

# Programming Exercise 10.3

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## Temperature Conversion, v.3.0

**Purpose.** Practice writing programs that use EOF (end-of-file) loops. Also get experience with a program that manages when formatting is applied to the output of floating point values and when it is not.

**Requirements.** Modify Exercise 6.4's `Canada2.cpp`, replacing console inputs with text file inputs. Name the new program `Canada3.cpp`.

1. Modify the program so that it reads input temperatures from a text file (named `temps.txt`) in the working directory. The file should allow one temperature per line, possibly with decimal points and digits after the decimal (like 12.34).
2. The program should end when a sentinel value of -999 is entered from the file as the input temperature, or if the end-of-file is reached.
3. Modify the screen output statement so that it echoes the input Celsius temperature in addition to the calculated Fahrenheit temperature. Each Celsius/Fahrenheit pair should be on its own single line of screen output. So if there are 4 temperatures in the file, there should be 4 lines of output.
4. Express the Celsius value *without formatting*. Express the Fahrenheit value with one decimal digit (like 56.7).

**Program I/O.** Input: from a named `temps.txt` with any number of lines of numbers (one per line), where the last line contains the number -999. Output: Echoes of the unformatted input Celsius value and the formatted Fahrenheit value, one per input line, excluding the sentinel.

### Example.

```
100. Celsius equals 212.0 Fahrenheit
0. Celsius equals 32.0 Fahrenheit
-40. Celsius equals -40.0 Fahrenheit
100.001 Celsius equals 212.0 Fahrenheit
```