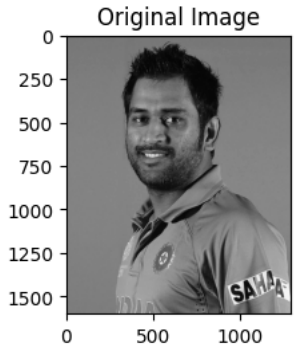
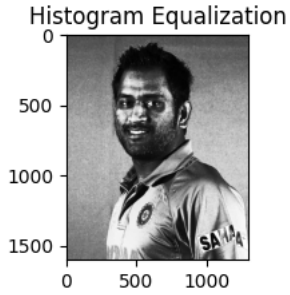
```
import cv2
import numpy as np
from matplotlib import pyplot as plt


#Load an iamge
image_path="Dhoni.webp"
original_image=cv2.imread(image_path,cv2.IMREAD_GRAYSCALE)


#Display the original image
plt.figure(figsize=(10,10))
plt.subplot(3,4,3)
plt.imshow(original_image,cmap='gray')
plt.title("Original Image")
```

```
Text(0.5, 1.0, 'Original Image')
```



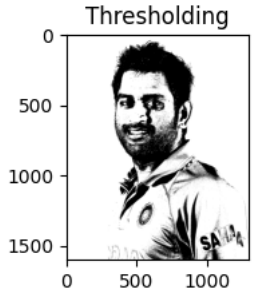

```
#Histogram Equalization
equalized_image=cv2.equalizeHist(original_image)
plt.subplot(2,2,2)
plt.imshow(equalized_image,cmap='gray')
plt.title("Histogram Equalization")
```

```
Text(0.5, 1.0, 'Histogram Equalization')
```



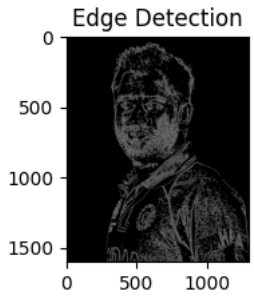

```
#Thresholding
_,thresholded_image=cv2.threshold(original_image,100,300,cv2.THRESH_BINARY)
plt.subplot(2,3,4)
plt.imshow(thresholded_image,cmap='gray')
plt.title("Thresholding")
```

```
Text(0.5, 1.0, 'Thresholding')
```



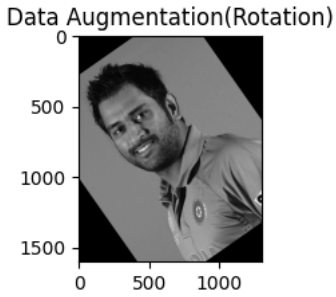

```
#Edge Detection(Using Canny)
edges=cv2.Canny(original_image,100,200)
plt.subplot(2,3,2)
plt.imshow(edges,cmap='gray')
plt.title("Edge Detection")
```

```
Text(0.5, 1.0, 'Edge Detection')
```




```
#Data Augmentation(rotate image)
rows,cols=original_image.shape
rotation_matrix=cv2.getRotationMatrix2D((cols/2,rows/2),35,1)
rotated_image=cv2.warpAffine(original_image,rotation_matrix,(cols,rows))
plt.subplot(2,3,5)
plt.imshow(rotated_image,cmap='gray')
plt.title('Data Augmentation(Rotation)')
```

```
Text(0.5, 1.0, 'Data Augmentation(Rotation)')
```




```
#Morphological Operations(Dilation)
kernel=np.ones((5,5),np.uint8)
dilated_image=cv2.dilate(original_image,kernel,iterations=1)
plt.subplot(2,3,6)
plt.imshow(dilated_image,cmap='gray')
plt.title('Morphological Operation(Dilation)')
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-2-bf19868e0d35> in <cell line: 2>()
      1 #Morphological Operations(Dilation)
----> 2 kernel=np.ones((5,5),np.uint8)
      3 dilated_image=cv2.dilate(original_image,kernel,iterations=1)
      4 plt.subplot(2,3,6)
      5 plt.imshow(dilated_image,cmap='gray')

NameError: name 'np' is not defined
```