Contents

1 Assignment 1

1.1 Negative of an image

```
1  a=imread('Lenna.png');
2  figure
3  [row,col,s]=size(a);
4  imshow(a);
5  for i=1:row
6      for j=1:col
7          for k=1:3
8              a(i,j,k)=255-a(i,j,k);
9          end
10     end
11 end
12
13 figure
14
15 imshow(a);
```


(a) Original Image   (b) Negative Image
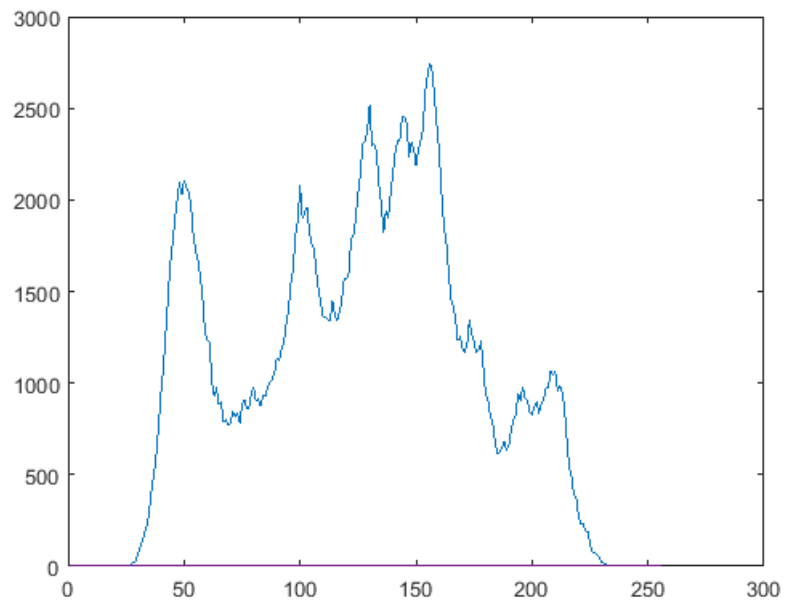
Figure 1: a normal and a negative image

2 Assignment 2

2.1 Plotting the histogram of an image

```
1  a=imread('Lenna.png');
2  b=rgb2gray(a);
3  [row,col]=size(b);
4  arr=zeros(256);
5  for i=1:row
6      for j=1:col
7          arr(b(i,j)+1)= arr(b(i,j)+1)+1;
8      end
9  end
10 plot(arr);
```
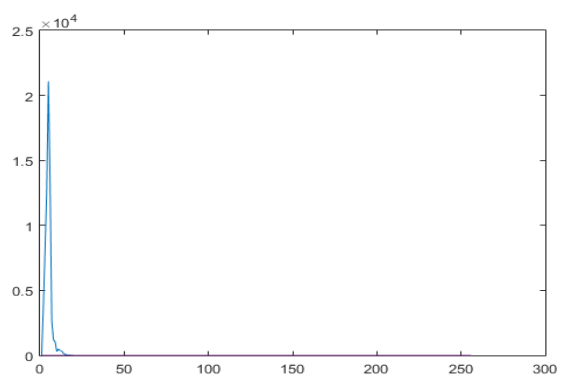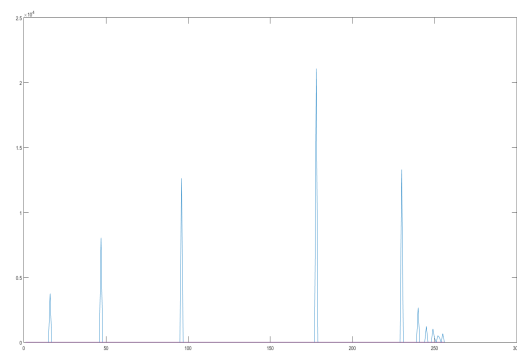

(a) Original Image

(b) Histogram of the Image

Figure 2: Image & histogram of the image

2.2 Histogram equalization

```matlab
a=imread('Lenna.gif');
b=(a);
[row,col]=size(b);
arr=zeros(256);
for i=1:row
    for j=1:col
        arr(b(i,j)+1)= arr(b(i,j)+1)+1;
    end
end
plot(arr);
pr=zeros(256);
pr1=zeros(256);
for k=1:256
    pr(k) = arr(k)/(row*col);
end
k=0;
for l=1:256
     k=k+pr(l);
     pr1(l)= pr1(l)+k;
end
for i=1:row
    for j=1:col
        b(i,j)=pr1(b(i,j)+1)*255;
    end
end
arr1=zeros(256);
for i=1:row
    for j=1:col
        arr1(b(i,j)+1)= arr1(b(i,j)+1)+1;
    end
end
imwrite(b,'C:\Users\ratul\Desktop\myGray.png')
imtool(b);
```

(a) Original Histogram

(b) Histogram after equalization

Figure 3: Histograms of the images

(a) Original Image

(b) Equalized image

Figure 4: Image & histogram of the image

3 Assignment 3

3.1 Mean Filter