CS335 Exercise Set 2  
Due Monday, Feb 13

Instructions: Write solutions to the following problems. Submit an electronic copy of your solution to CS Web Application System (https://www.cs.uky.edu/CSAPP/main.php) by midnight on the due date. Exercises refer to the class text (Java How to Program by Deitel, 6/e).

1. Exercise 11.9 (Calculator GUI)

![Image of Calculator GUI]

2. Exercise 11.12 and 11.13 (Temperature Conversion program with GUI)

11.12 Write a temperature conversion application that converts from Fahrenheit to Celsius. The Fahrenheit temperature should be entered from the keyboard (via a JTextField). A JLabel should be used to display the converted temperature. Use the following formula for the conversion:

\[
\text{Celsius} = \frac{5}{9} \times (\text{Fahrenheit} - 32)
\]

592 Chapter 11 GUI Components: Part I

11.13 Enhance the temperature conversion application of Exercise 11.12 by adding the Kelvin temperature scale. The application should also allow the user to make conversions between any two scales. Use the following formula for the conversion between Kelvin and Celsius (in addition to the formula in Exercise 11.12):

\[
\text{Kelvin} = \text{Celsius} + 273.15
\]

3. Write a GUI wrapped around your Sieve program from exercise 1 that allows the user to select a number between 1 and 1000. Decide on a GUI element for this that makes it as easy as you can for the user to select the number. Use the calculated sieve to show (either in a pop-up dialog box or in a JTextField) whether or not the selected number is prime.
Grading Guideline
Each problem is worth 100 points, which are divided as the following:

- 20 pts: the submitted program compiles without error.
- 20 pts: the compiled code can run without error.
- 60 pts: correct results are generated.