

```
i = imread("IMG-20191216-WA0102.jpg");  
g = rgb2gray( i );
```

```
figure  
subplot(2,1,1);  
imshow(i);  
title('OriginalImage');  
  
subplot(2,1,2);  
imshow(g);  
title('Grayscale Image');
```

OriginalImage



Grayscale Image



```
figure  
subplot(2,1,1);  
imshow(g+50);  
title('Grayscale Increase Brightness Image');  
  
subplot(2,1,2);  
imshow(g-50);  
title('Grayscale Decrease Brightness Image');
```

Grayscale Increase Brightness Image



Grayscale Decrease Brightness Image



```
figure
subplot(3,1,1);
imshow((g-30)*1.75);
title('Grayscale Increase Contrast Image');

subplot(3,1,2);
imshow((g+50)*0.5);
title('Grayscale Decrease Contrast Image');

subplot(3,1,3)
histeq(g);
title('Original Histogram Equalized Image');
```

Grayscale Increase Contrast Image



Grayscale Decrease Contrast Image



Original Histogram Equalized Image



```
figure
subplot(2,1,1);
histeq(g+50);
title('Increase Brightness Histogram Equalized Image');

subplot(2,1,2);
histeq(g-50);
title('Decrease Brightness Histogram Equalized Image');
```

Increase Brightness Histogram Equalized Image



Decrease Brightness Histogram Equalized Image



```
figure
subplot(2,1,1);
histeq((g-30)*1.75);
title('Increase Contrast Histogram Equalized Image');

subplot(2,1,2);
histeq((g+50)*0.5);
title('Decrease Contrast Histogram Equalized Image');
```

Increase Contrast Histogram Equalized Image



Decrease Contrast Histogram Equalized Image



Histogram Plot Code

```
[rows, columns] = size(g);
counts = zeros(1, 256);
for col = 1 : columns
    for row = 1 : rows
        grayLevel = g(row, col);
        counts(grayLevel+ 1) = counts(grayLevel+1) + 1;
    end
end
grayLevels = 0 : 255;
bar(grayLevels, counts, 'BarWidth', 0.4, 'FaceColor','b');
ylim([0 20000]);
xlabel('Gray Level');
ylabel('Pixel Count');
title('Decrease Contrast Histogram Equalized Image Histogram');
grid on
```

Increase Contrast Histogram Equalized Image



Decrease Contrast Histogram Equalized Image Histogram

