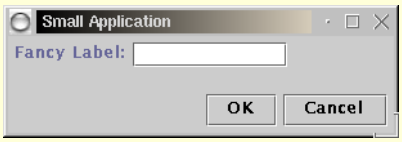
Tutorial #7 (for week 12)
(Mar 25, 2003)

22nd March 2003

The following questions will be considered during the tutorial sessions on Tuesday. They are taken from last year's exam.

Q1: Write the Java/Swing code for a small application with two buttons, and a text entry box with a label, laid out as shown in this image.



Q2: When programming using the AWT toolkit, when you add something to a frame, you would do something like

```
...    frame.add(panel,BorderLayout.CENTER);
```

However in Java/Swing you write

```
...    frame.getContentPane().add(panel,BorderLayout.CENTER);
```

Why is this done? What advantage does it give us?

Q3: Examine the following Java/Swing code specifying a dialog. Draw a diagram showing the resultant display when you run the code, and give a brief description of the function of the dialog. (What does it look like? What does it do?). Obvious code has been elided for clarity.

CODE LISTING **Dialog.java**

```
public class ListDialog extends JDialog {
    private static ListDialog dialog;
    private static String value = "";
    private JList list;
    public static void initialize(Component comp,
                                  String[] possibleValues,
                                  String title,
                                  String labelText) {
        Frame frame = JOptionPane.getFrameForComponent(comp);
        dialog = new ListDialog(frame, possibleValues,
                                title, labelText);
    }
    public static String showDialog(Component comp, String initialValue) { ... }
;
    private void setValue(String newValue) { ... };
        value = newValue;
        list.setSelectedValue(value, true);
    }
    private ListDialog(Frame frame, Object[] data, String title,
                       String labelText) {
        super(frame, title, true);
        JButton cancelButton = new JButton("Cancel");
        final JButton setButton = new JButton("Set");
        cancelButton.addActionListener(new ActionListener() { ... };
        setButton.addActionListener(new ActionListener() { ... };
        getRootPane().setDefaultButton(setButton);
        list = new JList(data);
        list.setSelectionMode(ListSelectionModel.SINGLE_INTERVAL_SELECTION);
        list.addMouseListener(new MouseAdapter() { ... };
        JScrollPane listScroller = new JScrollPane(list);
        listScroller.setPreferredSize(new Dimension(250, 80));
        listScroller.setMinimumSize(new Dimension(250, 80));
        listScroller.setAlignmentX(LEFT_ALIGNMENT);
        JPanel listPane = new JPanel();
        listPane.setLayout(new BoxLayout(listPane, BoxLayout.Y_AXIS));
        JLabel label = new JLabel(labelText);
        label.setLabelFor(list);
        listPane.add(label);
        listPane.add(Box.createRigidArea(new Dimension(0,5)));
        listPane.add(listScroller);
        listPane.setBorder(BorderFactory.createEmptyBorder(10,10,10,10));
        JPanel buttonPane = new JPanel();
        buttonPane.setLayout(new BoxLayout(buttonPane, BoxLayout.X_AXIS));
        buttonPane.setBorder(BorderFactory.createEmptyBorder(0, 10, 10, 10));
        buttonPane.add(Box.createHorizontalGlue());
        buttonPane.add(cancelButton);
        buttonPane.add(Box.createRigidArea(new Dimension(10, 0)));
        buttonPane.add(setButton);
        Container contentPane = getContentPane();
        contentPane.add(listPane, BorderLayout.CENTER);
        contentPane.add(buttonPane, BorderLayout.SOUTH);
        pack();
    }
    ...
```

The Dialog may be instantiated using this main:

CODE LISTING **MainDialog.java**

```
    public static void main(String[] args) {
        String[] names = {"Arlo", "Cosmo", "Elmo", "Hugo",
                          "Jethro", "Laszlo", "Milo", "Nemo",
                          "Otto", "Ringo", "Rocco", "Rollo"};
        ...
        ListDialog.initialize(f, names, "Name Chooser",
                              "Baby names ending in O:");
        ...
```