

Programming with Python 3

Conditional Statements in Python

Conditional Statements in Python

- Decision-making in a programming language is automated using conditional statements, in which Python evaluates the code to see if it meets the specified conditions
- **Python has six conditional statements**
 - If the statement
 - If else statement
 - Nested if statement
 - If...Elif ladder
 - Short Hand if statement
 - Short Hand if-else statement

If Statement

- ▶ It is executed based on whether it meets the specified condition. It has a code body that only executes if the condition in the if statement is true.
- ▶ The statement can be a single line or a block of code.
- ▶ The if statement in Python has the subsequent syntax:

```
if expression  
    Statement
```

If Else Statement

- ▶ This statement is used when both the true and false parts of a given condition are specified to be executed.
- ▶ When the condition is true, the statement inside the if block is executed; if the condition is false, the statement outside the if block is executed.
- ▶ The if...Else statement in Python has the following syntax:

```
if condition :  
    #Will executes this block if the condition is true  
else :  
    #Will executes this block if the condition is false
```

If...Elif..else Statement

- ▶ In this case, the If condition is evaluated first. If it is false, the Elif statement will be executed;
- ▶ if it also comes false, the Else statement will be executed.
- ▶ The If...Elif..else statement in Python has the subsequent syntax:

```
if condition :  
    Body of if  
elif condition :  
    Body of elif  
else:  
    Body of else
```

Nested IF Statement

- ▶ A Nested IF statement is one in which an If statement is nestled inside another If statement.
- ▶ This is used when a variable must be processed more than once. If, If-else, and If...elif...else statements can be used in the program.
- ▶ In Nested If statements, the indentation (whitespace at the beginning) to determine the scope of each statement should take precedence.
- ▶ The Nested if statement in Python has the following syntax:

```
if (condition1):  
    #Executes if condition 1 is true  
    if (condition 2):  
        #Executes if condition 2 is true  
        #Condition 2 ends here  
    #Condition 1 ends here
```

Short Hand if statement

- ▶ Short Hand if statement is used when only one statement needs to be executed inside the if block.
- ▶ This statement can be mentioned in the same line which holds the If statement.
- ▶ The Short Hand if statement in Python has the following syntax:

```
if condition: statement
```

- Example for better understanding

```
i=15
# One line if statement
if i>11 : print ("i is greater than 11")
The output of the program : "i is greater than 11."
```

Short Hand if-else statement

- ▶ It is used to mention If-else statements in one line in which there is only one statement to execute in both if and else blocks.
- ▶ In simple words, If you have only one statement to execute, one for if, and one for else, you can put it all on the same line.
 - Examples for better understanding:

```
a = 3
b = 5
print("A") if a > b else print("B")
output: B
```


Thank you
