
PYTHON ASSIGNMENT #4

Now we're going to learn to make Python automate tasks in loops.

WHILE LOOPS

The "while" keyword begins a loop. It is just like a "repeat - until" loop in Scratch



This is the conditional statement, just like in an "if". The loop will continue to repeat until the condition becomes True.

while x < 10:

```
print x
x = x + 1
```

} The indented stuff is what gets repeated over and over again until the condition becomes True.

This program counts to ten.

USEFUL INFORMATION

1. If you get stuck in an infinite loop, use CTRL-C to kill your program.
2. Remember in Scratch when we had the "change x by ___" block? That will be very useful in Python. There are two ways to do it: a short way, and a long way.

Long Way	Short Way
<code>x = x + 1</code>	<code>x += 1</code>

The short way uses "assignment operators," and they exist for the 6 basic math operators: +=, -=, *=, /=, **=, and %=

EXERCISES

EXERCISE 1: What will be the output of these programs and why are they different? Answer in a text file called exercise1.txt (2 marks)

PROGRAM 1	PROGRAM 2
<pre>foo = 100 if foo > 86: print "You got an A!" if foo > 0: print "You did not get an A ..."</pre>	<pre>foo = 100 if foo > 86: print "You got an A!" elif foo > 0: print "You did not get an A"</pre>

EXERCISE 2. secret2.py Change your program "secret.py" from your last assignment so that you only have 3 guesses before it locks you out (exits the program). (2 marks)

EXERCISE 3. counter.py Write a function that receives a positive integer as an argument. The function will then add up all the integers from 1 to that number, and return the sum. (3 marks)

EXERCISE 4. average.py Write a program that repeatedly asks a user to enter numbers. When they enter the word "quit", find the average of all the numbers that the user input. (5 marks)

EXERCISE 5: rps2.py Using your Rock, Paper, Scissors module, change it so that the computer asks you if you'd like to play again. Also, if the player enters an incorrect choice (like "laser sword") then python should repeat the question until the player enters a correct answer. Finally, the program should also keep track of how many rounds you've played. When you quit, it should display your cumulative stats on wins, losses, and ties. (6 marks)