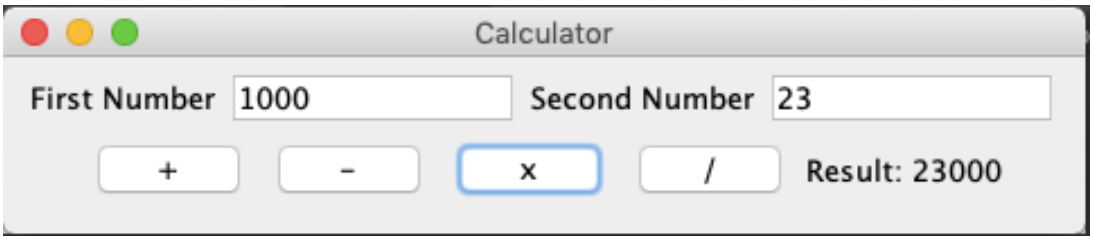
Lab 15

Create a new Eclipse project named **YourStudentId_Lab15** and create a class "GUICalculator".

Please follow the instructions to create a calculator and it should look like this:



1. Import the corresponding class.

```
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JTextField;
```

2. Declare some constant variables(hint: final) which are used in later GUI configuration.
   FRAME_WIDTH = 480, FRAME_HEIGHT = 100, FIELD_WIDTH = 10;

3. Declare a static method called "`doCalculate`" which has three input parameters: num1(int), num2(int), and operator(String), and returns an integer. This method can handle the four types of calculation: +, -, *, and /.

4. In main method:
   A. Instantiate a JFame called frame and set title as "Calculator".
   B. Instantiate four JButton: plus operator(+), minus operator(-), multiply operator(x), and divide operator(/).
   C. Instantiate two JTextField called firstNum and secondNum so the user can input value.
   D. Instantiate three JLabel called first, second, and result which are using as the prefix of the two text field(first for firstNum and second for secondNum) and displaying the result (result).
   E. Define an inner class plusActionListener which implements ActionListener. And it can perform these jobs:
      i. Get the value of two text field.
      ii. Pass the two number and operator "+" to the method "doCalculate".
      iii. Update JLabel "result" to show the result.
   F. Repeat the instruction in step E to complete the remaining ActionListener: minusActionListener, multiplyActionListener, and divideActionListener.
   G. Assign the four listeners to the corresponding buttons. (e.g, plusActionListener for plus operator)
   H. Instantiate a JPanel, panel.
   I. Add all components which are instantiated in step B, C, and D (9 components in total) to the panel.
   J. Add the panel to the frame.
   K. Set the frame size by FRAME_WIDTH and FRAME_HEIGHT.
   L. Set close operation by JFrame.EXIT_ON_CLOSE.
   M. Make the GUI visible.

API Reference:

String	getText() Returns the text contained in this TextComponent.
static int	parseInt(String s) Parses the string argument as a signed decimal integer.

Submission: Submit your project as "zip (or rar) file" via WM5. No other submissions will be graded.

Reminder: Please zip the whole project.

Deadline: Tomorrow's midnight (for both Mon56 and Tue23)