Interactive GUIs

10-26-2011

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?

Menus

- The frame has a MenuBar.

- Contents of a MenuBar should be Menus.

- Menus can hold the following:

  - MenuItem

  - Menu

  - CheckMenuItem

  - RadioMenuItem

  - Separator

Example GUI

- 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.

Publisher/Reactor

- 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.

  - 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.

Minute Essay

- Questions?
- Remember to turn in Assignment #2 by tonight.