MCS 355 Homework 5 Extra Credit

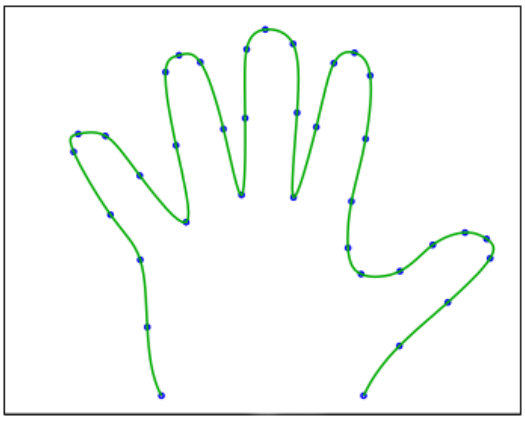
Interactive Input with Matlab (6 pts):

Matlab provides the capability for user input via the mouse. Look over the code in the Matlab script file userInputBasic.m that is in the code folder on Moodle. In particular, read through the comments to see how a window is cleared, how the x and y coordinates of a mouse click or stored, how mouse buttons are identified, and how points and lines are plotted.

Exercise (Spliny Hands!): Modify the userInputBasic code so that the points drawn are connected by parametric cubic splines of the form x(t) and y(t) once you input the last point. You should use code from question 1 on this homework to compute the splines. As knot vectors, you can use use a simple indexed t array, like t=[1:n] for both x and y. Using your new code, you should be able to do the following:

- Place your hand on the computer screen. Use the mouse to select a dozen or so data points outlining your hand. You might find it easier to trace your hand on a piece of paper and then put the paper on the computer screen. You should be able to see the ginput cursor through the paper.

- Plot splines between the data points to get a representation of your hand.



You should hand in your Matlab script and a copy of the hand plot you produce.