CSE3018 CONTENT BASED IMAGE AND VIDEO RETRIEVAL LAB
EXERCISE - 3

DATE: 18.02.2021

Implement a CBIR system that uses features derived from Color Histogram Descriptors.

Database – Minimum 10 images and 2 categories

I. Image Histogram in RGB Color Space

1. Read every image in RGB Color Space
2. Perform color plane separation
3. Generate histogram for each color plane – R,G, B
4. Use the bins as the feature and you will have 256 X 3 = 768 features for every image. Export these values to an Excel File. (There will be 20 records in the Excel File, one record corresponding to each image)

Image Name	Red Color Bin 0	Red Color Bin 1	…	Red Color Bin 255	Green Color Bin 0	Green Color Bin 1	…	Green Color Bin 255	Blue Color Bin 0	Blue Color Bin 1	…	Blue Color Bin 255
Image 1												
…												
Image 20												

5. Read a Query Image.
6. Extract similar set of features for the Query Image
7. Compare Query Image Features with features of every image in your datasets, using Euclidean Distance.
8. Sort the images according to the Ascending Order of the distance.
9. Display the matching images of this format.

QUERY IMAGE		
Most Similar Image 1	Most Similar Image 2	Most Similar Image 3
Most Similar Image 4	Most Similar Image 5	Most Similar Image 6

II. Repeat the same procedure, for the same images in HSV/HIS color space

III. Repeat the same procedure, for Grayscale equivalent of the same images (In this case, you will have only 256 features for every image)

Show the time taken to complete the program execution in each of the III cases.