Assignment 02 (Odd ID)

1. **Histogram Equalization:**
   a. Read the image 'cameraman.png'
   b. Compute no. of pixels for each gray level intensity (to generate histogram)
   c. Compute Probability Distribution Function (PDF) = no. of pixels for each level / total no of pixels
   d. Compute Cumulative Distribution Function (CDF) = Cumulative sum of PDF
   e. Multiply each CDF by L-1
   f. Round the value obtained in step e
   g. Display original image and Equalized image using subplot
   h. Display original histogram and equalized histogram using subplot
   i. **Bonus:** Perform Histogram Specification of the input image with your desired image (you can choose any of your image for performing the specification).

2. **Bit Plane Slicing:**

a	Take a RGB input image and convert it into grayscale image.	01
b	Extract the dimension of the grayscale image (say R).	01
c	For every column of bit depth of R, starting from the LSB, take the column number of the bit positions (say k) of R. **Example: If R is an 8-bit image, for the MSB bit position, k should be 7.**	02
d	For every k, calculate X, where X is 2 to the power of that column number. **X=2^k**	02
e	Calculate the bitwise and operation for every pixel of the image using the following function. S= bitand(A,B) *****where A and B are unsigned integers or arrays of unsigned integers. Let, A be the input image (R), and B be X.**	03
f	Show the output images (S) for every bit position. It is recommended to use subplot function for showing the output images.	01