

CS 1181 - Computer Science II

Practice Problem: Getting Warmer

Purpose: To review and practice the basics of graphical user interface implementation.

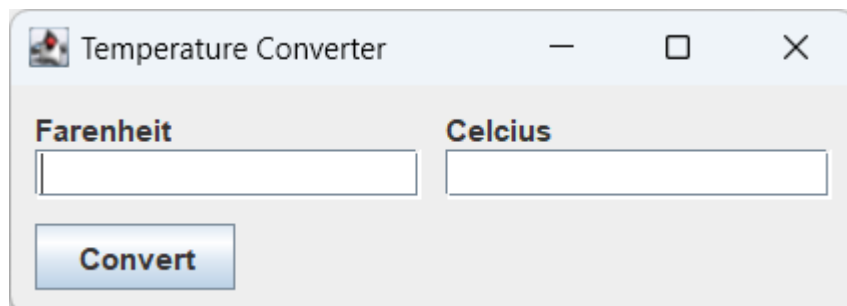
For this lab you will create a graphical user interface to convert temperature values between the Fahrenheit and Celsius scales.

Part A:

Create a simple GUI consisting of one pushable button labeled "Convert". Your program does not need to do anything when the button is pushed. It should simply display the button and allow the user to push it. Your program should exit when the main window is closed. *Note: Be sure to add your button to a JPanel, and not the main window's JFrame.*

Part B:

Create an interface for a program converts between the Fahrenheit and Celsius temperature scales. When the user types in a number in the Fahrenheit text field and clicks on the Convert button, the program should display the corresponding temperature in Celsius in that text field. If the user enters an invalid value or the Fahrenheit text box is empty when the Convert button is clicked, the GUI should handle the exception without crashing. Your main window should appear as shown below:



Extra challenge (optional, no points):

Try modifying your program so that it reads the value from whichever text field was most recently typed in and displays the equivalent in the other text field. So, for example, if the user types 32 in the Fahrenheit text field, your program should display 0 in the Celsius text field. If the user then types 100 in the Celsius text field, it should display 212 in the Fahrenheit text field. You can do this by creating a variable of type JTextField called something like lastEdited and adding KeyListeners to both of the text fields. Then you can modify the button action handler to take the appropriate action based on which text field was last typed in. Here is an example of a key event handler:

```
fahrenheitTF.addKeyListener(new KeyAdapter() {  
    public void keyPressed(KeyEvent e) {  
        lastEdited = (JTextField) e.getSource();  
    }  
});
```

