Editor - C:\Users\Admin\Documents\MATLAB\p6.m*

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Stack: Base

1.0 1.1

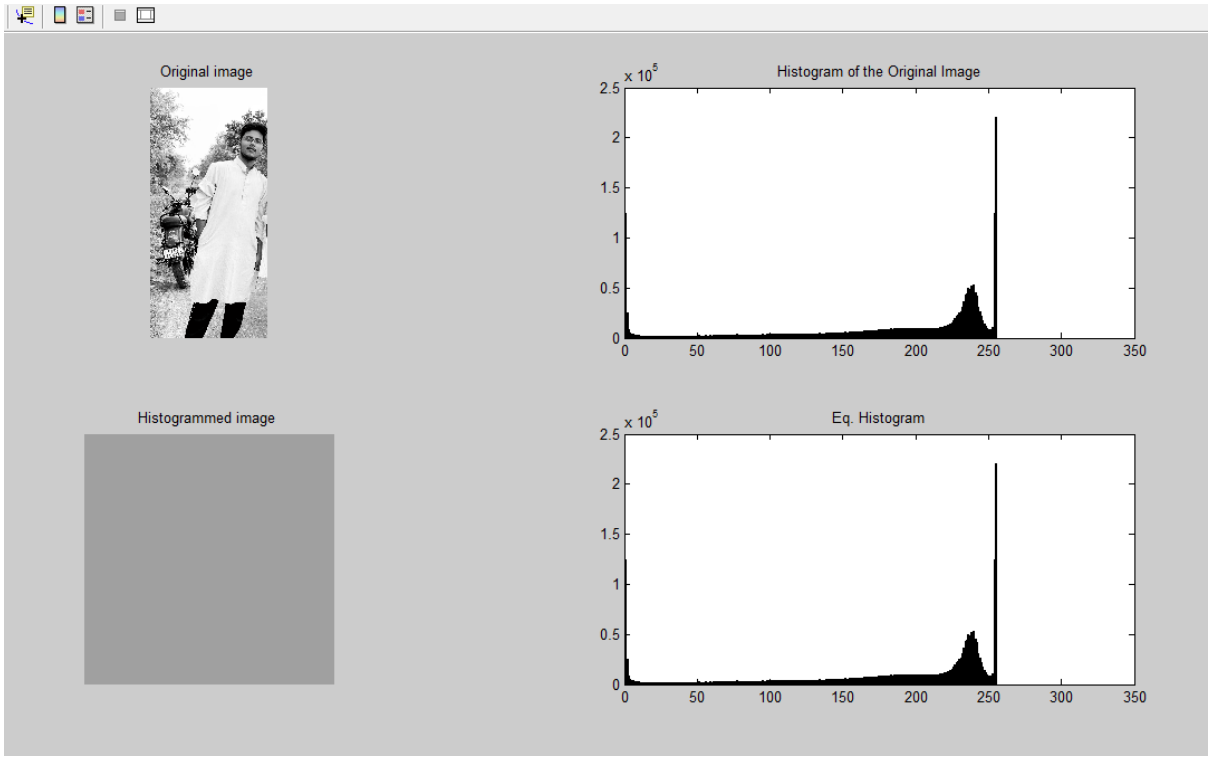
```
% Practical 6 - Write a program to perform Histogram Equilization
clc;
clear all;
close all;

a = imread('D:\RS\1671458913727.jpg');
a1 = double(a);
a2 = rgb2gray(uint8(a1));
[row col] = size(a2);
c = row*col;
h = zeros(1,300);
z = zeros(1,300);
for m = 1:1:row
    for n = 1:1:col
        t = a2(m,n);
        h(t+1) = h(t+1)+1;
    end
end

pdf = h/c;
cdf(1) = pdf(1);
for x=2:1:256
    cdf(x) = pdf(x)+cdf(x-1);
end

new = round(cdf*256);
new = new+1;
for p = 1:1:row
    for q = 1:1:col
        temp = a2(p,q);
        b = (temp);
        t = b;
        z(t+1) = z(t+1)+1;
```

```
34 -        end
35 -    end
36
37 -    b = b-1;
38 -    subplot(2,2,1)
39 -    imshow(uint8(a2))
40 -    title('Original image');
41
42 -    subplot(2,2,2)
43 -    bar(h)
44 -    title('Histogram of the Original Image');
45
46 -    subplot(2,2,3)
47 -    imshow(uint8(b))
48 -    title('Histogrammed image');
49
50 -    subplot(2,2,4)
51 -    bar(z)
52 -    title('Eq. Histogram');
```



Editor - D:\RS\P7\P7.m*

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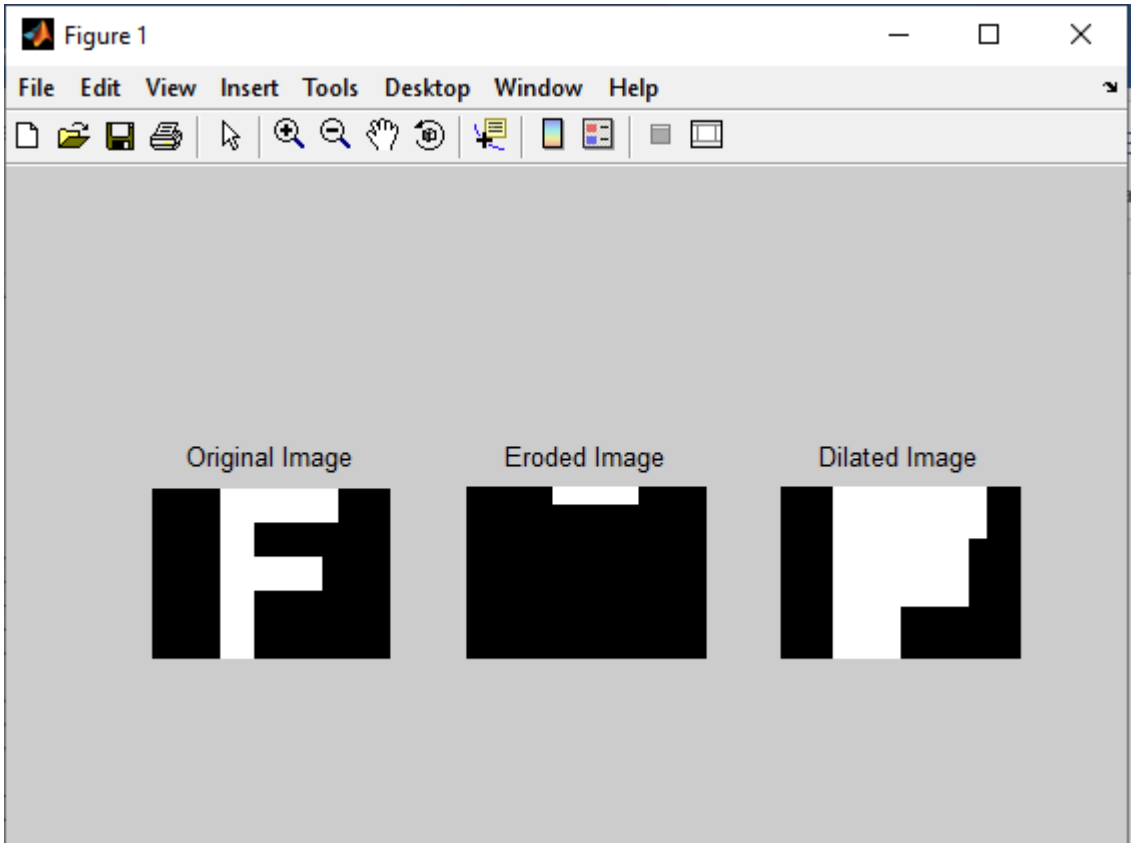
```
% Practical 7 – Write a program to perform Erosion and Dilation
clc;
clear all;
close all;

w = [0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0];

 disp(w);
 se1 = strel('square',3);
 disp(se1);
 IM1 = imerode(w, se1);
 IM2 = imdilate(w, se1);

 subplot(1,3,1);
 imshow(w);
 title('Original Image')

 subplot(1,3,2);
 imshow(IM1);
 title('Eroded Image')

 subplot(1,3,3);
 imshow(IM2);
 title('Dilated Image')
```



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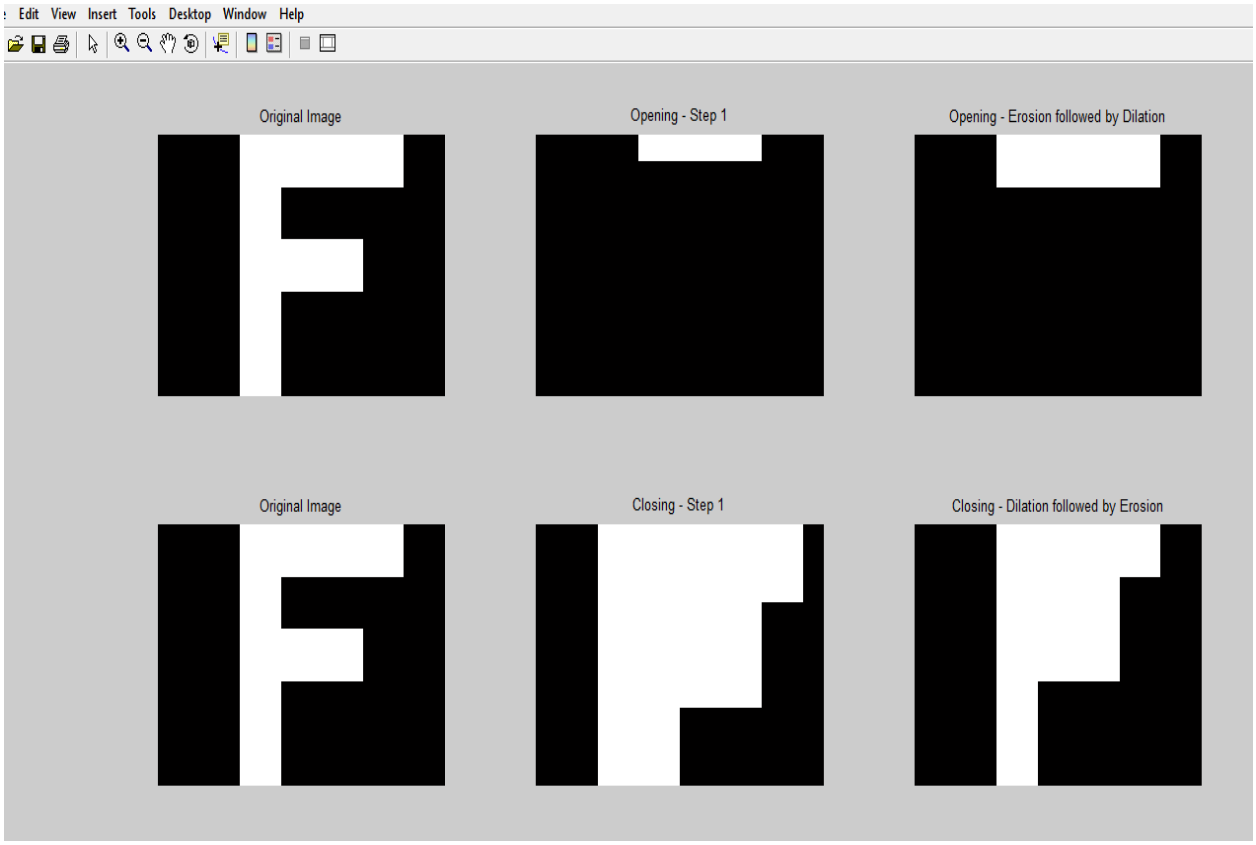
Stack: Base

1.0 1.1

```
% Practical 8 - Write a program to perform Opening and Closing

clc;
clear all;
close all;

w = [0 0 0 0 1 1 1 1 1 1 1 1 0 0;
     0 0 0 0 1 1 1 1 1 1 1 1 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 1 1 1 1 1 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0;
     0 0 0 0 1 1 0 0 0 0 0 0 0 0];

 disp(w);
 se1 = strel('square',3);
 disp(se1);
 O1 = imerode(w, se1);
 O2 = imdilate(O1, se1);

 C1 = imdilate(w,se1);
 C2 = imerode(C1,se1);

 subplot(2,3,1);
 imshow(w);
 title('Original Image')

 subplot(2,3,2);
 imshow(O1);
 title('Opening - Step 1')

 subplot(2,3,3);
 imshow(O2);
 title('Opening - Erosion followed by Dilation')

 subplot(2,3,4);
 imshow(w);
 title('Original Image')

 subplot(2,3,5);
 imshow(C1);
 title('Closing - Step 1')

 subplot(2,3,6);
 imshow(C2);
 title('Closing - Dilation followed by Erosion')

```


Edit View Insert Tools Desktop Window Help
Original Image
Opening - Step 1
Opening - Erosion followed by Dilation
Original Image
Closing - Step 1
Closing - Dilation followed by Erosion

Editor - D:\RS\P9\P9A.m

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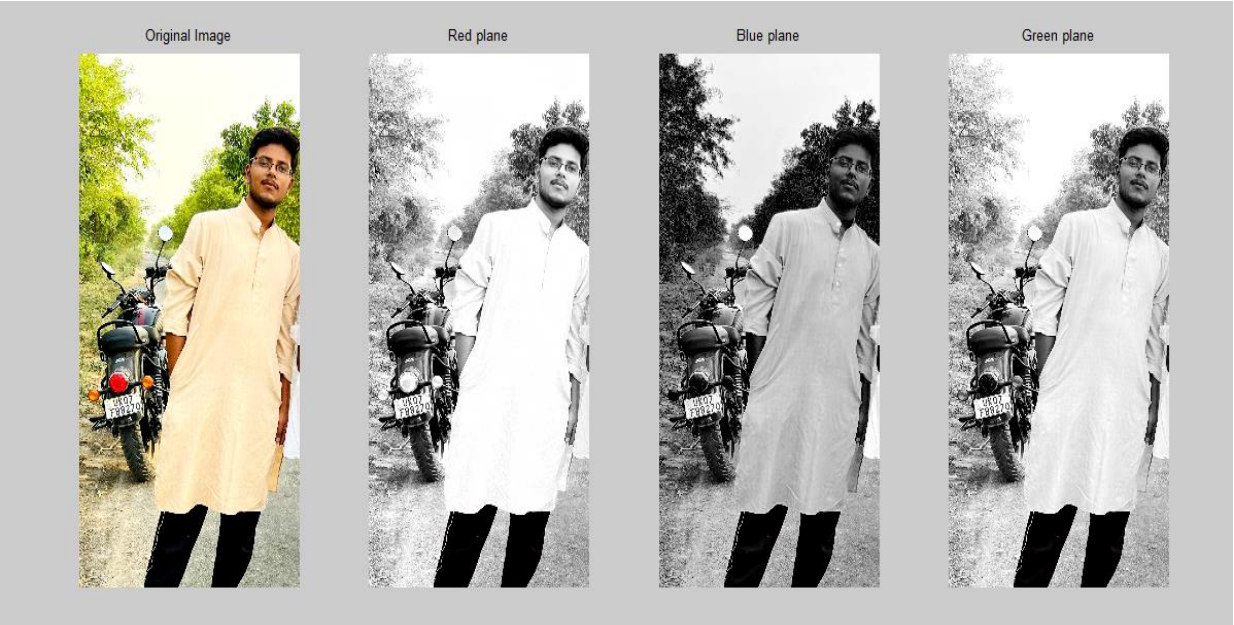
```
1   % Practical 9a - RGB planes
2   clc;
3   clear all;
4   close all;
5
6   img = imread('D:\RS\1671458913727.jpg');
7   subplot(1,4,1);
8   imshow(img);
9   title('Original Image')
10
11  redp = img(:,:,1);
12  greenp = img(:,:,2);
13  bluep = img(:,:,3);
14
15  subplot(1,4,2);
16  imshow(redp);
17  title('Red plane')
18
19  subplot(1,4,3);
20  imshow(bluep);
21  title('Blue plane')
22
23  subplot(1,4,4);
24  imshow(greenp);
25  title('Green plane')
```



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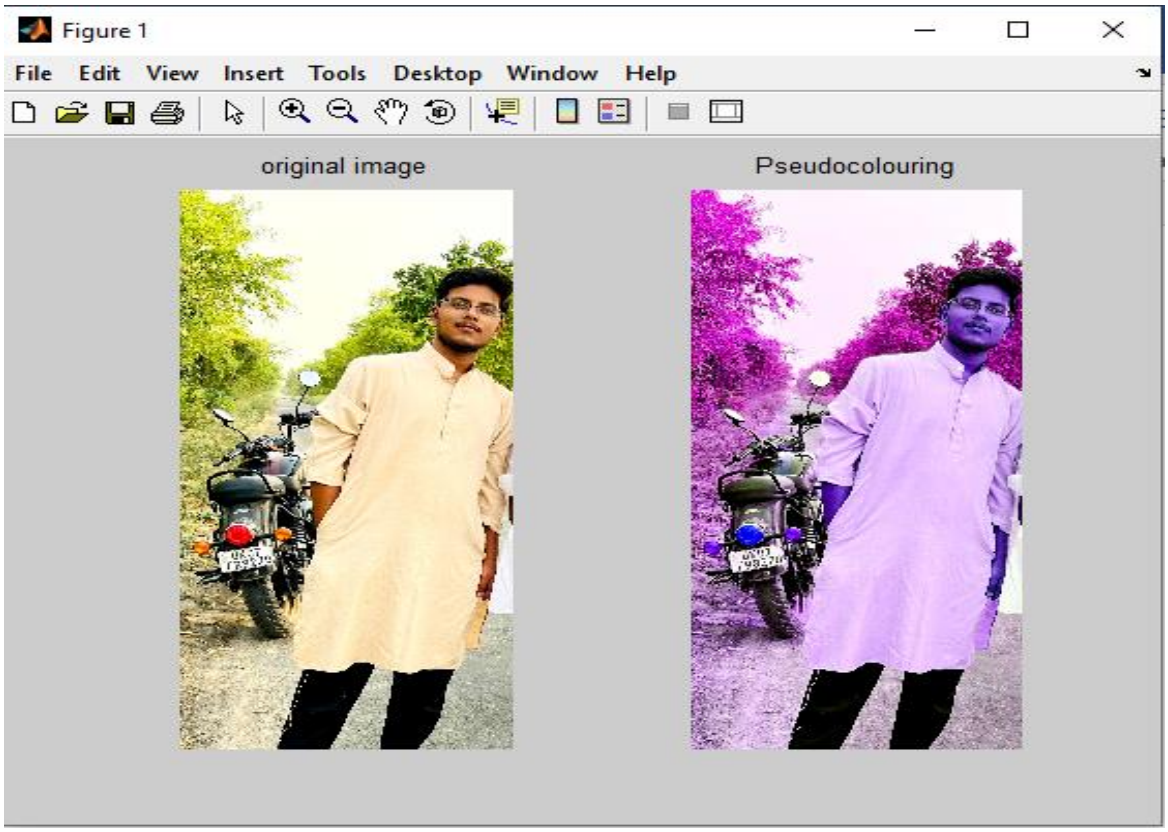
```
1   %Practical 9b - Pseudocoloring
2   clc;
3   clear all;
4   close all;
5
6   img=imread('D:\RS\1671458913727.jpg');
7   subplot(1,2,1);
8   imshow(img);
9   title('original image')
10
11  redp=img(:,:,1);
12  greenp=img(:,:,2);
13  bluep=img(:,:,3);
14
15  OP(:,:,1)=greenp;
16  OP(:,:,2)=bluep;
17  OP(:,:,3)=redp;
18  subplot(1,2,2);
19  imshow(OP);
20  title('Pseudocolouring');
```



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Stack: Base

```
% Practical 10 - Write a program to perform smoothing on a given image
clc;
clear all;
close all;

img = imread('D:\RS\1671458913727.jpg');
grayImage = rgb2gray(img)
subplot(2,3,1);
imshow(grayImage);
title('Original Image');

grayImage1 = imnoise(grayImage, 'salt & pepper')
subplot(2,3,2);
imshow(grayImage1);
title('Noise Image');

blurredImage = imfilter(grayImage1, ones(3)/9, 'symmetric');
subplot(2,3,3);
imshow(blurredImage);
title('Blurred Image (3x3)');

blurredImage = imfilter(grayImage1, ones(5)/25, 'symmetric');
subplot(2,3,4);
imshow(blurredImage);
title('Blurred Image (5x5)');

blurredImage = imfilter(grayImage1, ones(7)/49, 'symmetric');
subplot(2,3,5);
imshow(blurredImage);
title('Blurred Image (7x7)');

blurredImage = imfilter(grayImage1, ones(9)/81, 'symmetric');
subplot(2,3,6);
imshow(blurredImage);
title('Blurred Image (9x9)');
```

Editor - D:\RS\P11\P11.m

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Stack: Base

1.0 1.1

```
% Practical 11 - Perform sharpening on a given image

clc;
clear all;
close all;

img = imread('D:\RS\1671458913727.jpg');
a = rgb2gray(img);
lap = [1 1 1; 1 -8 1; 1 1 1];
resp = uint8(filter2(lap, a, 'same'));
sharpened = imsubtract(a, resp);

subplot(1,3,1);
imshow(a);
title('Original Image');

subplot(1,3,2);
imshow(resp);
title('Laplacian Filtered Image');

subplot(1,3,3);
imshow(sharpened);
title('Sharpened Image');
```