Iris recognition

Phase 2

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Segmentation methods could be used :

1-Canny edge detection :

```
import numpy as np
import cv2 as cv
from matplotlib import pyplot as plt
img = cv.imread('Image Destination')
edges = cv.Canny(img,100,200)
plt.subplot(121),plt.imshow(img,cmap = 'gray')
plt.title('Original Image'), plt.xticks([]), plt.yticks([])
plt.subplot(122),plt.imshow(edges,cmap = 'gray')
plt.title('Edge Image'), plt.xticks([]), plt.yticks([])
plt.show()
```

2-Hough circle transform :

```
import numpy as np
import cv2 as cv
img = cv.imread('Image Destination',0)
img = cv.medianBlur(img,5)
cimg = cv.cvtColor(img,cv.COLOR_GRAY2BGR)
circles = cv.HoughCircles(img,cv.HOUGH_GRADIENT,1,20,
                          param1=50,param2=30,minRadius=0,maxRadius=0)
circles = np.uint16(np.around(circles))
for i in circles[0,:]:
    cv.circle(cimg,(i[0],i[1]),i[2],(0,255,0),2)
    cv.circle(cimg,(i[0],i[1]),2,(0,0,255),3)
cv.imshow('Iris region',cimg)
cv.waitKey(0)
cv.destroyAllWindows()
```

3-Thresholding :

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

img = cv2.imread('Image Desitination',0)
img = cv2.medianBlur(img,5)

ret,th1 = cv2.threshold(img,127,255,cv2.THRESH_BINARY)
th2 = cv2.adaptiveThreshold(img,255,cv2.ADAPTIVE_THRESH_MEAN_C,\
        cv2.THRESH_BINARY,11,2)
th3 = cv2.adaptiveThreshold(img,255,cv2.ADAPTIVE_THRESH_GAUSSIAN_C,\
        cv2.THRESH_BINARY,11,2)

titles = ['Original Image', 'Global Thresholding (v = 127)',
        'Adaptive Mean Thresholding', 'Adaptive Gaussian Thresholding']
images = [img, th1, th2, th3]

for i in xrange(4):
    plt.subplot(2,2,i+1),plt.imshow(images[i],'gray')
    plt.title(titles[i])
    plt.xticks([]),plt.yticks([])
plt.show()
```