

Python while Loop

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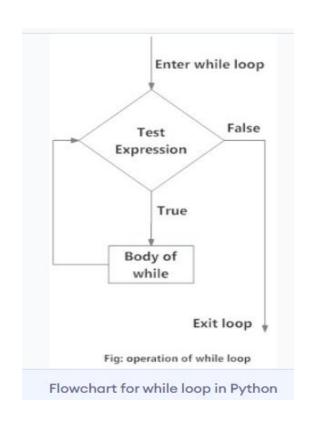
• The while loop is used to **iterate over a block of code** as long as the **test expression** (condition) is **true**.

Syntax

```
while test_expression:
Body of while
```

- In the while loop, test expression is checked first.
- The body of the loop is executed only if the test expression evaluates to True.
- After one iteration, the test expression is checked again.
- This process continues until the test expression evaluates to False.

Flowchart of while Loop



Example: while Loop

```
# Sum of the First n Natural Numbers.
# sum = 1+2+..+n

n = int (input("Enter n: "))
sum = 0
counter = 1
while (counter <= n):
    sum = sum + counter
    counter = counter + 1
print("The sum is ", sum)</pre>
```

Output

```
Enter n: 10
The sum is 55
```

while loop with else

- while loops can also have an optional else block.
- The else part is executed if the condition in the while loop evaluates to False.
- The while loop can be terminated with a break statement. In such cases, the else part is ignored.

Example

```
counter = 0
while (counter < 3):
    print("Inside loop")
    counter = counter + 1
else:
    print("Inside else")</pre>
```

Output

Inside loop Inside loop Inside loop Inside else