



Nested While loop and Control statements



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Control statements

- Statements to control the flow of the loop
- exit a loop completely or skip specific part of a loop
- Types - continue, break and pass

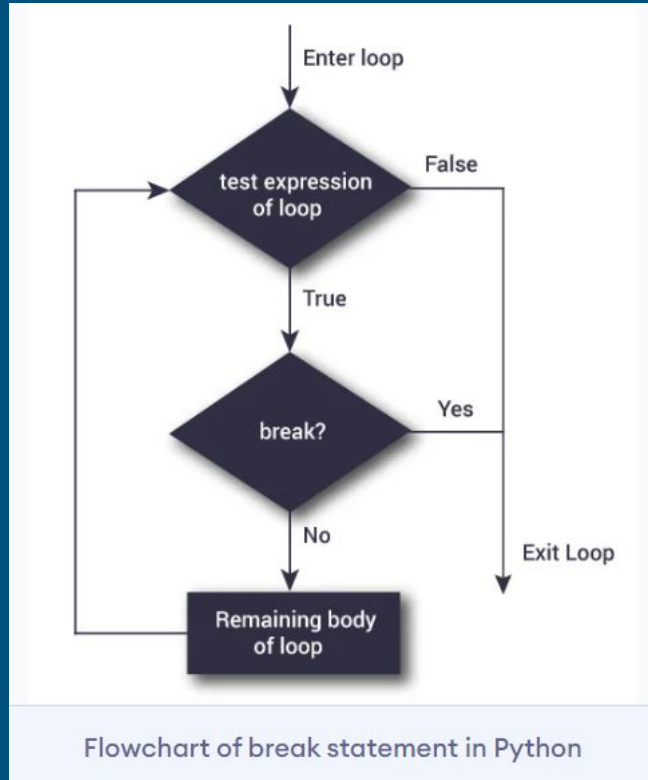
Break statement

The break statement terminates the loop containing it. Control of the program flows to the statement immediately after the body of the loop.

If the break statement is inside a nested loop (loop inside another loop), the break statement will terminate the innermost loop.

Syntax - break

Flowchart



Example

```
# Control statements
# Break
i = 0
while i<10:
    if i == 5:
        break
    print("i is", i)
    i += 1
print("Loop body ends on the line above")
```

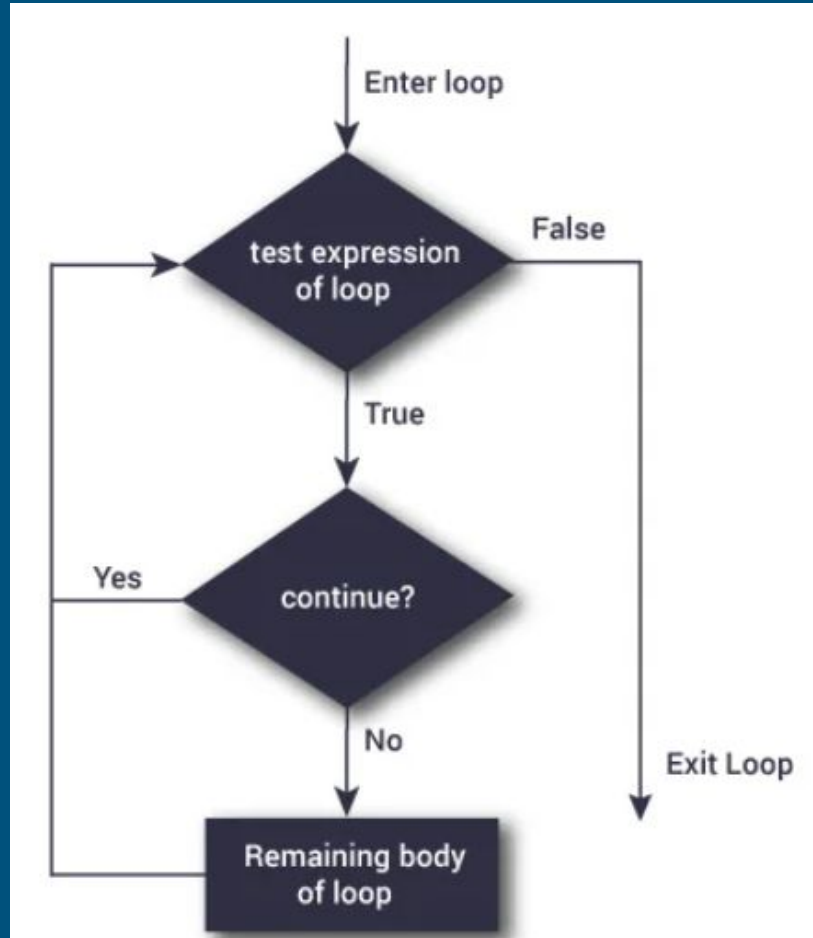
```
i is 0
i is 1
i is 2
i is 3
i is 4
Loop body ends on the line above
>
```

Continue statement

The continue statement is used to skip the rest of the code inside a loop for the current iteration only. Loop does not terminate but continues on with the next iteration.

Syntax - continue

Flowchart



Example

```
# Control statements
# Continue
i = 0
while i<10:
    i += 1
    if i <= 5:
        continue
    print("i is", i)
print("Loop body ends on the line above")
```

```
i is 6
i is 7
i is 8
i is 9
i is 10
Loop body ends on the line above
➤ █
```


Pass statement

In Python programming, the pass statement is a null statement. The difference between a comment and a pass statement in Python is that while the interpreter ignores a comment entirely, pass is not ignored.

However, nothing happens when the pass is executed. It results in no operation (NOP).

Syntax - pass

Example

```
# Pass
i = 0
while i<10:
    if i==5:
        pass
    print("i is", i)
    i += 1
print("Loop body ends on the line above")
```

```
i is 0
i is 1
i is 2
i is 3
i is 4
i is 5
i is 6
i is 7
i is 8
i is 9
Loop body ends on the line above
_
```

Nested while loop

Loop inside a loop

while expression1: # Repeat for N times

while expression2: # Repeat for M times

inner loop body # Will run for N x M times

outer loop body # will run for N times

```
*****  
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*****  
*****
```

```
*  
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*****
```

References

<https://www.programiz.com/python-programming/break-continue>

<https://www.programiz.com/python-programming/pass-statement>