

Lecture #14

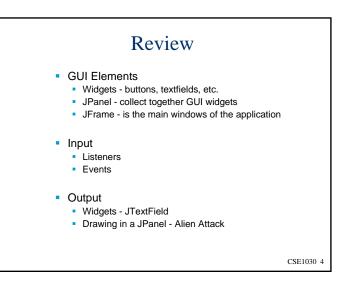
Graphical User Interface III

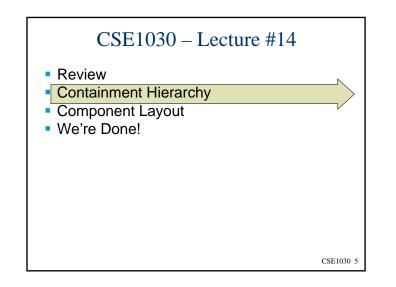


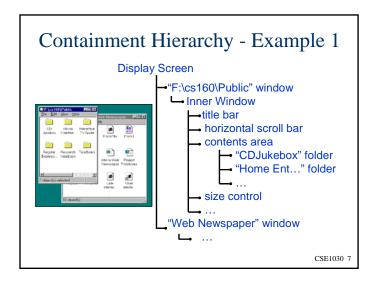
CSE1030 – Lecture #14

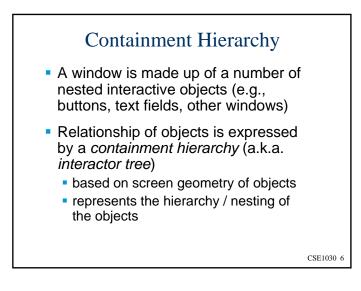
Review

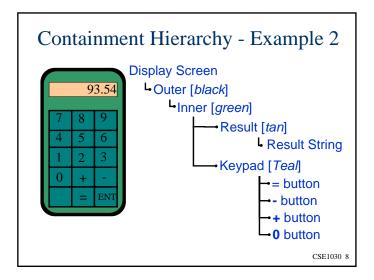
- Containment Hierarchy
- Component Layout
- We're Done!





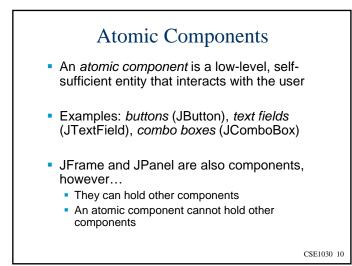


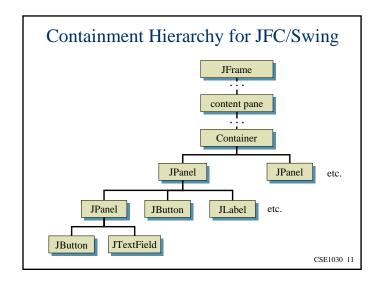


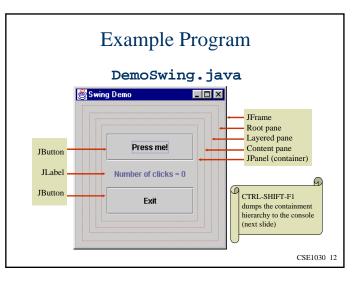


Containers

- Components are placed in containers
- A JFrame is a top-level container
 - It exists mainly as a place for other components to paint themselves
 - Cannot place a JFrame inside a JFrame
- A JPanel is an intermediate container
 - Sole purpose is to simplify the positioning of interactive objects, such as buttons or text fields
 - Other intermediate containers are *scroll panes* (JScrollPane) and *tabbed panes* (JTabbedPane)
 - Can place a JPanel inside a JPanel (or inside a JFrame, via the content pane)







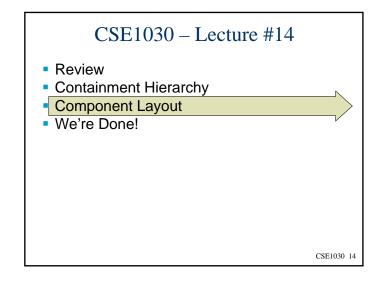


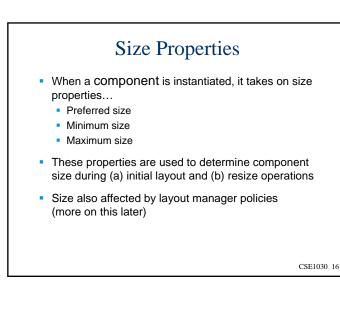
DemoSwingFrame[frame0,0,0,121x128, ...
javax.swing.JRootPane[,4,23,113x101, ...
javax.swing.JPane1[null.glassPane0,0,0,113x101, ...
javax.swing.JLayeredPane[null.layeredPane0,0,0,113x101, ...
javax.swing.JButton[,10,10,93x27, ...
javax.swing.JLabe1[,10,37,93x27, ...
javax.swing.JButton[,10,64,93x27, ...

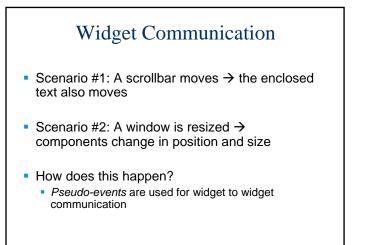
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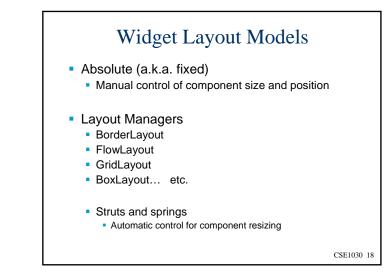


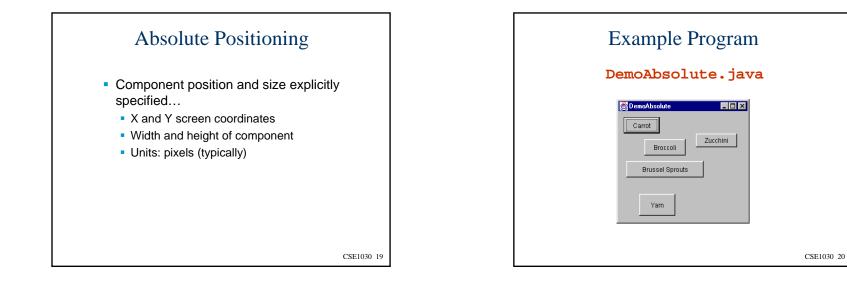
- Positioning widgets in their container (typically a JPanel or a JFrame's content pane)
- Basic idea: each widget has a size and position
- Main problem: what if a window changes size?

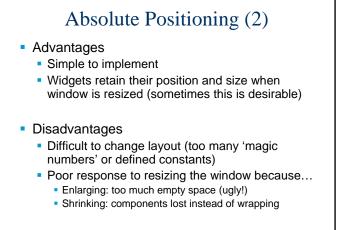










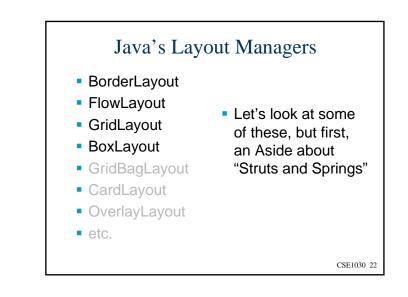


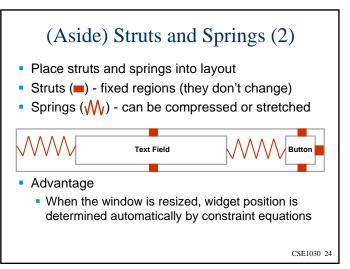
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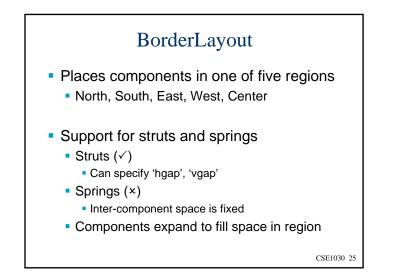
(Aside:) Struts and Springs

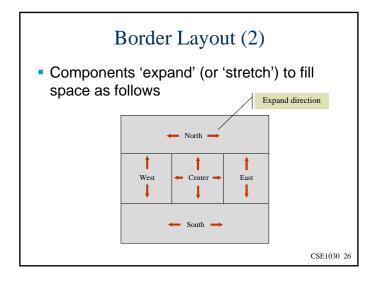
Goals

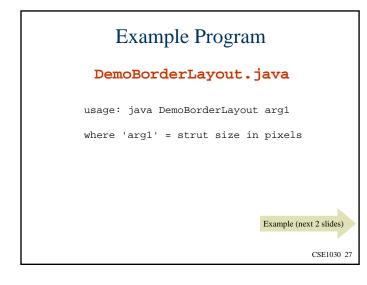
- Easy to use
- Handles window resizing appropriately
- Idea
 - Add constraints to define geometric relationships between widgets

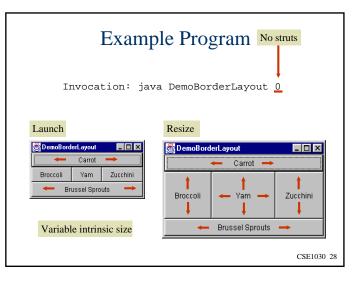


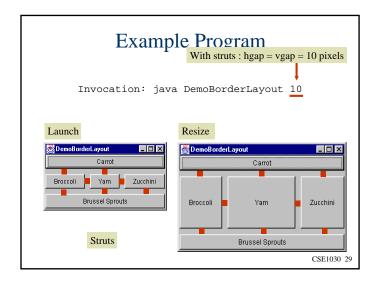


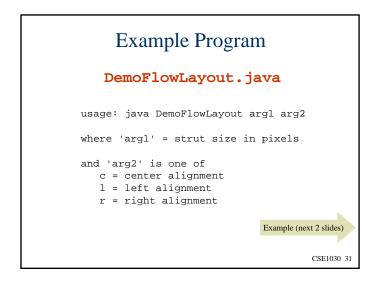


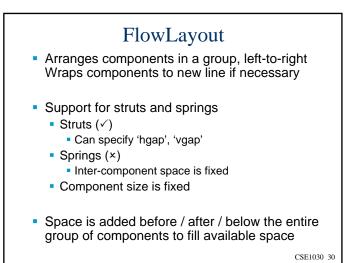


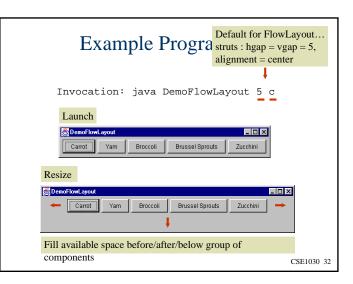












Example Program (3) With struts : hgap = vgap = 10, alignment = right
Invocation: java DemoFlowLayout <u>10</u> r
DemoFlowLayout Image: Carrot Carrot Yam Brussel Sprouts Zucchini
Resize

