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%Question 5 :

% Step 1: Loading the Image
imagePath = 'IMAGE_HW2.jpeg';
img = imread(imagePath);

% Step 2: Converting to Grayscale
if size(img, 3) == 3
    imgGray = rgb2gray(img);
else
    imgGray = img;
end

% Step 3: where we normalize the Pixel Values
imgNormalized = double(imgGray) / 255;

% Step 4: Quantization to 32 Levels
numLevels = 32;
q_values = floor(imgNormalized * numLevels);
q_Image = q_values / (numLevels - 1);

% Step 5: Scale Back to 0-255 Range
q_Image = uint8(q_Image * 255);

% Displaying the Original and Quantized Images
figure;
subplot(1, 2, 1);
imshow(imgGray);
title('Grayscale homework2 Image');

```

Grayscale homework2 Image



```
figure;  
subplot(1, 2, 2);  
imshow(q_Image);  
title('Quantized homework2 Image to 32 Levels');
```

Quantized homework2 Image to 32 Levels

