Interactive GUIs
Opening Discussion

- Minute essay comments:
  - Scope in programs.
  - What languages are used to write apps?
  - GUI for text adventure.
  - Simple spreadsheet.
  - Blog layout?
  - Simple game.
  - Quiz GUI.
  - Can a GUI only have one MainFrame?
The frame has a MenuBar.

Contents of a MenuBar should be Menus.

Menus can hold the following:

- MenuItem
- Menu
- CheckMenuItem
- RadioMenuItem
- Separator
We want to have a simple GUI that has a few components for us to play with.
Interactive GUIs

- Last time we learned how to build a GUI with components.
- Our GUI wasn't interactive though.
- Buttons and MenuItems are easy because we give them an Action.
- Simple read model of console apps is insufficient.
- Need a way to deal with input from many sources.
The basic model employed by scala.swing is Publishers and Reactors.

A Reactor can listenTo events from a Publisher.

Events are in scala.swing.event.

To stop listening, set yourself to be deafTo.

The Publisher can be the component or an object in the component.
Partial Functions

- Scala has a construct called a partial function. It is a function that only works on some inputs.
- The brief syntax for them is like a match with no match. So it has curly braces with cases in them.
  
  ```
  { 
    case 1 => doOption1() 
    case 2 => doOption2() 
    ... 
  }
  ```
Events/reactions

- When a Reactor is listening to a Publisher, it needs to define reactions.
- You can add PartialFunctions into the reactions of the Reactor.
- They should respond to the events you are interested in.

```scala
  reactions += {
    case e:ActionEvent => ... 
    case e:SelectionChanged => ...
  }
```
Making the GUI Interactive

- Let's use this new knowledge to make it so that our GUI interacts with the user.
Questions?

Remember to turn in Assignment #2 by tonight.