Name-Surname:
Student ID:

EEE 501 – Applied Digital Image Processing
CE 490 – Introduction to Digital Image Processing

Assignment Report #1

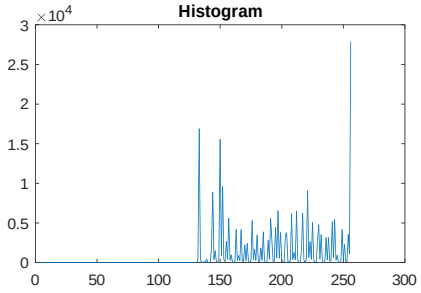
1. **MATLAB Code** (Please paste below all your MATLAB code including scripts and functions in a neat manner)

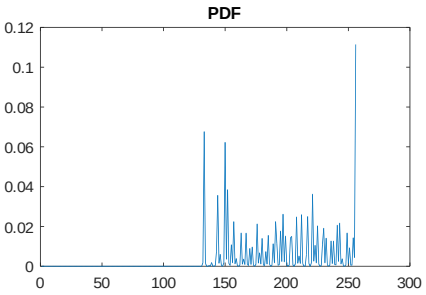
```
x = im2double(imread('lightPollen.jpg'));

pixel_count=size(x,1)*size(x,2);%get pixel count

hist=zeros(1,256);%create for histogram array
x=x.*256;%orginal photo opeened double so that times 256

for i = 1:size(x,1)%go to photo matrix first dimention
    for j =1:size(x,2)%go to photo matrix first dimention
       hist(1,round(x(i,j)))= hist(1,round(x(i,j)))+1 ; %write hist
go to pixel and which colour increase 1
    end
end

hist_size = 1:1:256;%for plot i create matrix

%plot histogram
subplot(3,2,1)
plot(hist_size,hist)
title('Histogram')

pdf_version= hist./pixel_count%pdf version is only diveded each
element by each

%plot pdf
subplot(3,2,3)
plot(hist_size,pdf_version)
title('PDF')


cdf_version = zeros(1,256);%create matrix for cdf

for i = 1:length(hist)%
    total =0;
    for j =1:i
      total = total + pdf_version(1,j); %add before all cell
    end
     cdf_version(1,i)= total;  %and write to cell
end


transfer_version=cdf_version*255;%cdf version is only multiply each
element by each
transfer_version=round(transfer_version);%transfer funcion should be
integer numbers
```

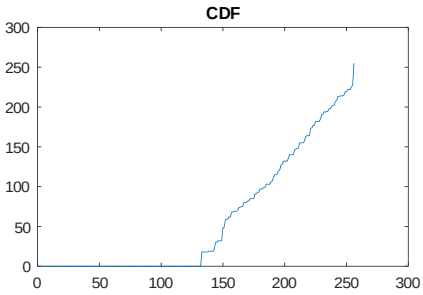
```
%show cdf
subplot(3,2,4)
plot(hist_size,transfer_version)
title('CDF')

%for final photo matrix
final_photo = zeros(size(x,1),size(x,2));


for i = 1:size(x,1)
    for j =1:size(x,2)
       final_photo(i,j) = transfer_version(round(x(i,j)));%go pixel
get colour and get for this value's transfer function and write new
matrix
    end
end

%plot again
subplot(3,2,5)
imshow(uint8(x));
title('Orginal Photo')

subplot(3,2,6)
imshow(uint8(final_photo));
title('Final Photo')
```

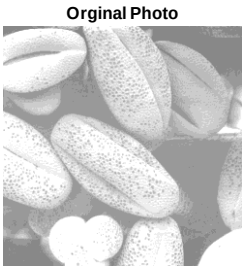
2. **Plots, Figures, Images and Comments** (Please paste below all required plots, figures and images <u>together with the comments</u> of each plot/figure/image)

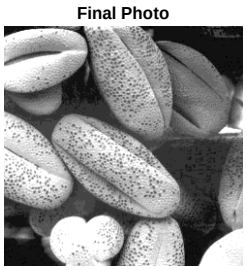
- get photos pixels
- go every pixel and count the pixel values and write this data
- diveded by total pixels count of pixel
-

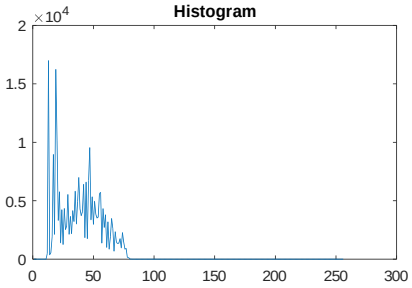

Histogram
×10^4
3
2.5
2
1.5
1
0.5
0
0
50
100
150
200
250
300

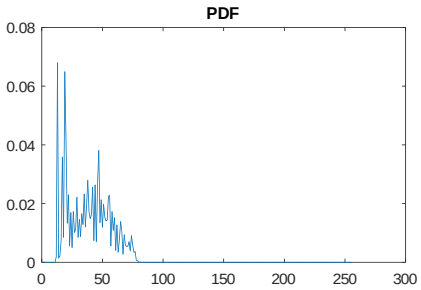

PDF
0.12
0.1
0.08
0.06
0.04
0.02
0
0
50
100
150
200
250
300

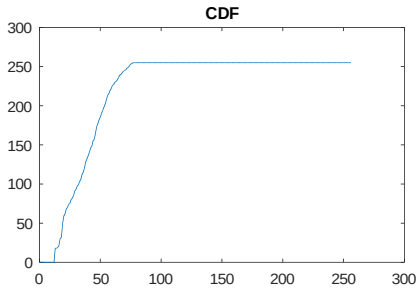

CDF
300
250
200
150
100
50
0
0
50
100
150
200
250
300


Orginal Photo

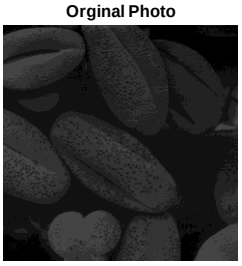

Final Photo







Orginal Photo



Final Photo

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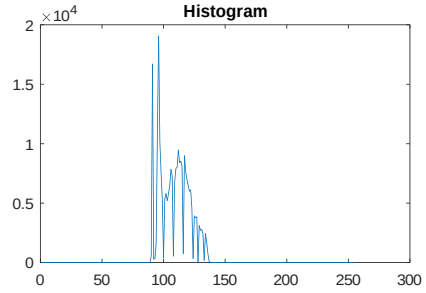
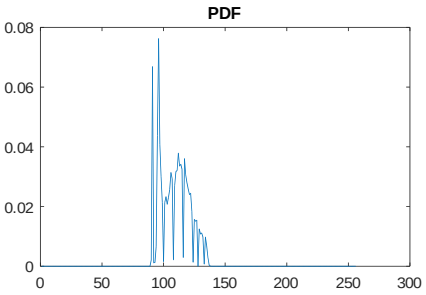
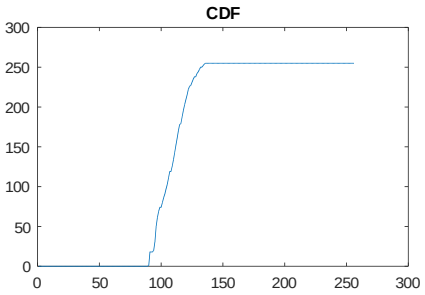
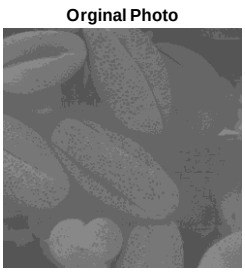
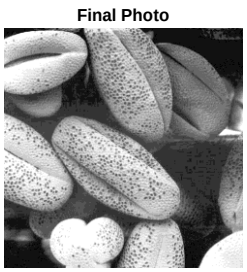

Histogram
×10^4
2
1.5
1
0.5
0
0
50
100
150
200
250
300


PDF
0.08
0.06
0.04
0.02
0
0
50
100
150
200
250
300


CDF
300
250
200
150
100
50
0
0
50
100
150
200
250
300


Orginal Photo


Final Photo

3. **Conclusion** (Please summarize to conclude what have you learned in this assignment)

I learned histograms and PDF and CDF.

Histogram is count of same value of pixel .

PDF is rate of histogram and CDF is integrate PDF basically.

Multiply the CDF matrix 255 and write for orginal photo pixels values and show the image.