

Programming Project 1 (turn in for a grade)

Program Topic: Decisions and Temperature Conversion

As with any assigned program, do not wait until the last minute to start. Start early in the week the program is due so you can ask questions if you get stuck.

Write a program that prompts the user to enter a numeric temperature value that may be a float. A second prompt should then ask the user to indicate whether the user wants the entered temperature value converted to degrees Celsius or degrees Fahrenheit by entering either an 'F' or a 'C' for a second prompt.

For example, if the user enters 212 at the first prompt and the character C for the second prompt you are to convert 212 degrees F to the Celsius equivalent (which would be 100.0). Converted temperatures should be rounded to 1 decimal place.

If the user enters 26 at the first prompt and the character F at the second one, then your programs should convert 26 degrees C to the Fahrenheit equivalent (which is 78.8 deg F)

Your conversion formulas are:

```
degF = 1.8 * degC + 32          //convert Celsius to Fahrenheit
```

```
degC = (degF - 32) / 1.8       //convert Fahrenheit to Celsius
```

To get full credit you need to

- Have your converted values be floats rounded to 1 decimal place.
- The F or C entry should be case-insensitive. The user should be able to enter F or f for a Fahrenheit conversion, or a C or c for a Celsius conversion. But if the user doesn't enter an F, f, C or c, then display an error message and exit the program rather than performing the calculation
- Use the decision structure of your choosing to determine whether to convert the input value to degF or degC or to exit.
- Your output should contain both the original temperature entered and the proper output temperature, labeled as to which is which. Something like this: 212 degrees F = 100.0 degrees C

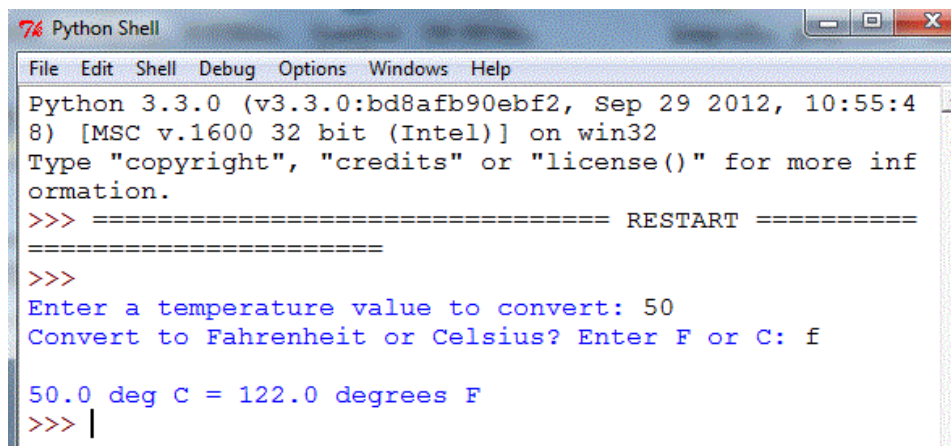
- Your Python file needs to have a comment near the top giving your *full* name and the assignment number. Please don't turn in a program without a name.

Your prompt strings might look something like this, although you can choose your own words.

Please enter a temperature value to convert:

Convert to Fahrenheit or Celsius? Enter either F or C:

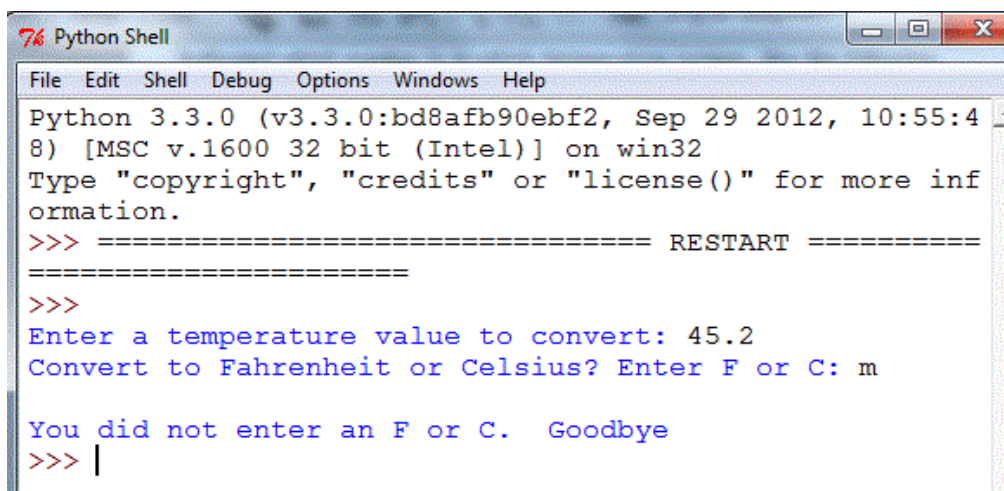
A possible example program run might look like this, where 50 deg C is converted to 122.0 deg F. Your output should indicated which number is in which temperature system, like the following.



```
Python Shell
File Edit Shell Debug Options Windows Help
Python 3.3.0 (v3.3.0:bd8afb90ebf2, Sep 29 2012, 10:55:48) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a temperature value to convert: 50
Convert to Fahrenheit or Celsius? Enter F or C: f

50.0 deg C = 122.0 degrees F
>>> |
```

And, what if the user does not enter an F, f, C, or c? Suppose they type in k or simply hit enter without typing any character at all?. Then your output should look similar to the following. You do not have to account for all possible user input errors, and for this program you can assume the user will not enter a number that is lower than absolute zero.



```
Python Shell
File Edit Shell Debug Options Windows Help
Python 3.3.0 (v3.3.0:bd8afb90ebf2, Sep 29 2012, 10:55:48) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a temperature value to convert: 45.2
Convert to Fahrenheit or Celsius? Enter F or C: m

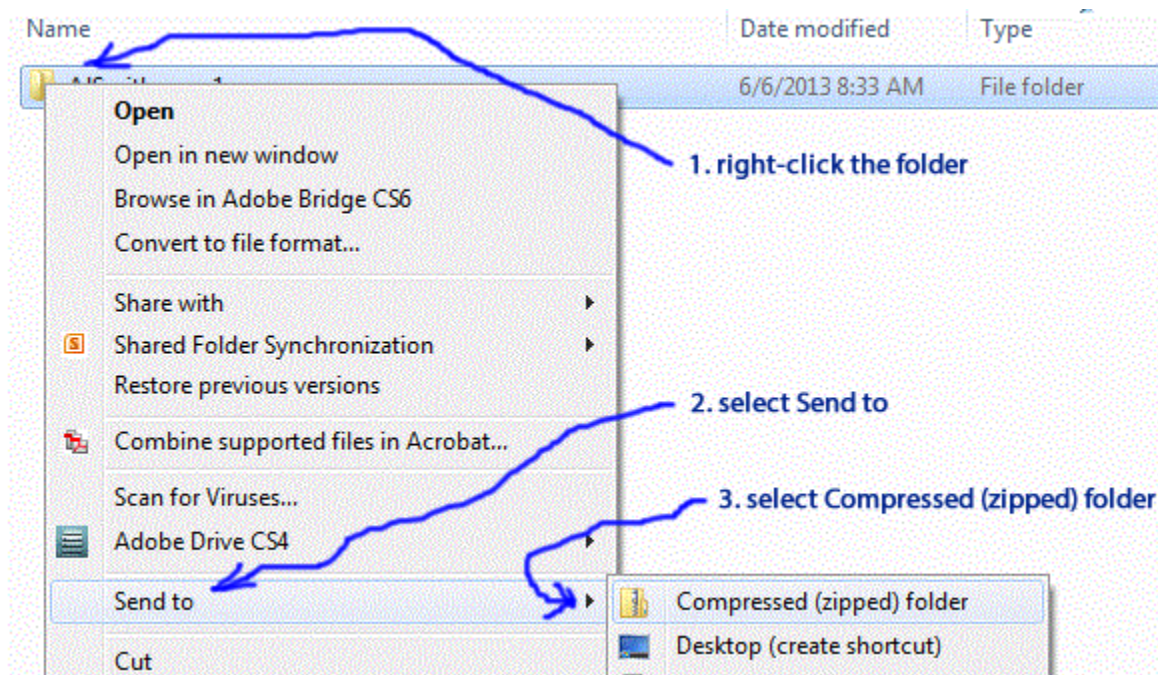
You did not enter an F or C. Goodbye
>>> |
```

If you get good and stuck email me your code and we'll get it working.

How To Submit Your Program

When you're finished put the program in a new folder and name that folder using your name and project number. For example the folder might be named AJSmith-prog1. **Please put your name on the folder as well as having your name in a comment in the file itself.** I get lots of programs; putting your name on the folder help keep things organized and shortens the amount of time it takes to get things graded.

After creating the folder, Zip (compress) the folder by right-clicking on it, and then choosing **Send to** from the pop-up menu, then select **Compressed folder**. This will crate a new zipped folder identifiable by the little zipper on the folder icon.



Then, attach the zipped folder to an email and send it to me.

Please use your student email account rather than Blackboard email or messaging.

Thanks...

If you have questions let me know: mark.prather@kctcs.edu.