Exercise 2 – deadline: 15/2/1400

Filtering in Spatial Domain:

1- Apply each spatial filters to the image according to the below table and compare the original image and the image after using the filter.

section	Filter name	Size of Filter	Image
a	Average(Mean) filter	5 * 5	image1
b	Median filter	5 * 5	Image2
c	Laplacian filter	5 * 5	Image3
d	Sobel(X and Y) filter	7 * 7	Image4

Filtering in Frequency Domain:

2- Apply frequency filters in each case and compare the original image and the image after using the filter:

    (a) Apply frequency spectrum with Fast Fourier Transformation (FFT), centered spectrum, decentralized spectrum and inverse FFT on image5 and show them.

    (b) Apply Ideal Low Pass Filter (ILPF) and Ideal High Pass Filter (IHPF) on image5 and show them.

    (c) Apply Gaussian Smoothing with 3, 5,7and 9 kernel size on image6 and show them.

Write a report with description of steps in each number and each case and also put the screenshot of the original images and results in the report.

Attach the code.

Make HW2.zip

Upload it in the elearn system.