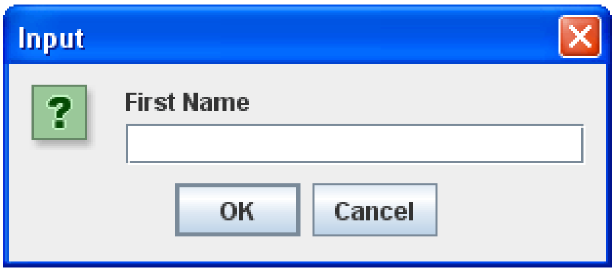
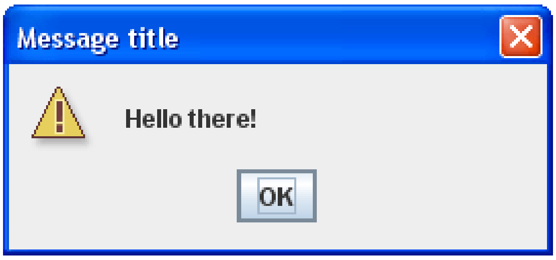
Java Option Panes

homeandlearn.co.uk/java/java_option_panes.html

Another useful class for accepting user input, and displaying results, is the JOptionPane class. This is located in the javax.swing library. The JOptionPane class allows you to have input boxes like this one:



And message boxes like this:



Hello there!

Let's adapt our code from the previous section and have some option panes.

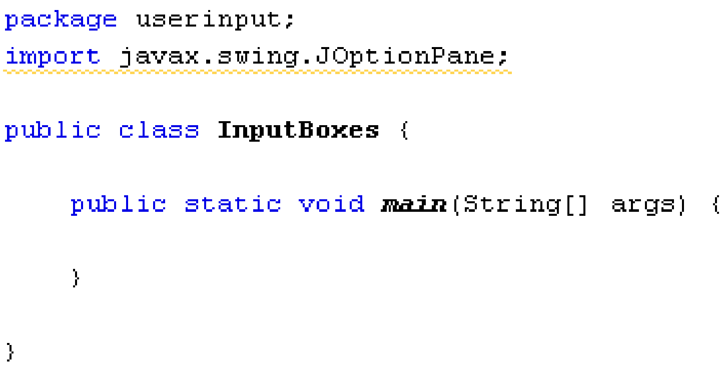
The first thing to do is to reference the library we want to use:

import javax.swing.JOptionPane;

This tells java that we want to use the JOptionPane class, located in the javax.swing library.

You can start a new project for this, if you prefer not to adapt your previous code. (You should know how to create a new project by now. Just remember to change the name of the Class from Main to something else. We're going to have the class name InputBoxes for ours. Our package name will be userinput.)

Add the import line to your new project, and your code window should look like something like this:



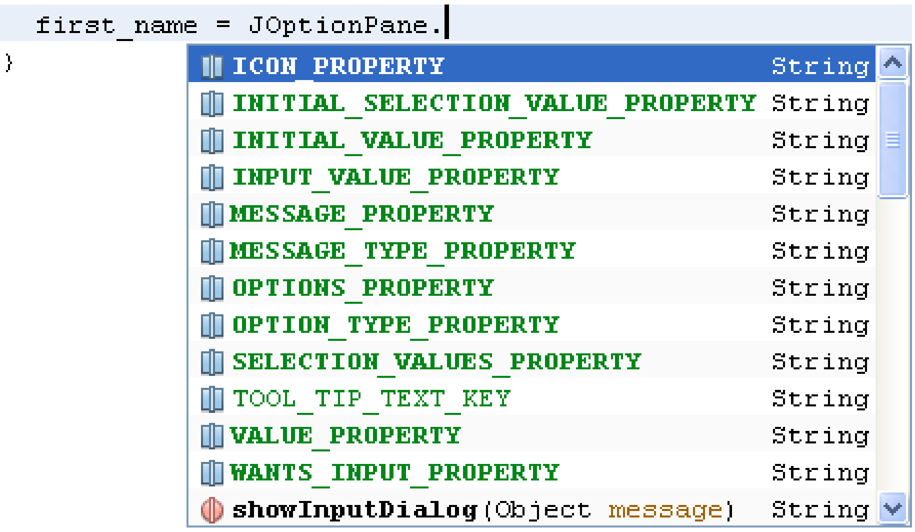
```
package userinput;
import javax.swing.JOptionPane;

public class InputBoxes {

    public static void main(String[] args) {

    }

}
```

(The reason for the wavy underline is that we haven't used the JOptionPane class yet. It will go away once we do.)

To get an input box that the user can type into, we can use the **showInputDialog** method of JOptionPane. We'll store the input straight into a first name variable again, just like last time. So add the following line to your main method:

String first_name;
first_name = JOptionPane.showInputDialog("First Name");

As soon as you type a full stop after JOptionPane you will see the following popup list:



```
  first_name = JOptionPane.
}
```

ICON_PROPERTY String
INITIAL_SELECTION_VALUE_PROPERTY String
INITIAL_VALUE_PROPERTY String
INPUT_VALUE_PROPERTY String
MESSAGE_PROPERTY String
MESSAGE_TYPE_PROPERTY String
OPTIONS_PROPERTY String
OPTION_TYPE_PROPERTY String
SELECTION_VALUES_PROPERTY String
TOOL_TIP_TEXT_KEY String
VALUE_PROPERTY String
WANTS_INPUT_PROPERTY String
showInputDialog(Object message) String

Double click **showInputDialog**. In between the round brackets of showInputDialog type the message that you want displayed above the input text box. We've typed "First name". Like all strings, it needs to go between double quotes.

Add the following code so that we can get the user's family name:

String family_name;
family_name = JOptionPane.showInputDialog("Family Name");

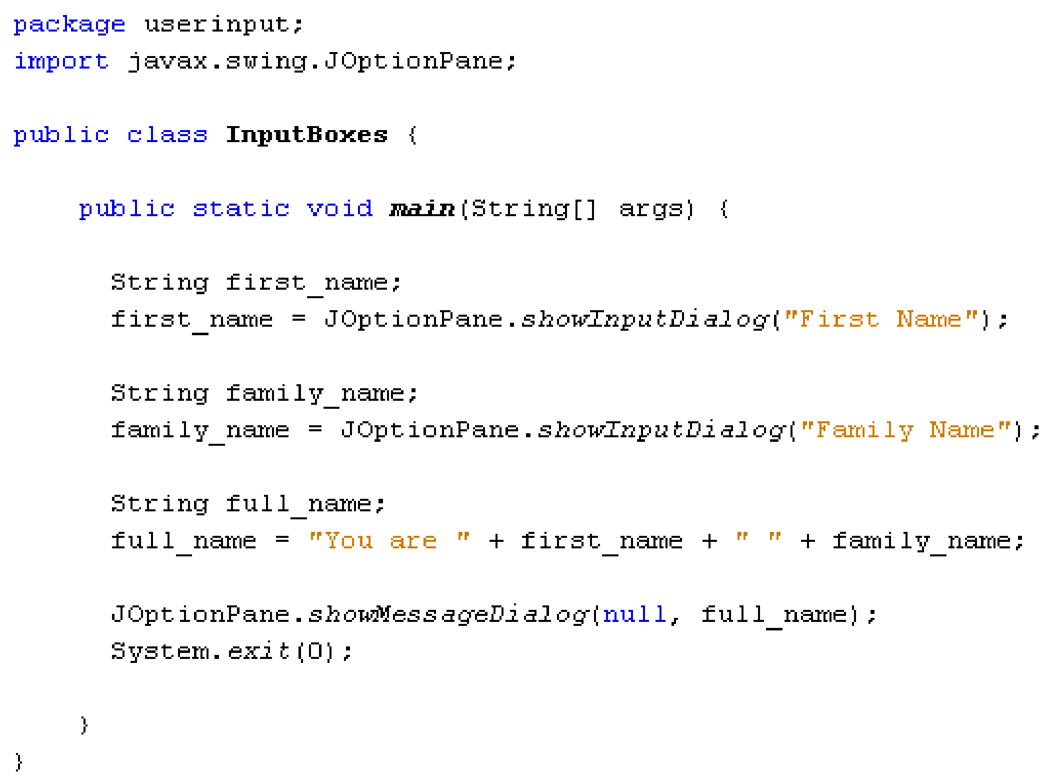
Join the two together, and add some text:

String full_name;
full_name = "You are " + first_name + " " + family_name;

To display the result in a message box, add the following:

JOptionPane.showMessageDialog(null, full_name);

This time, we want **showMessageDialog** from the popup list. In between the round brackets we first have the word **null**. This is a java keyword and just means that the message box is not associated with anything else in the programme. After a comma comes the text we want to display in the message box. The whole of your code should look like this:



```
package userinput;
import javax.swing.JOptionPane;

public class InputBoxes {

    public static void main(String[] args) {

      String first_name;
      first_name = JOptionPane.showInputDialog("First Name");

      String family_name;
      family_name = JOptionPane.showInputDialog("Family Name");

      String full_name;
      full_name = "You are " + first_name + " " + family_name;

      JOptionPane.showMessageDialog(null, full_name);
      System.exit(0);

    }
}
```

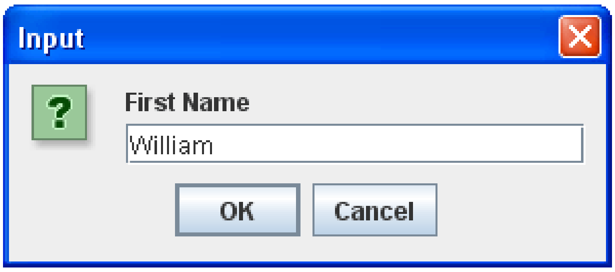
Notice the line at the bottom of the code:

System.exit(0);

As its name suggests, this ensures that the programme exits. But it also tidies up for us, removing all the created objects from memory.

Now run your code. (Another quick way to run your programme in NetBeans is by right-clicking anywhere inside of the coding window. From the menu that appears, select **Run File**.)

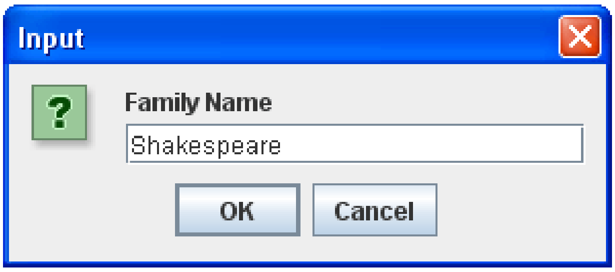
You'll see the First Name input box. Type something into it, then click OK:



First Name

William

When the Family Name input box appears, type a family name and click OK:



Family Name

Shakespeare

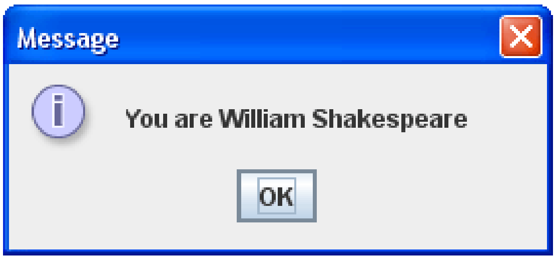
After you click OK, the message box will display:

Click OK to end the programme.

Exercise
Input boxes and Message boxes can be formatted further. Try the following for your Input boxes:

showInputDialog("First Name", "Enter Your First Name");

showInputDialog("Family", "Enter Your Family Name");



You are William Shakespeare

Exercise
For your Message boxes try this (yours should be on one line):

showMessageDialog(null, full_name, "Name", JOptionPane.INFORMATION_MESSAGE);

Exercise
Instead of JOptionPane.INFORMATION_MESSAGE try these:

ERROR_MESSAGE
PLAIN_MESSAGE
QUESTION_MESSAGE
WARNING_MESSAGE

Exercise A
Input boxes are not just used for text: they can accept numbers as well. Write a programme that prompts the user for two numbers, the breadth of a rectangle and the height of a rectangle. Use a message box to calculate the area of the rectangle. (Remember: the area of a rectangle is its breadth multiplied by the height.) However, you'll need some extra help for this exercise.

Answer to Exercise A

Help for the Exercise
You have to use the String variable to get your numbers from the user:

String breadth;
breadth = JOptionPane.showInputDialog("Rectangle Breadth");

However, you can't multiply two strings together. You need to convert the Strings to integers. You can convert a string to an integer like this:

Integer.parseInt(string_to_convert)

So you type Integer then a full stop. After the stop, type parseInt( ). In between the round brackets of parseInt, type the name of the string variable you're trying to convert.

Set up an int variable for the area. You can then multiply and assign on the same line;

int area = Integer.parseInt(string_one) * Integer.parseInt(string_two);

For the message box, use concatenation:

"answer = " + area

You can use any of the MESSAGE symbols for your message box.

Exercise B
The programme will crash if you enter floating point values for the breadth and height. How would you solve this?

When you have solved the above exercise, do you really want Integer.parseInt? What else do you think you can use?