CSE 8A Programming Assignment 1: Data Conversions

Due Date: Mon. Oct 7th, 11:59 PM (PDT)

Learning goals:

- Write a function that takes a numerical parameter and returns a numerical value
- Verify the function is correct by calling it with different input
- Take input from the user
- Print output to the user

Submission:

- Your submission will be in the form of a PDF write-up
- You can find the template of the write-up here

Part 1: Implementation (6 Points)

Place all of the following code in a file (.py) that you can save.

Write a **function** named `convert` that takes a number as an input, converts that number to another representation, and returns the resulting value. What conversion you choose to do is up to you. **Make sure you include comments indicating what the function does** Here are some ideas (you do not have to use them):

- Men's wages to Women's wages, reflecting the wage gap (see more information here: https://en.wikipedia.org/wiki/Gender_pay_gap_in_the_United_States)
- Fahrenheit to Celsius
- Cost of Living between cities

Next, write **code to call your function** in a program that does the following three things:

- Prompts the user to enter a number with the context for the conversion. Then reads the number the user enters.
- Calls the function you wrote to convert that number.
- Prints the resulting value from the conversion, again providing the appropriate context.

Here's an example interaction with a suitable program. The user's input is in bold.

```
>> Enter a male salary (in dollars per week, excluding the dollar
sign) to convert to a female salary: 200.50
>> The equivalent female salary is: 164.41
```

***Star Points (optional)**:* Feel free to extend your program to make it more complex or interesting. For example, you might read ahead about conditional statements and add another parameter to your function so that it does different conversions depending on the value of the parameter.

Part 2: Testing (3 Points)

You must report on how you tested your code. In particular, you must provide:

A. Test Cases
   Include three examples with three **different** test cases showing your program running correctly. The easiest way to do this is to run your program in IDLE three times with three different inputs, then copy and paste each interaction into the Google doc for submission. Include a test explanation of why these test cases were chosen, how you know they are correct, and why they illustrate the scope of your program's functionality.

B. Report Bugs and Issues
   Include in your report any known bugs or issues with your program. If you think you have none, justify why.

Part 3: Reflection (1 Point)

Fill out the reflection form here.

Submission Instructions

- You will submit your assignment as a pdf file. Here are the instructions:
  - Click here to see a copy of the assignment format.
  - Click on "File", then "Make a copy", and you will get a local copy of this Google Doc.
  - Fill in the Google Doc, making sure you keep the headings in about the same places. **See detailed instructions below.**
  - Once you are done, in Google Docs, click on "File", "Download", "PDF Document", which will give you a pdf
  - Sign into gradescope and submit the pdf to Programming Assignment 1
- For Part 1, you will add your code to the section labeled "Code" in the Google Doc. To do so, copy and paste your code from your editor. If you are using Python IDLE, you should be able to copy and paste directly in the Google Doc, but make sure that the font is `Courier`. If you are using an editor like VSCode or PyCharm, you should be able to copy and paste directly from the editor into the Google Doc, and it might even capture the color formatting. The tricky part is if you are using tabs in your code files. If so, it's very likely that the tabs **WILL NOT** convert properly. We've observed that tabs pasted

into a Google Doc typically get converted to a single space. If this happens, you will have to add a few more spaces for each tab to ensure that the code in the Google Doc is properly formatted.

- **For Part 1: Regardless of which editor you use, make sure that the code in the Google doc is formatted properly and looks like the code from your editor.**
- For Part 2, you will add your test cases and explanation of the cases (part A) and your discussion of bugs or issues (part B) in the section labeled “Test” in the Google Doc.
- Also please remember that if you are submitting as a pair doing pair programming, you only submit one assignment for the two of you, and then you list both names, PIDs and emails.
- For Part 3, you must fill out the reflection form linked in Part 3.
- Once your Google doc has all of the required information and is formatted correctly, export it as a PDF and upload it on gradescope, as you practiced in lab.