**Introduction to Image Processing**

**Lab 4**

1. Write a Matlab function **Y=equalize(X)** that equalizes the histogram of a given image **X**. Apply your equalize function to different images. Compare the histograms of equalized and original images. Export your code to this document as well as the histogram plot of equalized image. Compare your function with the built-in histogram equalization function of MATLAB. Note that **help** can only be helpful when you know the exact name of the command. If you do not know the name of the command you are looking for, you can use the **lookfor** command to get a list of related commands.
2. Write a Matlab function **Y=match(X,Z)** that matches the histogram of a given image **X** to the histogram of a reference image **Z**. You can use your own **equalize()** function in your implementation.
3. Try to embed these two functions (equalize and match) in a Matlab GUI.