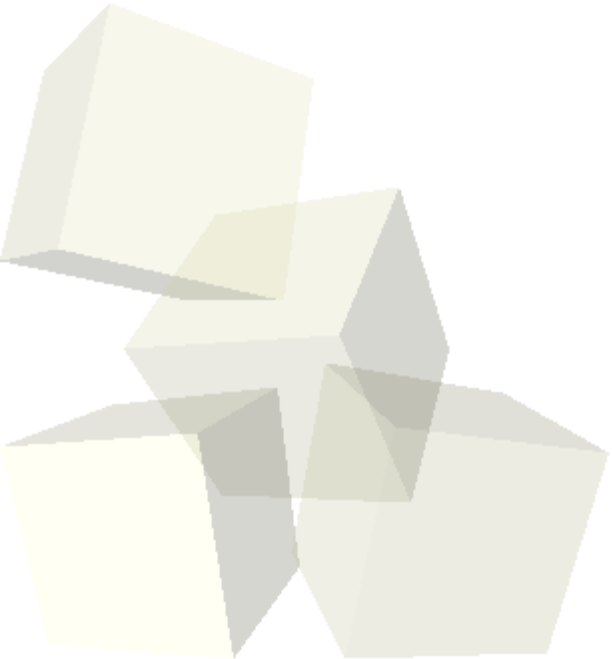
Playing with C and Matlab

1/23/2008

Opening Discussion

- What did we talk about last class?



C Based Fractals

- Let's go back to our C code and see what we can do to actually “draw” a fractal.
- Since we don't know how to do graphics in C, we'll output a file that can be plotted in some other tool (like gnuplot).
- Let's do the same for Serpinski's triangle.

Back to Matlab

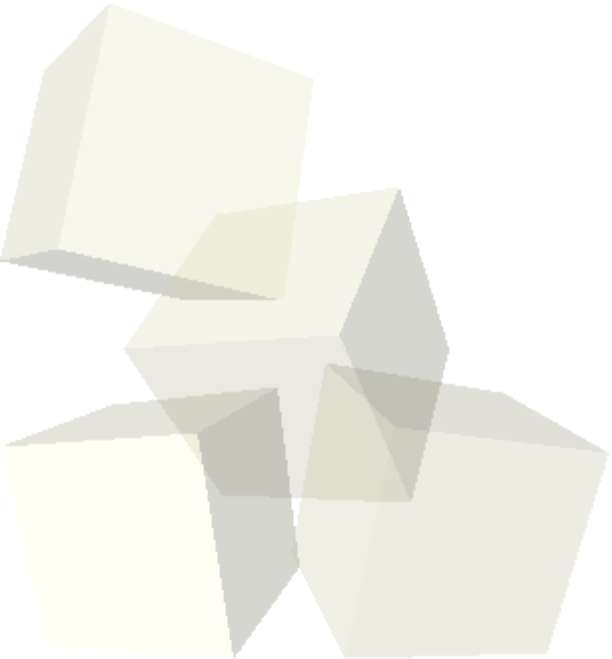
- Now we want to try to do these same things in Matlab. We won't get there today, but we can move in that direction.
- Let's begin by creating an M-file just so that we can see how that works.

Arrays in Matlab

- Matlab was created for playing with matrices, which are basically 2-D arrays.
- Matlab is very good at dealing with arrays and makes it easy to play with them.
- There are lots of ways of building arrays in Matlab and many of the functions in Matlab operate on arrays and return arrays.
- The simplest syntax for creating arrays is with square brackets and space separated values.
- The colon notation is a fast way of building arrays with many elements.
- The linspace function also gives large arrays with linear spacing between elements.

Indexing Arrays

- We use parentheses to pull values our of arrays in Matlab.
- The indexes can themselves be arrays. This method of addressing elements is very powerful and gives us a lot of capabilities in Matlab.
- Let's finish off the day playing with these features in Matlab.

Closing

- Do you feel clear on how floating point numbers work on computers?
- We will keep working through material from chapters 4 & 5 next class.
- Also remember that assignment #1 is due on Friday. We'll go over how to turn it in during class.