## CSC365 Script Languages - Chapter 3 Assignment - Temp Calc

Start your program by using the book's solutions\ch03\future\_value.py code.

Write a temperature calculator:

c = (f - 32) \* 5 / 9  
f = c \* 9 / 5 + 32

* Validate all user's input (using min & max values for all numeric input)
  + convert fahrenheit or celsius
  + the starting and stopping temperation degrees
  + the step in degree value
  + optionally try-except
* Use a FOR loop to display the convertion table
* Use a WHILE loop to all the user the ability to display multiple convertion tables
* Use f-string to align input and output for a friendly UI experience
* Use meaningful variable names
* Make sure PyCharm isn't reporting any warnings
* 30% of your code should be documented including a program header:
  + programmer name
  + date written
  + description
  + GitHub repository URL (I should already be added to your class repository)
* How to submit the assignment:
  + Attach the following files to your assignment:
    - Python module (temp\_calc.py program)
    - Text file of your console output (temp\_calc.txt)
  + Assignment reflection in the comment area the Good, Bad, and Ugly

**The Python way of string validation:**

user\_input = input('Enter F to convert C or enter C to convert to F: ')    
***# get the first letter and convert to lower case***

conversion\_type = user\_input[0].lower()

if conversion\_type == 'f' or conversion\_type == 'c': ***# long way***  
if conversion\_type in ['f', 'c']:  ***# short way***

**Python way of writing your for loop (pseudocode)**

for temp in range(start\_temp, stop\_temp, step\_temp)  
   if type = f  
      convert\_temp = f to c using temp  
   else  
      convert\_temp = c to f using temp  
   print(f'{temp} {convert\_temp}')

**Help with try-except:**

* <https://www.w3resource.com/python-exercises/python-basic-exercise-113.php>

**Help with f-string:**

* https://mkaz.blog/code/python-string-format-cookbook/
* https://realpython.com/python-f-strings/
* <https://miguendes.me/73-examples-to-help-you-master-pythons-f-strings>
* <https://www.30secondsofcode.org/articles/s/6-python-f-strings-tips>
* <https://datagy.io/python-f-strings/>

**More help with f-string:**

Also, since f-strings are new to all of you, here is example of how I aligned the user's numeric inputs:

temp\_start = int(input(f'{"Enter the starting temperature (-50 to 150)":.<45s}: '))

Also, here is an example of what my f-string looks to display conversion table inside the for loop:

print(f'| {temp:3.0f} | {temp\_conv:3.0f} |')

**What a user-friendly console output might look like ☺**

Welcome to the Temperature Calculator

============================================================

Enter F to convert from Fahrenheit to Celsius.

Enter C to convert from Celsius to Fahrenheit.

Enter the conversion type (F,C): f

============================================================

Enter the starting temperature (-50 to 150)..: 0

Enter the stopping temperature (-50 to 150)..: 100

Enter the stepping temperature (-50 to 50)...: 20

|=====|=====|

| F | C |

|=====|=====|

| 0 | -18 |

| 20 | -7 |

| 40 | 4 |

| 60 | 16 |

| 80 | 27 |

| 100 | 38 |

|=====|=====|

Do you want to display another temperature chart (y/n)? y

============================================================

Enter F to convert from Fahrenheit to Celsius.

Enter C to convert from Celsius to Fahrenheit.

Enter the conversion type (F,C): c

============================================================

Enter the starting temperature (-50 to 150)..: 0

Enter the stopping temperature (-50 to 150)..: -50

Enter the stepping temperature (-50 to 50)...: -10

|=====|=====|

| C | F |

|=====|=====|

| 0 | 32 |

| -10 | 14 |

| -20 | -4 |

| -30 | -22 |

| -40 | -40 |

|=====|=====|

Do you want to display another temperature chart (y/n)? n

============================================================

Bye!

Process finished with exit code 0