Chapter - 25 Loops in Python

Lesson Objective :

- For loop
- Range() function
- While loop

Skills to be attained : Usage of if-else statement, developing logical thinking.

Tools / Websites / Resources :

1. https://www.onlinegdb.com//
2. gedit text editor in Hitech lab

Teacher Led Instruction :

Loops in Python

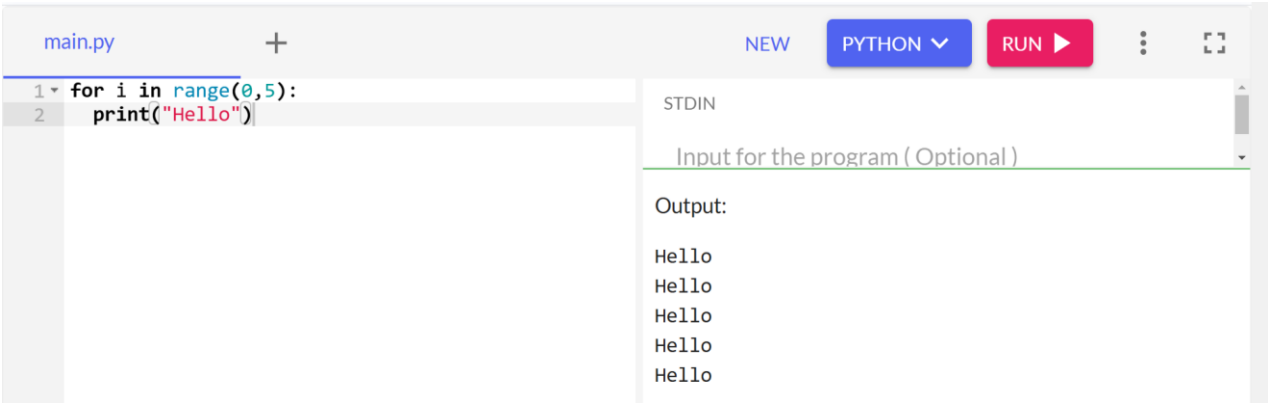
Loops help us repeat actions in Python without writing the same code multiple times.

Imagine you're writing a note to your friend and instead of writing "Hello!" five times, you just say, "Write 'Hello!' five times!" That's what a loop does in programming.

Types of Loops

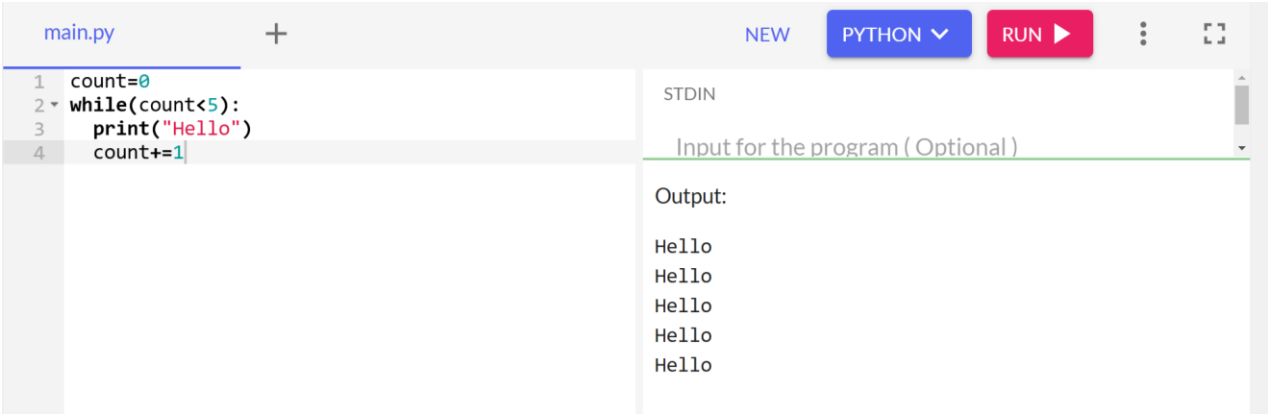
1. **For Loop**

A **'for'** loop helps us repeat something for each item in a list or for a certain number of times. A python code to print the word 'Hello' five times using for loop.



2. **While Loop**

A while loop repeats something as long as a condition is True. A python code to print the word ‘Hello’ five times using while loop.

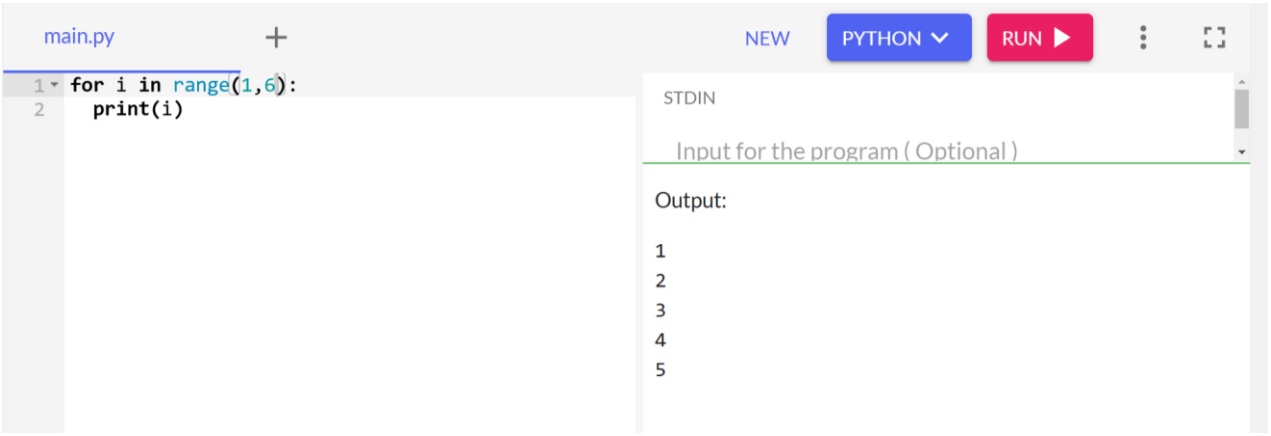


For loop does this task using range function. But while loop does the same task using condition.

Range Function

The range() function gives us a sequence of numbers, which we can use to control how many times a loop runs.

Example:

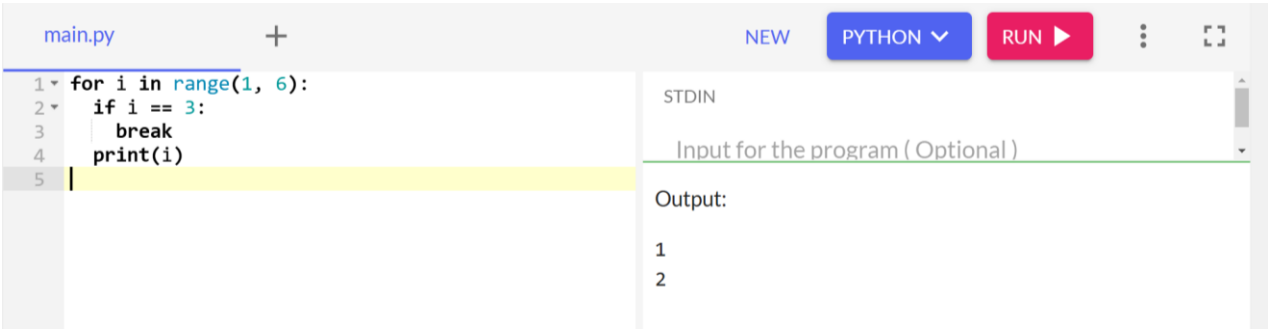


Jump Statements

Sometimes we want to stop a loop early or skip something. That's where jump statements come in.

Break : break stops the loop.

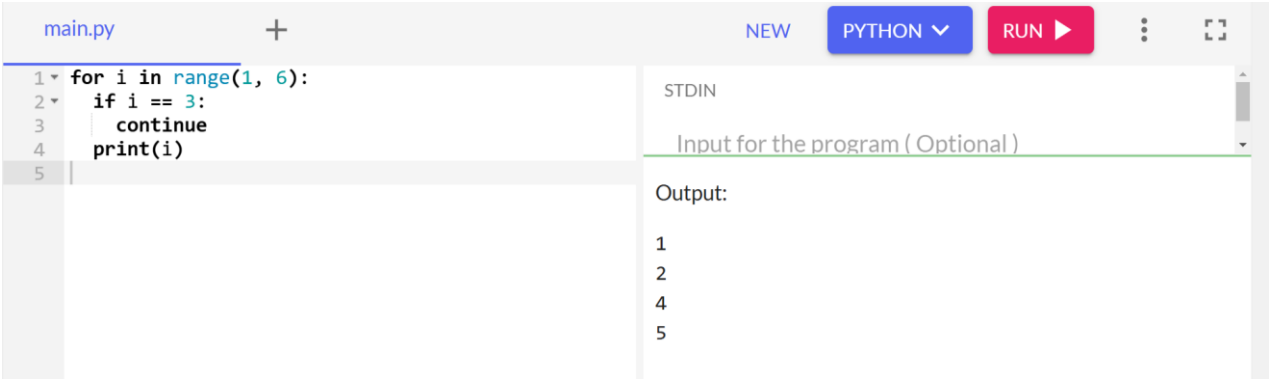
Example:



This will print 1 and 2, then stop when it reaches 3.

Continue : Continue skips one loop and moves on to the next.

Example:



This will print 1, 2, 4, and 5 (it skips 3).

Student Activity :

Activity 1 : Write a code to print your name 10 times.

Activity 2 : Write a code to display numbers from 1 to 10 but skip the numbers 4 and 5.

Conclusion

- Loops help automate repetitive tasks.
- The range() function simplifies iteration, while jump statements like break and continue control the flow of loops.