1. Write a MATLAB script or program to implement region-based histogram equalization. Your code should allow the user to interactively select (with the mouse) a region of interest (ROI) within an image to which the histogram equalization will be applied.

How can your code be extended to perform ROI-based histogram specification?

2. Write a MATLAB script or program to produce the results from Example 10.3, as discussed in the class. See posted lecture slides on 2D convolution and Example 10.3 (slides #10 and #11) from Chapter 10.

Try at least one different set of low-pass, high-pass and edge detection filters besides the ones provided in the Example. Compare your image results between these different filters.