

Pengolahan Citra

Pekan 3. Enhancement : brigthness kuantisasi

Dosen Pengampu

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Source Code :

```

from sqlite3 import Row
from cv2 import imshow
import numpy as np
import cv2
from matplotlib import pyplot as plt
import matplotlib.image as mpimg
import time
from array import *

# Main Function

def flip_image():
    img = mpimg.imread('img/kuda.jpg')
    horizontal_img = cv2.flip(img, 1)
    vertical_img = cv2.flip(img, 0)
    both_img = cv2.flip(img, -1)

    plt.subplot(2, 2, 1), plt.imshow(img)
    plt.title('Original'), plt.xticks([]), plt.yticks([])
    plt.subplot(2, 2, 2), plt.imshow(horizontal_img)
    plt.title('Flip Horizontal'), plt.xticks([]), plt.yticks([])
    plt.subplot(2, 2, 3), plt.imshow(vertical_img)
    plt.title('Flip Vertikal'), plt.xticks([]), plt.yticks([])
    plt.subplot(2, 2, 4), plt.imshow(both_img)
    plt.title('Flip both'), plt.xticks([]), plt.yticks([])
    plt.show()
    return

def enchancement():
    img = mpimg.imread('img/kuda.jpg')
    row, col, n = img.shape
    img1 = np.zeros((row, col, 3), np.uint8)
    img2 = np.zeros((row, col, 3), np.uint8)
    img3 = np.zeros((row, col, 3), np.uint8)
    img4 = np.zeros((row, col, 3), np.uint8)
    img5 = np.zeros((row, col, 3), np.uint8)

    th = 50
    for y in range(0, col-1):
        for x in range(0, row-1):
            R, G, B = img[x, y]
            if (R+th) > 255:
                R = 255
            else:
                R = R+th
            if (G+th) > 255:
                G = 255
            else:
                G = G+th
            if (B+th) > 255:
                B = 255
            else:

```

```

        R = R+th
        img1[x, y] = [R, G, B]

th = 4
for y in range(0, col-1):
    for x in range(0, row-1):
        R, G, B = img[x, y]
        if (R*th) > 255:
            R = 255
        else:
            R = R*th
        if (G*th) > 255:
            G = 255
        else:
            G = G*th
        if (B*th) > 255:
            B = 255
        else:
            B = B*th
        img2[x, y] = [R, G, B]

xmax = 0
xmin = 300

for y in range(0, col-1):
    for x in range(0, row-1):
        R, G, B = img[x, y]
        gray = int((R+G+B)/3)
        if(gray > xmax):
            xmax = gray
        if(gray < xmin):
            xmin = gray

d = xmax-xmin
for y in range(0, col-1):
    for x in range(0, row-1):
        R, G, B = img[x, y]
        gray = int((R+G+B)/3)
        gray = int((255/d)*gray-xmin)
        img3[x, y] = [gray, gray, gray]

print("xmax=", xmax)
print("xmin=", xmin)

titles = ['Original Image', 'BRIGHTNESS', 'CONTRAST', 'AUTO SCALE']
images = [img, img1, img2, img3]
for i in range(4):
    plt.subplot(2, 2, i+1), plt.imshow(images[i], 'gray', vmin=0,
vmax=255)
    plt.title(titles[i])
    plt.xticks([], plt.yticks([]))
plt.show()
return

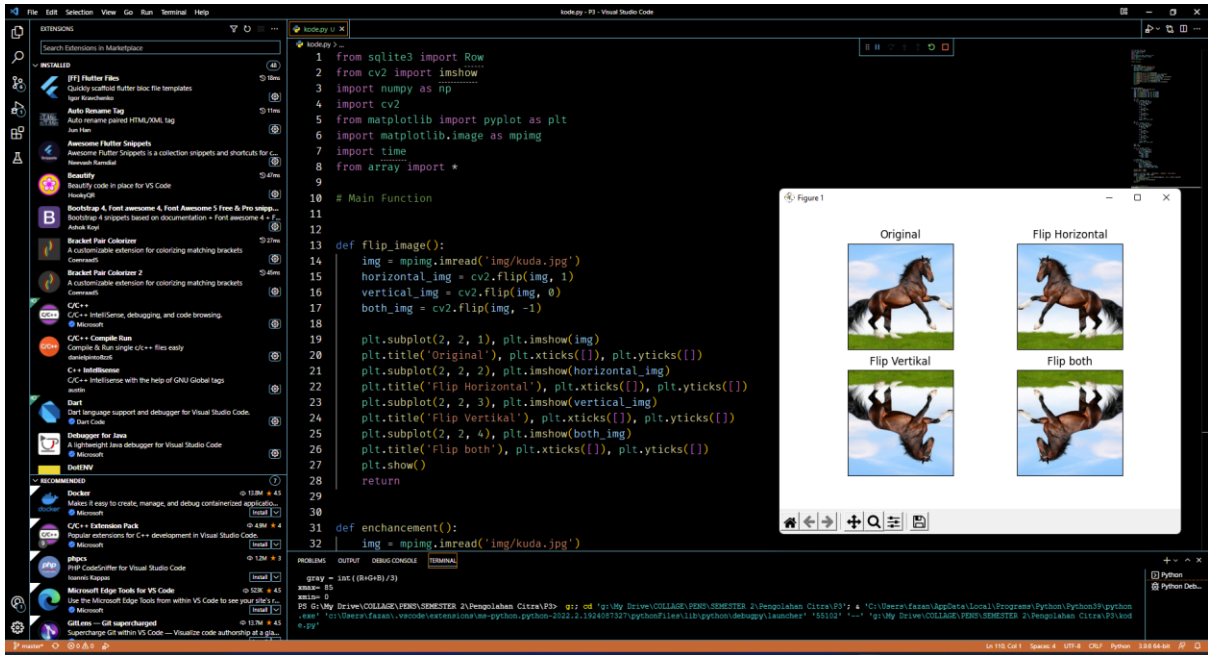
# =====Main Program=====

```

```
# flip_image()
# enhancement()
```

Output Code :

flip_image()



enhancement()

