**Week 5 Practice Problems**

**#1.** Read one string from the user. Then, swap cases and print the result. In other words, convert all lowercase letters to uppercase letters and vice versa. You should solve this question twice.

1. There is a str method that will do this for you and so after the input just call it.
2. But a) is not much of an exercise, so you should also do it without calling that function!

**#2.** Get one string from the user, remove all exclamation and question marks from it, and output the resulting string. Do not use any special string methods.

Example:

Input: Hello!

Output: Hello

Input: How are you?

Output: How are you

1. There is a str method that will do this for you (if you use it correctly) and so after the input just call it.
2. But a) is not much of an exercise, so you should also do it without calling that function!

**#3.**

a) Prompt the user to enter their full name and, using only string comparison functions, decide if the string starts with your first name. If it does, print out “How did you know my name?”. If it doesn’t, print out “It’s rude to not know my name.”

b) Write a function that takes two strings and returns True if the two “match”, where this time “matching” is not case sensitive. (So “Smith” and “smitH” match). Redo part a) using this function.

**#4.** Redo #2 from Week 4 using strings. That is, write a function that takes in a positive integer of any size and returns the “flipped” version (that is, with its digits reversed). For example:

Enter a positive number: **90177**

That number flipped is 77109

Use string functions to do it. Note that the function should still have a type contract of (int)->int. It is only inside the function that you are allowed to use strings.

**#5.** DNA has 4 nucleotides: adenine (A), thymine (T), cytosine (C), and guanine (G). A strand of DNA can be represented as a string of A, T, C, and G. A double helix contains two strands that are "mirror images" of each other in the sense that A is swapped with T and C is swapped with G. For example, here are two paired strands:

ATGGGCAATCGATGGCCTAATCTCTCTAAG

TACCCGTTAGCTACCGGATTAGAGAGATTC

Notice that each A in the top strand has a corresponding T in the bottom one and vice versa. Same for C and G.

Write a function that takes in a DNA strand and produces its matching counterpart in a double helix.

There are a few ways to solve this problem (and next week we will do it with another way) but for now use string methods.

Hint: You are going to have to be a bit clever with how you use the methods to get this right.