1	Reading a color image, (i). Converting Color image to gray image without using inbuilt function and display them both. (ii)Converting Gray image to binary image without using inbuilt function and display them both. (iii)Working with Color images. Changing the Red rectangle to Blue rectangle and display them both.	

Grey image to binary image

```
I = imread("grey.jpg");


x = size(I, 1);
y = size(I, 2);


threshold= (min(I)+max(I))/2 ;
binary_image = zeros(x,y);


for i = (1:x)
    for j = (1:y)
        if I(i, j) >= threshold
            binary_image(i, j) = 1;
        else
            binary_image(i, j) = 0;
        end
    end
end
subplot(1,2,1);
imshow(I);
title("grey image");
subplot(1,2,2);
imshow(binary_image);
title("binary image");
```

Color image to grey image

```
I = imread('RONALDO.jpg');


R = I(:,:,1);
G = I(:,:,2);
B = I(:,:,3);


grey_img = (R*0.2989)+(G*.5870)+(B*0.114);


subplot(1,2,1);
imshow(I);
title('Color image');
subplot(1,2,2);
```

```
imshow(grey_img);
title('grey image');
```

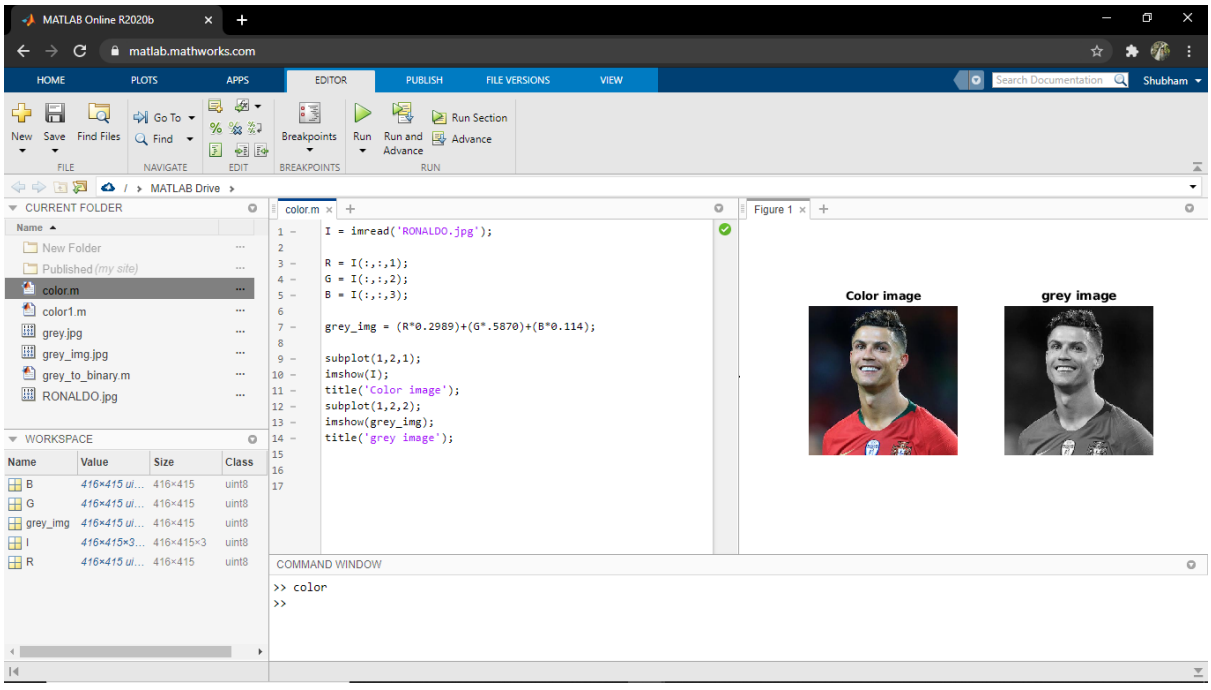
Changing red rectangle to blue rectangle

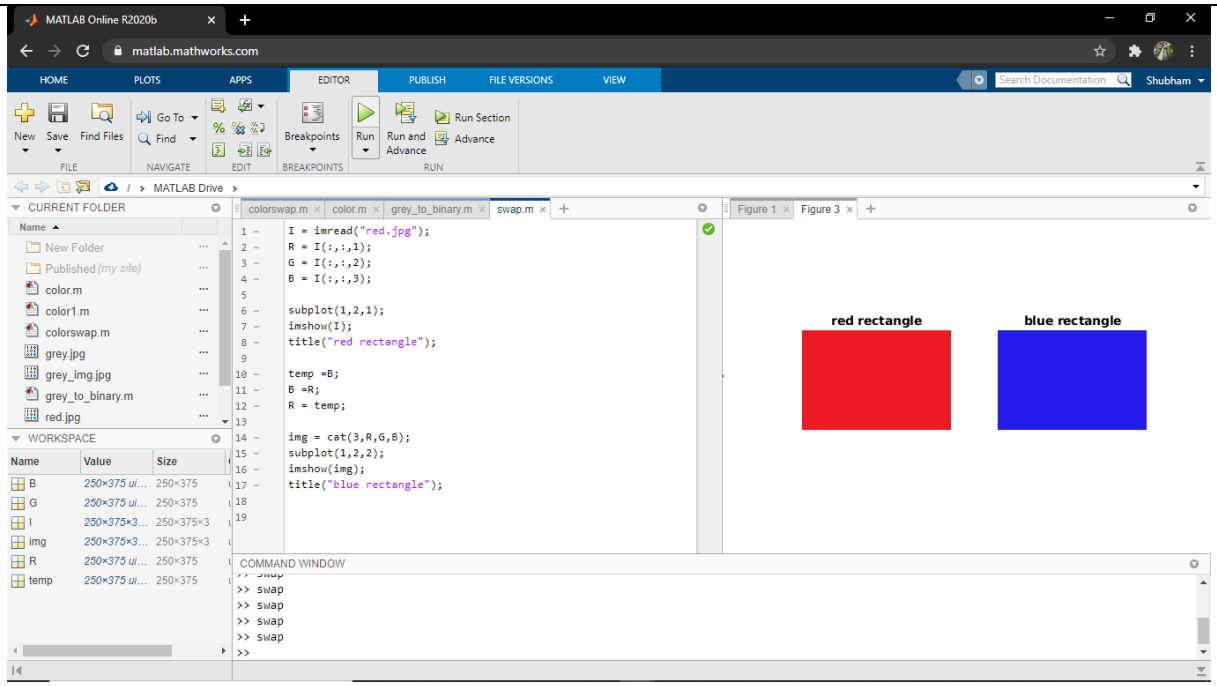
```
I = imread("red.jpg");
R = I(:,:,1);
G = I(:,:,2);
B = I(:,:,3);


subplot(1,2,1);
imshow(I);
title("red rectangle");


temp =B;
B =R;
R = temp;


img = cat(3,R,G,B);
subplot(1,2,2);
imshow(img);
title("blue rectangle");
```

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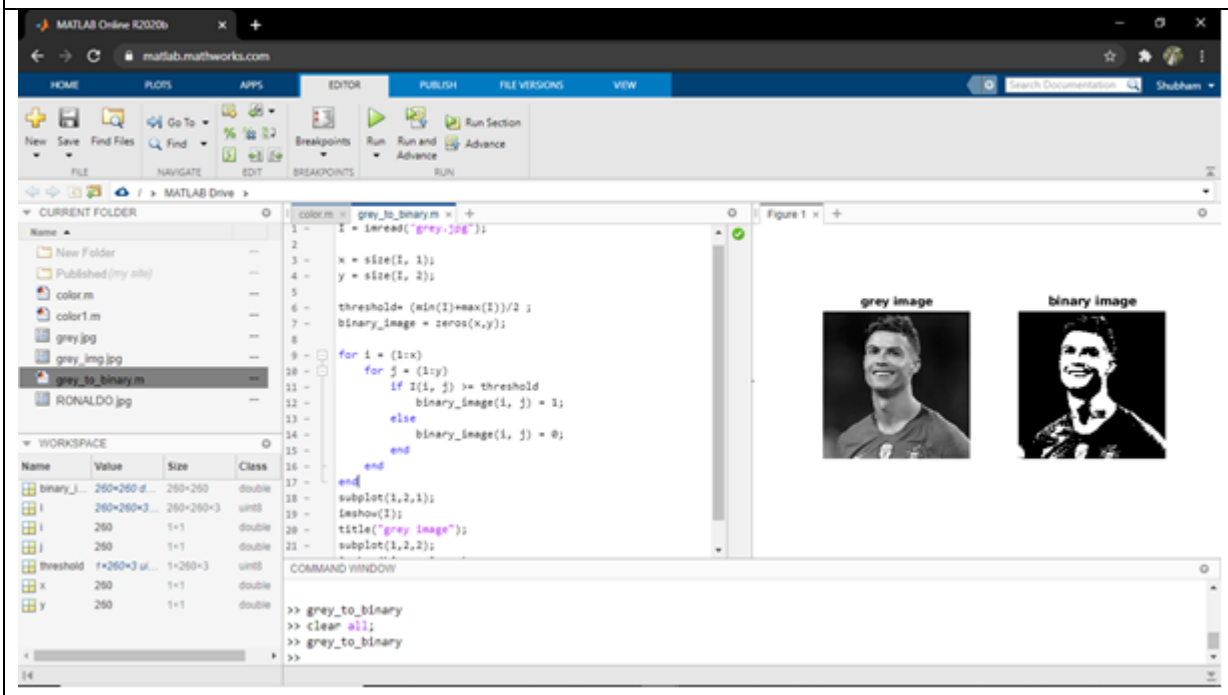
color.m
color1.m
colorswap.m
grey.jpg
grey_img.jpg
grey_to_binary.m
red.jpg
WORKSPACE
Name
Value
Size
B
G
I
img
R
temp
colorswap.m
color.m
grey_to_binary.m
swap.m
I = imread("red.jpg");
R = I(:,:,1);
G = I(:,:,2);
B = I(:,:,3);
subplot(1,2,1);
imshow(I);
title("red rectangle");
temp =B;
B =R;
R = temp;
img = cat(3,R,G,B);
subplot(1,2,2);
imshow(img);
title("blue rectangle");
Figure 1
Figure 3
red rectangle
blue rectangle
COMMAND WINDOW
>> swap
>> swap
>> swap
>> swap
>>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color1.m
grey.jpg
grey_img.jpg
grey_to_binary.m
RONALDO.jpg
WORKSPACE
Name
Value
Size
Class
threshold
x
y
color.m
grey_to_binary.m
I = imread("grey.jpg");
x = size(I, 1);
y = size(I, 2);
threshold= (min(I)+max(I))/2 ;
binary_image = zeros(x,y);
for i = (1:x)
for j = (1:y)
if I(i, j) >= threshold
binary_image(i, j) = 1;
else
binary_image(i, j) = 0;
end
end
end
subplot(1,2,1);
imshow(I);
title("grey image");
subplot(1,2,2);
Figure 1
grey image
binary image
COMMAND WINDOW
>> grey_to_binary
>> clear all;
>> grey_to_binary
>>