Lab 8

Python Loops

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Main points of loop

- Initialize value .
- End value .
- Condition .
- Increment / Decrement .

Types of Python Loops

- While Loop in Python.
- For Loop in Python.
- Nested Loops.
- Loop Control Statements.

While Loop

While loop structure

- The syntax of while loop in Python is:

Init value

While condition :

body of while statements

Increment / Decrement

Cont..

- With the while loop we can execute a set of statements as long as a condition is true.

```
i = 0
while i < 3:
    print("hello")
    i += 1
```

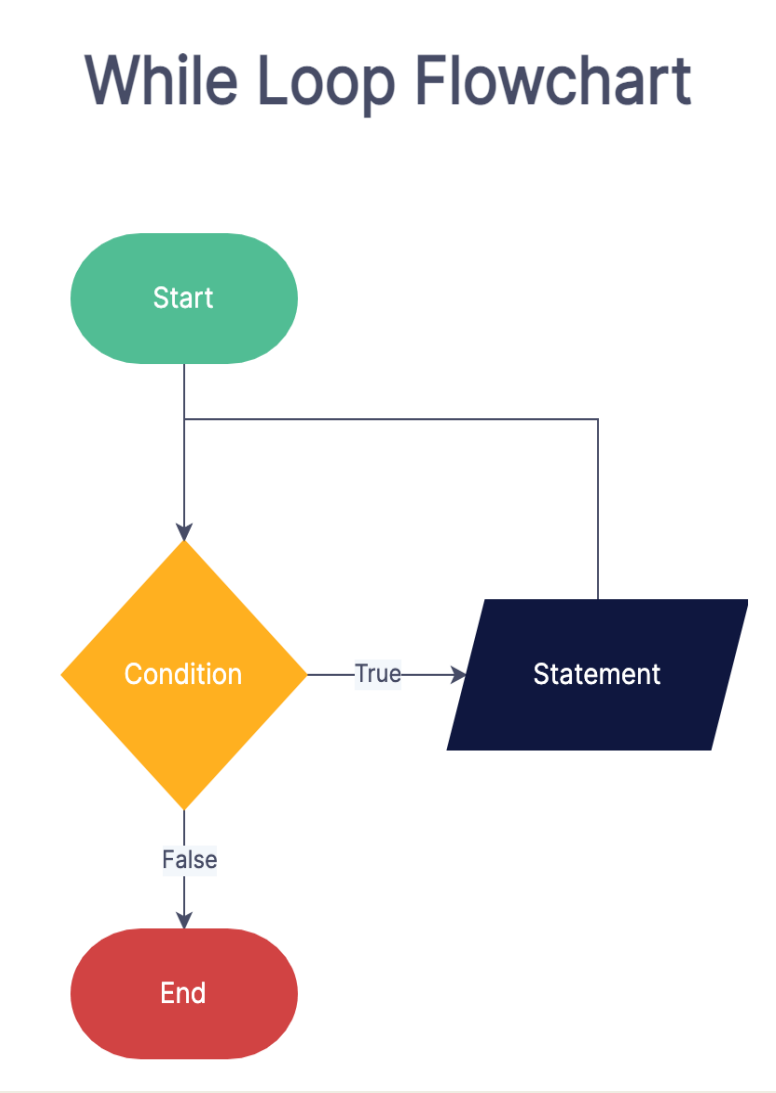
```
hello
hello
hello
```

Flow while loop diagram

- The while evaluates condition.
- If condition is evaluated to True,

  the code inside the body of while is executed.
- If condition is evaluated to False,

  go out of while loop .



Example 1

- Write python program to print numbers from (0 – 10)

```
i = 0
while i <= 10:
    print(i,end="\t")
    i += 1
```

- **Output**

```
C:\Users\SuperLap\PycharmProjects\pythonProject\ver
0    1    2    3    4    5    6    7    8    9    10
Process finished with exit code 0
```

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.
- **Syntax of While Loop with else statement:**

```
while condition:

    # execute these statements

else:

    # execute these statements
```

Example 2

- What the output of following program.

```
count = 0
while count < 3:
    count = count + 1
    print("Hello every one")
else:
    print("In Else Block")

print("you out of while block")
```

Cont..

- Output

```
C:\Users\SuperLap\PycharmProjects\p
Hello every one
Hello every one
Hello every one
In Else Block
you out of while block
```

Infinite While Loop in Python

- First program :

```
count = 0
while count == 0:
    print("Hello every body")
```

- Second program :

```
i = 0
while i < 5:
    print("infinite loop")
    i -=1
```

The break Statement

- With the break statement we can stop the loop even if the while condition is true:

```
while True:
    num = int (input("select 0 key to stop program"))
    if num == 0 :
        break
    else:
        print("error enter again")
```

Example 3

- What the output of following program.

```
i = 0
while i < 10:
    if i > 5:
        break
    print(i,end="\t")
    i +=1
```

The continue Statement

- With the continue statement we can stop the current iteration, and continue with the next:

```
i = -1
while i < 10:
    i += 1
    if i == 5:
        continue
    print(i,end="\t")
```


GOOD LUCK