

Programming Exercise 5.4

Temperature Conversion, v.1.0

Purpose. The purpose of this lab is for you to learn how write a program “from scratch” that takes console keyboard input, performs a simple calculation, and prints nicely formatted console output. It also introduces "Unicode" symbols -- ones that are not part of the alphanumeric sequence or the familiar punctuation symbols on most computers.

Write a program named **Canada1.cpp** to convert from Celsius to Fahrenheit, so that if you ever visit Canada you can figure out what the temperature *really* is.

Requirements.

1. Prompt the user to enter a temperature in degrees Celsius, allowing any number of decimal digits (for example, 32 or 10.21)
2. Calculate the Fahrenheit equivalent, using the formula shown below.
3. Output the answer to the console screen with a label and with both the unformatted input and formatted output values. Show one decimal digit for the output.

Here's how to calculate Fahrenheit:

$$F = \frac{9}{5} C + 32$$

Test your program. Here are some useful test points: -40°C is -40°F, 0°C is 32°F, 100°C is 212°F.

Optional Requirement. Add the degree symbol (°) to your output. Here's a hint that might be helpful: `char degreeSymbol = 0xF8;` is “ASCII” code for the degree symbol on Windows systems. It's `0xB0` on the Mac. (Those are ZEROs, not OHs). Use the one that matches your system.

Program I/O. Input: one number from the console keyboard. Output: Echo the input value and print the result of the calculation to the console screen.

Example. For example, with user input in blue:

```
What's the temperature in Celsius? 100.001
100.001 Celsius equals 212.0 Fahrenheit
```