1. Display an image to illustrate change in image quality with decreasing gray levels-128, 64, 32, 16 and 8.
2. Write a code in Matlab to perform the following operations on an image:
   - a. Increase and decrease brightness of an image.
   - b. Manipulate contrast of an image.
   - c. Determine negative of an image.
3. Read an image and perform histogram equalization of the input image and analyse the result.
4. Read a grayscale image and convert it to a binary image using hard thresholding. Make the threshold value a user defined parameter. Vary the threshold and observe the result.
5. Read an image, convolve the image with the mask $\frac{1}{9}\begin{bmatrix}1 & 1 & 1\\ 1 & 1 & 1\\ 1 & 1 & 1\end{bmatrix}$

   And show that it performs averaging operation which results in blurring of the image. Also analyse the impact of increasing the size of the mask to 5x5, that is, mask is

   $\frac{1}{9}\begin{bmatrix}1 & 1 & 1 & 1 & 1\\ 1 & 1 & 1 & 1 & 1\\ 1 & 1 & 1 & 1 & 1\\ 1 & 1 & 1 & 1 & 1\\ 1 & 1 & 1 & 1 & 1\end{bmatrix}$
6. Read an image and then corrupt the image by salt-and-pepper noise and Gaussian noise. Then apply an averaging filter of size 3 X 3 and 5 x 5 to this corrupted image. Comment on the result obtained.
7. Read an image and then corrupt the image by salt-and-pepper noise. Now apply a 3 x 3 box filter, a 5 x 5 box filter and a median filter to the corrupted image and comment on the result obtained.
8. Write a matlab program that performs a two-dimensional Butterworth low-pass and high-pass filter of the given image for two different cut-off frequencies.
9. Read an input image to perform the following operations:
   - a. High-pass filtering in the frequency domain
   - b. Low-pass filtering in the frequency domain
   - c. Band-pass filter in the frequency domain
   - d. Band-stop filter in the frequency domain
10. Read an image and degrade the image using motion blur.