LAB 11

Intro to Java GUI Development

Java GUI Libraries

Swing

AWT (Abstract Windowing Toolkit)

JFrame

- A frame, implemented as an instance of the [JFrame](#) class, is a window that has decorations such as a border, a title, and supports button components that close or iconify the window.
- Applications with a GUI usually include at least one frame. Applets sometimes use frames, as well.

CODE:

```
//1. Create the frame.
JFrame frame = new JFrame("FrameDemo");

//2. Optional: What happens when the frame closes?
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

//3. Create components and put them in the frame.
//...create emptyLabel...
frame.getContentPane().add(emptyLabel, BorderLayout.CENTER);

//4. Size the frame.
frame.pack();

//5. Show it.
frame.setVisible(true);
```
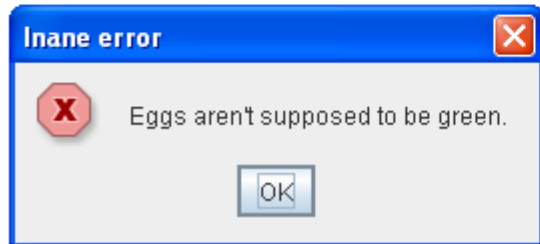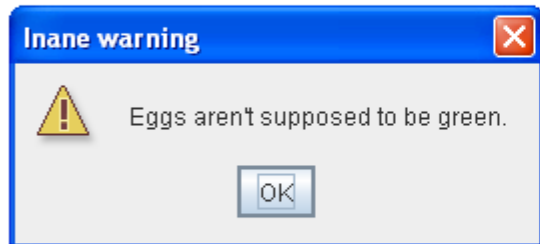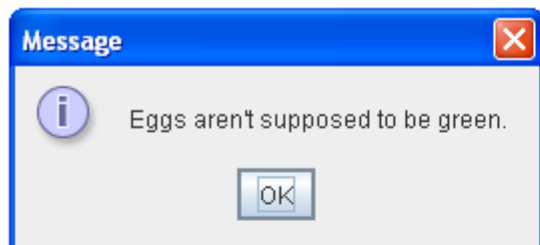
JOptionPane

- A Dialog window is an independent subwindow meant to carry temporary notice apart from the main Swing Application Window.

- Most Dialogs present an error message or warning to a user, but Dialogs can present images, directory trees, or just about anything compatible with the main Swing Application that manages them.

Examples for showMessageDialog

Message

(i) Eggs aren't supposed to be green.

[OK]

```
//default title and icon
JOptionPane.showMessageDialog(frame,
    "Eggs are not supposed to be green.");
```

Inane warning

⚠ Eggs aren't supposed to be green.

[OK]

```
//custom title, warning icon
JOptionPane.showMessageDialog(frame,
    "Eggs are not supposed to be green.",
    "Inane warning",
    JOptionPane.WARNING_MESSAGE);
```

Inane error

(×) Eggs aren't supposed to be green.

[OK]

```
//custom title, error icon
JOptionPane.showMessageDialog(frame,
    "Eggs are not supposed to be green.",
    "Inane error",
    JOptionPane.ERROR_MESSAGE);
```
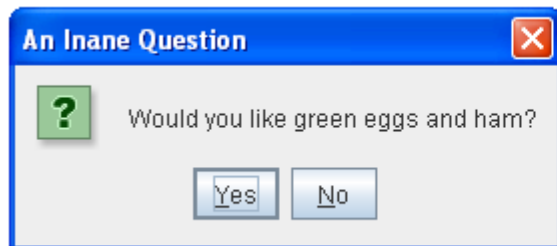
Icons used by JOptionPane

| Icon description	Java look and feel	Windows look and feel
question	?	?
information	i	i
warning	⚠	⚠
error	×	×

Examples for showInputDialog
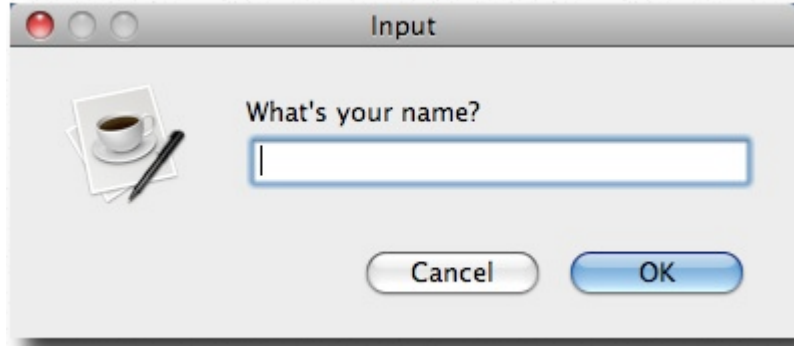

```
// prompt the user to enter their name
String name = JOptionPane.showInputDialog(frame, "What's your name?");
```

Example of showConfirmDialog

An Inane Question

? Would you like green eggs and ham?

[Yes] [No]

```
//default icon, custom title
int n = JOptionPane.showConfirmDialog(
    frame,
    "Would you like green eggs and ham?",
    "An Inane Question",
    JOptionPane.YES_NO_OPTION);
```


A Silly Question

? Would you like green eggs and ham?
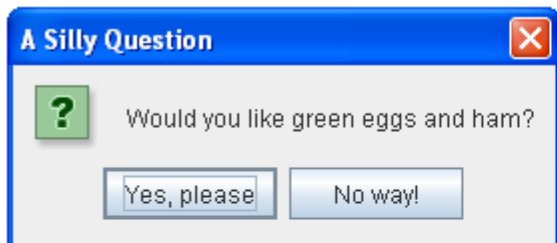
[Yes, please] [No way!]

```
Object[] options = {"Yes, please",
                    "No way!"};
int n = JOptionPane.showOptionDialog(frame,
    "Would you like green eggs and ham?",
    "A Silly Question",
    JOptionPane.YES_NO_OPTION,
    JOptionPane.QUESTION_MESSAGE,
    null,      //do not use a custom Icon
    options,   //the titles of buttons
    options[0]); //default button title
```

Example Program

```java
import javax.swing.*;

/**
 * JOptionPane showInputDialog example.
 * A simple showInputDialog example.
 */
public class JOptionPaneShowInputDialogExample
{
  public static void main(String[] args)
  {
    // a jframe here isn't strictly necessary, but it makes the example a little more real
    JFrame frame = new JFrame("InputDialog Example #1");

    // prompt the user to enter their name
    String name = JOptionPane.showInputDialog(frame, "What's your name?");

    // get the user's input. note that if they press Cancel, 'name' will be null
    System.out.printf("The user's name is '%s'.\n", name);
    System.exit(0);
  }
}
```