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CNIT 15501

Week 5 Honors Deliverable

# More While Loops

Sentry variable/loop variable is the variable that determines whether or not the loop will happen.

Example: while(keepGoing == True):

In that line of code, keepGoing is a sentry variable.

Note: the following two lines of code do the same thing:

while(keepGoing == True):

while(keepGoing):

If at any time, you want the loop to end, turn the loop variable to False.

The following line of code makes the code immediately return to the start of the loop:

continue

The following line makes the loop immediately end:

break

NOTE: Using break and continue is bad practice. DO NOT use it while coding, but you should still know how to recognize it!

# For Loops

For loops are another kind of loop. It is better to use a for loop if you know exactly how many times you want the code to loop.

For the following example, I will use num as the name for my loop variable. However, different variable names work as well.

for num in range(5):

print(num)

This code will print out the following: 0, 1, 2, 3, 4

Notice how it starts at 0 instead of 1. Also, the last number is not included.

If one number is put in the range function, it will give a range of numbers starting from 0. If you put in a second number, you can choose the range of numbers that will print. A third number in the range specifies how much of an increment there is between each number.

for num in range(2, 14, 3):

print(num)

This code will print out: 2, 5, 8, 11

2 is the starting point, 14 is the ending point, and the number is incremented by 3.

For loops can also be used with strings. Each letter in the string will be used.

Example:

for letter in “CNIT 15501”

print(letter, end = “”)

The output will be: CNIT 15501

Another example:

firstFactor = 10

for secondFactor in range(1, 11):

    print(f"{firstFactor} X {secondFactor} = {firstFactor \* secondFactor}")

Output: This will print the times tables for the number 10.

Nested Loops

A nested loop is when you have a loop inside of a loop. This means that each time the outer loop happens, the inner loop will iterate multiple times.

Example code:

for j in range(3):

    for i in range(5):

        print("\*", end= "")

    print()

Output:

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Nested loops can be done with while loops or for loops.

# Other Useful Code Lines

.upper() makes a string uppercase. If x = “hello”, then x.upper() = “HELLO”.

.startswith(x) checks if a string starts with a certain value.

NOTE: Do not copy and paste code from this document. Word uses a different format for quotation marks from VScode, so you will likely get an error.