assignment01

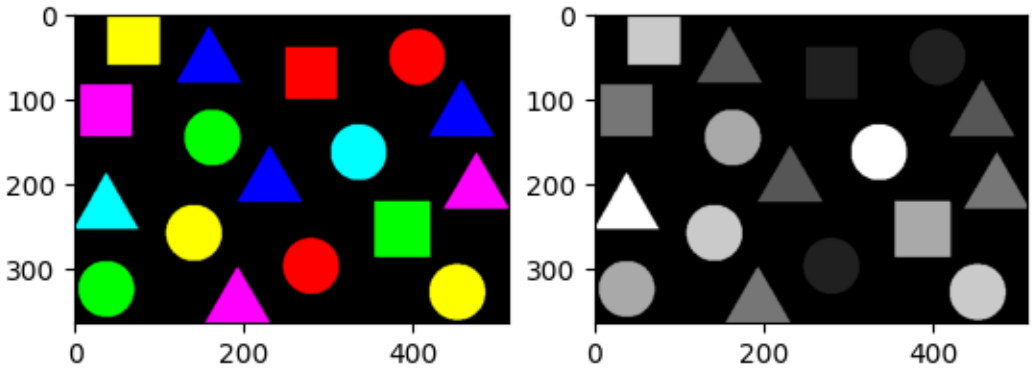
December 9, 2023

Assignment 01 | 65011428 Papinwich Asnapetch

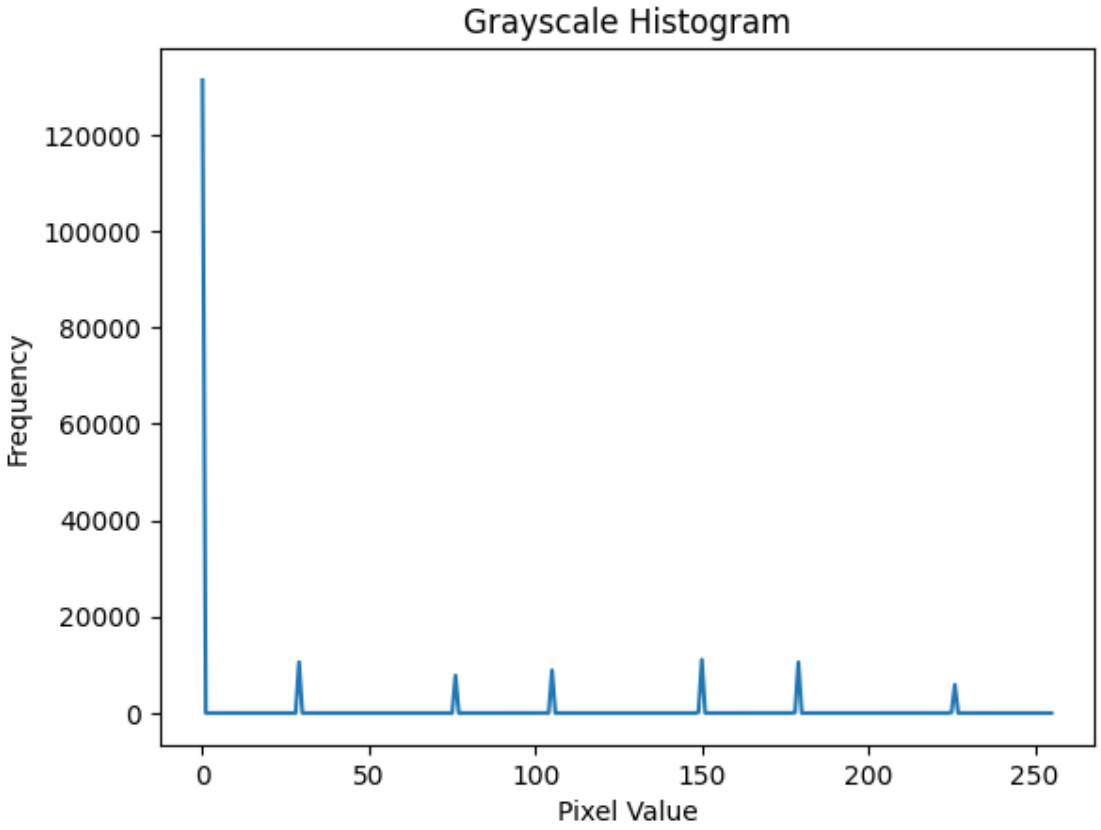
[5]:
```
import cv2
from matplotlib import pyplot as plt
```

[52]:
```
# Load image
pic = cv2.imread('colorobject.png')
# pic = cv2.cvtColor(pic, cv2.COLOR_BGR2RGB)
# plt.imshow(pic)

# Convert ot grayscale
gray = cv2.cvtColor(pic, cv2.COLOR_BGR2GRAY)
# plt.imshow(gray)

fig = plt.figure()
ax1 = fig.add_subplot(2,2,1)
ax1.imshow(pic, cmap= 'gray')
ax2 = fig.add_subplot(2,2,2)
ax2.imshow(gray, cmap= 'gray')
```

[52]:
```
<matplotlib.image.AxesImage at 0x142561e5d00>
```

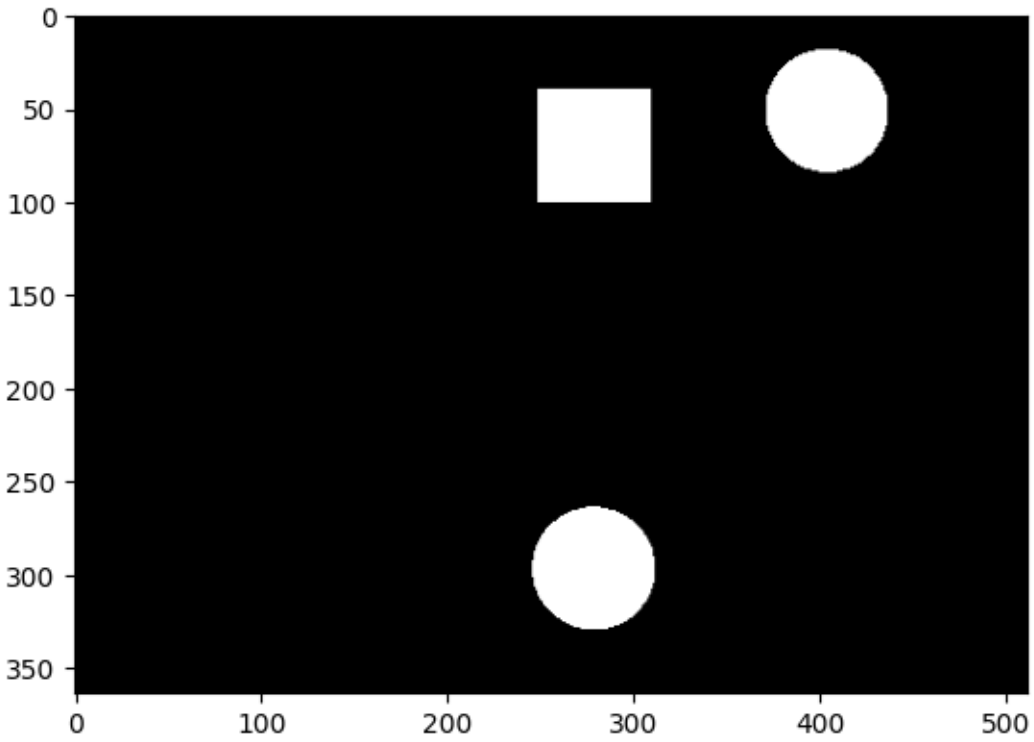


[65]:
```
# Create Histrogram
hist = cv2.calcHist([gray], [0], None, [256], [0, 256])

# Plot the histogram
plt.plot(hist)
plt.xlabel('Pixel Value')
plt.ylabel('Frequency')
plt.title('Grayscale Histogram')
plt.show()
```



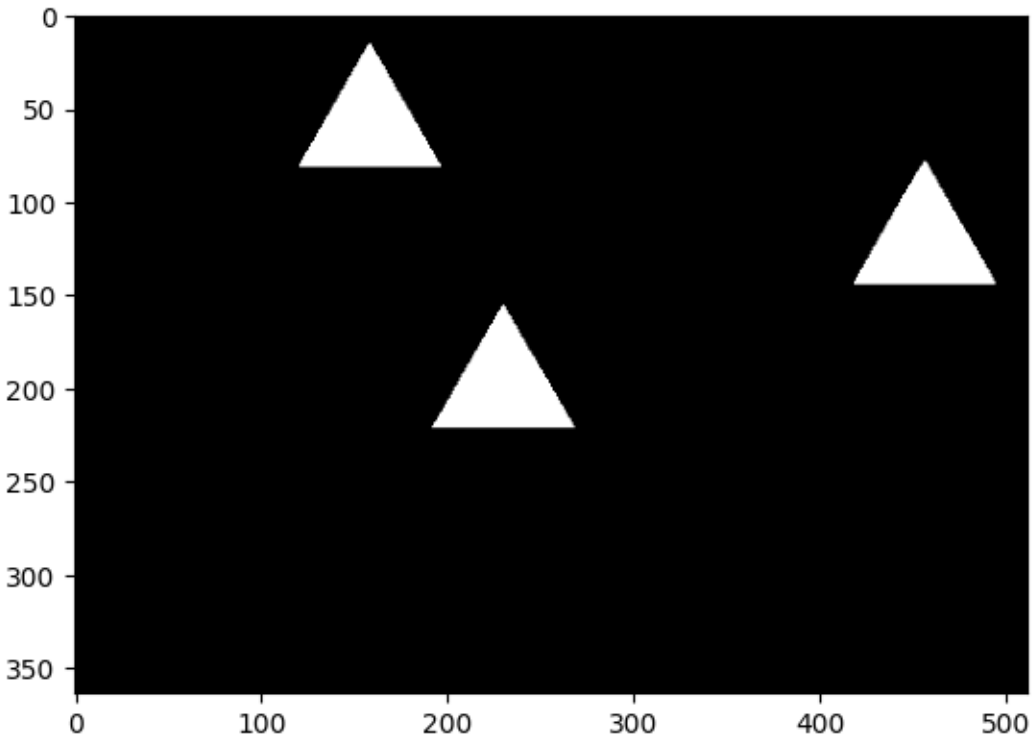
[94]:
```
# Task 01: BLUE
ret, blue = cv2.threshold(gray, 50, 255, cv2.THRESH_TOZERO_INV)
ret, blue = cv2.threshold(blue, 10, 255, cv2.THRESH_BINARY)
plt.imshow(blue, cmap= 'gray')
```

[94]:
```
<matplotlib.image.AxesImage at 0x14257f81a60>
```



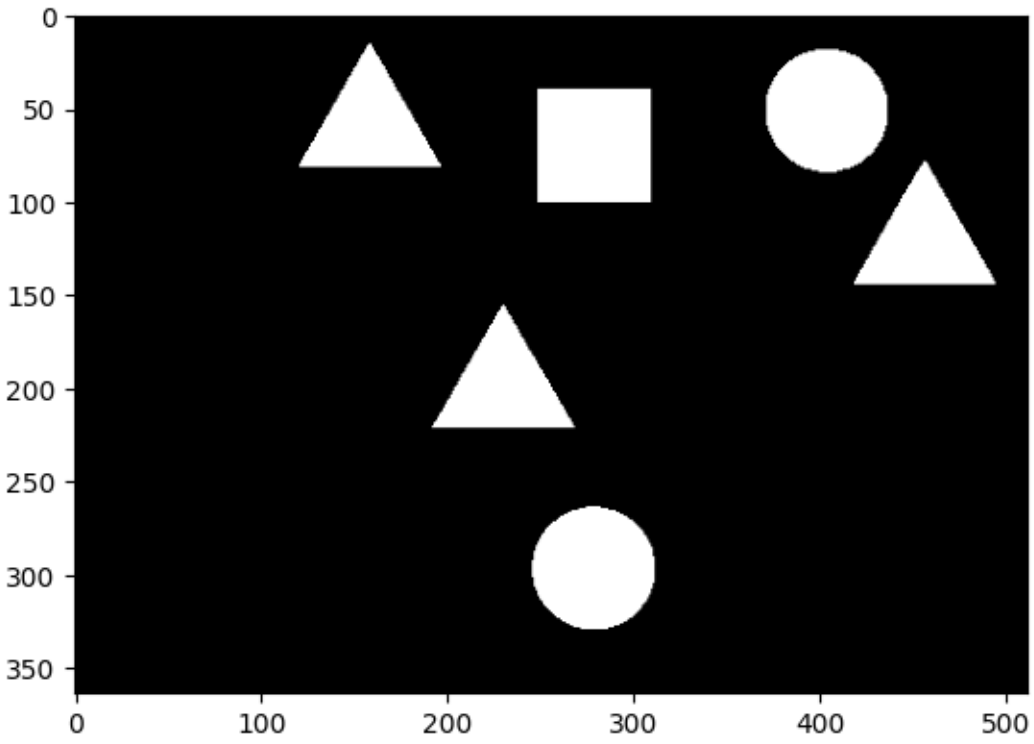
[93]:
```
# Task 02: RED
ret, red = cv2.threshold(gray, 100, 255, cv2.THRESH_TOZERO_INV)
ret, red = cv2.threshold(red, 50, 255, cv2.THRESH_TOZERO)
ret, red = cv2.threshold(red, 10, 255, cv2.THRESH_BINARY)

plt.imshow(red, cmap= 'gray')
```

[93]: <matplotlib.image.AxesImage at 0x14257e520a0>



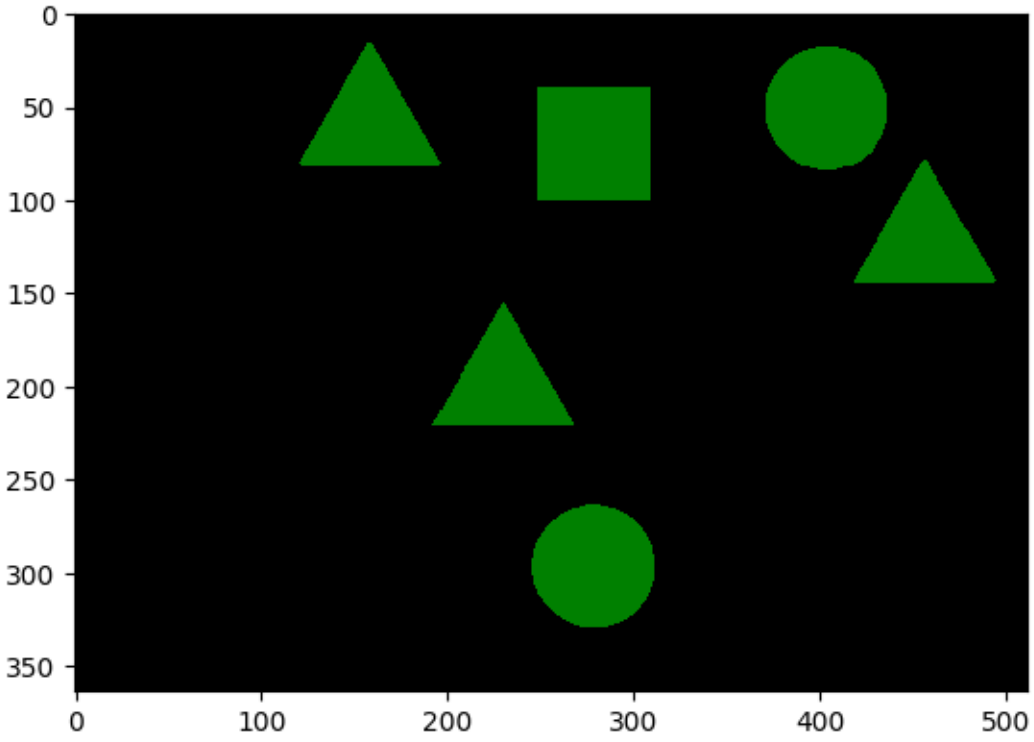
[99]:
```
# Task 03: B&R
ret, BR = cv2.threshold(gray, 100, 255, cv2.THRESH_TOZERO_INV)
ret, BR = cv2.threshold(BR, 10, 255, cv2.THRESH_BINARY)

plt.imshow(BR, cmap= 'gray')
```

[99]:
```
<matplotlib.image.AxesImage at 0x1425826f670>
```



[101]:
```
# Task 04: B&R in green
plt.imshow(BR,cmap = plt.cm.colors.ListedColormap(['black', 'green']))
```

[101]: <matplotlib.image.AxesImage at 0x14258383ca0>


0
50
100
150
200
250
300
350
0
100
200
300
400
500