School of Engineering and Applied Science (SEAS)
Ahmedabad University

BTech(ICT) Digital Signal Processing (Section 1)

Laboratory Examination

Enrollment No: AU1841145 **Name: Samarth Shah**

AIM :

1. Solution Problem-1

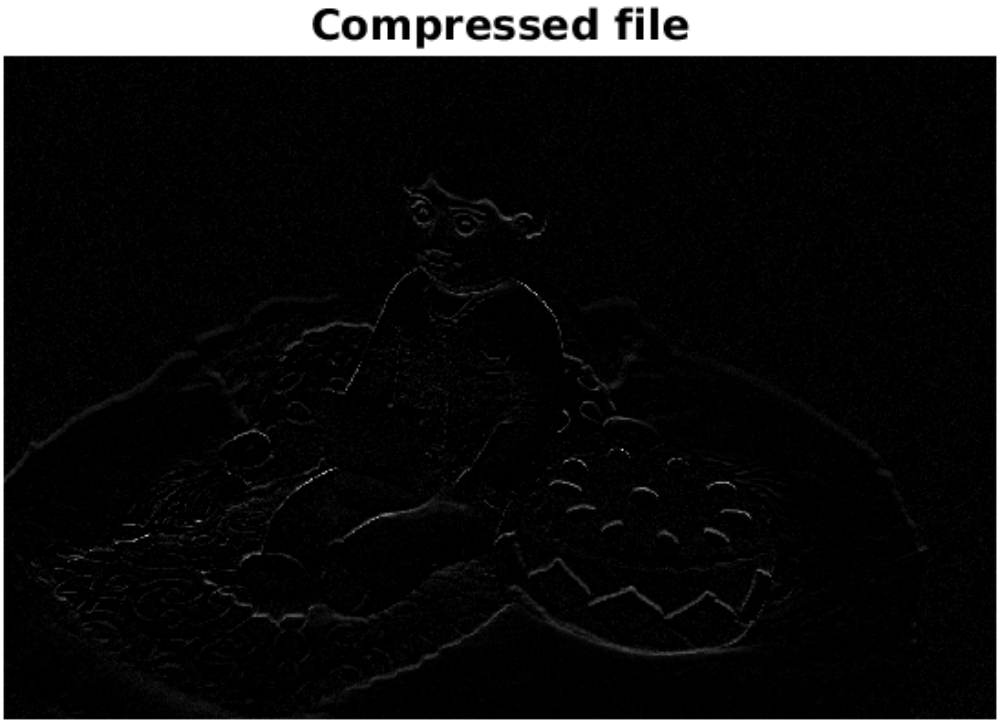
   (a) Approach: Here's the base matrix for the image compression. Ratio of Compressed image size/Original image size was about 1.

   (b) Matlab Script:

```
% Name : Samarth Shah
% Roll No: AU1841145
% Lab Exam:
close all;
clear all;
clc;
image_read= imread("DSC_0108.JPG");%uploading the photo
rgb = rgb2gray(image_read);%Convert RGB or colormap to grayscale
im2grey= im2double(rgb); %convert image to double format
original_imagesize=size(im2grey); %in bits
base_matrix=[-1 -1 -1 -1 -1;0 0 0 0 0; 1 0 1 1 1]; %base matrix
output= conv2(im2grey,base_matrix,'SAME');%convolution

figure;
imshow(output);
title('Compressed file');
compressed_imagesize1=size(output);
ratio=original_imagesize./compressed_imagesize1; %Ratio
disp(ratio);
```

(c) Simulation Output:



1. Solution Problem-2

   (a) Approach:

   (b) Matlab Script:

   (c) Hand-written Analysis:

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(d) Simulation Output:

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