

* Conditional statements :-

1. If
2. If else.
3. If else ladder (else-if ladder)
4. nested if else.

1) if statement :-

used when you want to run a block of code, only if a condition is true

ex:- age = 20

if age >= 18:

print ("you are eligible to vote.")

2) if - else statement.

used when you want to run one block if condition is true, and another block if it is false.

ex:-

age = 15

if age >= 18:

print ("you are eligible to vote.")

else:

print ("you are not eligible to vote.")

3) if - elif - else ladder (else-if ladder)

* used when you need to check multiple conditions one by one.
• first true condition executes, rest are ignored.

ex:- marks = 72

if marks >= 90:

print ("Grade A")

elif marks >= 75:

print ("Grade B")

elif marks >= 50:

print ("Grade C")

else:

print ("Grade D").

4) Nested if - else:-

* means an if statement inside another if or else block.
• useful for checking dependent conditions.

ex:- age = 25

citizen = True.

if age >= 18:

if citizen:

print ("you are eligible to vote.")

else:

print ("you must be a citizen to vote.")

else:

print ("you are not eligible to vote.").

- * if → single condition
- if - else → two-way decision
- if - elif - else ladder → multiple conditions.
- nested if - else → condition inside another condition.

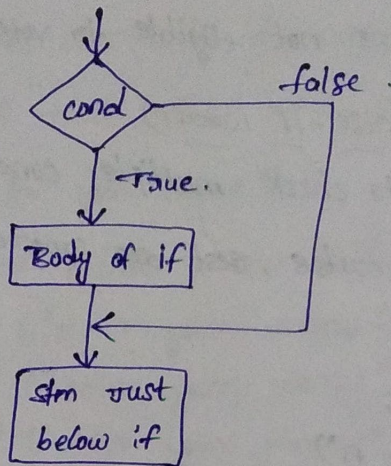
Block diagrams of Conditional statements:-

1) if stm:-

An if stm is used when a block of code needs to be executed only if a specific condition evaluates to true.

Syntax:- if condition:

statement to execute if condition is true.



ex:- if $10 > 5$:

print ("10 greater than 5")
print ("program ended").

o/p:- 10 greater
program c

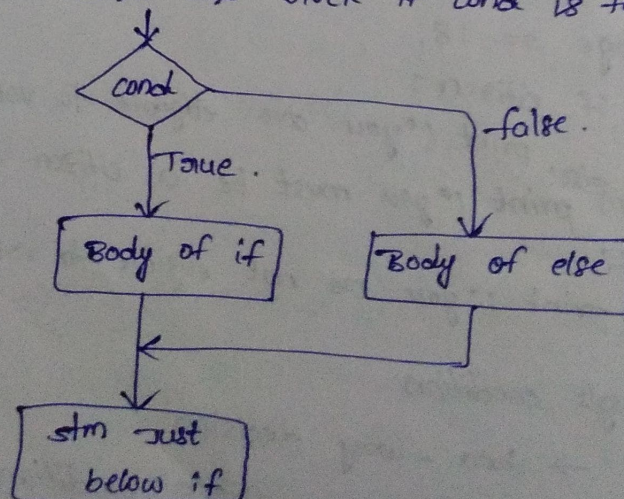
2) if else stm:-

In additional if stm the additional block of code is merged else stm which is performed when if condition is false.

Syntax:- if (condition):

executes this block if cond is true.
else:

executes this block if cond is false.



ex:- $x = 3$
 if $x == 4$:
 print ("yes")
 else:
 print ("No").

o/p:- No

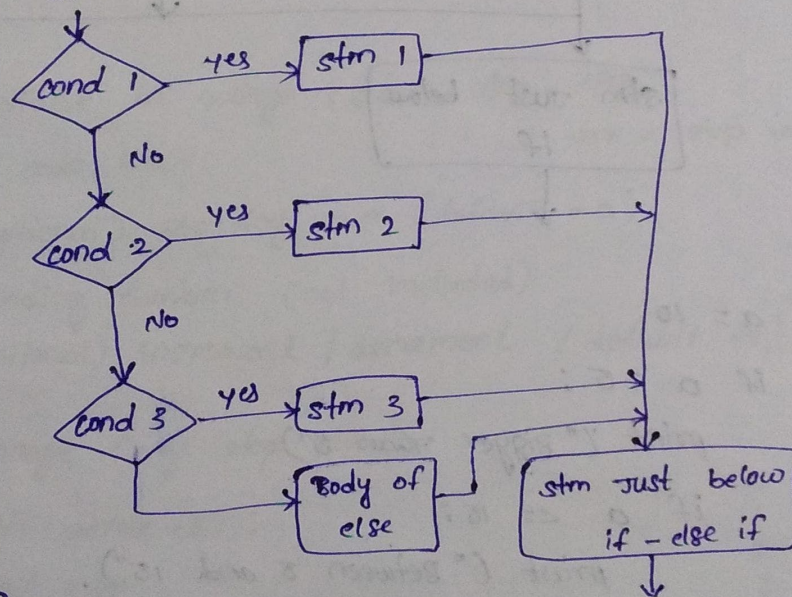
3) if - elif stm:-

The if - elif stm is a shortcut for chaining multiple if - else cond. when using if - elif stm at the end else block is added which is performed if none of above if - elif stm is true.

syntax:- if (condition):

 stm
 elif (condition):

 stm
 else:
 stm



ex:- $x = 10$
 $y = 5$
 if $x > 5$:

 if $y > 5$:

 print ("x is greater than 5")

 elif $y == 5$

 print ("x is greater than 5 and y is 5")

 else:

 print ("x is greater than 5 and y is less than 5").

o/p:-

x is greater than 5 and y is 5.

4) Nested if stm:-

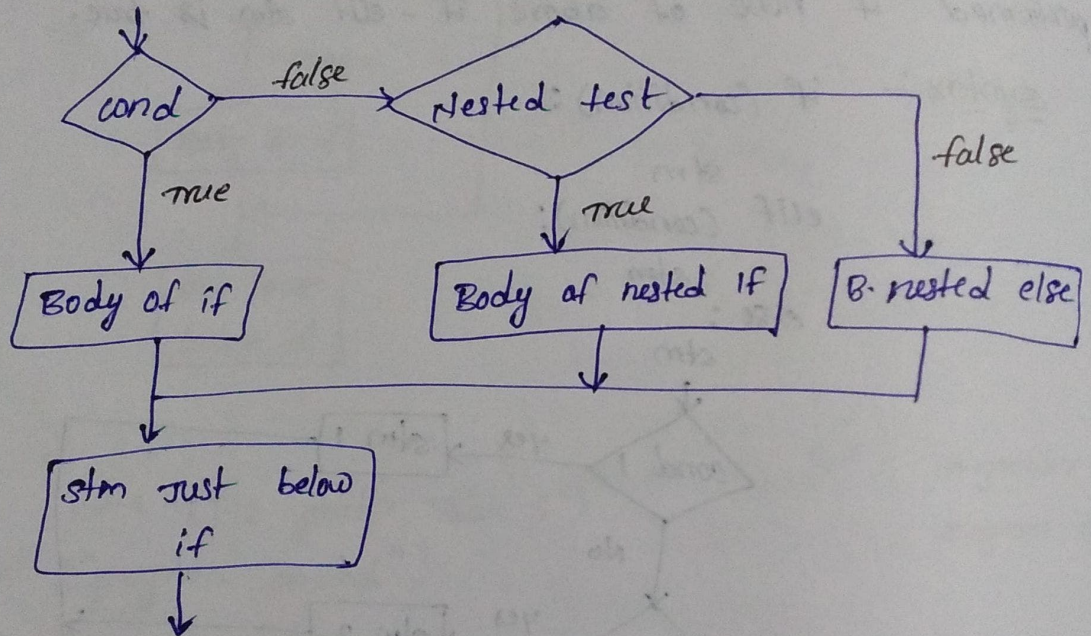
if stm can also be checked inside other if stm. This condition stm is called a nested if stm. This means inner if cond will only be checked if the outer if cond is true.

Syntax:- if (cond 1):

executes when cond 1 is true.

if (cond 2):

executes when cond 2 is true.



Ex:- a = 10

if a > 5:

print ("Bigger than 5")

if a <= 15:

print ("Between 5 and 15").

O/P:- Bigger than 5

Between 5 and 15.