

CONDITIONAL AND CONTROL STATEMENTS

CONDITIONAL STATEMENTS

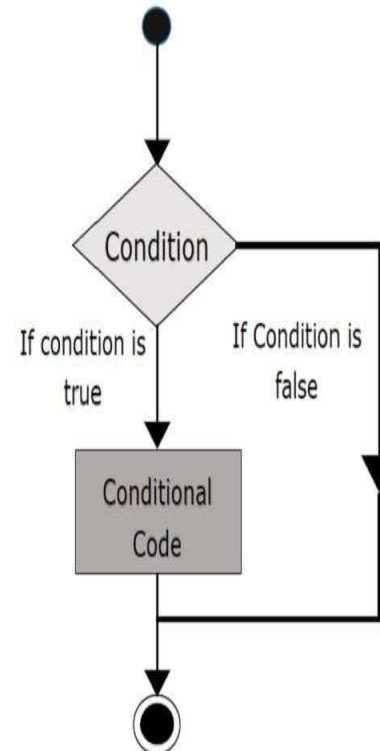
- The basic decision statements criteria for selection
- In conditional statements are answered in True or False.
- Python provides many conditional statements.

- **if statement**
- **if...else statement**
- **if...elif...else statement**
- **Nested if..else statement**

The if statement

- 'if statement is a decision making statement.
- It is used to control the flow of execution of the statements and to test logically whether the condition is true or false.

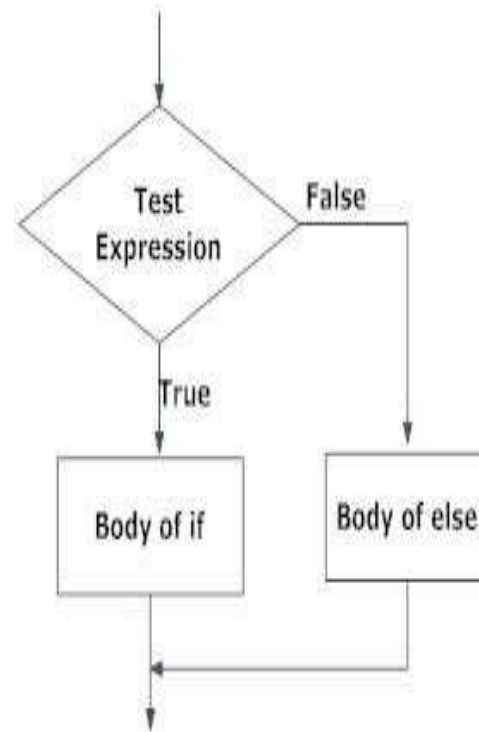
if test
expression:
statement(s)



If ... else statement

The if...else statement is called alternative execution, in which there are two possibilities and the condition determines which one gets executed.

```
if test expression:  
    Body of if  
else:  
    Body of else
```



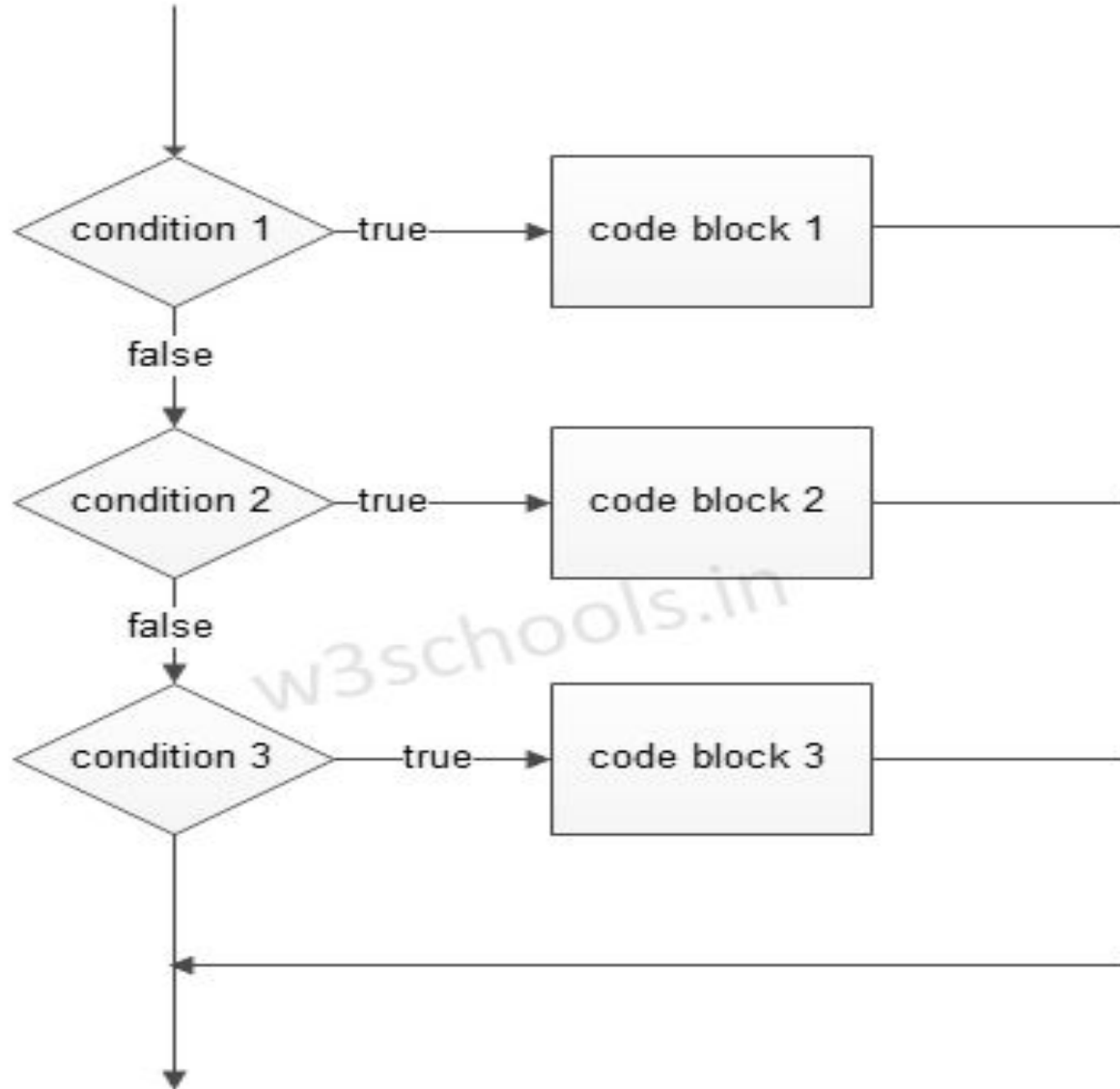
elif Statements

- elif – is used in replacement of ‘else if’ to place another condition in the program. This is called chained conditions.
- Chained conditions allows more than two possibilities and need more than two branches.

```
if expression:  
    Body of if  
elif expression:  
    Body of elif  
else:  
    Body of else
```



Figure – elif condition Flowchart



CONTROL (Looping Statement)

- Program statement are executed sequentially one after another.
- These are repetitive program codes, the computers have to perform to complete tasks. The following are the loop structures available in python.

□ for loop statement

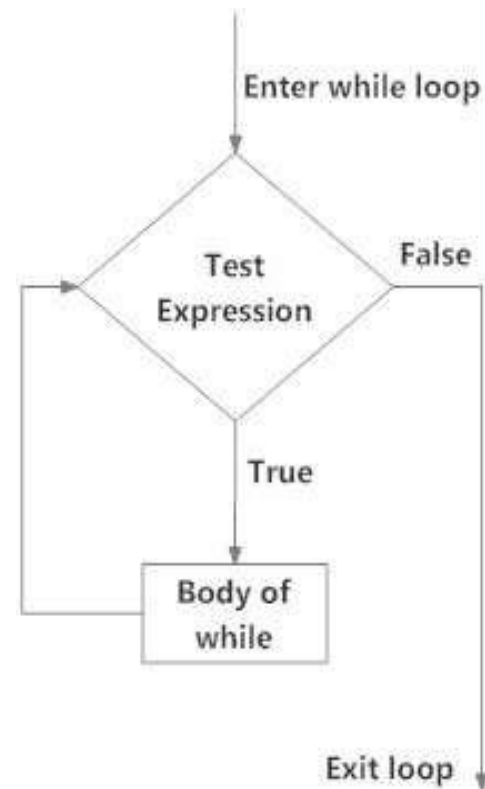
□ while statement

□ Nested loop statement

While loop statement

- A while loop statement is repeatedly executes a target statement as long as a given condition is true.
- Syntax of while loop

while expression:
statement(s)



Using else statement with while loops

- The else statement is associated with a loop structure.
- If else statement is used with a while loop, the else statement is executed when the condition is false.

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

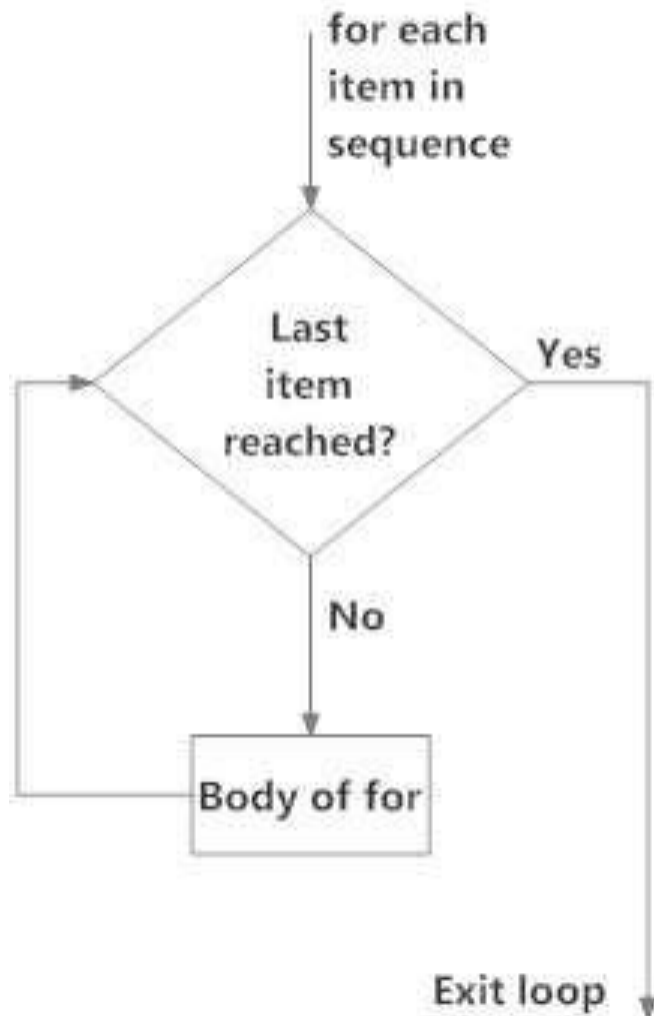
OUTPUT
Inside loop
Inside loop
Inside loop
Outside loop

For loop statement

- A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).
- This works more like an iterator method as found in other object-orientated programming languages.

```
for val in sequence:  
    Body of for loop
```

For loop flow chart



- Addition of number using for loop
- `numbers = [6, 5, 3, 8, 4, 2, 5, 4]`
- `sum1 = 0`
- `for val in numbers:`
`sum1 = sum1+val`
- `print("The sum is", sum1)`

OUTPUT

The sum is 37

Sum of number

```
num = int(input("Enter a number: ")) sum = 0
while(num > 0):
    sum = sum+num
    num = num-1
print("The sum is",sum)
```

OUTPUT

Enter a number: 10

The sum is 55

for Loop and for Loop with else- Examples

```
genre = ['pop', 'rock', 'jazz']
```

```
for i in range(len(genre)):
```

```
    print("I like", genre[i])
```

OUTPUT

I like pop
I like rock
I like jazz

EX-02:

```
genre = ['pop', 'rock', 'jazz']
```

```
for i in range(len(genre)):
```

```
    print("I like", genre[i])
```

```
else:
```

```
    print("No items left.")
```

OUTPUT

I like pop
I like rock
I like jazz
No items left.

Checking Odd or Even numbers

```
num = int(input("Enter the number:"))  
if (num % 2) == 0:  
    print ("Given number is Even")  
else:  
    print(" Given number is Odd")
```

OUTPUT

Enter the number: 9 Given
number is Odd

Example: largest among three numbers

```
a = int(input("Enter 1st number:"))  
b= int(input("Enter 2nd number:"))  
c= int(input("Enter 3rd number:"))  
  
if (a > b) and (a > c):  
    print("a is greater")  
elif (b > a) and (b < c):  
    print("b is greater")  
else:  
    print("c is greater")
```

OUTPUT

Enter 1st number:10

Enter 2nd number:25

Enter 3rd number:15

B is greater

Quiz section



1. What are the CONDITIONAL STATEMENTS ?
2. What are the types of operators?
3. Practice on Notebook the statement below-
 - The if statement
 - If ... else statement
 - elif Statements
 - While loop statement
 - For loop statement
 - else statement with while loops
 - for Loop and for Loop with else
3. Define and draw flow charts for different statements
4. Save the file and rename it