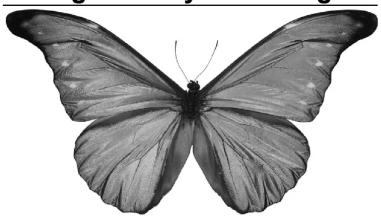
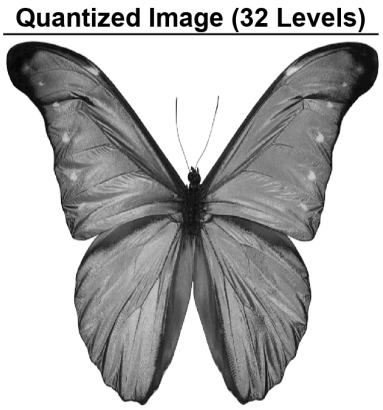
```
% Loading the image
original_image = imread('C:\Users\pbsjy\Downloads\butterfly_image.png'); % Replace
with your image path

% Convert to grayscale
if size(original_image, 3) == 3
    gray_image = rgb2gray(original_image);
else
    gray_image = original_image;
end

% Normalize the grayscale values
normalized_image = double(gray_image) / 255; % Convert to double and normalize to
[0, 1]

%  Quantize to 32 levels
quantized_image = round(normalized_image * 31) / 31; % Quantization

%Resize the quantized image
quantized_image_resized = imresize(quantized_image, [size(gray_image, 2),
size(gray_image, 2)]);

%  Displaying the original and quantized images
figure;
subplot(1, 2, 1);
imshow(gray_image);
title('Original Grayscale Image');

subplot(1, 2, 2);
imshow(quantized_image_resized);
title('Quantized Image (32 Levels)');
```





Steps:

- **Load the Image**: Image is loaded into MATLAB and converedt it to grayscale.
- **Normalize the Grayscale Values**: The pixel values are converted into a range between 0 and 1. This step is for uniform quantization.
- **Quantize the Pixel Values**: Maping the normalized values to 32 levels. This is done by multiplying the normalized values by 31 . rounding them to the nearest integer, and then dividing by 31 again to bring them back to the range [0, 1].
- **Resize the Image**: Using the `imresize` function to adjust the size of the quantized image . However,
- **Display the Result**: The original and quantized images using the `imshow` function are shown