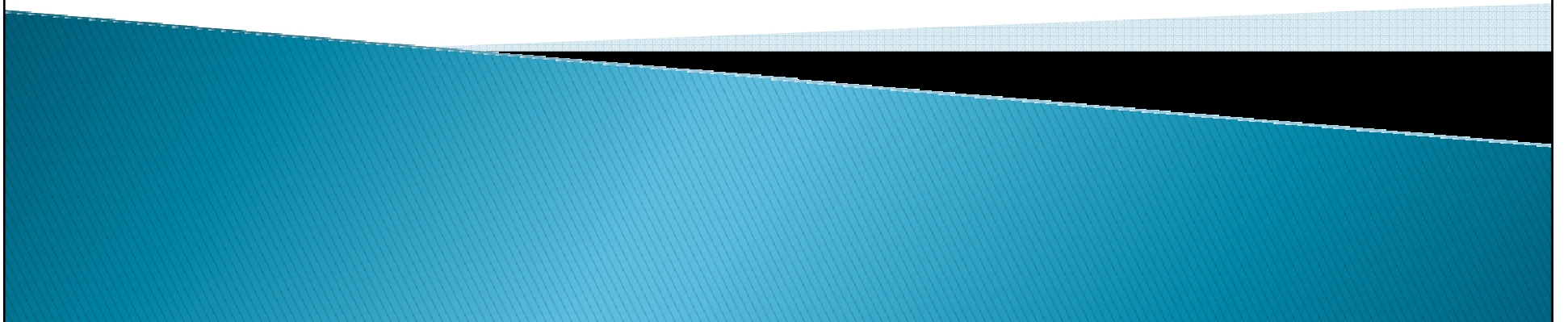


CSSE220 Day 10

More Event Handling
Layout Managers



Announcements

- ▶ Today:
 - Discuss exam
 - Multiplier example
 - TextField, Label, LayoutManager
 - Work on Paint and/or BallWorlds
- ▶ Questions?

Friday's exam

- ▶ Closed book part.
 - You may bring one 8.5 x 11 inch paper with anything you want *handwritten* on it
 - Questions on basics of the Java language, OOP, or about specific programming assignments
 - Written homework and ANGEL quizzes are good examples of the kinds of problems I might ask
 - Covers Weiss Sections 1.1–4.5 plus appendices on Swing and event-handling
- ▶ Programming part
 - Approximately 60% of the credit but 75% of the time for the exam.
 - Two small programs to get working on your computer
 - Almost all credit will be for correctness, almost none for comments, efficiency, style, or effort
 - Resources allowed: Eclipse (programs you or I have written) and web browser only. You may use the 220 ANGEL pages, course web pages, and any site linked from them).
 - **Both parts:** No communication with others, no use of any device with earphones or headphones

Programming problems on exam

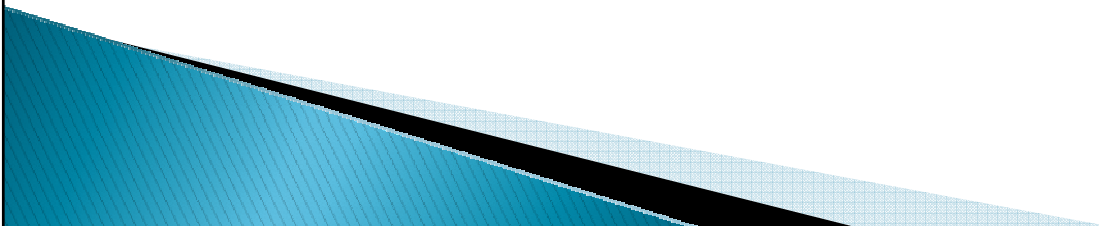
1. Similar in style to BigRational:
 - Define a class that meets certain specifications.
 - I will give you part of the code for that class, you must fill in the rest.
 - I will give you JUnit tests that your code must pass.
2. GUI programming using Swing.
 - The problem I give you will be variations on one of our examples (in-class or homework).

Don't dawdle on this part.



Early start!

- ▶ You may start as early as 7:15 am to reduce time pressure.
- ▶ This would give more time in case you need to fix bugs in the programming part.

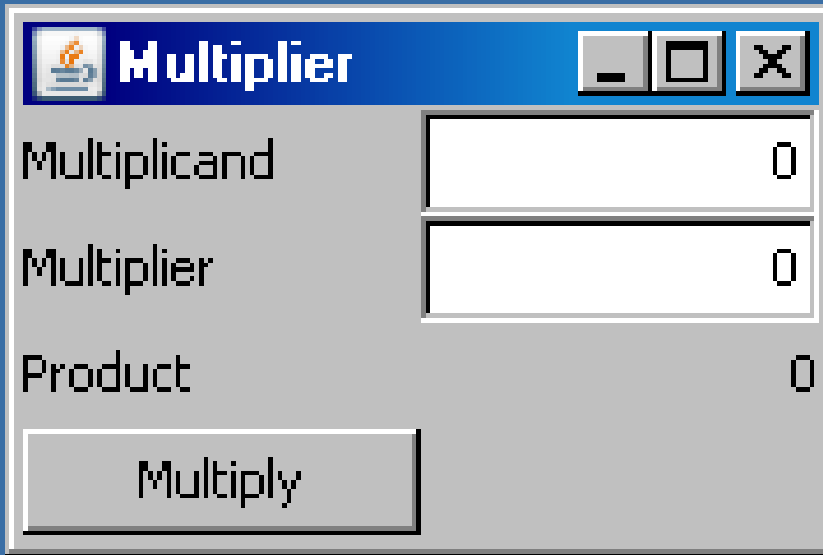


Layout Managers

- ▶ 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**
 - If you use the null **LayoutManager**, then you specify every location using coordinates
 - More control, but it doesn't resize automatically

Multiplier

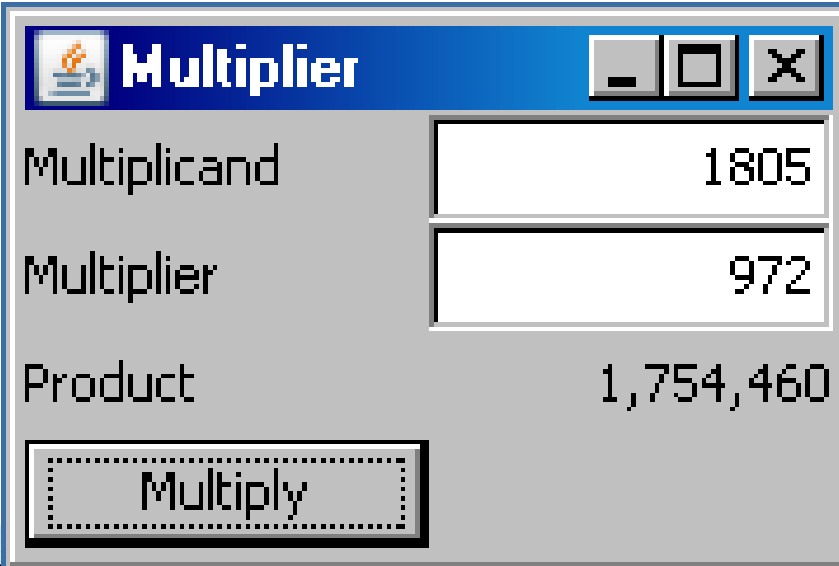
- ▶ Initial:



A screenshot of a Java Swing window titled "Multiplier". The window has a blue title bar with a small icon on the left and standard minimize, maximize, and close buttons on the right. The main content area has a light gray background and contains three text input fields stacked vertically. The first field is labeled "Multiplicand" and contains the number "0". The second field is labeled "Multiplier" and also contains "0". The third field is labeled "Product" and contains "0". Below these fields is a single button labeled "Multiply".

- ▶ After entering some numbers and pressing Multiply:

- ▶ We use a GridLayout



A screenshot of the same "Multiplier" window after a calculation. The "Multiplicand" field now contains "1805", the "Multiplier" field contains "972", and the "Product" field contains "1,754,460". The "Multiply" button is now disabled, indicated by a dashed border around the text.

Paint

- ▶ This week, you will do two things in parallel:
 - Finish implementing BallWorlds
 - Work with your partner to design your Paint program:
 - Read the specification
 - Draw sketches of the layouts that you want to use for your screens
 - Create a UML class diagram
 - Create an IEP to plan your work
 - Goal: to hit the ground coding when you return from break!

Paint Teams

101 Bryce Borchers	Casimir Ksiazek
102 Pete Brousalis	Ricky Chelminski
103 Hannah Chadd	Annmarie Stanley
104 Kyle Harris	L. Preston Segó III
105 Dillon Hunt	Joe Wanstrath
106 Jared Mathis	Benjamin Waters
107 Eric Schulte	Jacob Wise
108 Ian Roberts	Bryan Warner
109 Richard Stover	Mark Swanson
110 Jinwoo Baek	Michael Crane
111 Colin DeClue	Matt Drosos
112 Bryan Cobb	Jon Klein
113 Brad Holland	Jenny Kotsybar
114 Joel Carlson	Ty Strayer