Arifullah Jan - 186943 - BSCS 6A

LAB07 - DIP

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'''
python task1.py path/to/input
'''



import PIL
from PIL import Image
import itertools
import numpy as np
import sys
from PIL import ImageDraw
import matplotlib.pyplot as plt
image = Image.open(sys.argv[1])
# image = image.convert("L")  # convert to signle channeled image



width, height = image.size
totalPixels = width* height

freq = [0] * 256  # fill
cdf = [0] * 256  # fill zeros


pixels = image.load()  # allows pixel values to be edited



freq = image.histogram() # get frequencies

# input histogram
a = np.array(image)
plt.hist(a.ravel(),  bins=256)
plt.savefig('inputhist.png')
```

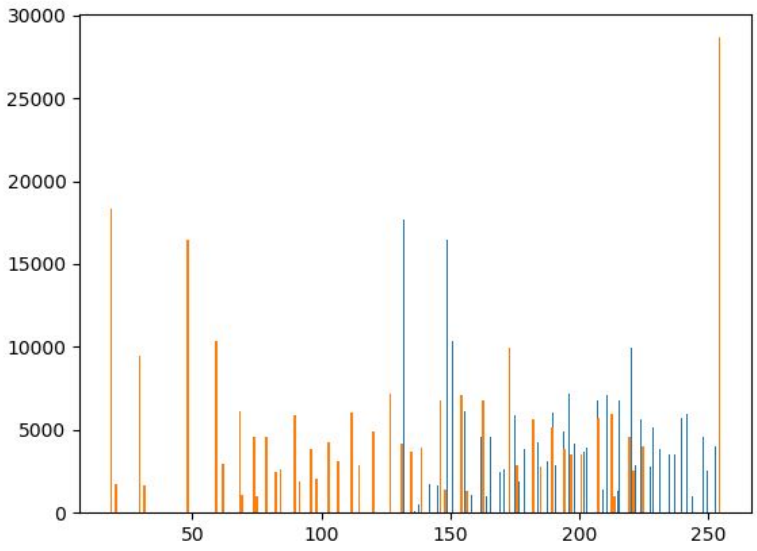
```
############## EQUALIZATION

s = 0
for i in range(256):
    s += freq[i]*1.0/totalPixels
    cdf[i] = s

print(cdf[255])
for x, y in itertools.product(range(width), range(height)):
    pixels[x,y] = int((255 * cdf[pixels[x,y]]))

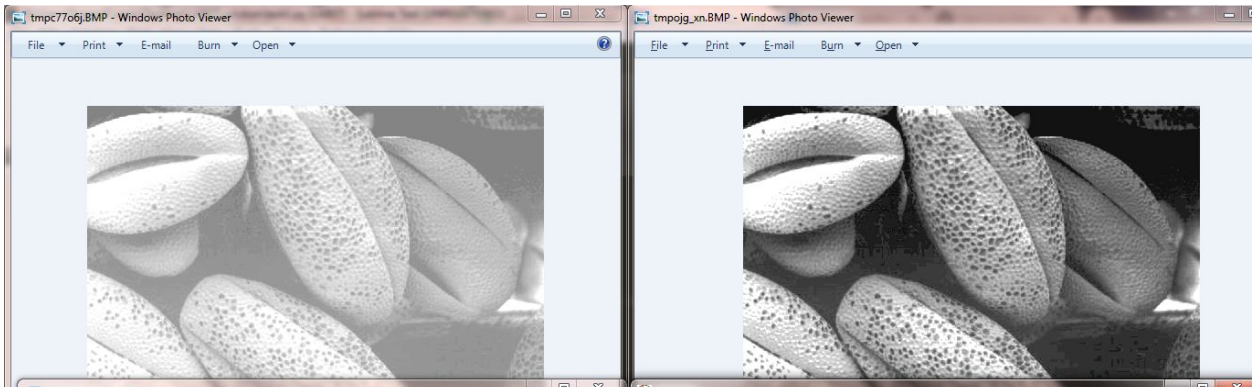

image.save('output.tif')

# output histogram
a = np.array(image)
plt.hist(a.ravel(),  bins=256)
plt.savefig('outputhist.png')
```



Input hist: blue

Ouptut hist: orange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File Print E-mail Burn Open
tmpojg_xn.BMP - Windows Photo Viewer
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