CS 515 Homework 1

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Homework 1: Basic Functions
Due: 2/2/22 at 11:59pm

Please submit this homework as a single file containing all functions, called hw1.py

Introduction

For this homework, you need to download and import the cs515.py file from Canvas. Once you've downloaded it, you can import it by typing the following block of code at the top of your Python source file:

```
from cs515 import [what you need]
```
If you need only the map function, type this:
```
from cs515 import map
```
If you need multiple functions, say map and filter, type this:
```
from cs515 import map, filter
```

1 Question 1: Write Temperature Converting Functions (33 pts)

Write two functions, `cToF(t)` and `fToC(t)` which convert from Celsius to Fahrenheit and Fahrenheit to Celsius respectively.

To convert from Fahrenheit to Celsius, subtract 32 and then multiply by 5/9.

To convert from Celsius to Fahrenheit, multiply by 9/5 and then add 32.

2 Question 2: Write a Series of Mathematical Functions (33 pts)

Write the following three functions:

- addTwoNumbers(a,b), which takes as input two numbers a and b and returns the result a+b
- multiplyTwoNumbers(a,b), which takes as input two numbers a and b and returns the result a*b

- calculate(a), which takes as input one number a and uses the above functions to return the result $a^2 + 2$

3 Question 3: Test out map and filter (33 points)

a) Write a function called longStrings(L) which given a list of strings L, returns a new list containing only the strings with length longer than 5.
i.e.: longStrings(['a','b','abcde','abcdef']) -> ['abcdef']

b) Write a function doubleStrings(L) which given a list of strings L, returns a new list of the same strings but doubled.
i.e.: doubleStrings(['a','b','cc']) -> ['aa', 'bb', 'cccc']

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