

**Lab 17****Name : Shashank Bagda****Date : 11 / 10 / 22****Enrollment No : 92100133020**

CODE :

```
from __future__ import division
from tkinter.tix import IMAGE
from PIL import Image

import imageio as iio

import cv2

import numpy as np

import matplotlib.pyplot as plt

I = Image.open('D:\ICT\SEM 3\PWP (Programming with Python )\Session
Handout\Lab 17\img.png ')
plt.imshow(np.asarray(I))
print (I.size, I.mode, I.format)

I1=I.convert(' L ') # 'L' for gray scale mode
print (I1.mode)

plt.imshow(np.asarray(I1), cmap=' gray ')

#plt.show()

I1.save('D:\ICT\SEM 3\PWP (Programming with Python )\Session Handout\Lab
17\img2.tif ')
a = np.asarray(I1,dtype=np.float32)

Image.fromarray(a.astype(np.uint8)).save("D:\ICT\SEM 3\PWP (Programming with
Python )\Session Handout\Lab 17\test.jpg ")
expert_face=a[235:450,225:400]
plt.subplot(121)
plt.imshow(a,cmap=' gray ',interpolation=' none ')
plt.title('Image'),plt.axis(' off ')
plt.subplot(122)
plt.imshow(expert_face,cmap=' gray ',interpolation=' none ')
plt.title(" Image Focus "),plt.axis(' off ')
```

```
plt.show()
Image.fromarray(expert_face.astype(np.uint8)).save("img2.jpg ")
i1 = Image.open('D:\ICT\SEM 3\PWP (Programming with Python )\Session
Handout\Lab 17\img2.tif')
Image.open('D:\ICT\SEM 3\PWP (Programming with Python )\Session Handout\Lab
17\img2.tif ')
radius=len(np.asarray(i1))/2
plt.imshow(np.asarray(i1), cmap=' gray ')
plt.show()
a = np.asarray(i1,dtype=np.float32)
b =np.zeros((len(a),a.shape[1]))
for x in range (0,len(np.asarray(i1))):
    for y in range (0,len(np.asarray(i1))):
        if (x-radius)*(x-radius) + (y-radius)*(y-radius)< 150*150:
            b[x][y]=1
plt.imshow(a*b,cmap=' gray ',interpolation=' none ')
plt.show()
```