Syllabus

Swing:

- Need for swing components

- Difference between AWT and swing

- Components hierarchy

- Panes

- Swing components: Jlabel, JTextField and JPasswordField, JTextAres, JButton, JCheckBox, JRadioButton, JComboBox and JList

JDBC:

- **Introduction**
- **JDBC Architecture**
- **Types of Drivers**
- **Statement**
- **ResultSet**
- **Read Only ResultSet**
- **Updatable ResultSet**
- **Forward Only ResultSet**
- **Scrollable ResultSet**
- **PreparedStatement,**
- **Connection Modes**
- **SavePoint**
- **Batch Updations**
- **CallableStatement,**
- **BLOB & CLOB**

What is Swing?

- The Java Swing provides the multiple platform independent APIs interfaces for interacting between the users and GUIs components.

All Java Swing classes are placed in javax.swing package

Java Foundation Classes (JFC)

- joint effort between SUN & Netscape produced the original swing set of components as part of JFC

- JFC contains
  swing
  cut & paste-(clipboard support)
  Accessibility support
  desktop features
  java 2D

Why Swing?

- offers improved functionality over AWT(new components, expanded components features, better event handling & drag & drop)

- Swing components are rendered by java code rather than native code

- AWT is a part of standard java distribution.
  It has limited implementation ,not designed to provide a serious , main UI.

- AWT component set was not designed for complex programming needs, has lots of bugs, & takes up lot of system resources.

Swing uses fewer system resources, adds lots more sophisticated components, helps to tailor the look & feel of the programs.

swing development has its root in MVC(Model – View- Controller) architecture.

MVC allows swing components to be replaced with different data models & views. Plug gable look & feel is result of MVC architecture.

Since java is platform independent & runs on client machine , the look & feel of any platform has to be known

Lightweight components:- in swing most of the components have their own view supported by java look & feel classes (it can't rely on native system classes)

Pluggable look & feel:- supports cross platform look & feel also called java look & feel that remains same across all platforms wherever the program runs.
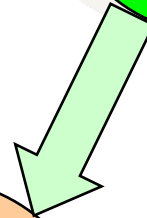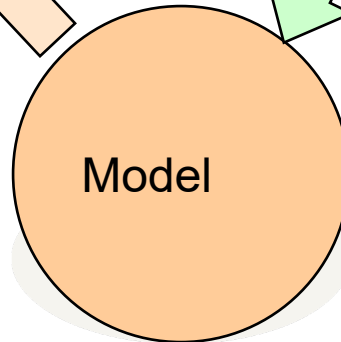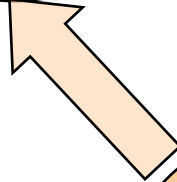
Swing Overview

- MVC Design
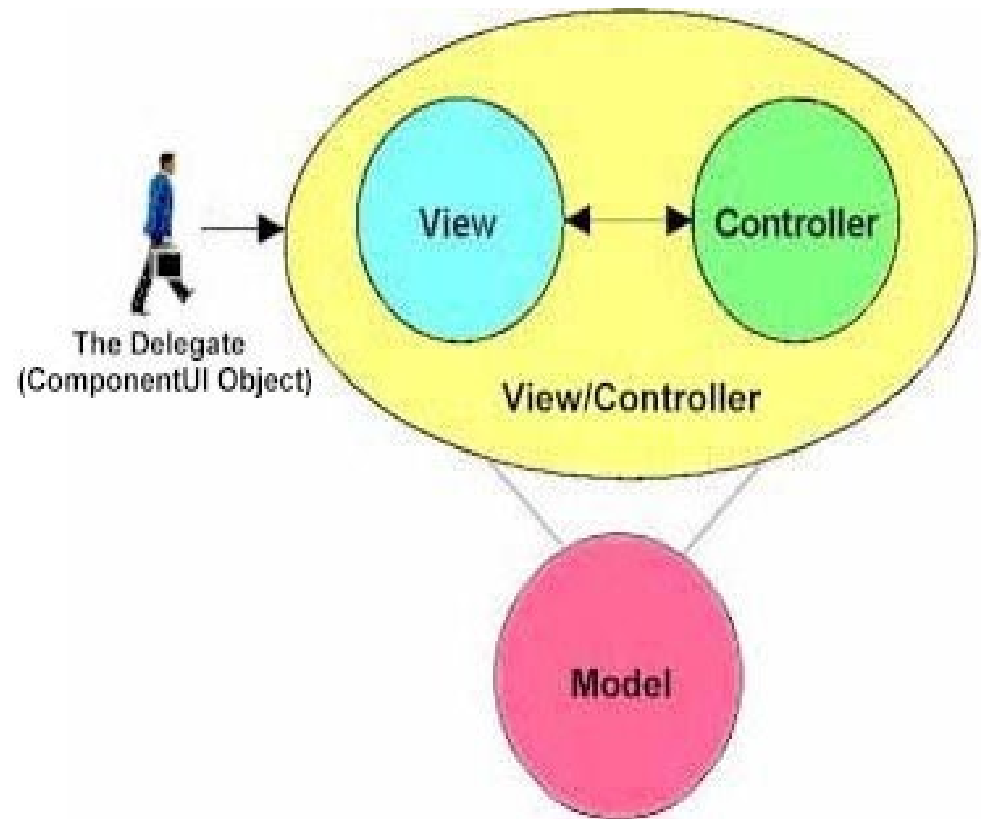
The visual screen representation of a component

View

Controller
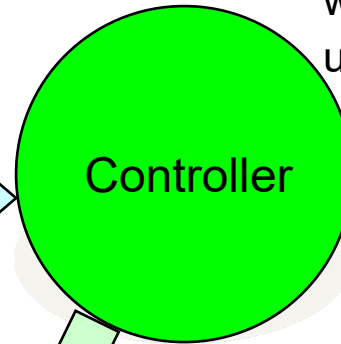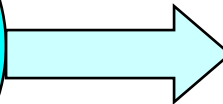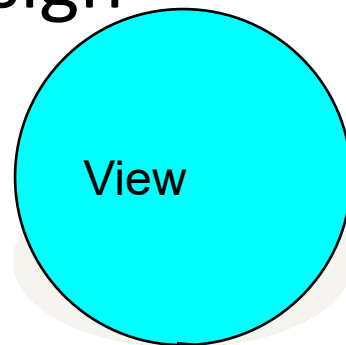
An object that controls a component in such a way that it responds to user input.
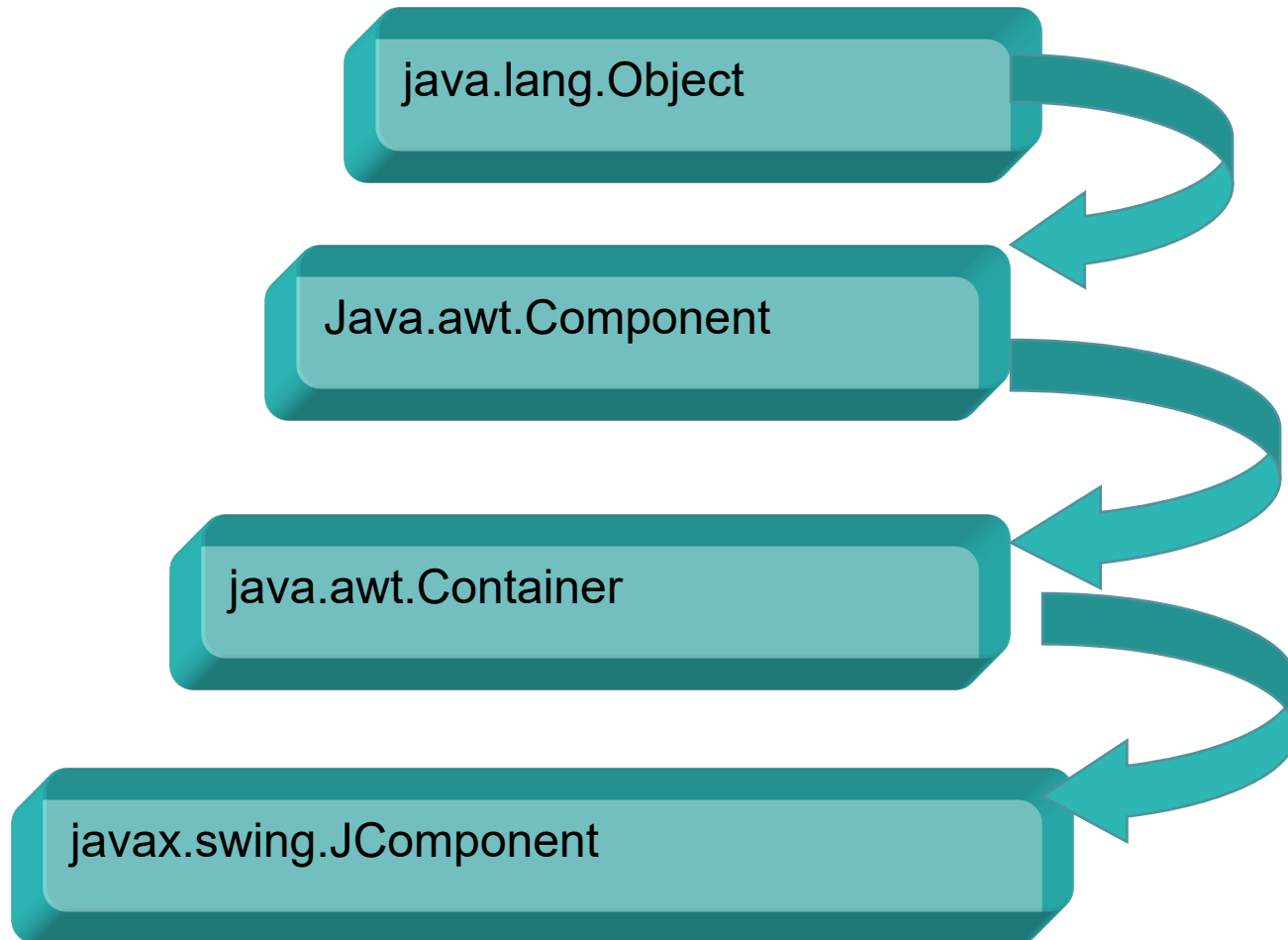
Model

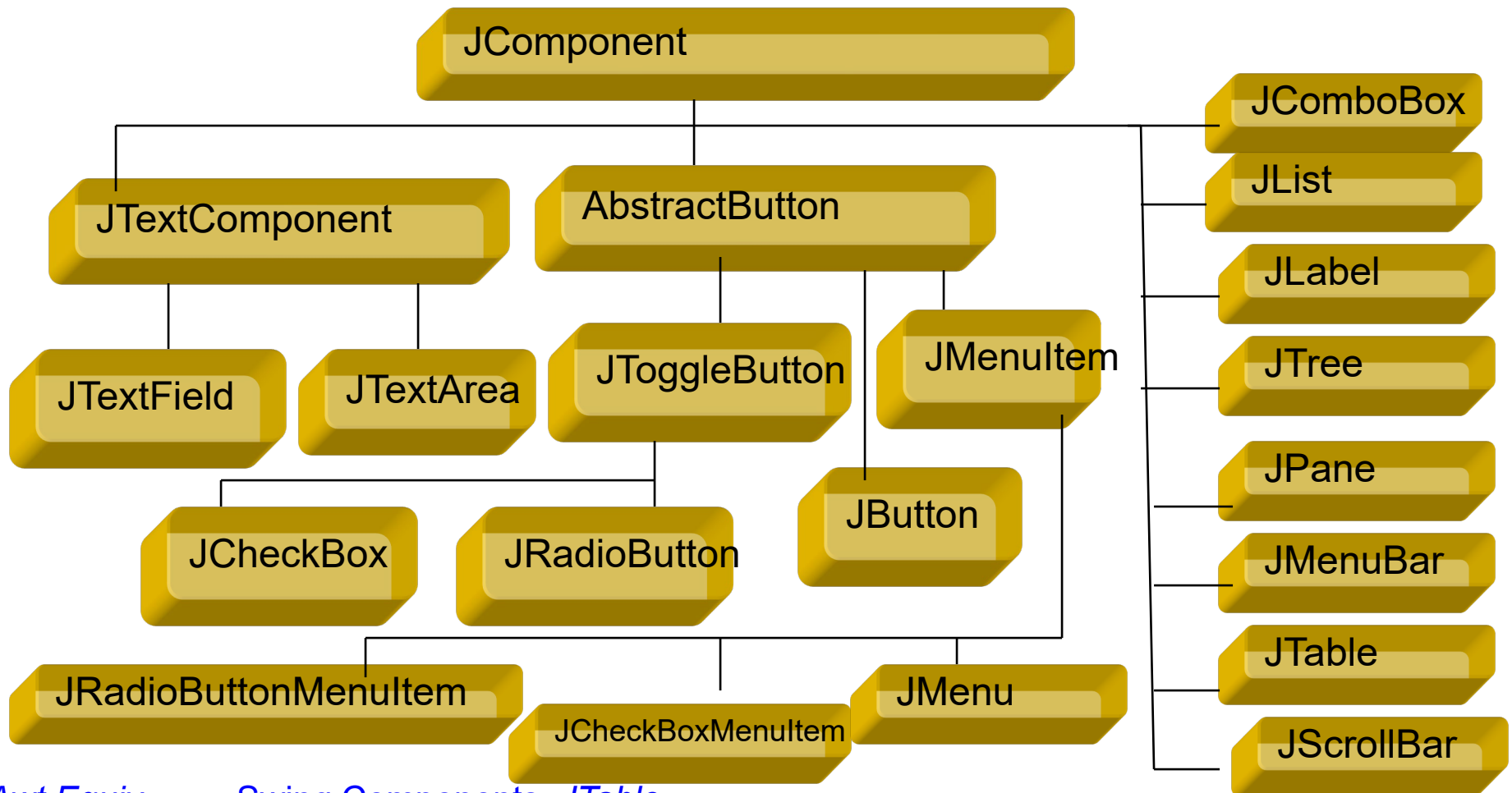An object that defines the component's state

Swing Overview

- Delegate
  - A vital part of Swing's pluggable L&F mechanism is a user-interface (*UI*) object called a *delegate*.

Swing Component Hierarchy

java.lang.Object

Java.awt.Component

java.awt.Container

javax.swing.JComponent

Swing Component Hierarchy

SWING V.S AWT

- Components are implemented with absolutely no native code
- More functionality
- Can be shipped as add-on to JDK1.1, JDK1.2
- Lightweight components
- Swing labels & buttons can display images instead of text.
  Can add/ change borders drawn around components
  components don't have to be rectangular.
  Assertive technologies can read data from swing components.

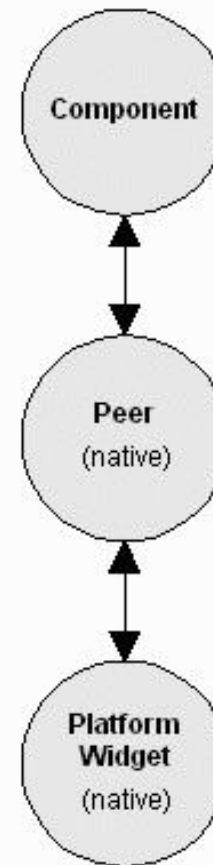 All swing elements are part of javax.swing package.
  Import javax.swing.*;
  Swing API is powerful, flexible & immense.

Swing vs. AWT
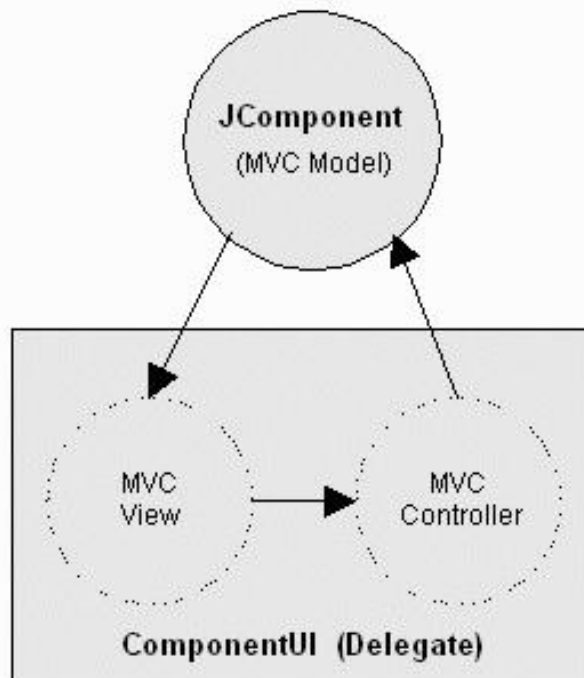
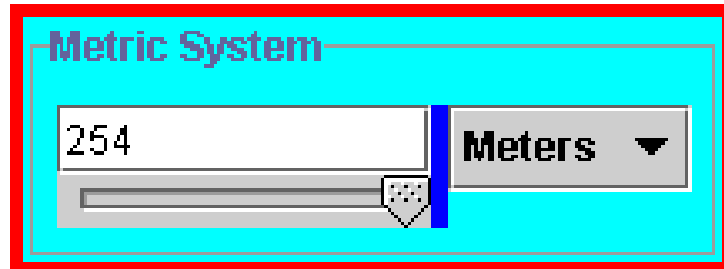# Swing Components and the Containment Hierarchy

- An example:

- Four components in this GUI:
  - a frame, or main window (JFrame) --- top-level container
  - a panel, sometimes called a pane (JPanel) --- intermediate container
  - a button (JButton) --- atomic components
  - a label (JLabel)   --- atomic components
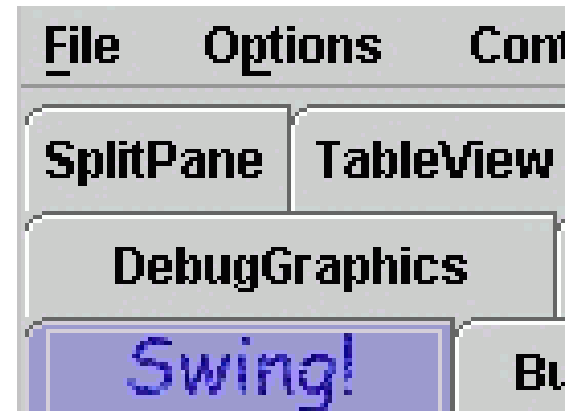
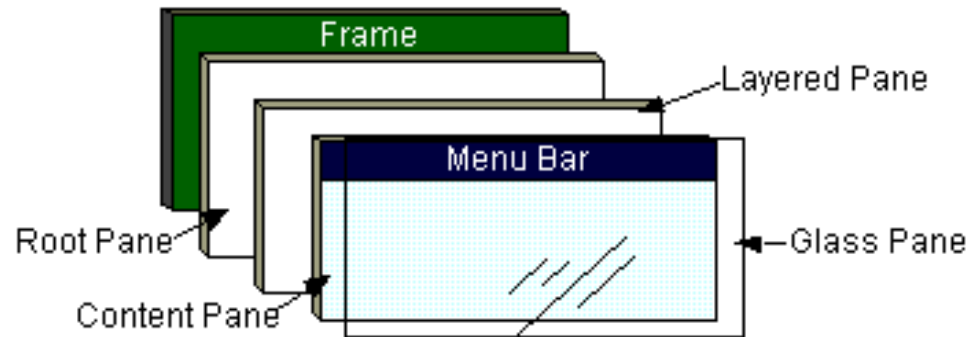# General-Purpose Containers

Panel (and JPanel)

JScrollPane

JToolBar

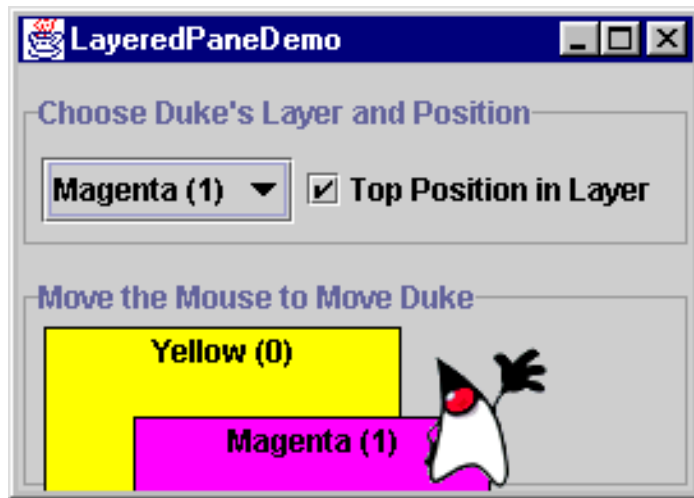JSplitPane

JTabbedPane

Special-Purpose Containers

Root Pane

JLayeredPane
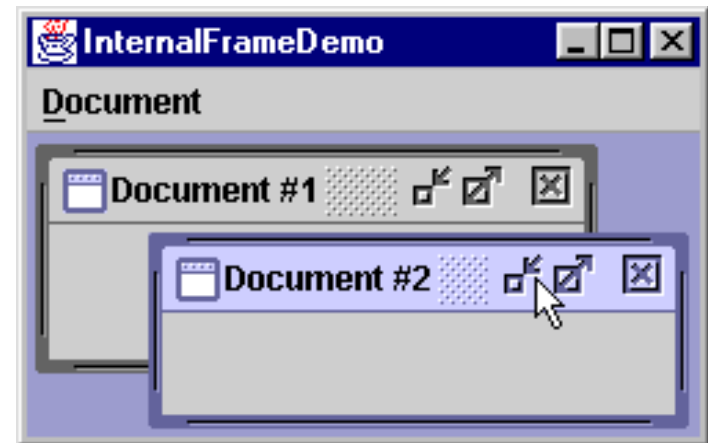
JInternalFrames

Basic Controls

☑ Check 1

⦿ Radio 2

OK

| Theme | Help |

☑ **m e t a l**   ctrl-m

☑ **Organic**   ctrl-o

☐ **metal2**   ctrl-2

JMenu
JMenuItem

JCheckBox
JRadioButton
JButton

January

February

March

April

List (and JList)

Basic Controls

Monday

Monday
Tuesday
Wednesday
Thursday
Friday

Choice (and JComboBox)

George Washington

Thomas Jefferson

Benjamin Franklin
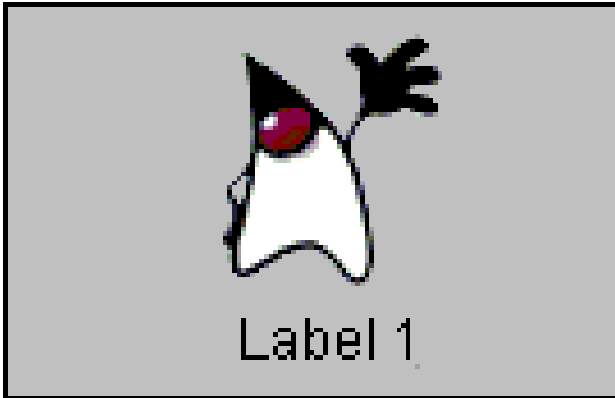
Thomas Paine

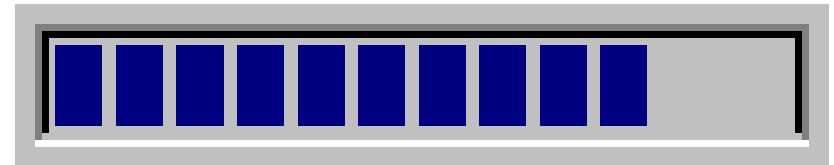JTextField

L   R
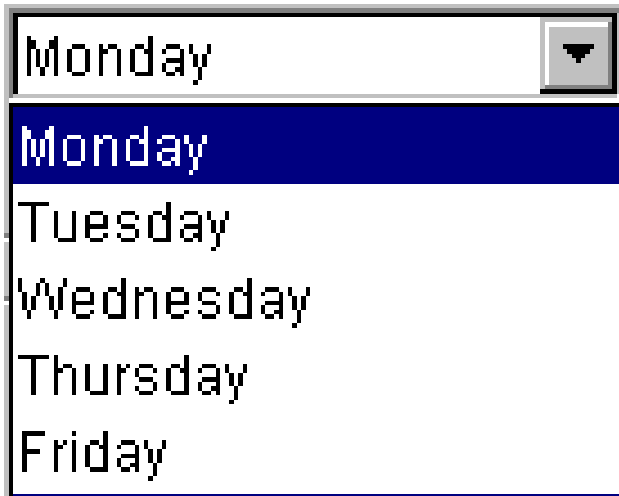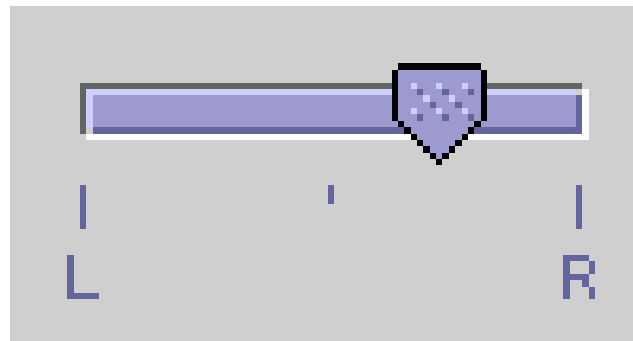
JSlider

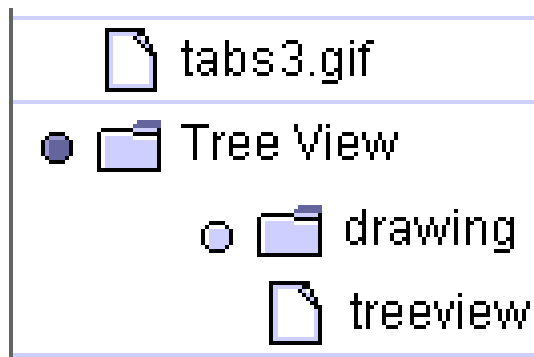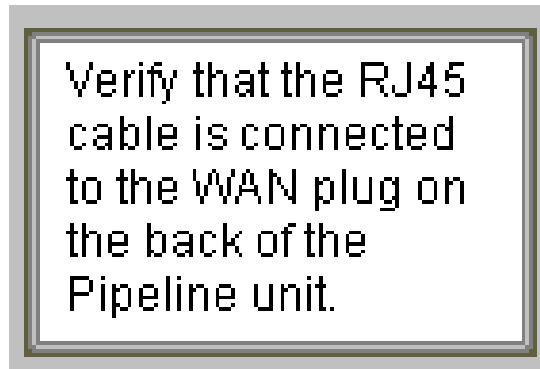# Uneditable Information Displays

Label (and JLabel)

JProgressBar

JToolTip

Editable Displays of Formatted Information

JTree

JText

JTable

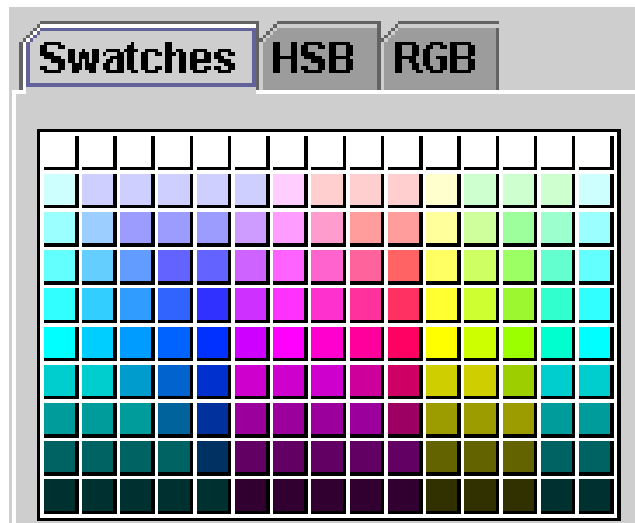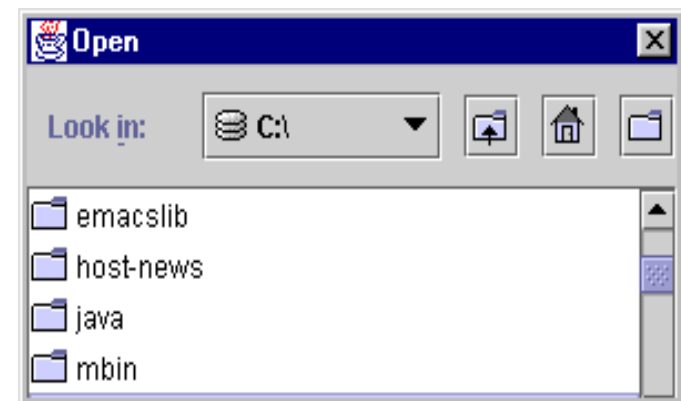Verify that the RJ45 cable is connected to the WAN plug on the back of the Pipeline unit.

First Na...	Last Name
Mark	Andrews
Tom	Ball
Alan	Chung
Jeff	Dinkins

JColorChooser

FileDialog (and JFileChooser)