

IVP Lab Practice Set - 1

Pseudocode

```
1- open (Image)
   display (Image)
   flip = transpose (img)
   display (flip)
   img2 = img
   width = img width (img)
   height = height (img)
   for i from 0 to height:
       for j from 0 to width:
           num = img2[j][i][0]
           if num < 50:
               img2[j][i] = 0
           elif num > 150:
               img2[j][i] = 255
   display (img2)
```

```
2- img = [[2], [4, 5] ..... ]
   a = list (img)
   fig, ax = plt.subplots ( )
   ax.hist (a)
   plt.show.
```

```
3- image = open (image.loc)
   res = Empty image
   mmax = 0
   mmin = 255
   for y in 0, width:
       for x in 0, height:
           mmax = max (image[y][x][0], mmax)
           mmin = min (image[y][x][0], mmin)
```

lmin = 0

lmax = 255

ldiff = lmax - lmin

mdiff = mmax - mmin

freq = ~~new~~ [0] * (lmax + 1)

for y in range 0, width:

for x in range 0, height:

freq[img[y][x][0]] ++

lval = [0] * (lmax + 1)

for i in 0, lmax + 1:

val = round(((ldiff * (i - mmin)) / mdiff) + lmin)

if val > 255:

lval[i] = 255

elif val < 0:

lval[i] = 0

else:

lval[i] = val

~~new~~ new_freq, mmap.

for i in 0, lmax + 1:

mmap[int(lval[i])] += freq[i]

for i in 0, lmax + 1:

new_freq[i] += mmap[i]

for j in range 0, width:

for i range 0, height:

value = int(round(new_freq[img[j][i][0]))

res[j][i] = [value, value, value]

display(res).

4- $img = \text{Image Open (Image)}$

$img1 = img2, img3$

~~width~~ $w = img.width$

$h = img.height$

for i in $0, h$:

for j in $0, w$:

$r = img[j][i][0]$

$g = img[j][i][1]$

$b = img[j][i][2]$

$img1[j][i] = [r, r, r]$

$img2[j][i] = [g, g, g]$

$img3[j][i] = [b, b, b]$

$display(img1)$

$display(img2)$

$display(img3)$

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5- $img = \text{open (Image)}$

$display(img)$

$img1 = img$

for i in $0, height$:

for j in $0, width$:

$[r, g, b] = img[j][i]$

$img1[j][i] = [255-r, 255-g, 255-b]$

$display(img1)$

6- $img = \text{open (Image)}, img1$

for i in $0, height$:

for j in $0, width$:

~~$img1[j][i] = [r, g, b]$~~ $[r, g, b] = img[j][i]$

if $r \leq 15$: $img1[j][i] = [0, 0, 0]$

elif $r > 15$: $img1[j][i] = [255, 255, 255]$

img = open (Image)

7- planes = [Image] * 8.

for k in range (8):

for i in range (height):

for j in range (width):

s = img [i] [j] [0]

minum = s >> k

if ~~minum~~ (minum < 1) i = 0:

planes [k] [j] [i] = [255, 255, 255]

else:

planes [k] [j] [i] = [0, 0, 0].

final = New (Image)

for k in range (8):

for i in range (img.height):

for j in range (img.width):

x = final [j] [i] [0]

y = planes [k] [j] [i] [0]

if (y & 1) == 21:

x = x | (1 << k)

final [j] [i] = [x, x, x]

display (final)

8- ~~max~~ max = max value of all pixels.

hiseq = new image.

new_freq = [0] * (max+1)

fill new_freq with frequencies using loops.

total = no. of pixels

prob = [0] * (max+1)

prob [i] = new_freq [i] / total for each i.

Cum_prob [i] = sum of prob till prob [i]

roundoff [i] = Cum_prob [i] * max

hiseq [y] [x] = [roundoff [img [y] [x] [0]] * 3