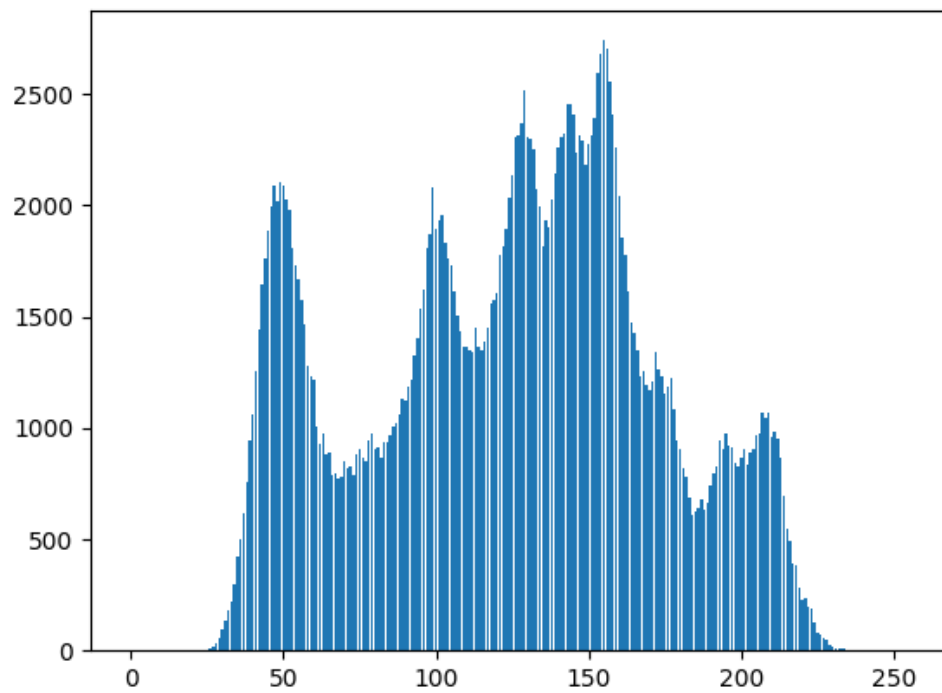


電腦視覺 HW3

R10922176 陳冠穎

(a) Origin-image and its histogram

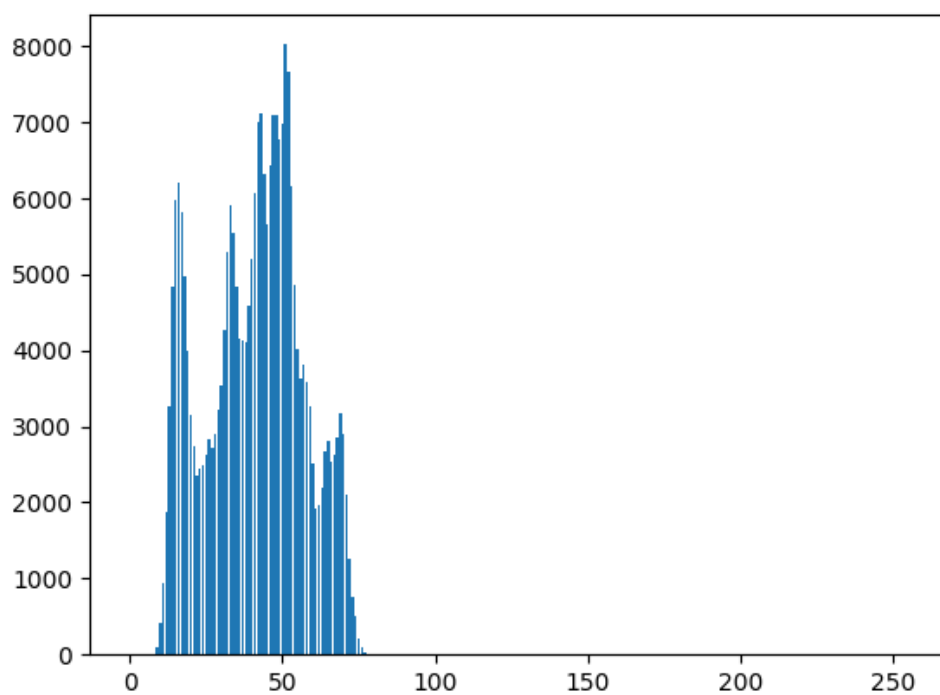
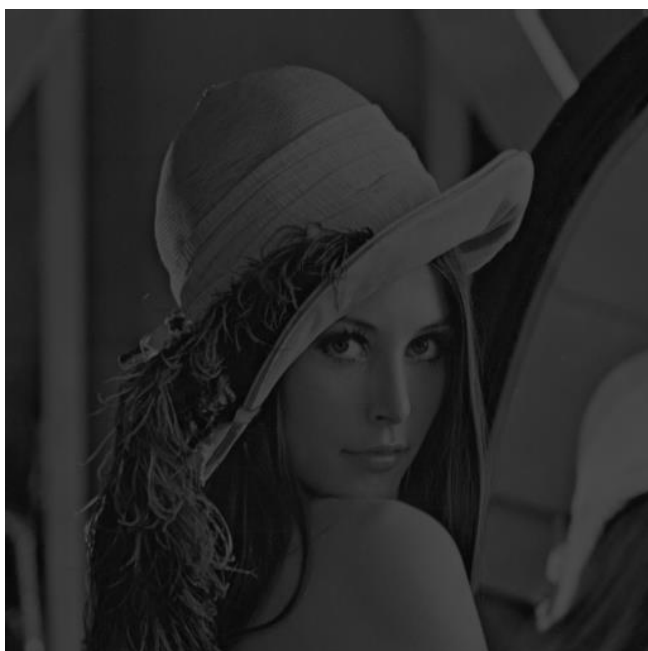


說明：

使用 HW2 就寫好的計算 histogram 的 function:

`calculateDestribution()` 。

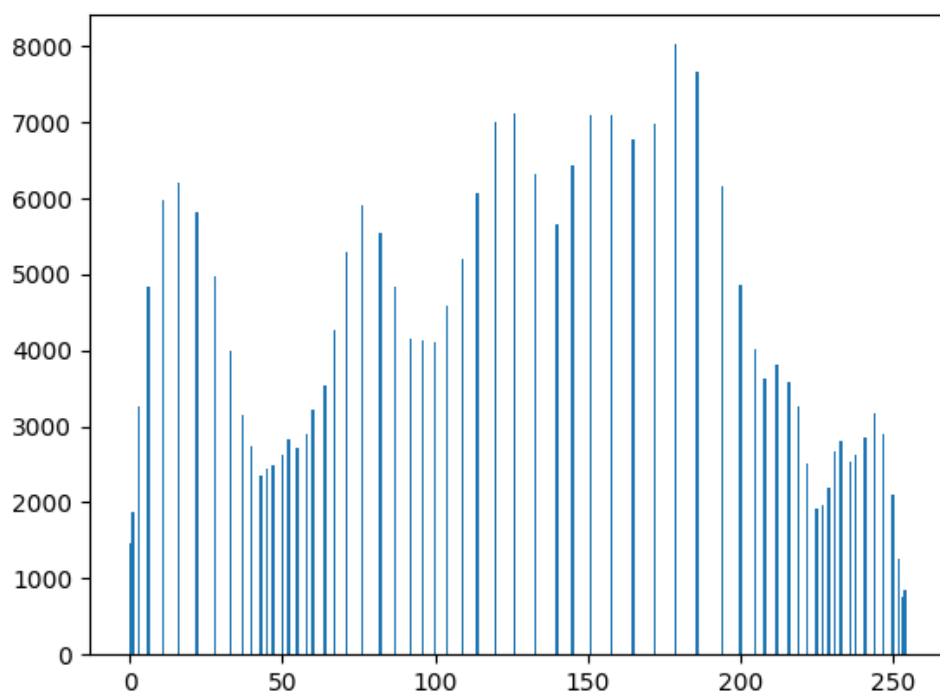
(b) Image with intensity divided by 3 and its histogram



說明：

將每個像素值除以三。

(c) Image after applying histogram equalization to (b) and its histogram



說明：

將(b)做好的圖片去做 histogram equalization，遇到值為 k 的 pixel

就使用 $\text{sum}(\text{hist}[:k])$ 將 $\text{intensity} \leq k$ 的個數算出來再套公式。

```
def histEqualization(img):  
  
    new_img = np.zeros((img.shape[0], img.shape[1]))  
  
    hist = calculateDestruction(img)  
  
    for i in range(img.shape[0]):  
        for j in range(img.shape[1]):  
            new_img[i][j] = 255*sum(hist[:int(img[i][j])]) / (img.shape[0] * img.shape[1])  
  
    return new_img
```