The purpose of this lab is to implement a minutiae-based fingerprint recognition system. In the first half, you can use an off the shelf minutiae detection program. In the second half, you will write a matcher and scorer to make a recognition decision.

Your job is to decide which of the seven fingerprints are the same as those of the notorious criminal, nicknamed the Candy Man. As a first step, you should detect minutiae in all input images, and you can use any software for doing this. Past work has been successful using MINDTCT which can be found at: http://www.nist.gov/itl/iad/ig/nbis.cfm

Now, given two sets of minutiae points, you should first estimate a rigid transformation to bring the minutiae points into correspondence using RANSAC. You then need to decide how many minutiae points match and make a decision about which fingerprints were from the CandyMan. There may be more than one.

As input, there is a zip file accessible from the course web page, which includes 8 fingerprint images (one of which is CandyMan).

What to turn in:
1. A report which includes
   a. A description of your implementation
   b. A figure with the 8 fingerprints and the detected minutiae.
   c. For each of the seven sets of minutiae, have a figure which shows the overlay of the CandyMan’s minutiae after estimating the affine transformation.
   d. A table with seven rows and two column showing the number of detected minutiae and the number inliers (matching minutiae), and a decision about which one(s) are from the CandyMan.
2. Turn in a hardcopy of the report.
3. Email your report and source code to kriegman@cs.ucsd.edu