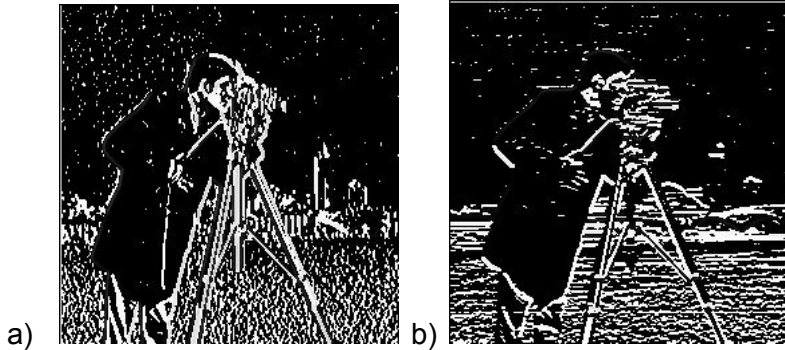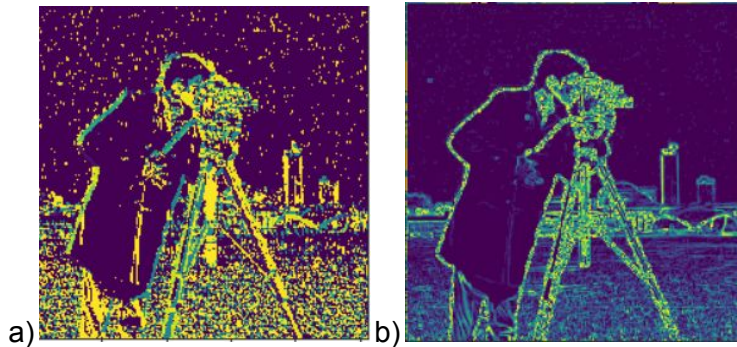# CSCI 5561: Assignment #1

Part 1

a)   b)

Image a) is generated when vertical differential filter in combination of gaussian filter is applied on cameraman.tif thus making the vertical edges more visible than the rest of the image. While in image b) is generated when horizontal differential filter in combination of gaussian filter is applied on cameraman.tif where the horizontal edges are visible than the rest of the image.

Part 2

a)   b)

In image a) the gradient angles are depicted while image b) depicts the gradient magnitude. Both are calculated utilising the differentially filtered images received as the output from part 1.
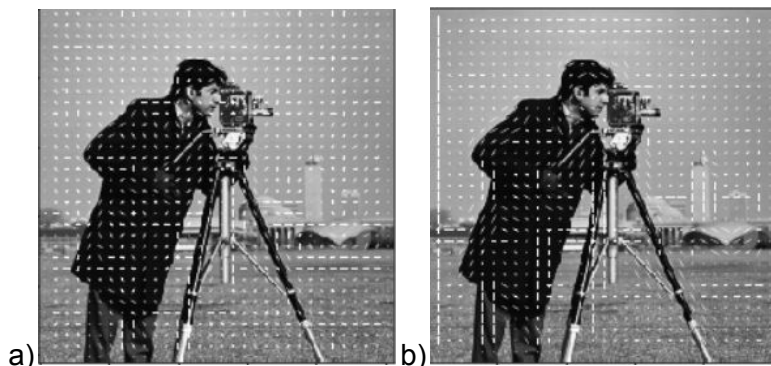
Part 3 and 4

a)   b)

Image a) visualises the Histogram of oriented gradients which is built by binning the gradients to corresponding bin based on the gradient angle. Image b) normalises the Histogram of oriented gradients to account for the contrast in the image.