Image & Video Processing

IIVP630C

LAB ASSIGNMENT 1

1. Create the following image shown in Fig.1 of size 512x512 in MATLAB without using inbuilt functions, where the length of the white square is given as input. The white block must be equidistant from the image boundaries.

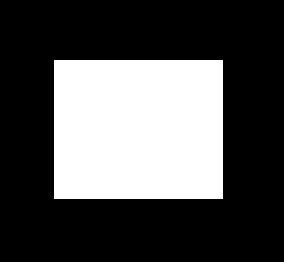


Fig.1

2. Select any random image from the given [link](http://decsai.ugr.es/cvg/CG/base.htm). Then perform following operations without using inbuilt functions:

(i) Place a white block of size ‘*m*’ at the center of the image, where ‘*m*’ is a user input.

(ii) Flip the image vertically and horizontally.

(iii) Show a section of the image where the coordinates are the inputs.

3. Generate an image corresponding to the following function:

f(x,y) = A sin(u0x+v0y) for x=0 to 511, y=0 to 511, u0 and v0 = any value between 0-1.

4. Find the different version of ‘lena’ image [here](https://www.ece.rice.edu/~wakin/images/). Write a code in Matlab which will calculate the compression ration where, Image 1 is the original one.

Calculate the root-mean-square-error between the original and the other versions of the image.