* conditional statements :-

A conditional statement is a programming feature that helps a program make decisions. It checks whether a condition is true or false and then executes the appropriate block of code. This allows the program to respond differently to different solutions.

Ex: age = 20
```
if age >= 18:
    print("Eligible to vote")
else:
    print("Not eligible to vote")
```
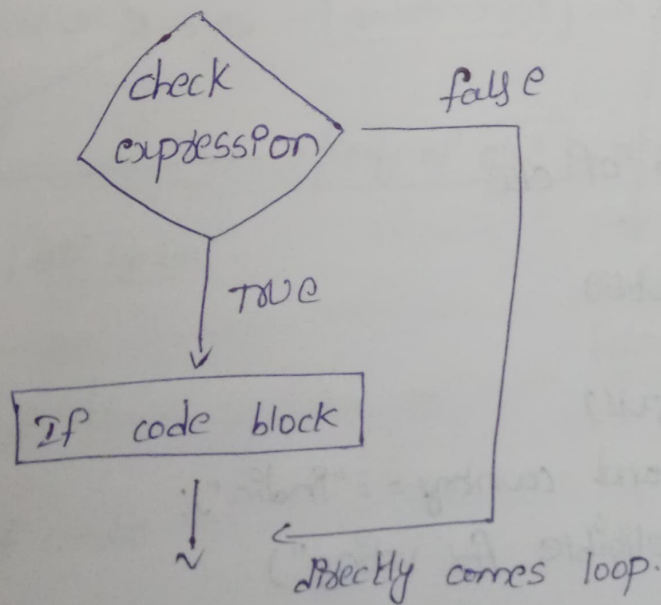
Types :-

1) if
2) if else
3) if else ladder / elif
4) Nested if else

1) if :- The if statement is the most basic form of a conditional statement in programming. It is used to check a condition, and if that condition evaluates to true, the block of code inside the if statement is executed. If the condition is false, the code inside the block is skipped.
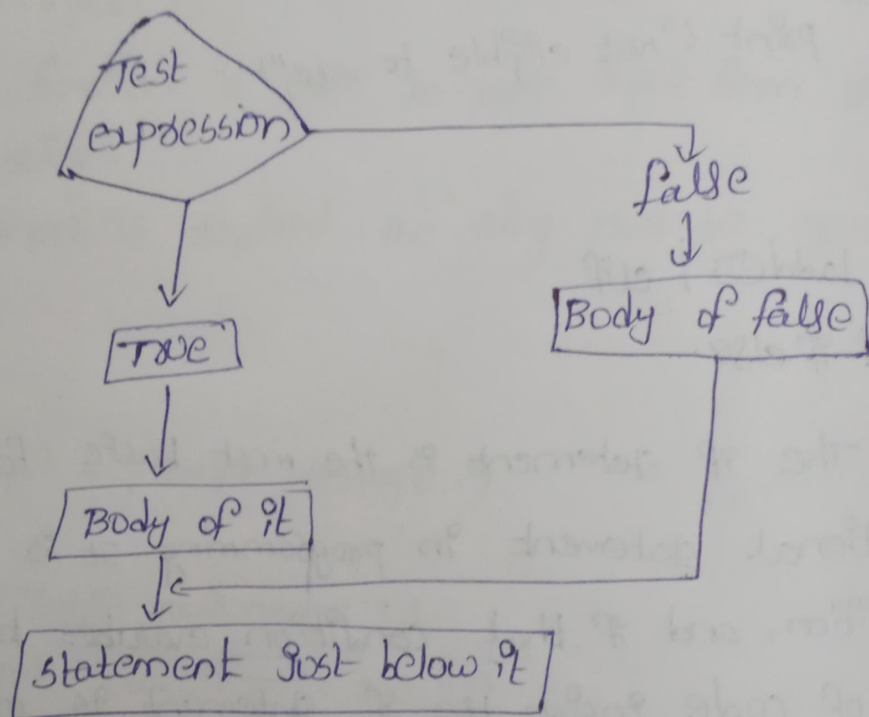

if syntax :-

```
if (condition):
    statements
```

Ex:-   Marks = 85

    if marks >= 40:

     print("pass"):

2) **if else** :- The if-else statement is a conditional structure in programming that allows you to execute one block of code if a condition is True, and a different block of code if the condition is false. It ensures that one of the two paths is always executed.

if else syntax :-

```
if(condition):
    statements
else:
    statements of else.
```

ex:-

```
age = int(input())
if too
country = input()
if (age >= 18 and country == "India"):
    print("eligible for voting")
else:
    print("not eligible for voting")
```
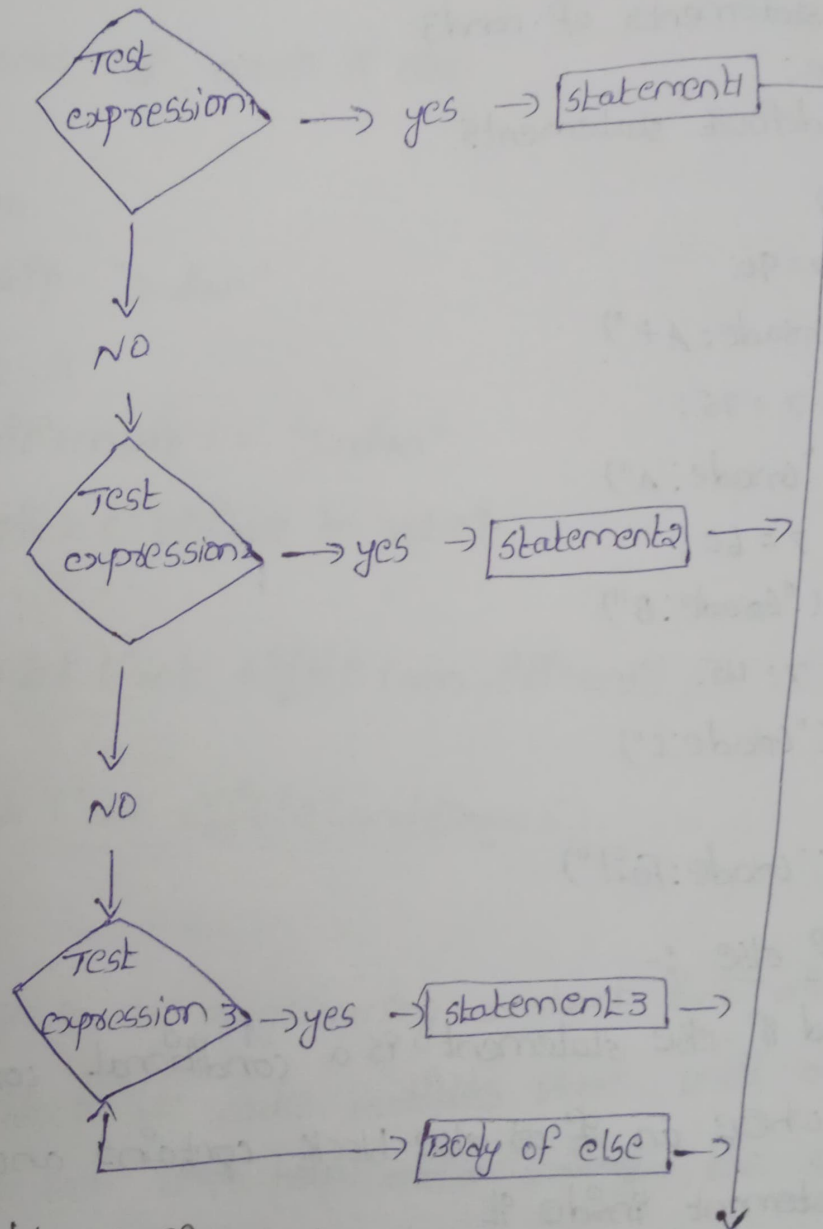
3) if else ladder / elif :-

An if-else ladder is a conditional control structure used in programming when multiple conditions need to be checked one after another. The program evaluates conditions from top to bottom, and as soon as one condition is satisfied, the corresponding block of code is executed, skipping the rest.

```
         ┌──────────┐
         │   Test   │ ──→ yes ──→ [Statement1]
         │expression│
         └────┬─────┘
              │
             NO
              ↓
         ┌──────────┐
         │   Test   │ ──→ yes ──→ [Statement2] ──→
         │expression2│
         └────┬─────┘
              │
             NO
              ↓
         ┌──────────┐
         │   Test   │ ──→ yes ──→ [Statement3] ──→
         │expression 3│
         └────┬─────┘
              │
              └──────────────→ [Body of else] ──→
                                                    ↓
                                          Statement just
                                          below if-else P
```

if else ladder / elif syntax :-

```
if (cond1):
    statements of cond1
elif (cond2):
    statements of cond2
elif (cond3):
    statements of cond3
else:
    default statements
```

Another syntax:-

```
if (cond1):
    statements of cond1.
else:
    if(cond2):
        statements of cond2
    else:
        if (cond3):
            statements of cond3
        else:
            default statements
```

ex:-

```
marks = 72
if marks 7 = 90:
    print ("Grade: A+")
elif marks 7 = 75:
    print ("Grade: A")
elif marks 7 = 60:
    print ("Grade: B")
elif marks 7 = 45:
    print ("Grade: c")
else:
    print ("Grade: fail")
```

4) Nested if_else :-

A nested if-else statement is a conditional control structure where an if or else block contains another if-else statement inside it.

It is used when a decision depends on multiple layers of conditions - meaning one condition must be true before checking another.

Nested if else syntax:-

```
if (cond 1): # outer if
  if (cond 2): # inner if
    statements of inner if
  else:
    statements of inner if else
else:
  statements of outer if else
```

ex:-

```
age = 20
citizenship = "Indian"
if age >= 18
  if citizenship == "Indian":
    print ("Eligible to vote")
  else:
    print ("Not eligible (Non-citizen)")
else:
  print ("Not eligible (underage)")
```