ECE-203 Programming for Engineers
Homework Week 2
Due Friday, Jan 27th to BBLearn

(20 Points) The formula for converting from degrees Fahrenheit to degrees Celsius is

$$C = \frac{5}{9}(F - 32)$$

Write a program that prints out a conversion table with degrees Fahrenheit in the first column and degrees Celsius in the second column. The table should start at 0°F and end at 100°F with 10° increments. When displayed, decimals should be carried out to two places. Please note that table formatting (i.e. whitespaces, etc) do not need to be perfect.

Name your program **ftoc1.py** and save its output as **ftoc1.txt**. Be sure to submit both files..

- If you need help capturing your program's output in a text file, please watch the video **HOWTO: Saving Output**, which is available under the *Tutorials* section of the course website.
- If you need help transferring your program file (**ftoc1.py**) and its output (**ftoc1.txt**) to your local computer for upload to BBLearn, please watch **HOWTO: Transferring Files via SFTP**, which is also available under the *Tutorials* section of the course website.

(10 Points) The conversion from Fahrenheit to Celsius is often approximated as

$$C \approx \hat{C} = \frac{1}{2}(F - 30)$$

when people perform the conversion mentally or conversationally. Create a new program based on `ftoc1.py` that adds a third column containing this approximation as well as a fourth column containing the error of the approximation (as $\hat{C} - C$). When displayed, decimals should be carried out to two places.

Name your program **ftoc2.py** and save its output as **ftoc2.txt**. Be sure to submit both files.

(20 Points) Write a Python program to compute the following expression:

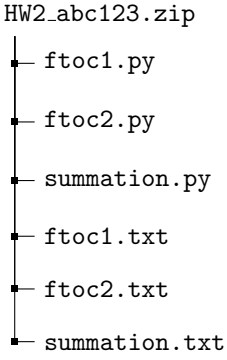
$$s = \sum_{k=1}^{M} \frac{1}{k}$$

Write your program so that the limit of summation M is defined at run time by taking user input from the keyboard. When writing your program, you may assume that the user will type in only valid input.

Name your program **summation.py** and save its output as **summation.txt**. Be sure to submit both files.

Submitting Your Assignment

Create a zip file with the following structure:



name your zip file using your Drexel user id. For example: `HW2_abc123.zip`. Upload your zip file to `learn.drexel.edu` using the assignment submission link found on the course website.

Points will be deducted for improperly packaged submissions.