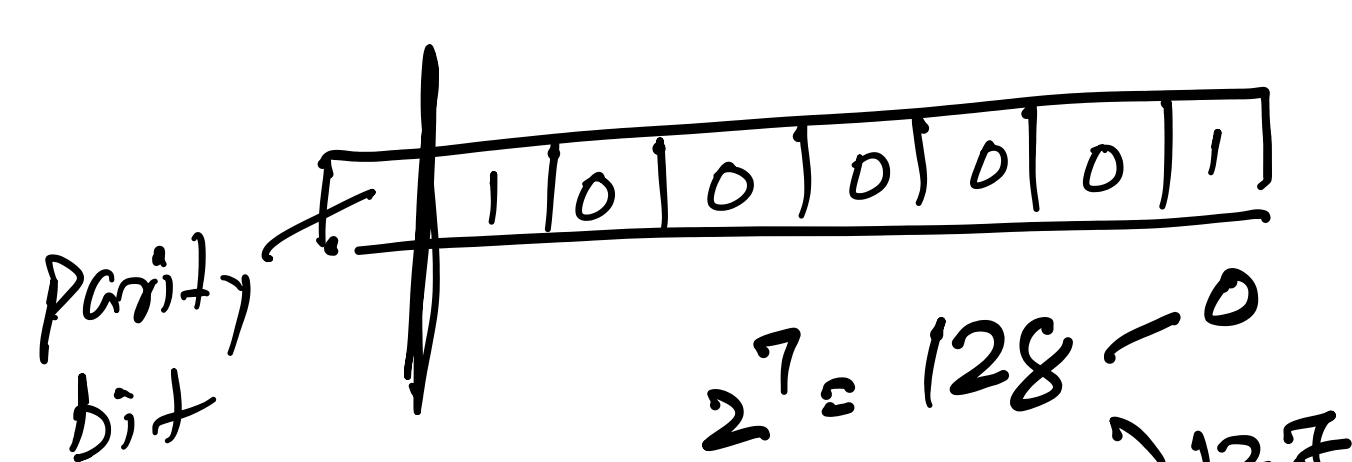
ASCII
(8-key)

A = 65 } Every character occupies one (1) byte.
a = 97
0 = 48

Glyph ASCII Code -

Characters Text

$$2^8 = 256 \begin{matrix} \nearrow 0 \\ \searrow 255 \end{matrix}$$



Keyboard Characters

Seen

Glyph 33-126

Unseen

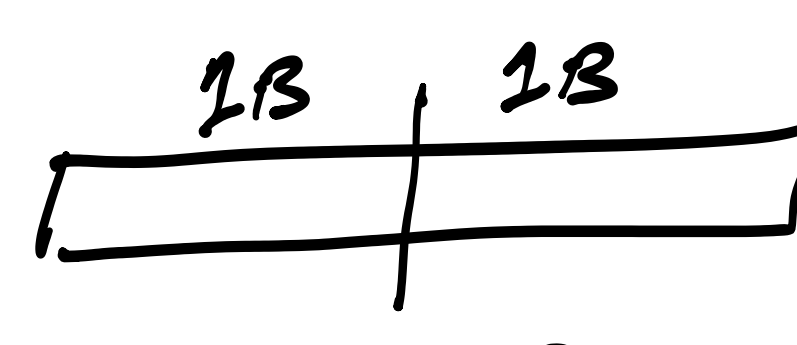
Control Characters

(Enter, ESC, Backspace, Del, Bell)

0-32, 127

ZAPAR
AZPAR
FAPAR
→ K-A

Precision Institute

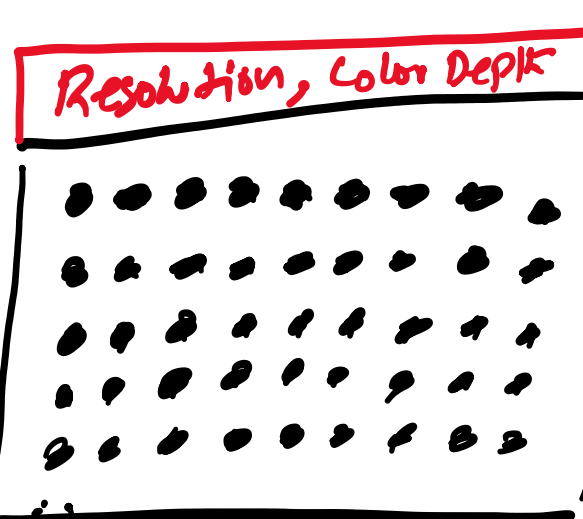


UNICODE

$$2^{16} = 65536$$

IMAGE

Width → 9 ←



File Header = Contains data about the image.

Bitmap File

4K 8.2 million more pixels
raster

$$\text{Resolution} = \text{Width} \times \text{Height} = 9 \times 5 = 45$$

Color Depth: Number of bits saved per pixel.

Color Depth

$$2^4 = 16 \begin{matrix} \nearrow 0 \\ \searrow 15 \end{matrix}$$

$$2^{24} = 17.6 \text{ million}$$

Image = S/W = List of colors.
Every color occupies pre-determined number of bits; called color depth.

$$\text{Image File Size} = \text{Resolution} \times \text{Color Depth} = W \times H$$

$$\begin{matrix} \text{Image} & 100 \times 50 = 5000 \\ \text{Colors} & 32 \\ \text{Color Depth} & 5 \end{matrix} \quad \begin{matrix} 2^n = \text{Colors} \\ 2^5 = 32 \end{matrix}$$

$$\begin{matrix} \text{Resolution} & = 5000 \\ \text{Color Depth} & = 5 \end{matrix}$$

$$\text{File Size} = 5000 \times 5 = \frac{25000 \text{ bits}}{8} = 3125 \text{ B}$$

Video:

Frames per second (FPS)

$$\text{Video File Size} = \frac{\text{Resolution} \times \text{Color Depth} \times \text{FPS} \times \text{Time}}{\text{Width} \times \text{Height} \times \text{bits per pixel} \times \frac{\text{Frames per sec.}}{\text{In sec.}}}$$

$$\text{Video Resolution} = 50 \times 10$$

$$\text{Depth} = 4 \text{ bits}$$

$$\text{FPS} = 10$$

$$\text{Time} = 1 \text{ min.}$$

$$\begin{matrix} \text{Size} = & 50 \times 10 \times 4 \times 10 \times 60 \\ & 500 \rightarrow 2000 \rightarrow 20000 \rightarrow \frac{1200000 \text{ bits}}{8} \\ & \Rightarrow 150000 \text{ Bytes.} \end{matrix}$$

Sound:

✓ Analogue = Natural = = Continuous
ADC Digital = Binary = = Discrete
01001011

(ADC) Analogue to Digital Conversion

Amplitude

