

Python Programming

While Loops 1

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Loop



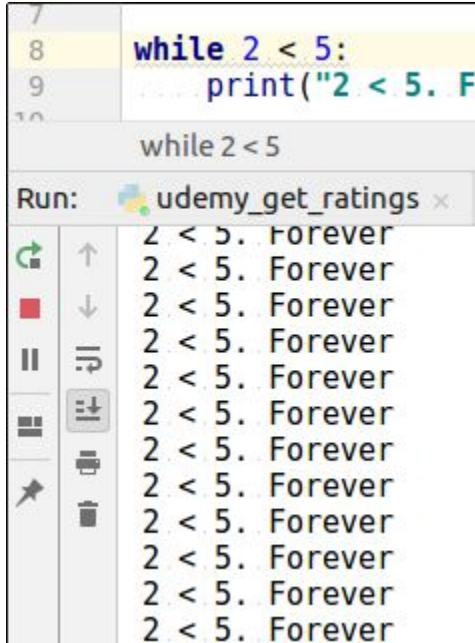
- Loop means circular.
- In our context, it is a way to command the computer to
 - **REPEAT** the same operations till we ask to **STOP**

Recall if condition

```
3 if 2 < 5:  
4     print("2 < 5. Printed once")  
5
```

- This if statement is applied once
- What if we want it repeat forever?

Repeat forEVER



The screenshot shows a code editor with a Python script. Line 8 contains `while 2 < 5:` and line 9 contains `print("2 < 5. Forever")`. Below the code, a console window titled "Run: uduemy_get_ratings" displays the output of the program. The output consists of 12 lines, each containing the text "2 < 5. Forever". The console window also includes a toolbar with various icons for running and debugging the code.

```
7  
8 while 2 < 5:  
9     print("2 < 5. Forever")  
10  
while 2 < 5  
Run: uduemy_get_ratings x  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever  
2 < 5. Forever
```

- While is same logic, but code goes as following
 - Line 8
 - Line 9
 - Line 8
 - Line 9
 - Line 8
 - Line 9
 - For ever
- Notice the red button
 - It means the program is still running!
 - We have to click it to force stop!
- What if wanna it STOP at some time?
 - Change while (condition)

Let's print first 5 numbers

```
1 x = 1
2
3 while x <= 5:
4     # end=' ': print space not \n
5     print(x, end=',')
6     x = x + 1
7
8 # output: 1,2,3,4,5,
```

- Body from lines 3 to 6 repeats as LONG as condition is true ($x \leq 5$)
- Let's trace it
- 3 important parts
 - Line 1 = Initialization
 - Line 3 = Condition
 - Line 6 = increment step
- We call every step: an **iteration**
 - We iterate on

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”