

PYTHON DECISION MAKING

PRESENT BY



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WHAT IS DECISION MAKING

- ↪ Decision making is anticipation of conditions occurring while execution of the program and specifying actions taken according to the conditions.
- ↪ Decision structures evaluate multiple expressions which produce **TRUE or FALSE** as outcome.
- ↪ You need to determine which action to take and which statements to execute if outcome is **TRUE or FALSE** otherwise.
- ↪ Python programming language assumes any non-zero and non-null values as TRUE, and if it is either zero or null, then it is assumed as FALSE value.



TYPE OF DECISION MAKING

In Python we can achieve decision making by using the below statements –

- 1 if statement
- 2 if - else statement
- 3 elif statement
- 4 nested if statement



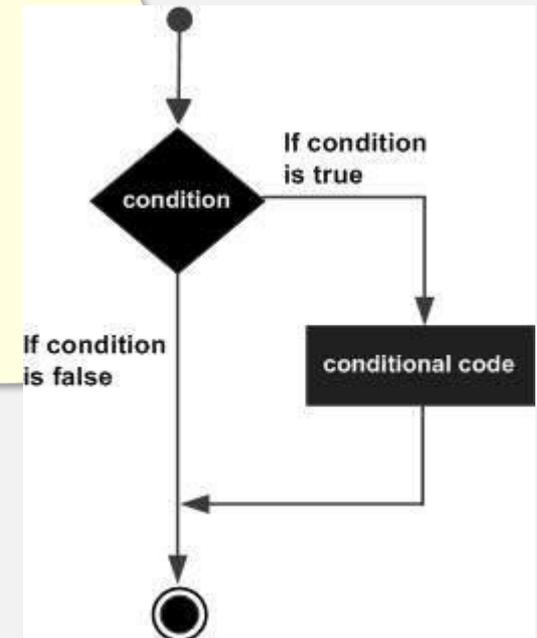
PYTHON IF STATEMENT

It is similar to that of other languages. The if statement contains a logical expression using which data is compared and a decision is made based on the result of the comparison.

The *if* condition evaluates a Boolean expression and executes the block of code only when the Boolean expression becomes **TRUE**.

SYNTAX

```
if (expression):  
    statement(s)
```



PYTHON IF STATEMENT EXAMPLE

PROGRAM

```
a = int(input("Enter The Value of A: "))  
if(a <= 10):  
    print("Condition is True")
```

OUTPUT

```
Enter The Value of A : 8  
Condition is True
```

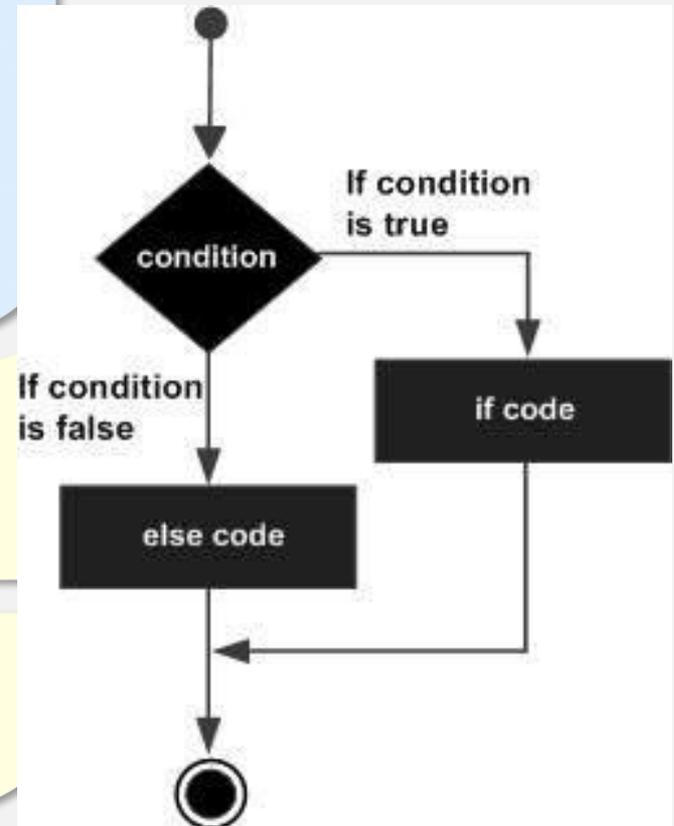


PYTHON IF ELSE STATEMENT

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

SYNTAX

```
if (expression):  
    statement(s)  
else:  
    statement(s)
```



PYTHON IF ELSE STATEMENT EXAMPLE

PROGRAM

```
a = int(input("Enter The Value of A : "))  
if(a <= 10):  
    print("Condition is True")  
else:  
    print("Condition is False")
```

OUTPUT

```
Enter The Value of A : 12  
Condition is False
```



PYTHON ELIF STATEMENT

Elif statement is used to check multiple conditions only if the given if condition false. It's similar to an if-else statement and the only difference is that in else we will not check the condition but in elif we will do check the condition.

SYNTAX

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

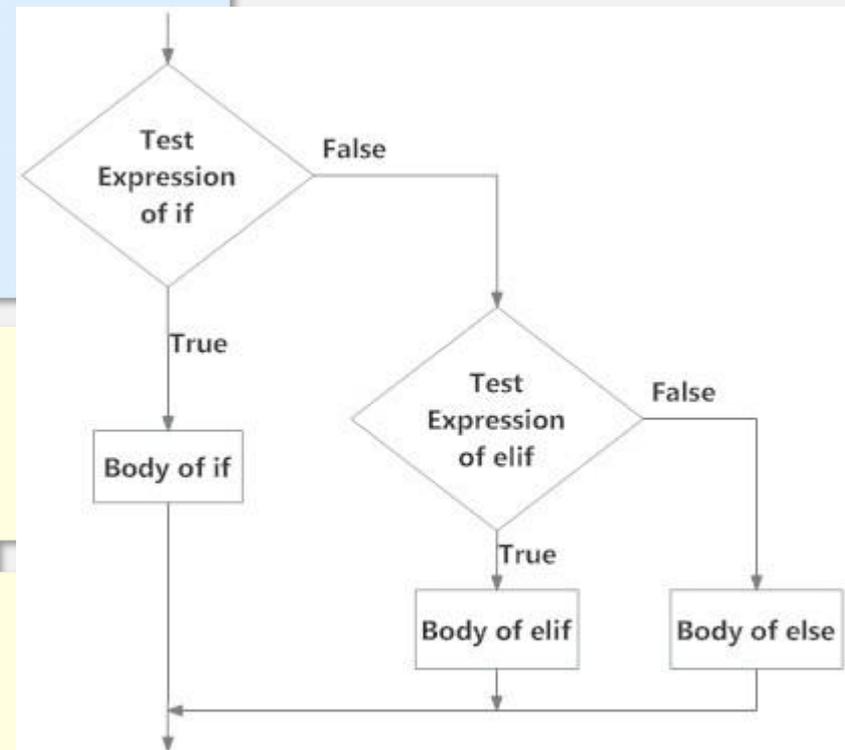


Fig: Operation of if...elif...else statement

PYTHON ELIF STATEMENT EXAMPLE

PROGRAM

```
num = 10
if (num == 0):
    print("Number is Zero")
elif (num > 5):
    print("Number is greater than 5")
else:
    print("Number is smaller than 5")
```

OUTPUT

Number is greater than 5



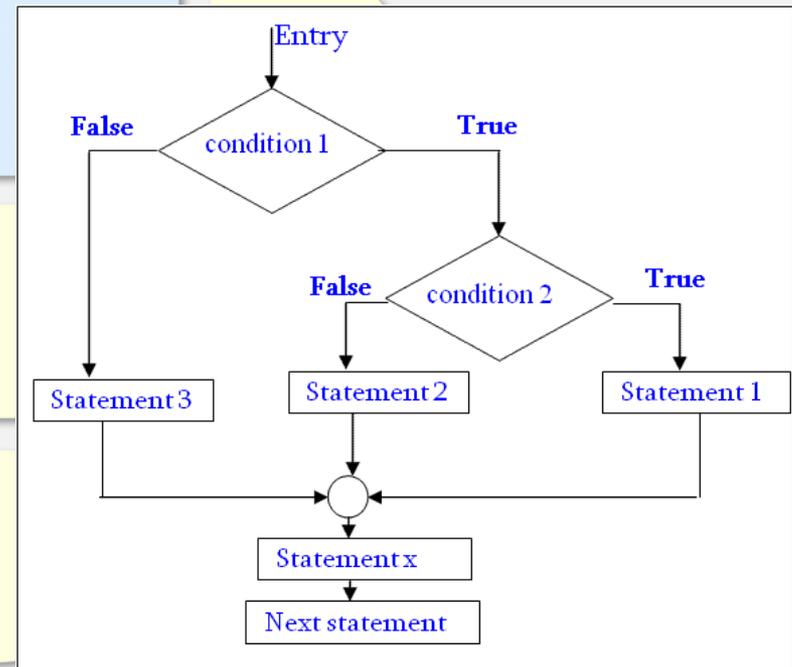
PYTHON NESTED IF STATEMENT

We can write an entire **if... else** statement in another **if... else** statement called nesting, and the statement is called nested if.

In a nested if construct, you can have an **if...elif...else** construct inside another **if...elif...else** construct.

SYNTAX

```
if(condition):  
    statements(s)  
    if(condition):  
        statements(s)  
    else:  
        statements(s)  
else:  
    statements(s)
```



PYTHON NESTED IF STATEMENT EXAMPLE

PROGRAM

```
num = int(input("Enter a number: "))
if num >= 0:
    if num == 0:
        print("Zero")
    else:
        print("Positive number")
else:
    print("Negative number")
```

OUTPUT

```
Enter a number: 5
Positive number
```





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Happy Learning



