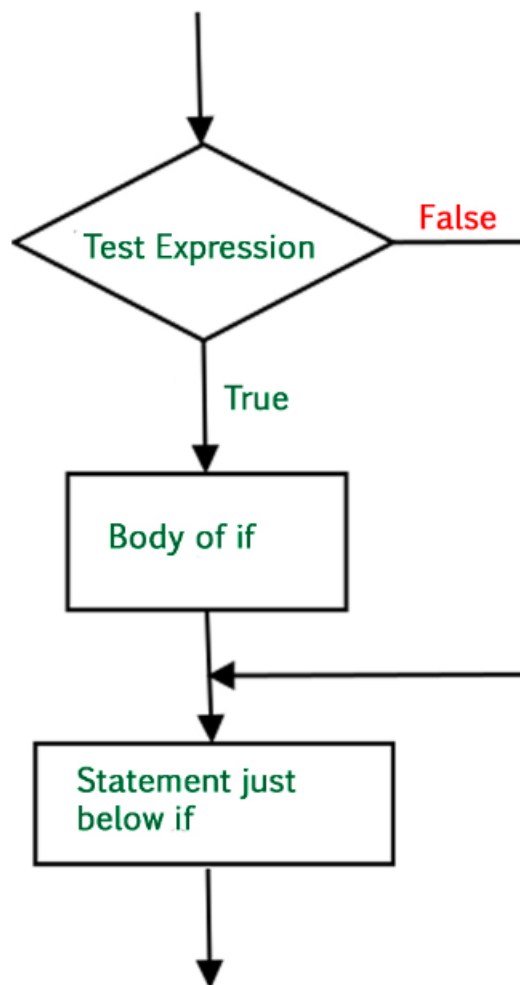


## Python If Statement

- The if statement is the most simple decision-making statement. It is used to decide whether a certain statement or block of statements will be executed or not.

### Flowchart of If Statement

Let's look at the flow of code in the Python If statements.



## Syntax of If Statement in Python

- Here, the condition after evaluation will be either true or false. if the statement accepts boolean values – if the value is true then it will execute the block of statements below it otherwise not.

```
#if syntax Python

if condition:
    # Statements to execute if
    # condition is true
```

## Example of Python if Statement

- As the condition present in the if statements in Python is false. So, the block below the if statement is executed.

```
# python program to illustrate If statement
i = 10

if (i > 15):
    print("10 is less than 15")
print("I am Not in if")
```

**Output:**

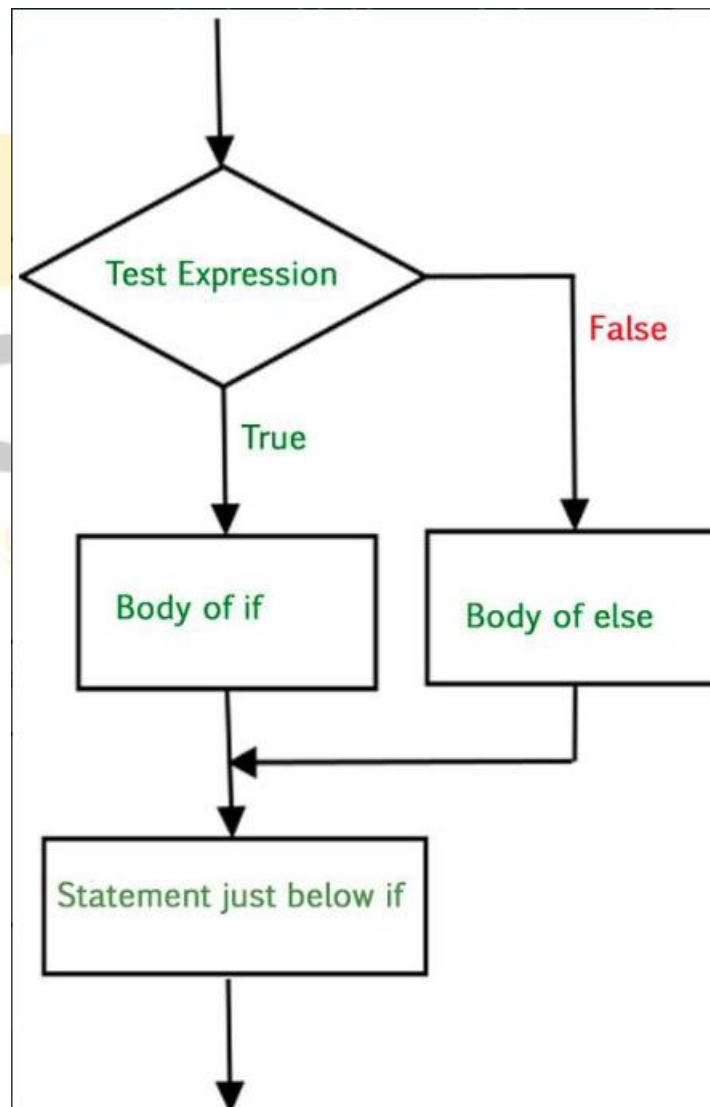
```
I am Not in if
```

## Python If Else Statement

- The if statement alone tells us that if a condition is true it will execute a block of statements and if the condition is false it won't. But if we want to do something else if the condition is false, we can use the else statement with the if statement Python to execute a block of code when the Python if condition is false.

## Flowchart of If Else Statement

Let's look at the flow of code in an if else Python statement.



## Syntax of If Else in Python

```
if (condition):  
    # Executes this block if  
    # condition is true  
else:  
    # Executes this block if  
    # condition is false
```

### Example of Python If Else Statement

- The block of code following the else if in Python, the statement is executed as the condition present in the if statement is false after calling the statement which is not in the block(without spaces).

```
# python program to illustrate else if in Python statement  
#!/usr/bin/python  
  
i = 20  
if (i < 15):  
    print("i is smaller than 15")  
    print("i'm in if Block")  
else:  
    print("i is greater than 15")  
    print("i'm in else Block")  
print("i'm not in if and not in else Block")
```

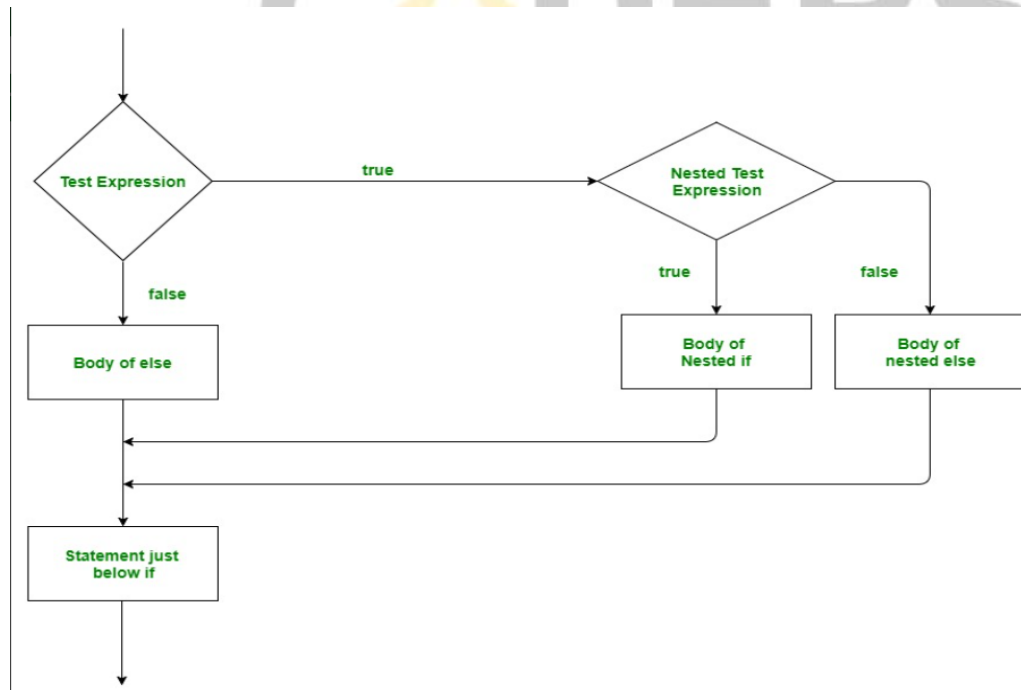
## Output:

```
i is greater than 15  
i'm in else Block  
i'm not in if and not in else Block
```

## Python Nested If Statement

- A nested if is an if statement that is the target of another if statement. Nested if statements mean an if statement inside another if statement.
- Yes, Python allows us to nest if statements within if statements. i.e., we can place an if statement inside another if statement.

## Flowchart of Python Nested if Statement



## Syntax:

```
if (condition1):  
    # Executes when condition1 is true  
    if (condition2):  
        # Executes when condition2 is true  
    # if Block is end here  
# if Block is end here
```

## Example of Python Nested If Statement

- In this example, we are showing nested if conditions in the code, All the If condition in Python will be executed one by one.

```
# python program to illustrate nested If statement
```

```
i = 10  
if (i == 10):  
  
    # First if statement  
    if (i < 15):  
        print("i is smaller than 15")  
  
    # Nested - if statement  
    # Will only be executed if statement above  
    # it is true  
    if (i < 12):  
        print("i is smaller than 12 too")  
    else:  
        print("i is greater than 15")
```

## Output:

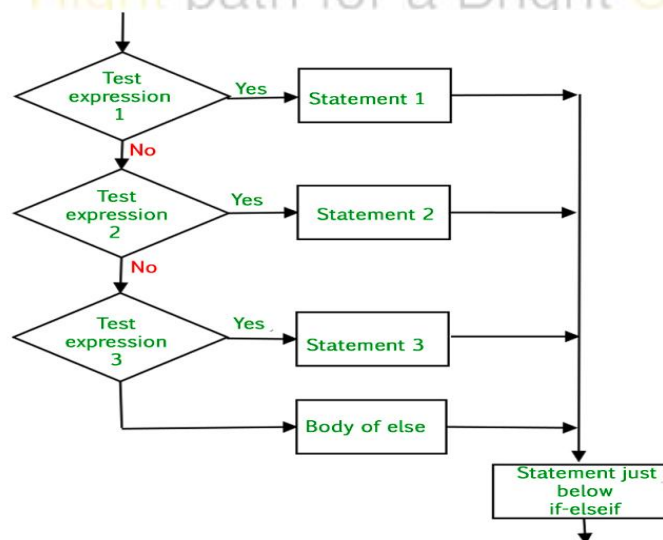
```
i is smaller than 15  
i is smaller than 12 too
```

## Python Elif

- Here, a user can decide among multiple options. The if statements are executed from the top down.
- As soon as one of the conditions controlling the if is true, the statement associated with that if is executed, and the rest of the ladder is bypassed. If none of the conditions is true, then the final “else” statement will be executed.

## Flowchart of Elif Statement in Python

Let's look at the flow of control in if-elif-else ladder:



### Syntax:

```
if (condition):  
    statement  
elif (condition):  
    statement  
.  
.  
else:  
    statement
```

### Example of Python if-elif-else ladder

In the example, we are showing single if in Python, multiple elif conditions, and single else condition.

```
# Python program to illustrate if-elif-else ladder  
#!/usr/bin/python  
  
i = 25  
if (i == 10):  
    print("i is 10")  
elif (i == 15):  
    print("i is 15")  
elif (i == 20):  
    print("i is 20")  
else:  
    print("i is not present")
```



Output:

```
i is not present
```

## Ternary Statement | Short Hand If Else Statement

- Whenever there is only a single statement to be executed inside the if block then shorthand if can be used. The statement can be put on the same line as the if statement.

### Example of Short Hand If Else Statements

This can be used to write the if-else statements in a single line where only one statement is needed in both the if and else blocks.

**Syntax:** `statement_when_True if condition else statement_when_False`

In the given example, we are printing True if the number is 15, or else it will print False.

```
1 # Python program to illustrate short hand if-else
2 i = 10
3 res = "True" if i < 15 else "False"
4 print(res)
```

Output

```
True
```