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## Tugas Topik 6 Face Detection dengan Template Matching

Image:



**ps1.jpg**



**ps2.jpg**

# 1. Mengakses Nilai Piksel Citra Gunakan Foto Yang Sendiri Saja

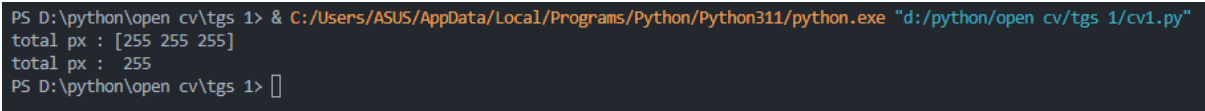


```
import cv2
import numpy as np

img = cv2.imread('ps1.jpg')
px = img[100,100]
print("total px :", px)

blue = img[100,100,0]
print("total px : ", blue)
```

Output:



```
PS D:\python\open cv\tgs 1> & C:/Users/ASUS/AppData/Local/Programs/Python/Python311/python.exe "d:/python/open cv/tgs 1/cv1.py"
total px : [255 255 255]
total px : 255
PS D:\python\open cv\tgs 1> 
```

## 2. Mengubah Intensitas Gunakan Foto Yang Sendiri Saja

```
import cv2
import math

w = 200
h = 100

image1 = cv2.imread('ps1.jpg')
gray1 =
cv2.cvtColor(image1,cv2.COLOR_BGR2GRAY)
resize1 = cv2.resize(gray1,(w,h))

image2 = cv2.imread('ps2.jpg')
gray2 =
cv2.cvtColor(image2,cv2.COLOR_BGR2GRAY)
resize2 = cv2.resize(gray2,(w,h))

dist = 0;
for i in range(1,w):
    for j in range(1,h):
        dist = dist +
        ((int(resize1[j,i]) -
int(resize2[j,i]))**2)

dist = math.sqrt(dist) / (w*h)
print(dist)
```

Output:

```
PS D:\python\tgs 2> & C:/Users/ASUS/AppData/Local/Programs/Python/Python311/python.exe "d:/python/open cv/tgs 1/cv1.py"
0.7366681003002641
PS D:\python\tgs 2> □
```

### 3. Face Detection Tunggal

```
import cv2
import numpy as np
from matplotlib import pyplot as plt

img = cv2.imread('ps1.jpg',0)

template = cv2.imread('ps1_face.jpg',0)
w,h = template.shape[::-1]

res =
cv2.matchTemplate(img,template,cv2.TM_C
COEFF)
min_val, max_val, min_loc, max_loc =
cv2.minMaxLoc(res)

top_left = max_loc
bottom_right = (top_left[0] + w,
top_left[1] + h)
image = cv2.rectangle(img,top_left,
bottom_right, 255, 2)

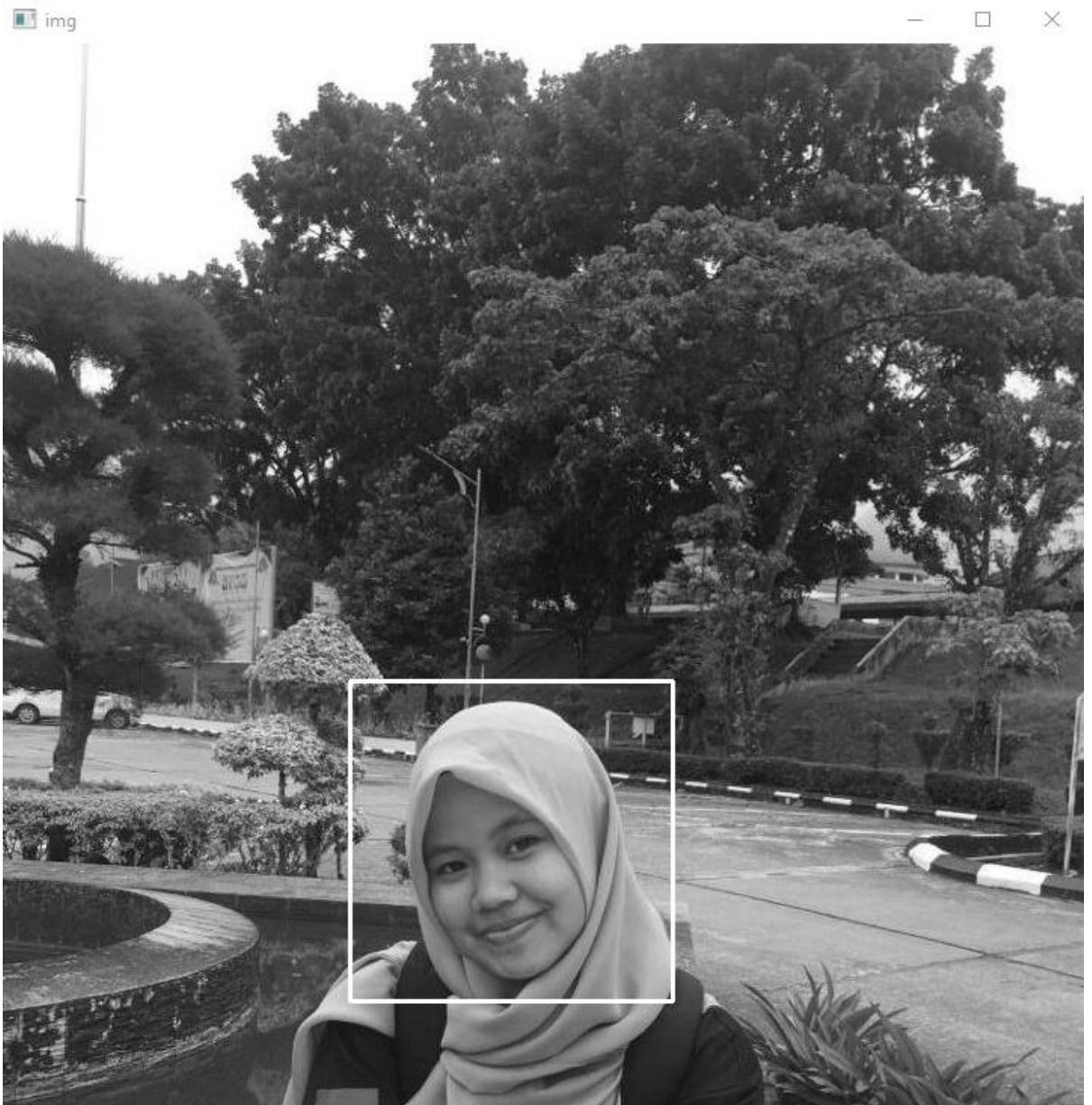
cv2.imshow('img',image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Image:



ps1\_face.jpg

Output:





#### 4. Face Detection Banyak Wajah

```
import cv2
import numpy as np
from matplotlib import pyplot as plt

img = cv2.imread('pp.jpg',0)

template = cv2.imread('pp_face.jpg',0)
w,h = template.shape[::-1]

res =
cv2.matchTemplate(img,template,cv2.TM_C
COEFF_NORMED)
threshold = 0.4
loc = np.where(res >= threshold)
for pt in zip(*loc[::-1]):
    img = cv2.rectangle(img, pt, (pt[0]
+ w, pt[1] + h), (0,0,255), 2)

cv2.imshow('img', img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Image:



pp.jpg



pp\_face.jpg

Ouput:

