LOOPS IN PYTHON

Loops in Python – For, While and Nested Loops

Python programming language provides two types of Python loops checking time. In this article, we will look at Python loops and understand their working with the help of example – **For loop** and **While loop** to handle looping requirements. Loops in Python provides three ways for executing the loops.

While Loop in Python

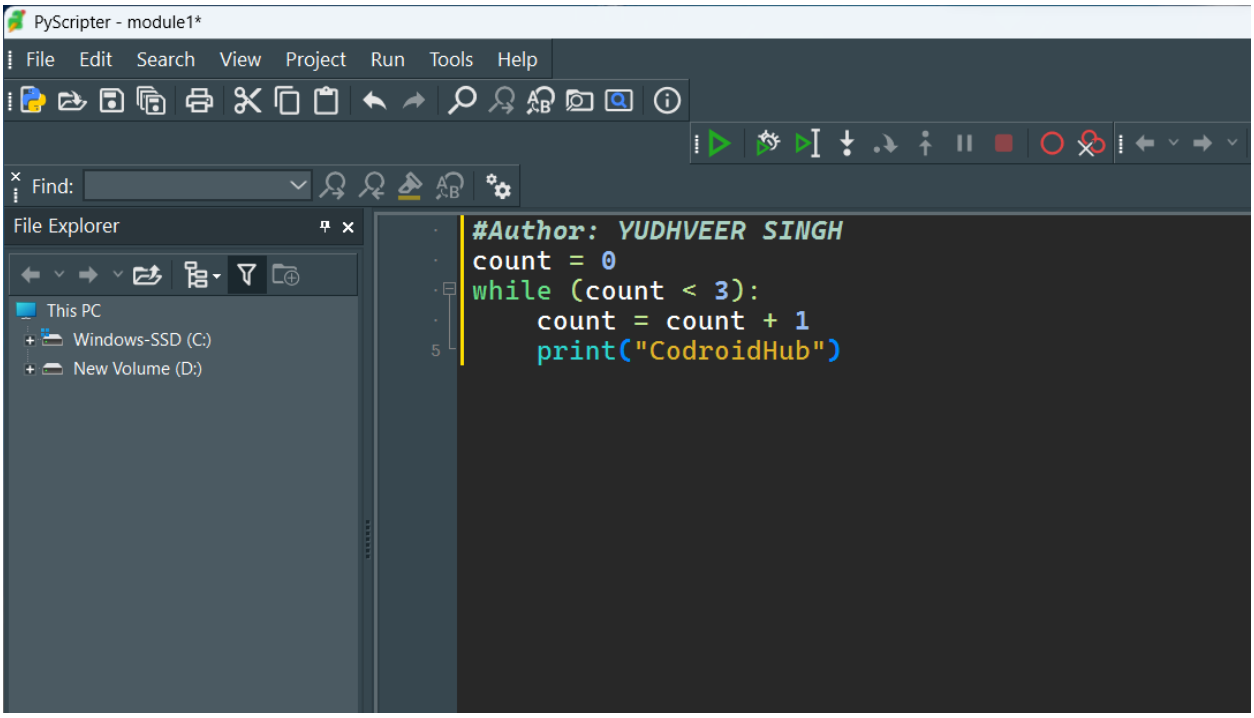
In Python, a while loop is used to execute a block of statements repeatedly until a given condition is satisfied. When the condition becomes false, the line immediately after the loop in the program is executed.

Python While Loop Syntax:

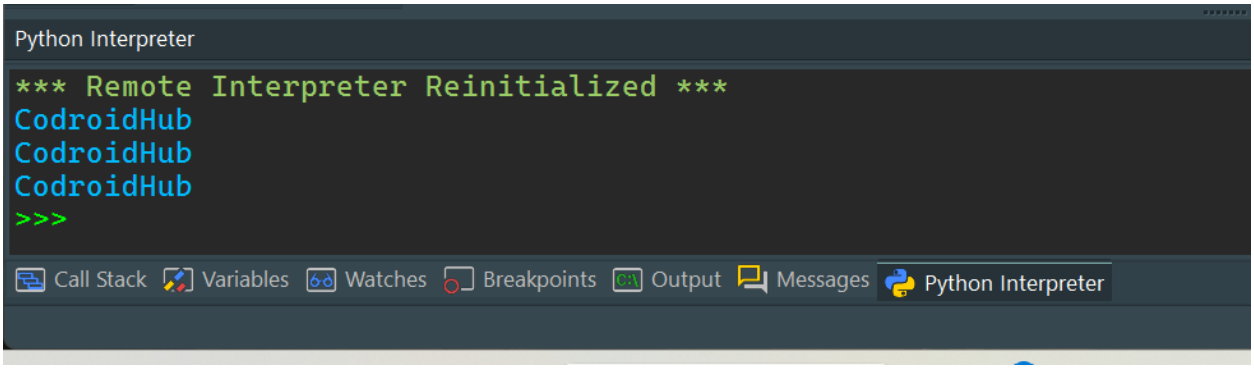
```
while expression:
    statement(s)
```

Example of Python While Loop

Let's see a simple example of a while loop in Python. The given Python code uses a **'while'** loop to print **"CodroidHub"** three times by incrementing a variable called **'count'** from 1 to 3.



Output:



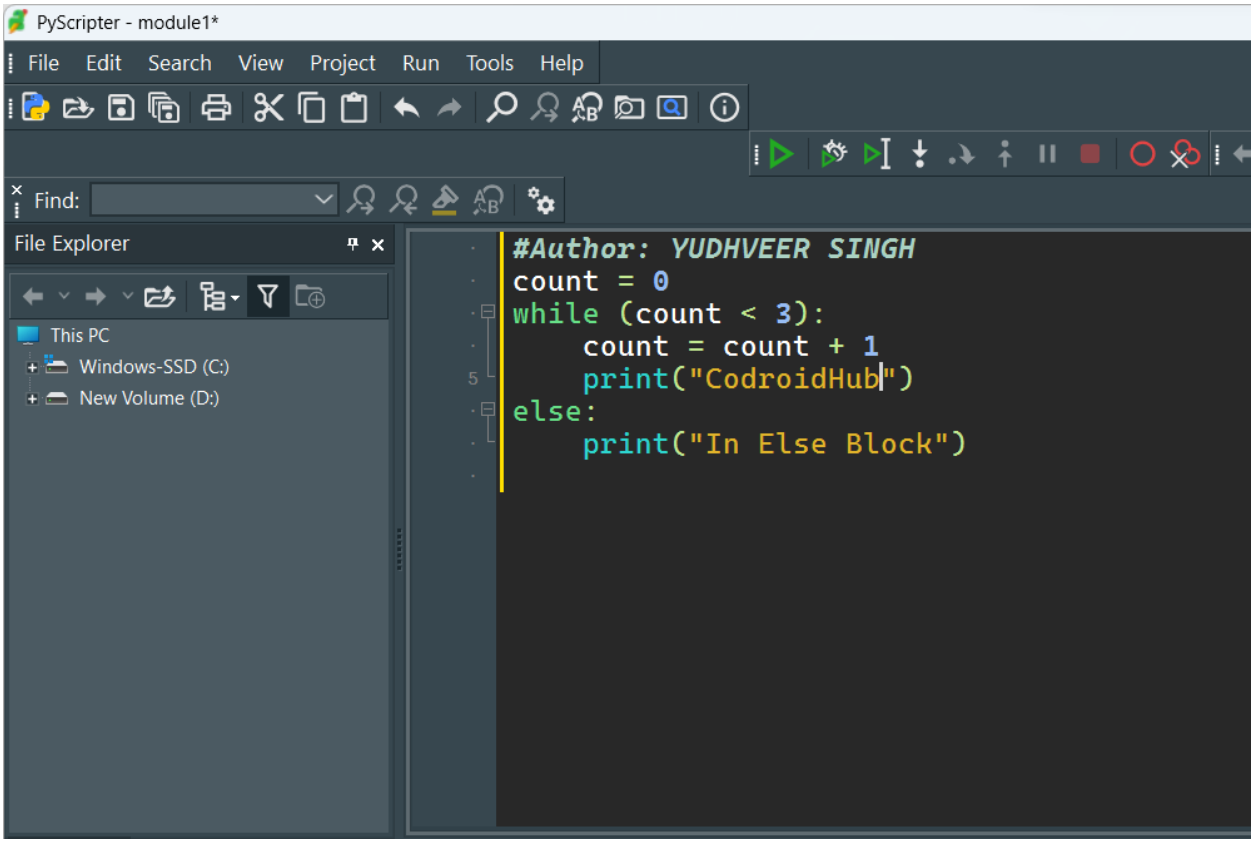
Using else statement with While Loop in Python

The else clause is only executed when your while condition becomes false. If you break out of the loop, or if an exception is raised, it won't be executed.

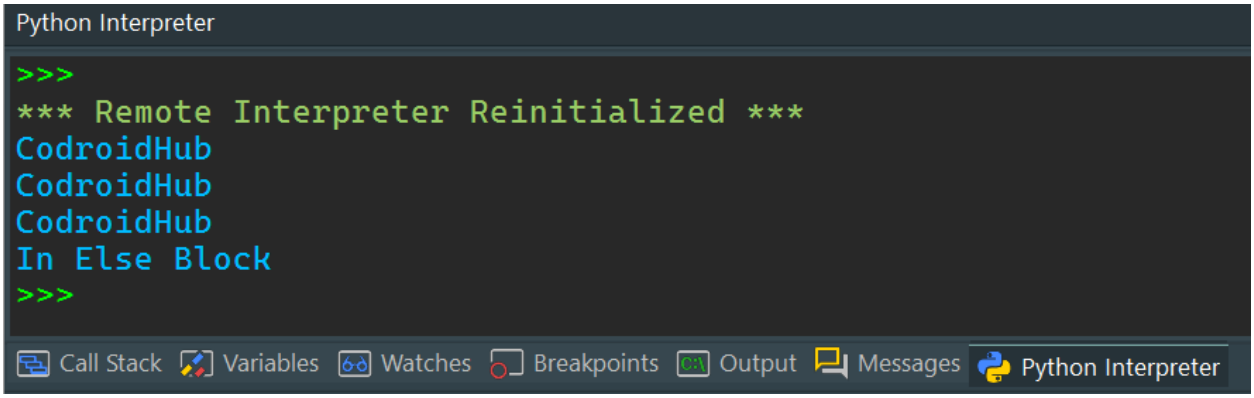
Examples of While Loop with else statement:

Here is an example of while loop with else statement in Python:

The code prints "CodroidHub" three times using a 'while' loop and then, after the loop, it prints "In Else Block" because there is an "else" block associated with the 'while' loop



Output:

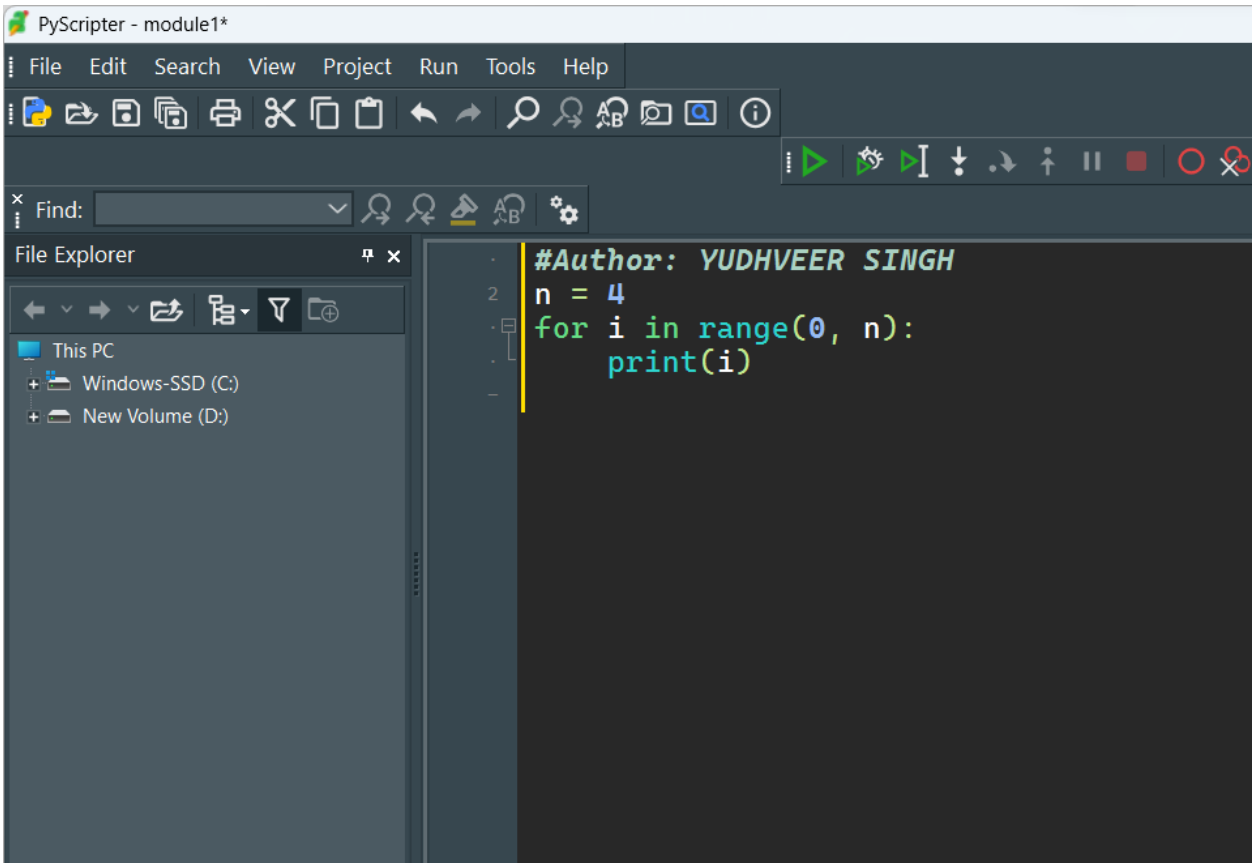


For Loop in Python

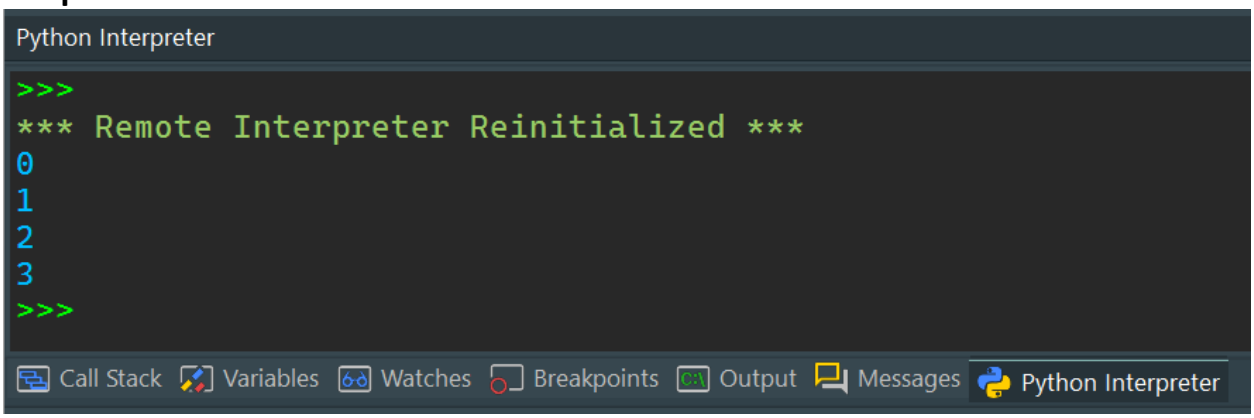
For loops are used for sequential traversal. For example: traversing a list or string or array etc. In Python, there is “for in” loop which is similar to foreach loop in other languages. Let us learn how to use for loops in Python for sequential traversals with examples.

Example:

The code uses a Python for loop that iterates over the values from 0 to 3 (not including 4), as specified by the **range(0, n)** construct. It will print the values of **‘i'** in each iteration of the loop.



Output:



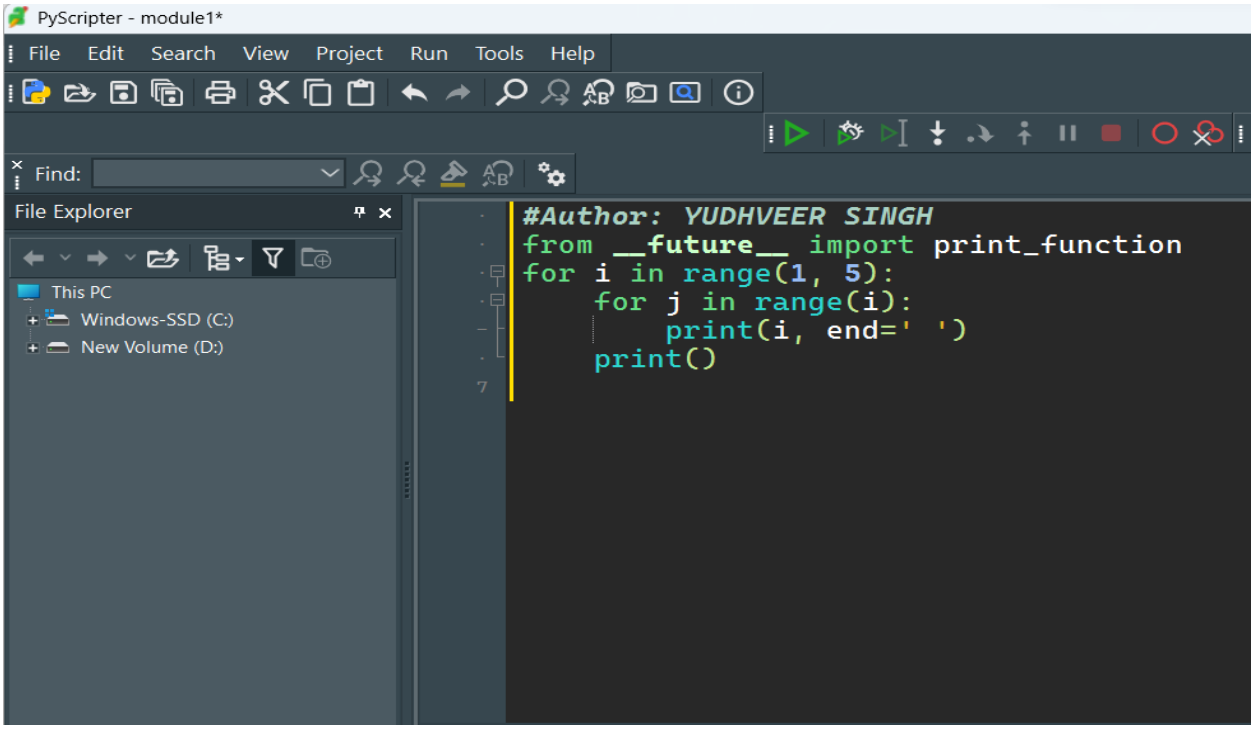
Nested Loops in Python

Python programming language allows to use one loop inside another loop which is called nested loop. Following section shows few examples to illustrate the concept.

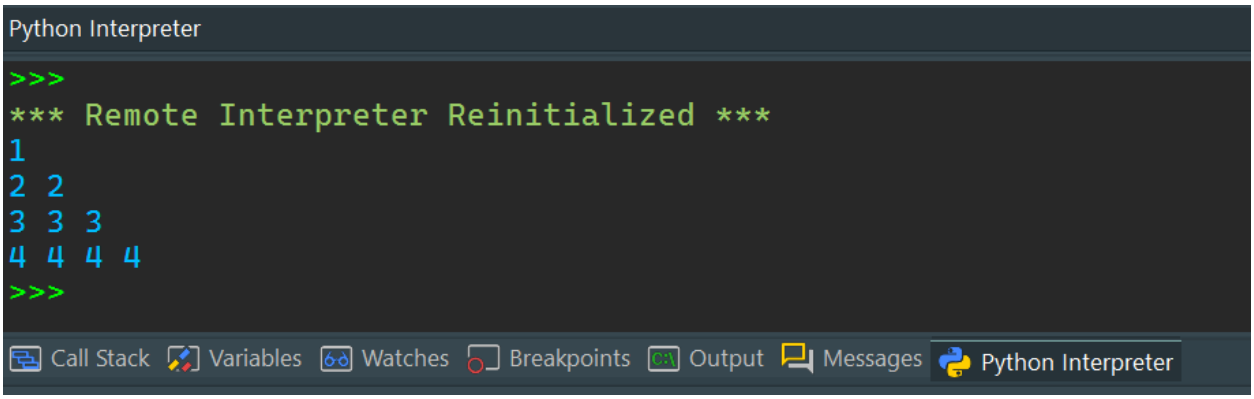
Nested Loops Syntax:

```
for iterator_var in sequence:
  for iterator_var in sequence:
     statements(s)
  statements(s)
```

Example: This Python code uses nested **'for'** loops to create a triangular pattern of numbers. It iterates from 1 to 4



Output:


Python Interpreter
>>>
*** Remote Interpreter Reinitialized ***
1
2 2
3 3 3
4 4 4 4
>>>
Call Stack
Variables
Watches
Breakpoints
Output
Messages
Python Interpreter