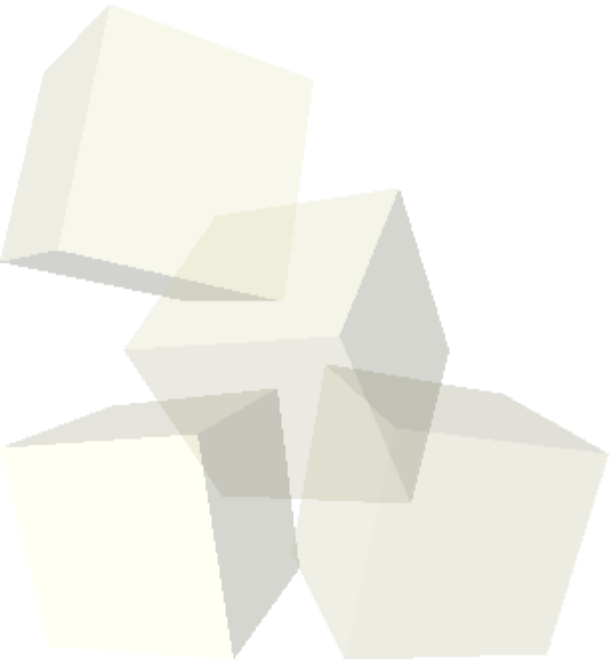




GUIs, Events, and Listeners

4/23/2008





Opening Discussion

- Let's look at solutions to the interclass problem.
- Do you have any questions about the project?
Remember to turn in your project ideas today.





Layout Managers

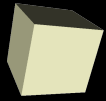
- What we wrote last class only has one limitation, we only got to add one component to the frame.
- For adding multiple elements we use Layout Managers. These are classes that control how things go into a GUI container.
- There are many layout types, but we will only deal with a few.
 - ◆ FlowLayout
 - ◆ GridLayout
 - ◆ BorderLayout
- Some Swing components have their own layouts.



Nesting Layouts

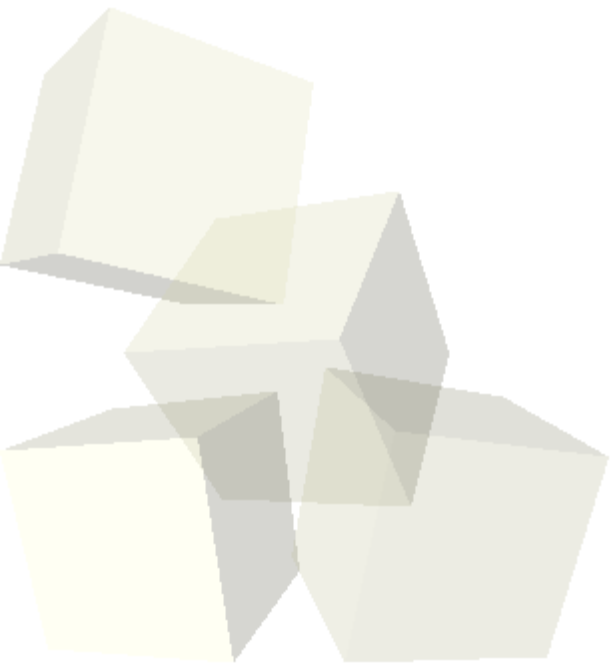
- The proper way to position components in GUIs in Java is with Layout Managers. There are some powerful and complex layouts that you can use, but most GUIs can be achieved by nesting simple layouts.
- We do this by putting a container object in the proper location in one layout and giving it the layout that we want. In Swing the container that we generally use is a JPanel.





Interacting with GUIs

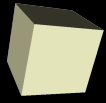
- User interaction with GUIs is very different from the interaction with a text program.
- There are multiple things that you can interact with. (buttons, text fields, check boxes, etc.)
- The program should just stop waiting for you to interact with something.





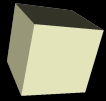
Events and Listeners

- Alice had events for taking certain user inputs. Java has the same, but as you would guess, we implement them differently.
- Different GUI elements have different events that can happen to them.
- We register Listeners with GUI elements so that when an event happens, code in the Listener will be called.
- Different types of events have different types of listeners. We write subclasses of the listener interfaces that do what we want.



- Let's give our programs interactivity. At the very least we should make it so that we can click a button to make something happen.
- Many of you might find a JTable useful so let's write a little code that uses one of those as well.





- What parts of building and using a GUI don't make sense to you right now? Should Java Basics be extended in future semesters?
- Interclass Problem – Do problem 14.2.

