

Computer Programming

C Programming Assignment #1 1999/2000

Brief:

Write a computer program that converts input data from one temperature measurement system to another.

Informative:

The Celcius measurement system is not the only measurement system in operation. Celcius is a metric measurement, and is now more widely used than the older Fahrenheit system, though Fahrenheit is used in America.

For example, most people know that water freezes at 0°C and boils at 100°C - but that's only in the Celcius measurement system. Under the Fahrenheit measurement system water freezes at 32°F and boils at 212°F. (This doesn't mean that water is hotter under the Fahrenheit system, just that the measuring scale is different).

The Formula:

Temperatures in the scales can be converted using the following formulas:

Conversion	Formula
C => F	$F = (9 * C) / 5 + 32$
F => C	$C = ((F - 32) * 5) / 9$

In the first formula, to convert the temperature to F (Fahrenheit) from C (Celcius), you first multiply the C value by nine, divide the result by 5, and add 32 to the outcome of that.

In the second formula, to convert the temperature from F to C, you subtract 32 from the F value, multiply the result by 5, and divide the result of that by 9.

Your Task:

Write a program to accept input from the user and to carry out the conversion. Accept a temperature measurement and two letters to indicate the temperature you are convert from and the temperature you are to convert into. Use the letters entered by the user to decide which, if any, conversion to carry out.

Documentation:

Provide evidence of your planning process, the commented source code and sample data used. You should also include a hand-drawn as well as a SmartDraw formatted flow-chart. Any other appropriate documentation may be included if you wish.

Sample Data:

Input	Expected Output
212 F C	100.0C
100 C F	212.0F
0 C F	32.0F
32 F C	0.0C
0 F C	-17.8 C
-100 C C	-100.0C
72 F F	72.0F
-22 C F	-7.6F

Submission Details:

Submit paper to submission box in Room 15. Electronic submission may also be requested at a later time.

Due date: October 27th 2000