1-25-2010
Opening Discussion

- Do you have any questions about the quiz?
- What did we talk about last class?
- Do you have any questions about the reading?
As we saw at the end of last class, Matlab supports relational arrays. You can do all your normal logical operations on logical arrays. The logical arrays can be used for selection. Make an array with two rows. One row is integers from -5 to 5, the other is the square of those values. Now use a logical operation to make a new array that contains only the columns where the square is greater than 5. Now do the same type of thing but only get squares greater than 10 or less than 5.
Matlab has control flow structures just like the imperative languages that you are used to.
The details can be a bit different though.
■ Write a few lines of code that will do Serpinski's triangle and put each new point in a single Nx2 array. Put 5000 points into it.

■ You can plot that array with the following:
  - plot(data(:,1),data(:,2),'.')

■ Now write a loop that will do a Mandelbrot check for a single point. Have it loop until $z_n$ has a magnitude greater than 2 or you get through 100 iterations.
Matlab allows you to write functions in m-files.
You edit them just like you would an m-file script, but they have a particular syntax for passing in arguments.
Now make an m-file and put the code you wrote for the Mandelbrot into the m-file as a function that takes a point and returns how many iterations it went.

Let's close out the class trying to write code that will plot up a full Mandelbrot set for us.
Assignment #2 is due on Wednesday.