CSSE 220 Day 9

More Event Handling
Layout Managers
Communities of interacting objects; BallWorlds

CSSE 220 Day 9

- **Swing Warm-up** is due tonight at 11:59 PM.
- Fill out the Minesweeper Partner Survey on ANGEL before Friday at 3:00.
- I posted solutions to HW6 written problems to the usual place on ANGEL:
  Course > Lessons > Assignments > Solutions
- "Install" Violet.
- Install Tortoise SVN if you don't already have it. How to tell if you have it:
- In Windows Explorer, right-click on some folder icon. One of the items ion the context menu that comes up should be SVN.

Today's agenda

- Multiplier example
  - TextField , Label, LayoutManager.
- Your Questions, Work on Swing Warm-up
- Interacting communities of Objects
- BallWorlds Introduction

Event Handling Recap

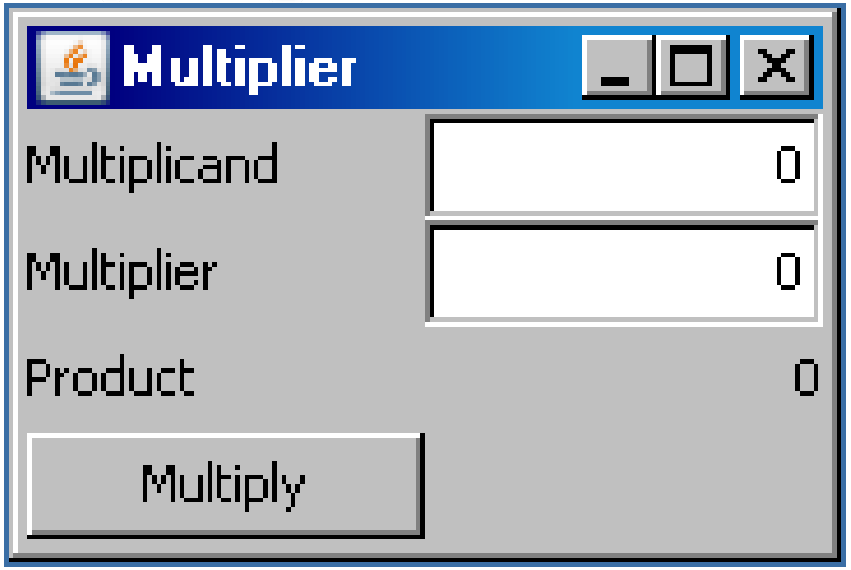
- For a given event type X, a GIU component `c`, and an XListener object `xLis`,
  - the call `c.addXListener(xLis);` says to the c object,
  - "Whenever an event of type X happens, notify object xLis by calling its appropriate 'X handler' method."

Layout Managers

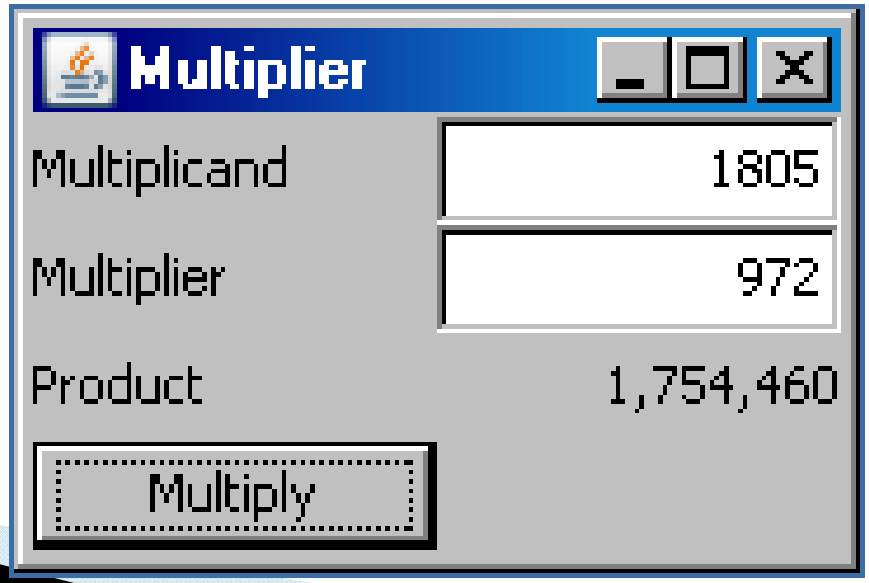
- A **LayoutManager** determines how components are laid out within a container
- FlowLayout: Components are placed left to right. When a row is filled, start a new one. (default for a JPanel)
- BorderLayout. When adding a component, you specify center, north, south, east, or west for its location. (default for a JFrame)
- GridLayout. All components same size, placed into a 2D grid.
- Many others are available, including GridBagLayout, BoxLayout, CardLayout, GroupLayout

Multipler program

- Initial:



- After entering some numbers and pressing Multiply:



- We use a GridLayout

Your questions about …

- Java
- Reading from the textbook
- Homework
- etc.

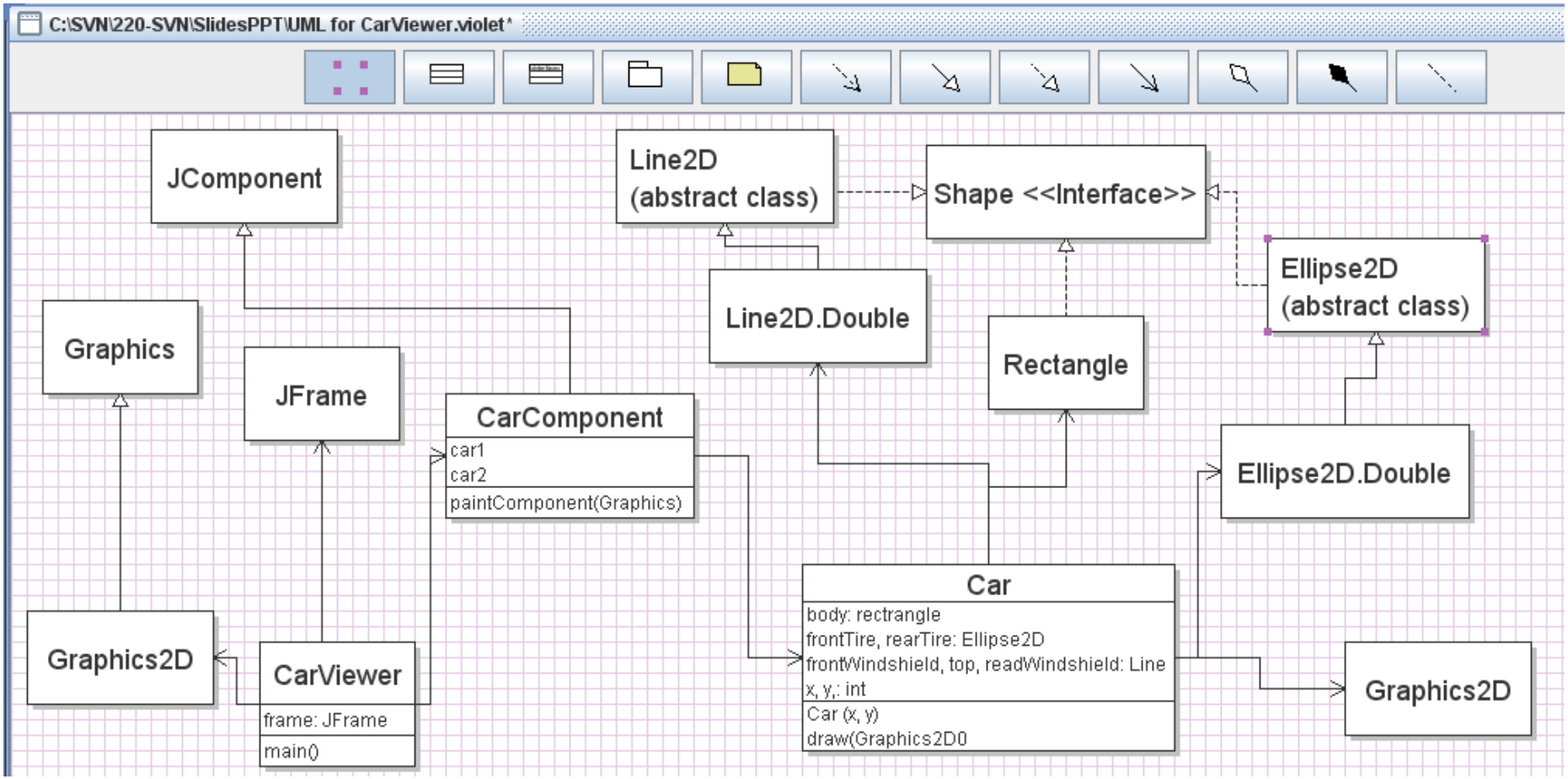
Some Classes That We will be Using

Class	What it is
JFrame	a top-level window
JComponent	a region where we can draw; also parent of many other widget classes
JButton	a JComponent representing a button. When clicked, an action can happen
JLabel	a place to put text in a window
JTextfield	a place for the user to enter text
JPanel	a JComponent that can be used as a container for organizing other widgets
Graphics	an object that can draw things on a JComponent. We never have to create this object; it is provided to us by the system
Graphics2D	a more "object-oriented" graphics object
JOptionPane	Request a single line of input from the user,

Interaction in UML Class Diagrams

- So far, each of the programs we have written has involved at most three new classes that we wrote, plus a handful of classes from the Java library.
- Many "real" programs involve dozens or hundreds of classes, with complex interactions among objects from those classes.
- For large programs can't just start writing code and hope it works out!
- UML Class Diagrams can help us to visualize the classes and their interactions before we write the code.

A UML diagram for our Cars Program



BallWorlds Intro

- So far, we have written "from scratch" programs.
- Most programmers do not get that luxury.
- They write a small part of a program that is designed/written by a larger team.
- Their part has to "fit" with the other parts.
- They have to understand enough of the other parts to be able to make their part work.
- In BallWorlds, you will get to experience that.