

```

img = imread('/MATLAB Drive/1.jpeg');
if size(img, 3) == 3
    img = rgb2gray(img);
end
% quantization factor
quantization_factor = 8;
%Quantize the image using imresize
image_quantiz = imresize(floor(double(img) / quantization_factor),size(img));
image_quantiz = image_quantiz * quantization_factor; % Scale back to
0-255range
%Display the original and quantized images
figure;
subplot(1, 2, 1), imshow(img), title('Original Grayscale Image');
subplot(1, 2, 2), imshow(image_quantiz, []), title('Quantized Image (32
Levels)');

```

**Original Grayscale Image**



**Quantized Image (32 Levels)**



## Step 1: Read the Image

- I started by loading the image using `imread`. This function reads the image file from the specified path.

## Step 2: Check if the Image is RGB and Convert to Grayscale

- Next, I checked if the image is in RGB format (has 3 channels). If it is, I converted it to grayscale using `rgb2gray`, because the quantization works better on grayscale images.

### **Step 3: Set the Quantization Factor**

- I defined a quantization factor of 8, which means I'll be reducing the number of intensity levels in the image. This step prepares the image for quantization.