

**Lab 2 (September 13 or September 14)**

**Instructions:** Complete the steps below. Be sure to show your code to one of the lab TAs before you leave, so that you can receive credit for this lab. You must also upload a copy of all your source code (.java) files to the link on Blackboard by 11:59 PM on Thursday, September 14.

1. Write a Java program that uses `Scanner` to read in a temperature (in degrees Celsius) from the user as a `double`. Your program should convert the input into its equivalent Fahrenheit value, and then print both versions of the temperature.

To convert a Celsius temperature into Fahrenheit, use the formula:

$$\text{Fahrenheit} = (9.0/5) * \text{Celsius} + 32$$

(recall that  $9.0/5$  in Java is 1.8, as opposed to  $9/5$ , which is truncated to 1)

**Sample execution:** (program output is shown here in *italics*, while user input is shown here in **boldface**)

*Enter a temperature in Celsius: **43***  
*43 degrees in Celsius is 109.4 degrees in Fahrenheit.*

For this assignment, do not worry about the precision (number of decimal places) after the numbers in your program's output.

2. Write a Java program that reads in a `double` value representing the value of a restaurant bill. If the bill is less than or equal to \$30, the tip is fixed at \$5.00; otherwise, the tip should be calculated as 15% of the bill amount. Your program should print the value of the tip and the total amount to be paid (bill amount + tip).

**Sample execution:** (program output is shown here in *italics*, while user input is shown here in **boldface**)

*Please enter the subtotal: **15.69***  
*The gratuity is \$5 and the total bill is \$20.69.*

For this assignment, do not worry about the precision (number of decimal places) after the numbers in your program's output.

**Grading Guidelines:** This lab is graded on a scale of 0-3 points, assigned as follows:

0 points: Student is absent or does not appear to have completed any work for the lab

1 point: Student has written only one program, but it does not compile or run at all due to errors.

2 points: Student has written (or attempted to write) both programs, but only one compiles and runs without error.

3 points: Student has written both programs, and they both compile and run correctly, without any apparent errors.