Lab 1, Part 2

Introduction to Computer Science I
Spring 2007
Bob Roos

Home page: http://cs.allegheny.edu/wiki/cs111s2007/

Lab 1, Part 2
An “Active” Application
Due in Two Stages:
Design due on Weds., 7 February
Final Program due on Tues., 13 February

Create several Java files. One of these files should define a class that extends Frame and contains a main method that creates an “active” frame (e.g., “Lab1App.java” might be the name of this class.) By “active” I simply mean that it contains more than a static picture — either something moves (as in some of the animated examples we’ve seen in class) or the program interacts with the user through some sort of dialogue that affects the contents of the frame (as we saw in the “FortuneTeller” example) or something else happens (perhaps objects change size or color). More specific requirements are listed below.

The remaining one or more files should contain definitions of classes that you will use in your picture. Each class that you create (other than the main application class) should have several instance variables describing properties, one or more constructors, one or more “get” methods, and one or more “set” methods. I suggest you do something comparable to the EightBall or Face classes — create an object made up of simpler shapes like ellipses, rectangles, and lines, provide one or more constructors for these objects, provide one or more methods for manipulating these objects (for instance, a “setColor” or “setLocation” method), and provide one or more methods for querying these objects (for instance, a “getXPosition” or “getColor” method).

The application class should have at least two properties that are objects of the class or classes you created (as described in the previous paragraph). Of course you may have other instance variables as well (for instance, rectangles, conversation bubbles, etc.) The constructor for your application class should make use of all of the methods you wrote in the preceding part of the assignment.

For Weds., 7 Feb.: Hand in a “design” for your program. This should consist of the names of the Java files (i.e., the classes) that you will create and, for each class, a list of the instance variables, constructors, method names, and brief descriptions of what each does. Imitate the style of the diagram at the bottom of page 37 for each of your classes. Remember, you will have at least two classes — one with a main that runs your applications, the other that defines some sort of object.

For Tues., 13 Feb.: Demonstrate your program to me. Hand in printouts of all of the files you created, fully documented, and correctly indented. Attach your design document to your printouts.

I will try to return your designs on Friday morning with my comments so you will have them as you work on completing the program.