Python Control Statements:

- ➢ Control statements are used to control the flow of program execution. These are classfied into three types.
- 1. Conditional or Decision Making or Selection Statements.
- 2. Looping or Iterative Statements.
- 3. Transfer or Jump Statements.

1. CONDITIONAL STATEMENTS:

- ➢ Conditional statements will decide the execution of a block of code based on the expression.
- ➢ The conditional statements return either True or False.
- ➢ Python supports four types of conditional statements,
- 1. Simple IF or IF statement
- 2. IF – ELSE Statement
- 3. IF ELSE IF (elif) Statement
- 4. Nested if statement

1. if   Statement

- ➢ The Python if statement is same as it is with other programming languages.
- ➢ It executes a set of statements conditionally, based on the value of a logical expression.
- ➢ Here is the general form of one way if statement.

Syntax:

```
if expression:
        statement_1
        statement_2

          ............

          …………
```

- ➢ In the above syntax, expression specifies the conditions it produces either true or false.
- ➢ If the expression evaluates true then the same amount of indented statement(s) following it will be executed.
- ➢ This group of the statement(s) is called a block.

Example 1:   How to check a Student is passed or failed based on marks ?

```
>>> marks = int(input("Enter your marks to know pass or failed: "))
>>> if marks >= 35:
            print("You are passed ...")
```

Output:

Enter your marks to know pass or failed: 45
You are passed ...

Example 2: Compare values and display message ?

```
a = int(input("Enter First Value: "))
b = int(input("Enter Second Value: "))
c = int(input("Enter third Value: "))
if a > b < c:
   print("Hello")
```

Q) How to test which is maximum value in two values ?

```
a = int(input("Enter First Value: "))
b = int(input("Enter Second Value: "))
max = a if (a > b) else b;
print('Maximum value is :', max)
```

or

```
if a > b:
   x = a
else:
   x = b
print('Maximum value is :', x)
```

2. if -- else   Statement:

  ➤ In Python if-else statement has two blocks, first block follows the expression and the other block follows the else clause. Here is the syntax.

Syntax:

```
 if expression :
```

```
    statement_1
    statement_2
    ................
else :
    statement_3
    statement_4
    ................
```

> ➤ In the above case, if the expression evaluates to true then the same amount of indented statements(s) executed.
> ➤ if the expression evaluates to false then same amount of indented statements(s) follow the else block will executed.

Example1: Write python script to check whether the given number is even or odd number ?

```python
a = int(input('Enter Your number: '))
if a % 2 == 0:
    print(a," is a even number")
else:
    print(a," is a odd number")
```

Output:

Enter Your number: 20

20 is a even number

Or

Enter Your number: 21

21 is a odd number

Example 2: Write a python script to know student is passed or failed ?

```python
marks = int(input("Enter your marks to know pass or failed: "))
if marks >= 35:
    print("Your are passed")
else:
    print("Your are failed")
```

Output:

Enter your marks to know pass or failed: 20

Your are failed`
Or
Enter your marks to know pass or failed: 40
Your are passed

3. if   else-if statement (elif) :
Example1: How to check a Student result based on the marks ?
marks = int(input("Enter your percentage of marks : "))
if marks < 35 and marks > 0:
    print("You are failed")
elif marks >= 35 and marks < 50:
    print("Your got 3rd class")
elif marks >= 50 and marks < 60:
    print("You got 2nd class")
elif marks >= 60 and marks < 72:
    print("you got 1st class")
else:
    print("you got distinction")
Output:
Enter your percentage of marks : 50
You got 2nd class
Enter your percentage of marks : 90
you got distinction
Enter your percentage of marks : 20
You are failed

Example 2: Write a program to check food timings for eating ?
time = int(input("Enter your time: "))
if time > 7 and time < 10:
    print("Its time to have Breakfast..")

elif time >= 10 and time < 12:
    print("Its time to have Brunch..")

```python
    elif time >= 12 and time < 15:
        print("Its time to have Lunch..")

    elif time >= 15 and time < 18:
        print("Its time to have Snacks")

    elif time >= 18 and time < 20:
        print("Its time to have Dinner")

    elif time >= 20 and time <= 24:
        print("Its sleeping time")

    elif time >= 1 and time <= 7:
        print("Its sleeping time")

    else:
        print('you entered invalid time')
```

Output:
Enter your time: 8
Its time to have Breakfast..
Enter your time: 13
Its time to have Lunch..

Enter your time: -2
you entered invalid time
Enter your time: 3
Its sleeping time

Example 3: How to find the biggest value of three given values ?
```python
a = int(input("Enter First Value: "))
b = int(input("Enter Second Value: "))
c = int(input("Enter third Value: "))
if a > b and a > c:
```

```
    print(a,'is greater then ',b, 'and',c)
elif b > c:
    print(b,'is greater then ',a, 'and',c)
else:
    print(c,'is greater then ',a,'and',b)
```

Output 1:

Enter First Value: 10

Enter Second Value: 20

Enter third Value: 15

20 is greater then 10 and 15

Output 2:

Enter First Value: 10

Enter Second Value: 5

Enter third Value: 30

30 is greater then 10 and 5

Output 3:

Enter First Value: 10

Enter Second Value: 3

Enter third Value: 5

10 is greater then 3 and 5

4. Nested if statement:

> ➤ If we creating **if** statements inside another if statements , then we called as **nested if** statments.

Example 1:

Database contains only male records, if user enters about female then display 'female records are not available' and if user enters about male then check employees name, if male employee name existed then display his details, if that name is not available then display 'nobody is there with that name'. if he enters

any wrong gender then display 'you entered wrong gender'. Finally display 'thank you' at the end of result.

```python
gender = input("Enter gender: ")
name = input("Enter name : ")
if gender == "Female" or gender == "Male":
    if gender == 'Female':
        print("Female records are not available")
    else:
        if name == 'Satya' and gender == "Male":
            print("Satya is from hyd and working as SE")

        elif name == 'Srinivas' and gender == "Male":
            print("Srinivas is from nagpura and working as ASE")

        elif name == 'Nani' and gender == "Male":
            print("Nani is from Hyd and working as TL")

        else:
            print("No one is there with that name")
else:
    print("You entered wrong gender: ")
print("Thank")
```

Output:

```
Enter gender : Male
Enter name : Satya
Satya is from hyd and working as SE
Thank
```

Example 4: Male records display example
```python
gender=input("Enter your gender: ")
name=input("Enter your name: ")
```

```python
if gender == "Male" or gender == "Female":
    if gender != "Female":
        if name == "Satya":
            print("Satya is from Hyd and havaing 10 years exp")
        elif name == "Sai":
            print("Sai is from mumbai and having 20 years exp")
        elif name == "Srinivas":
            print("Srinivas is having 6 years exp and he is from hyd")
        else:
            print("sorry, your name is not avaiable in the database")
    else:
        print("Sorry Female records are not available in the database..")
else:
    print("Sorry, You entered invalid gender" )
print("Thank You ......")
```

Output:

Enter your gender: Male1
Enter your name: Satya
Sorry, You entered invalid gender
Thank You ......
Enter your gender: Male
Enter your name: Sai
Sai is from mumbai and having 20 years exp
Thank You ......

Enter your gender: Female
Enter your name: Renu
Sorry Female records are not available in the database..
Thank You ......

Example2: Write a program to checking the eligibility of interview ?
```python
name = input("Enter your name: ")
qualification = input("Enter your qualification: ")
```

```python
passedoutyear = eval(input("Enter your degree finished year: "))
percentage = eval(input("Enter your degree percentage: "))
if qualification == 'b.tech' or qualification == 'b.e':
    if passedoutyear==2017 or passedoutyear == 2016:
        if percentage >= 60 and percentage <= 100:
            print("Hey",name,"Congrates you are eligible for attending interview this week....")
        elif percentage >= 45 and percentage < 60:
            print("Hey",name,"You can attend the interview after two weeks")
        elif percentage >= 35 and percentage < 45:
            print("Hey",name,"First you work in someother organizations and after two years you can try")
        elif percentage < 35:
            print("Hey",name,"Please dont try to attend interview in our organization ")
        else:
            print("Hey",name,"Please enter valid percentage")
    elif passedoutyear > 2017:
        print("Hey",name,"you entered invalid year")
    else:
        print("Hey",name,"You are not fresher")
else:
    print("Hey",name,"Sorry, only btech or be students are eligible")
    print(qualification,"students are not eligible")
```

Q) Write a program if student enters marks < 35 then display "You are failed", if student   enters >=35 and <=100 then display "You are passed", if marks more then 100 then display "Enter proper marks" ?

Q. Write a program to check given number is Even or Odd number ?
Q. Write a program to check given number is Positive or Negative number ?
Q. Write a program to check wether the given Person is eligible for Vote or not ?
Q. Write a program to check beggest number among the given two numbers ?
Q. Write a program to check beggest number among the given Three numbers ?

Q. Write a program to check given number is divisible by 5 or not ?