```
originalImage = imread('Elephant.jpeg');
grayImage = rgb2gray(originalImage);
[height, width] = size(grayImage);
resizeFactor = [32, round(32 * (height / width))];
smallImage = imresize(grayImage, resizeFactor, 'nearest');
quantizedImage = imresize(smallImage, [height, width], 'nearest');
figure;
imshow(grayImage);
title('Original Grayscale Elephant image');
```





```
imshow(quantizedImage);
title('32 Grayscale Levels Elephant image');
```

32 Grayscale Levels Elephant image



% {

Steps that i followed to quantize the given image

Step1: First i have loaded an Elephant image using imread function that i want to quantize.

Step2: Secondly, Converting the given colored(RGB) image into a gray scaled image using the available matlab function "rgb2gray"

Step3: Calculated the factor by which to resize the image. Since we want 32 levels of grayscale, we can resize the image to a smaller dimension that corresponds to 32 levels

Step4: I used imresize to reduce the dimensions of the grayscale image. This effectively reduces the number of grayscale levels.

Step5: Resized the image back to its original dimensions using same imresize function again. This process create a quantized effect due to the reduced information.

Step6: Finally, i just displayed both original and quantized images using imshow matlab function for comparison.

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