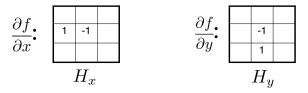**HOMEWORK #3**

1) In zip file, there are salt and pepper noise added images in 'sample images1' directory. Apply 3x3, 5x5 and 7x7 median filters to these images. Put the results into the report.

2) Take x-axis and y-axis derivatives of images in 'sample images2' directory. To do this, use linear filters given below. **Empty places are zero.** Put image results of convolving with Hx and Hy filters into report. Also, put the result of gradient magnitudes of images. The results will be like in page 23 in the lecture slide.

$$\frac{\partial f}{\partial x}:$$

1	-1	

$$H_x$$

$$\frac{\partial f}{\partial y}:$$

	-1	
	1	

$$H_y$$

Besides image reading and writing, do not use any image processing function from MATLAB. You can only use conv2 as available function of Matlab.

You should comment your code, so that it can be easily understood. Use Matlab. Your code has to be in script file with m extension.

You must explain what you implement in the report. You must show your output images in the related parts of the report.

Cheating and plagiarism on assignments will be punished according to ITU regulation.