**PRAKTIKUM 8 TRANSFORMASI CITRA**

Nama : Muhamad Arif Maulana

NIM : 1207070069

Link : <https://github.com/velmores/1207070069_Muhamad-Arif-Maulana_Prak8.git>

**Latihan 1 Transformasi Twirl**

Source Code

import matplotlib.pyplot as plt

from skimage.transform import swirl

import cv2

image = cv2.imread("foto/ungu.jpg")

swirled = swirl(image, rotation=0, strength=20, radius=200)

fig, (ax0, ax1) = plt.subplots(nrows=1, ncols=2, figsize=(8, 3), sharex=True, sharey=True)

ax0.imshow(image, cmap=plt.cm.gray)

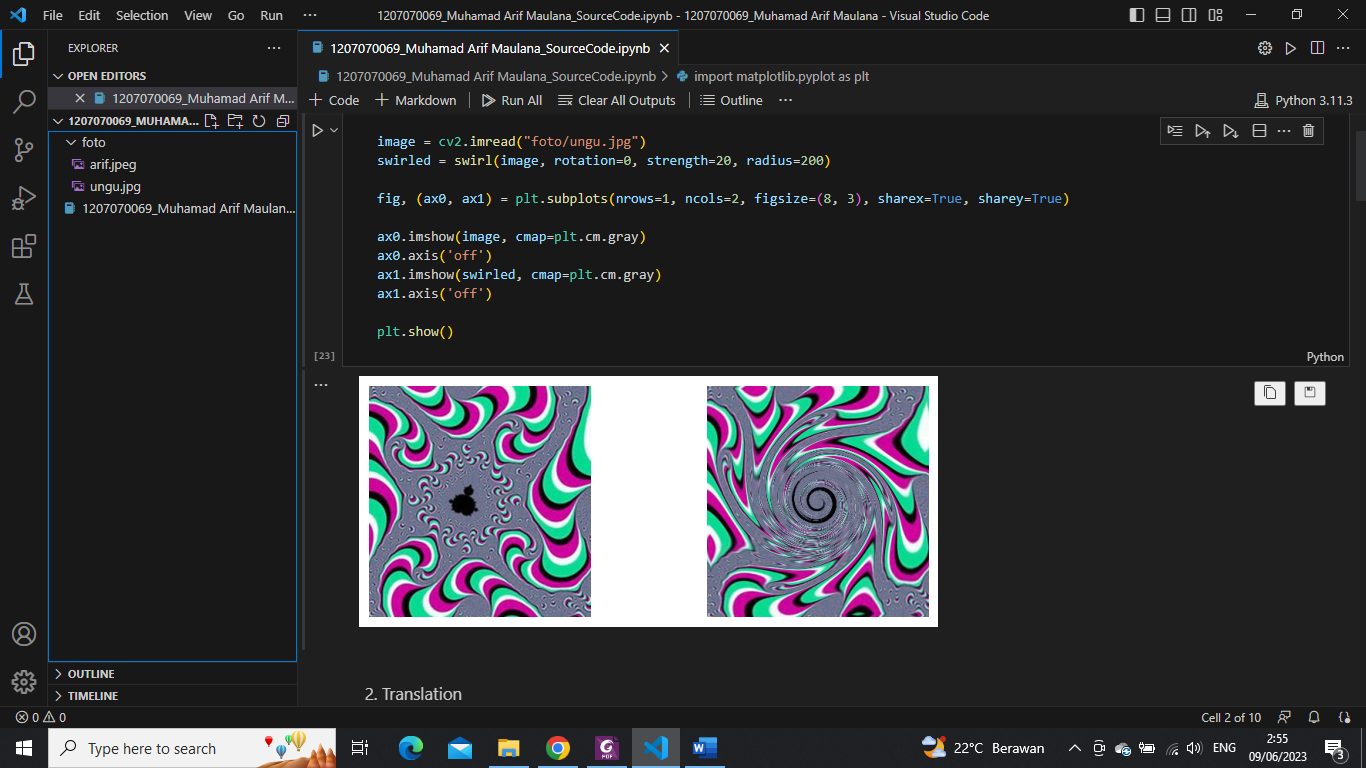
ax0.axis('off')

ax1.imshow(swirled, cmap=plt.cm.gray)

ax1.axis('off')

plt.show()

Hasil



**Latihan 2 Translation**

Source Code

import cv2 as cv

import numpy as np

import matplotlib.pyplot as plt

image = cv.imread("foto/arif.jpeg")

h, w = image.shape[:2]

half\_height, half\_width = h//6, w//10

transition\_matrix = np.float32([[1, 0, half\_width], [0, 1, half\_height]])

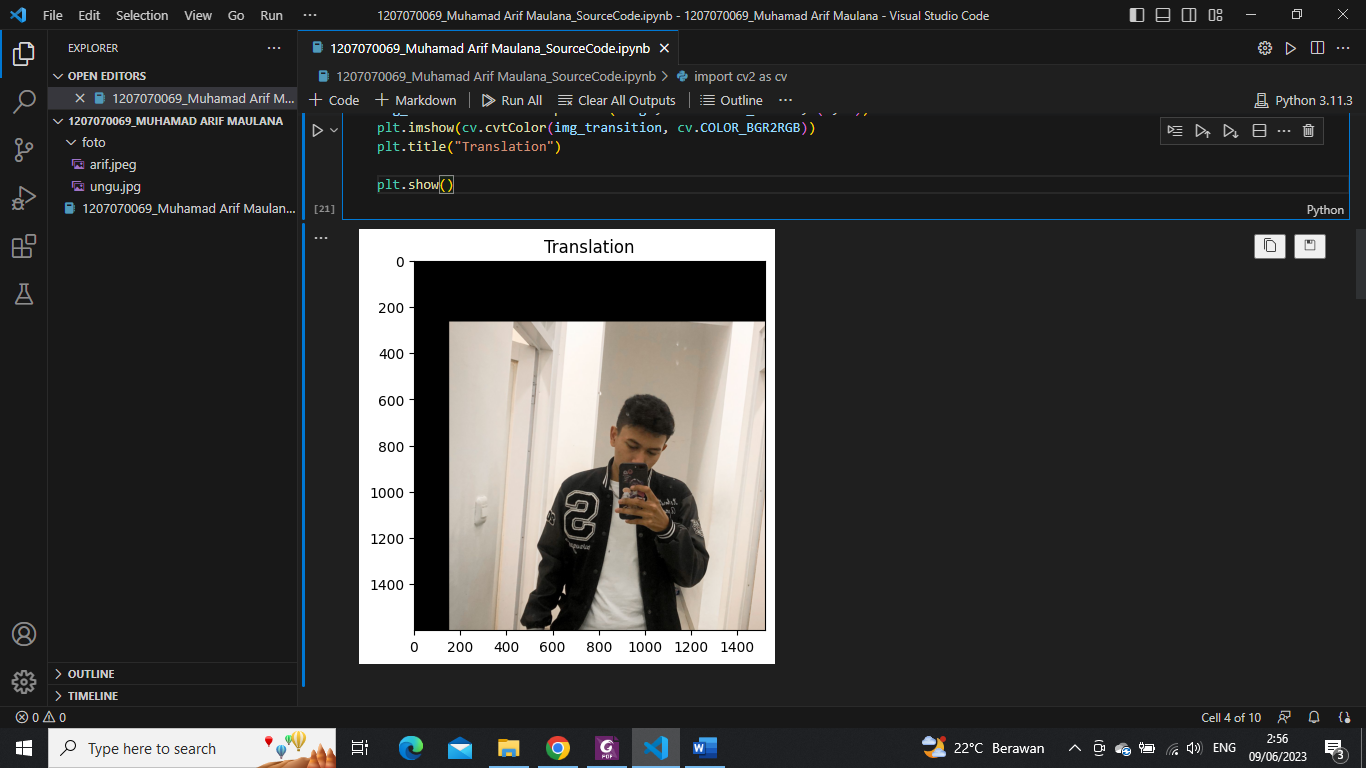
img\_transition = cv.warpAffine(image, transition\_matrix, (w, h))

plt.imshow(cv.cvtColor(img\_transition, cv.COLOR\_BGR2RGB))

plt.title("Translation")

plt.show()

Hasil



**Latihan 3 Rotation**

Source Code

import cv2 as cv

import matplotlib.pyplot as plt

image = cv.imread("foto/arif.jpeg")

h, w = image.shape[:2]

rotation\_matrix = cv.getRotationMatrix2D((w/2,h/2), -180, 0.7)

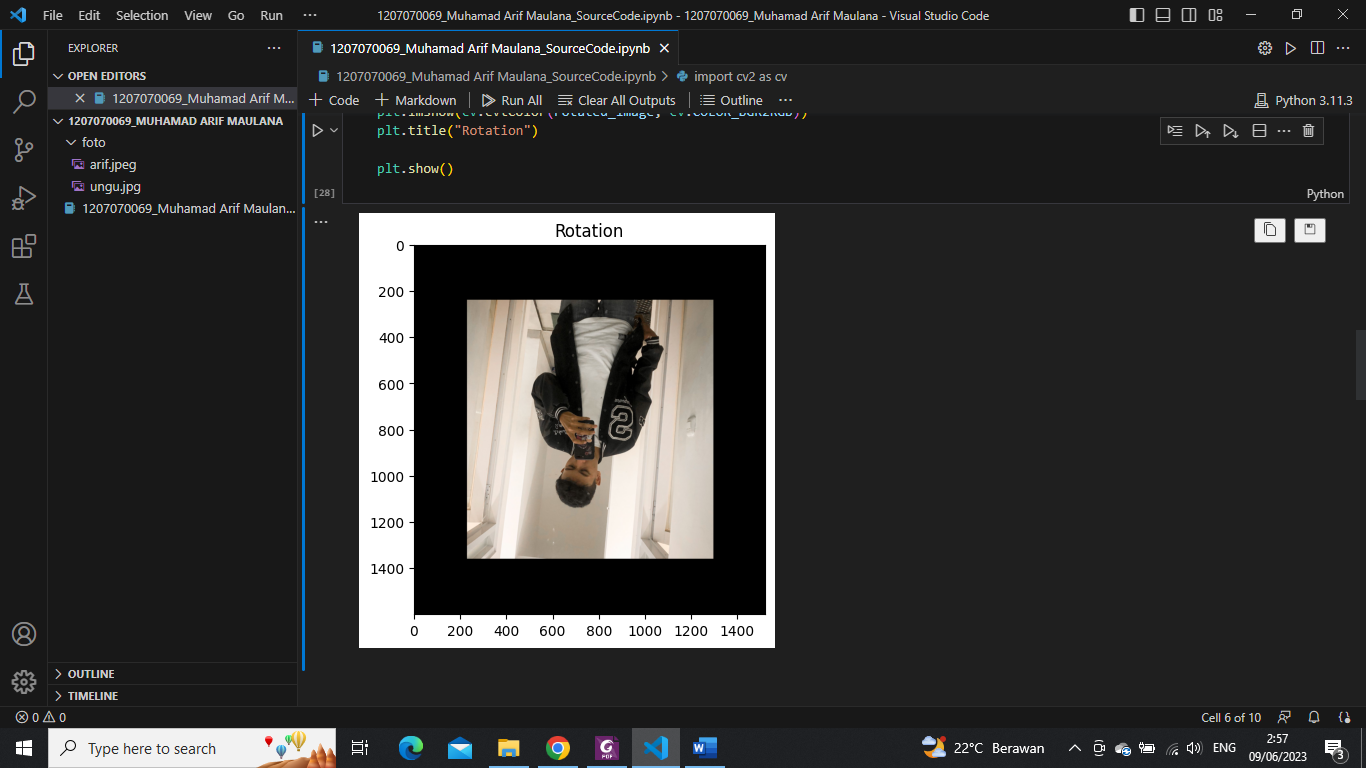
rotated\_image = cv.warpAffine(image, rotation\_matrix, (w, h))

plt.imshow(cv.cvtColor(rotated\_image, cv.COLOR\_BGR2RGB))

plt.title("Rotation")

plt.show()

Hasil



**Latihan 4 Interpolation**

Source Code

import mahotas as mh

import numpy as np

from pylab import imshow, show

regions = np.zeros((8,8), bool)

regions[:4,:3] = 1

regions[6:,:3] = 1

regions[:4,5:] = 1

regions[6:,5:] = 1

labeled, nr\_objects = mh.label(regions)

imshow(labeled, interpolation='nearest')

show()

labeled,nr\_objects = mh.label(regions, np.ones((3,3), bool))

sizes = mh.labeled.labeled\_size(labeled)

print('Background size', sizes[0])

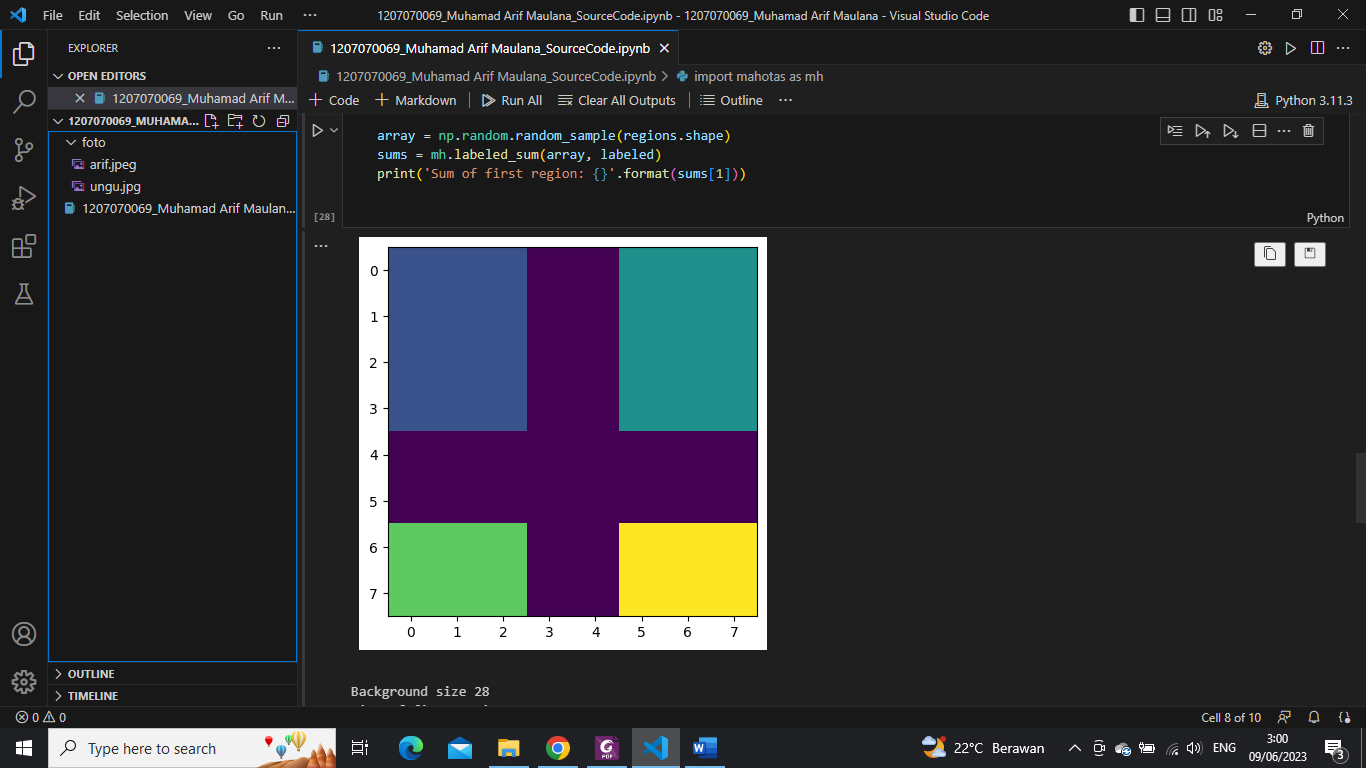
print('Size of first region: {}'.format(sizes[1]))

array = np.random.random\_sample(regions.shape)

sums = mh.labeled\_sum(array, labeled)

print('Sum of first region: {}'.format(sums[1]))

Hasil



**Latihan 5 Skala Interpolation Miring**

Source Code

import cv2 as cv

import numpy as np

import matplotlib.pyplot as plt

image = cv.imread("foto/arif.jpeg")

fig, ax = plt.subplots(1, 3, figsize=(14, 6))

image\_scaled = cv.resize(image, None, fx=0.15, fy=0.15)

ax[0].imshow(cv.cvtColor(image\_scaled, cv.COLOR\_BGR2RGB))

ax[0].set\_title("Linear Interpolation Scale")

image\_scaled\_2 = cv.resize(image, None, fx=2, fy=2, interpolation=cv.INTER\_CUBIC)

ax[1].imshow(cv.cvtColor(image\_scaled\_2, cv.COLOR\_BGR2RGB))

ax[1].set\_title("Cubic Interpolation Scale")

image\_scaled\_3 = cv.resize(image, (200, 400), interpolation=cv.INTER\_AREA)

ax[2].imshow(cv.cvtColor(image\_scaled\_3, cv.COLOR\_BGR2RGB))

ax[2].set\_title("Skewed Interpolation Scale")

Hasil

