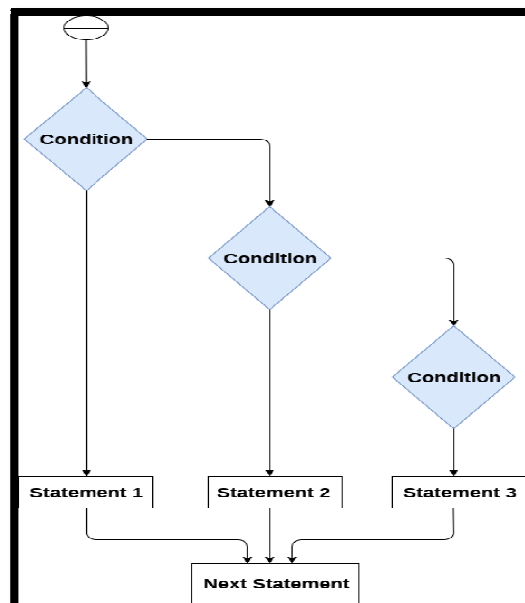
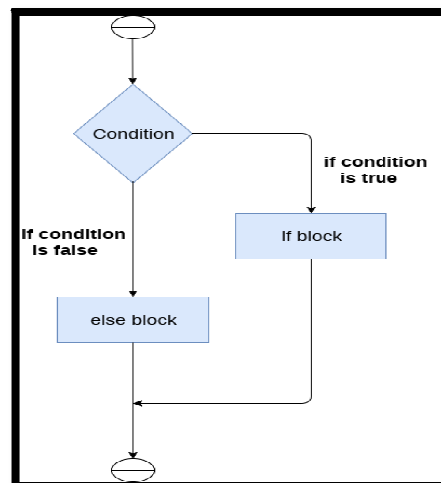
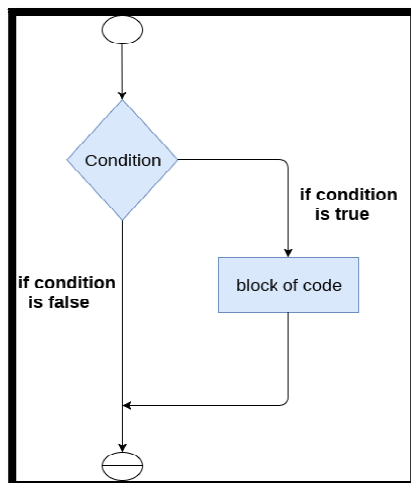


## Python 3.7.4 Tutorial Notes

### Decision making

Decision making is the most important aspect of almost all the programming languages. As the name implies, decision making allows us to run a particular block of code for a particular decision. Here, the decisions are made on the validity of the particular conditions. Condition checking is the backbone of decision making.

Statement	Description
<b>If Statement</b>	The if statement is used to test a specific condition. If the condition is true, a block of code (if-block) will be executed.
<b>If - else Statement</b>	The if-else statement is similar to if statement except the fact that, it also provides the block of the code for the false case of the condition to be checked. If the condition provided in the if statement is false, then the else statement will be executed.
<b>Nested if Statement</b>	Nested if statements enable us to use if ? else statement inside an outer if statement.



## Conditional (if):

The if statement contains a logical expression using which data is compared and a decision is made based on the result of the comparison.

Syntax:

if expression:

statement(s)

If the boolean expression evaluates to TRUE, then the block of statement(s) inside the if statement is executed. If boolean expression evaluates to FALSE, then the first set of code after the end of the if statement(s) is executed.

### if Statement Flowchart:

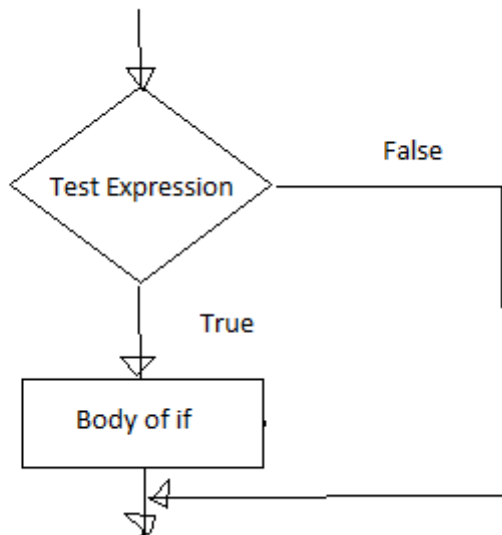


Fig: Operation of if statement

### Example: Python if Statement

```
a = 3
if a > 2:
    print(a, "is greater")
print("done")
```

```
a = -1
if a < 0:
    print(a, "a is smaller")
print("Finish")
```

### Output:

C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/if1.py

3 is greater

done

-1 a is smaller

Finish

-----

a=10

if a>9:

    print("A is Greater than 9")

### **Output:**

C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/if2.py

A is Greater than 9

### **Alternative if (If-Else):**

An else statement can be combined with an if statement. An else statement contains the block of code (false block) that executes if the conditional expression in the if statement resolves to 0 or a FALSE value.

The else statement is an optional statement and there could be at most only one else Statement following if.

### **Syntax of if - else :**

    if test expression:

        Body of if stmts

    else:

        Body of else stmts

### **If - else Flowchart :**

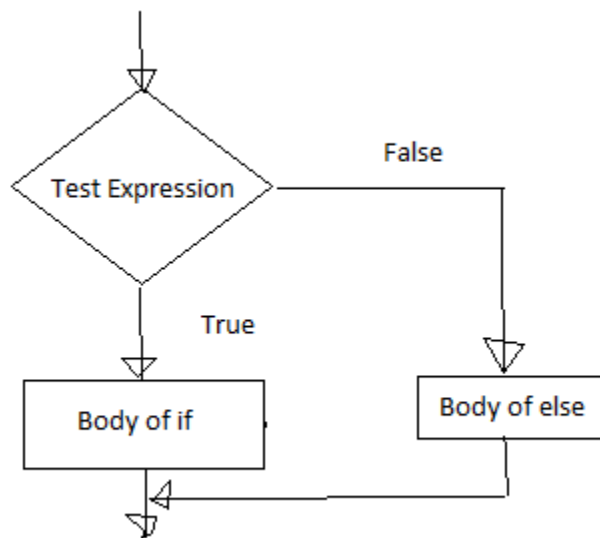


Fig: Operation of if – else statement

### Example of if - else:

```
a=int(input('enter the number'))
if a>5:
    print("a is greater")
else:
    print("a is smaller than the input given")
```

### Output:

```
C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/ifelse.py
enter the number 2
a is smaller than the input given
```

---

```
a=10
b=20
if a>b:
    print("A is Greater than B")
else:
    print("B is Greater than A")
```

### Output:

```
C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/if2.py
B is Greater than A
```

### Chained Conditional: (If-elif-else):

The elif statement allows us to check multiple expressions for TRUE and execute a block of code as soon as one of the conditions evaluates to TRUE. Similar to the else, the elif statement is optional. However, unlike else, for which there can be at most one statement, there can be an arbitrary number of elif statements following an if.

#### Syntax of if – elif - else :

If test expression:

    Body of if stmts

elif test expression:

    Body of elif stmts

else:

    Body of else stmts

#### Flowchart of if – elif - else:

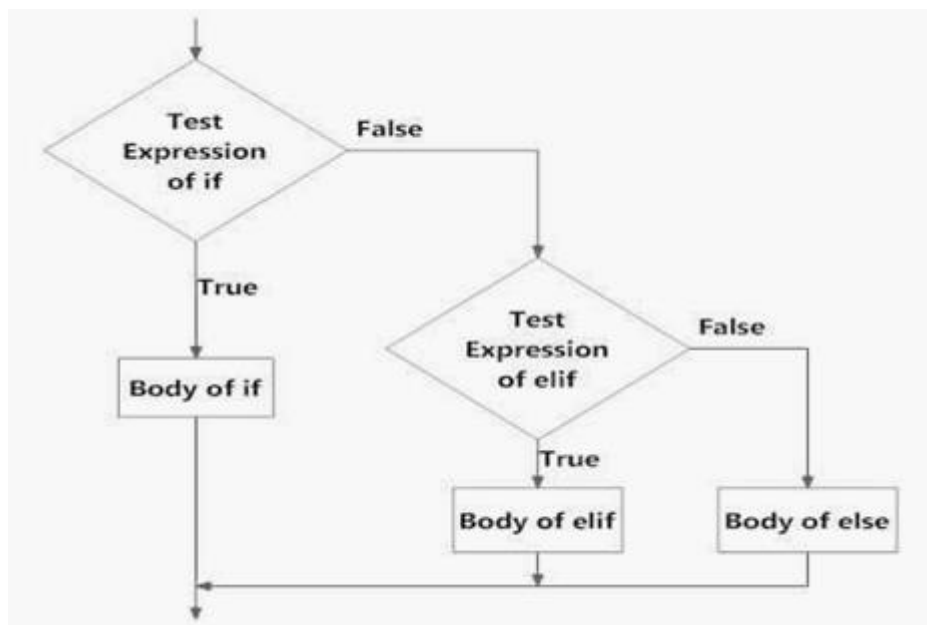


Fig: Operation of if – elif - else statement

#### Example of if - elif – else:

```
a=int(input('enter the number'))
b=int(input('enter the number'))
c=int(input('enter the number'))
if a>b:
```

```
    print("a is greater")
elif b>c:
    print("b is greater")
else:
    print("c is greater")
```

**Output:**

C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/ifelse.py

enter the number5

enter the number2

enter the number9

a is greater

>>>

C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/ifelse.py

enter the number2

enter the number5

enter the number9

c is greater

-----  
var = 100

if var == 200:

print("1 - Got a true expression value")

print(var)

elif var == 150:

print("2 - Got a true expression value")

print(var)

elif var == 100:

print("3 - Got a true expression value")

print(var)

else:

print("4 - Got a false expression value")

print(var)

print("Good bye!")

**Output:**

C:/Users/MRCET/AppData/Local/Programs/Python/Python38-32/pyyy/ifelif.py

3 - Got a true expression value

100

Good bye!