Network Communication
In Java

Feb 12, 2016

Today’s Plan

- Quick review of last class
- More GUI components
- Mechanisms for network communications

Announcements

- HW 1 due Monday in class
- Lab #2 is available on web site
- Please read it carefully before lab
- Still looking for someone to switch into Monday afternoon lab
- Other questions/comments/concerns?

Review

- Java programs are composed of classes (one or more)
  - Classes describe types of objects
  - Objects have state and functionality
  - Objects are accessed/changed through method invocation
- Key words (English)
  - class, object, method, instance variable, construction, constructor, constant
- Key words (Java)
  - class, extends, final, import, int, new, private, public, void
Constructing New Objects

new JLabel( "Click on the button below" )
new JButton( "Click Here" )
new JTextField( 8 )

new type-of-thing-to-create( ... details ... )

parameters

Method Invocation

contentPane.add( new JLabel( "Click on the button below" ) );
this.createWindow( WINDOW_WIDTH, WINDOW_HEIGHT );

actor . thing-to-do ( ... details/parameters ... );

Instance Variable Declarations

private JTextField noun1;
private int count;
private JLabel counterLabel;

private type-of-thing-name-will-identify name;

import squint.*;
import javax.swing.*;
public class Class-name extends GUIManager {
  private final int WINDOW_WIDTH = width, WINDOW_HEIGHT = height;
  ... additional instance variable declarations ...

  public Class-name () {
    this.createWindow( WINDOW_WIDTH, WINDOW_HEIGHT );
    ... instructions to create program's interface ...
  }

  public void buttonClicked() {
    ... instructions to react when button is clicked ...
  }
}

}
public class Class-name extends GUIManager {
    private final int WINDOW_WIDTH = width, WINDOW_HEIGHT = height;
    ...
    additional instance variable declarations ...

    public Class-name () {
        this.createWindow( WINDOW_WIDTH, WINDOW_HEIGHT );
        ...
        instructions to create program’s interface ...
    }

    public void some-method-name() {
        ...
        some-method’s body ...
    }

    public void some-other-method-name() {
        ...
        some-other-method’s body ...
    }

    ...
}
private JTextArea story;

story = new JTextArea( height-in-lines, width-in-letters);

story.setText("New text");

story.append("Text to add");

NetConnections

- NetConnections are non-graphical objects
- Cannot “see” them like we see JLabels and JButtons
- NetConnection is like a “virtual two-way pipe” connecting two computers
- Each connection has an outgoing component and an incoming component

AngryWords Revisited

- See AngryWordsTextArea
private NetConnection toServer;

toServer = new NetConnection( server, port );

toServer.close();

Some examples

- DateClient
  - Simple example of a NetConnection using the daytime protocol (see NetTap first)
- SpammyWords
  - AngryWords + fake spam
- SonOfSpammer
  - AngryWords + real spam
- BetterWorldWideWebsters
- Online dictionary protocol