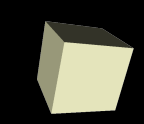
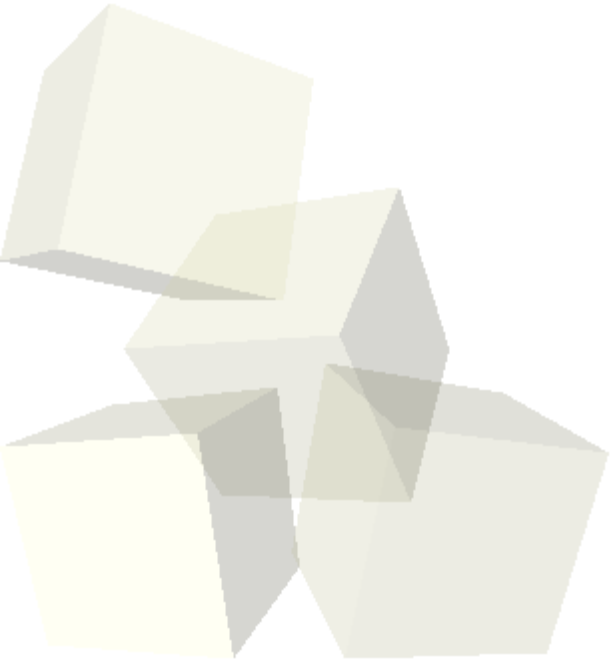
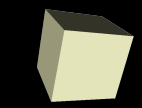


Basic Input and Problem Solving

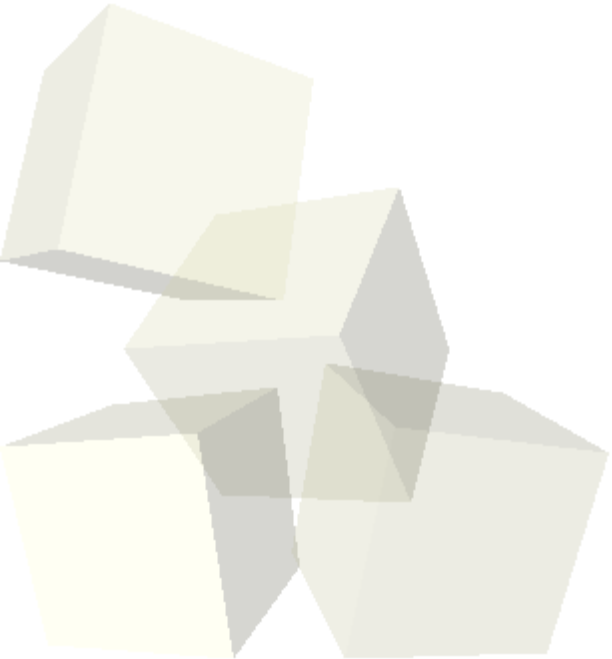
1/29/2008

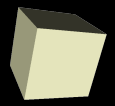




Opening Discussion

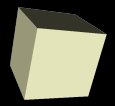
- Let's look at solutions to the interclass problem.
- What did we talk about last class?
- Do you have any questions about the reading?





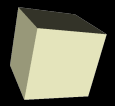
Simple Input

- As odd at it might sound, the original versions of Java did not include a way to do simple text input. This is because few modern application, especially in the fields Java was aimed at, actually do simple text input.
- With Java 5 the java.util.Scanner class was added. Largely at the urging of educators who used Java and wanted simple text input.
- Let's go look at java.util.Scanner in the API to see what it can do, then write a simple program that uses it.



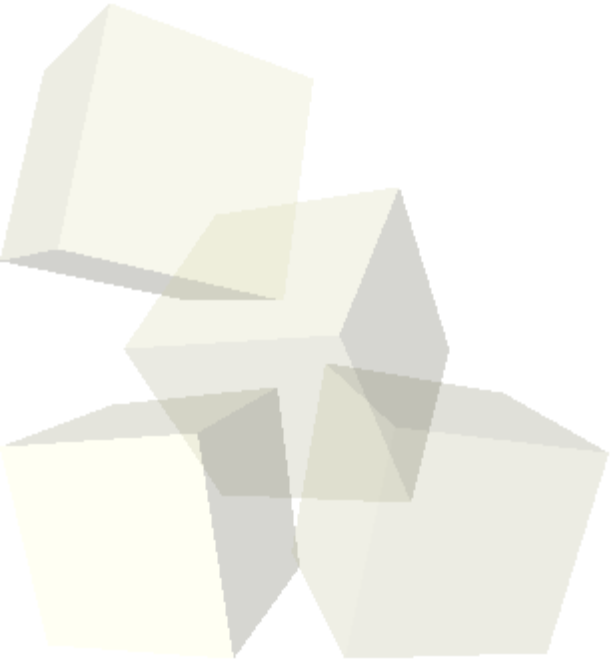
Class Decomposition

- In PAD1 one of the primary skills you had to learn was functional decomposition, how to break a problem into different functions.
- In an OO environment like Java, you have to think at a different level and learn how to decompose your problem into classes. Then you must think about what those classes need to store and what they can do.



A Problem

- To demonstrate this process I want us to play with one of my favorite problems: a ray tracer.
- Let's go through and list some of the classes that we might need to begin writing a ray tracer. Then we'll start filling them in and derive some of the math for doing intersections of rays with some geometric primitives.



Minute Essay

- How do you think you should go about picking the classes you need to solve a particular problem?
- The design for the first assignment is due a week from today. That means you will have to be able to describe the game you want to write by then.
- Interclass problem – See how close you can come to making a text based game of tic-tac-toe. You can make a 3x3 array of chars with the following code.
  - char[][] board=new char[3][3];