Steps followed to Quantize an Image to 32 Grayscale Levels Using imresize in MATLAB

1)Loading the Image : I have started by loading the image and converting it into grayscale format.

2)Calculating the Scaling Factor : To quantize to 32 levels, pixel values should fit within this range. The maximum pixel value for an 8-bit grayscale image is 255. The scaling factor can be calculated as:

$$scale\_factor = 255/32-1 = 8$$

3)Creating a Reduced Resolution Image : Used imresize to create a reduced resolution version of the image.
This step aims to downsample the image to reduce the number of distinct pixel values.

4)Resize back to original dimensions : Resized the downsampled image back to it's original size using imresize.

5)Convert to 32 levels : Pixel values are scaled by using floor division operation and then multiplied by the scale factor.This reduces the number of levels in the image.