ECE 122

April 19, 2005
Are you tired of Console I/O yet?

• We should have something fun.
• Something graphical, response with a click of a button, even animations…
Java GUI

- What is GUI?
- Graphical User Interface
- It is so intuitive, and easy to use.
- I want it.
Demo

• Show me an easy one I can build with Java.
• SimpleGui1.java
Behind the scene

- Make a frame.
  JFrame frame = new JFrame();
- Make a widget (button, text field, etc…).
  JButton button = new JButton("click me");
- Add the widget to the frame
  frame.getContentPane().add(button);
- Display it (give it a size, and make it visible)
  frame.setSize(300,300);
  frame.setVisible(true);
We need some action…

- We need to implement a method that does something when a button is clicked.
- We need to know when to trigger that method, i.e. a user clicks that button.
Listener

- When a button is clicked, an event is created.
- Button is the source of a GUI event.
- We need to have a listener that listen to that event (button is clicked).
- The listener needs to register itself with the button.
- The button will keep a list of listeners who are interested with its events.
- We need to implement an action method on that listener interface to do something.
Actions....

• Implement the ActionListener interface
  public class SimpleGui1B implements ActionListener
• Register the listener with the button.
  button.addActionListener(this);
• Define the event-handling method from the ActionListener interface.
  public void actionPerformed(ActionEvent e)
Demo SimpleGui1B.java
Listeners, Sources, and Events

- Source sends the event
- Listeners get the event
- Event object holds data about the event
- Event handler method of the Listener will be called to handle the event.
What if I have two buttons?

- Now I have two buttons. When user click on any button, the button should change its display text to “button” to “clicked”.
- If I still have one action listener, My action listener needs to have know which button is clicked.
Demo TwoButtons.java