CSE 8A Programming Assignment 3

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Known Bugs or Issues:
If you have any known bugs or issues with your code, let us know here.

In the guessing game portion of the assignment I used a breakpoint at the top of my while loop to figure out that I needed to set attemptsLeft = attemptsLeft -1 inside of the loop rather than out so as to decrement my count after each new guess.

Questions:

What are the differences between for and while loops? When would you use a for loop? When would you use a while loop?

Loops in general allow us to run code repeatedly. A For loop is a good choice when you know how long you will need to iterate your process. With a for loop we will often use a counter to iterate through code until we reach a certain condition. A while loop is used when we do not know for how long you would like to repeat some process. In a while loop, code will continue to repeat until some condition becomes false.

There is an error in the code given in question 2. Can you identify it? How can we fix it?

 Given a positive number *num*, the following code is trying to calculate and print the sum of natural numbers (i.e. positive integers greater than zero, eg. 1,2,3...) up to *num*. However, there is an error in this code. Can you identify it? How can we fix it?

num = 10
sum = 0
i = 1
while i <= num:
        sum = sum + 1
        i = i + 1

print("Sum of natural numbers up to" , num, "is:", sum)

A while loop must be able to eventually reach its terminating condition for it to stop. This code was missing an incrementation of i.

What is the difference between indexing and slicing? When would you use one over the other?

Indexing is when you reference a specific element in a list or another type of iterable. Slicing is when you retrieve a portion of elements or a subset of an existing list.