VIT-AP UNIVERSITY

LAB ASSIGMENT - 1

TITLE- Write a program to compute the histogram of an input image and equalization of the histogram

COURSE CODE: CSE4047
COURSE NAME : COMPUTER VISION

Name: Syed. Mahammed Sameer
RegNo: 21bce8463
Date: 09-08-2024

Steps:

- **Read the Image:**
  - Reads an image file (3dBoxBg.jpg) and stores it in a variable.

· **Histogram Equalization:**

- Applies histogram equalization to the image to enhance its contrast and stores the result in another variable.

· **Plot Histograms (Redundant Operations):**

- Initially plots the histograms of both the original and equalized images with 64 bins each. These steps are repeated but are redundant and can be removed.

· **Grayscale Conversion and Intensity Adjustment:**

- Converts the original RGB image to a grayscale image.
- Adjusts the intensity values of the grayscale image.
- Displays the grayscale image.
- Adjusts the intensity values of the original RGB image using specified low and high input values.

· **Create a 2x2 Grid of Subplots:**

- Creates the first subplot in a 2x2 grid and displays the original image with the title "Original image".

· **Plot Histogram of Original Image:**

- Creates the second subplot and plots the histogram of the original image with 50 bins, adding the title "Histogram of original image".

· **Display Histogram Equalized Image:**

- Creates the third subplot and displays the histogram-equalized image with the title "Histogram Equalized".

· **Plot Histogram of Equalized Image:**

- Creates the fourth subplot and plots the histogram of the histogram-equalized image with 50 bins, adding the title "Histogram of equalized image".

Code:

```
image = imread("3dBoxBg.jpg")
j = histeq(image);
imhist(image,64)
imhist(j,64)
imhist(image,64)
imhist(j,64)
image1 = rgb2gray(image);
k1 = imadjust(image1);
imshow(image1);
k2 = imadjust(image,[0.3,0.7],[]);
subplot(2,2,1)
imshow(image)
title("Original image")
subplot(2,2,2)
imhist(image,50)
```

```
title("Histogram of original image");
subplot(2,2,3)
imshow(j)
title("Histogram Equlaized");
subplot(2,2,4)
imhist(j,50)
title("Histogram of equalized image")
```

Output: