unit-2

Pseudocolor Image processing

→ In the field of digital Image processing, Color Image processing is an important technique

→ There are two main categories of Color Image processing -

- Pseudo color Image processing
- full color processing

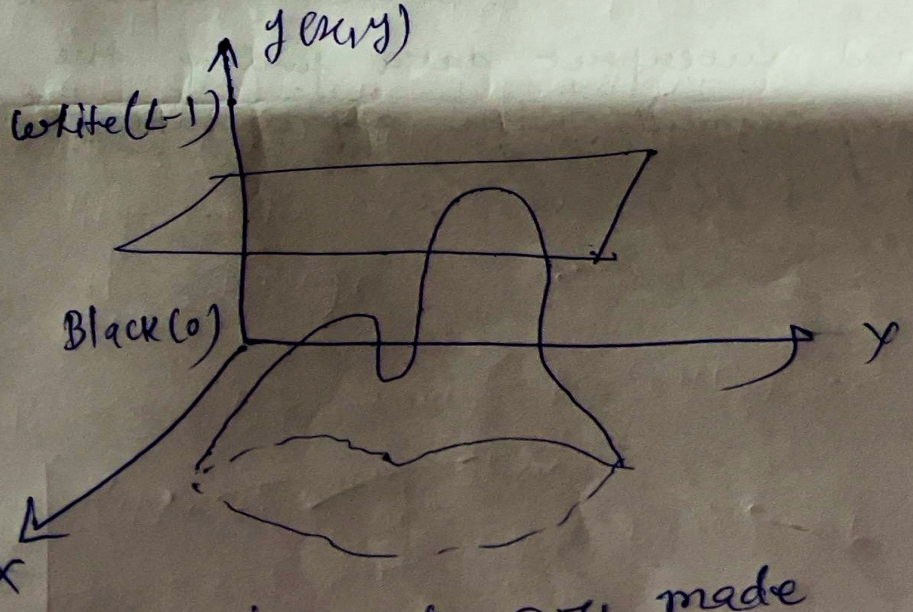
* Pseudo Color image processing (false color) - involves assigning different colours to different intensity range in black & white Image. By assigning different colour to different intensity value, it becomes easier to distinguish various regions and object within the Image

* methods of Pseudocolor Image processing

1) Intensity Slicing
2) Intensity Color transforms

① Intensity Slicing - If a different color is assign to each side of plane, any pixel whose Intensity level is above the plane will be coded with

- one color, and any pixel below the plane will be coded with the other color.
- In general the technique may be summarized
- Let $[0, L-1]$ represents the gray scale, let 0 represent the black $[f(x,y) = 0]$ level $L-1$ represents white $[f(x,y) = L-1]$
- Suppose that P planes perpendicular to the intensity axis are defined at levels $l_1, l_2 \ldots l_P$. Then, assuming that $0 < P < L-1$, the P planes partitions the gray scale into P+1 intervals



Intensity to color assignment are made according to relation

$$f(x,y) = C_K \quad \text{if } f(x,y) \in V_K$$

Color
Blue

2) Intensity to Color Transformation

The idea underlying this approach is to perform three independent transformation on the intensity of any input pixel.
Then three results are then fed seperately into the Red, Green and blue channels of color monitor. This method produces a composite image whose color content is modulated by the nature of transformation functions.