

## Day9\_Conditional control flow statements

1. if statement
2. if..else statement
3. if..elif statement
4. nested if statements

1. if statement : It also known as simple if statement, it has a condition which evaluates to True or False, if the condition is True,a True statement block gets executed otherwise the if gets terminated

Syntax	Flowchart	Example
Start of program Program code if condition: True-Statements  Rest of the program code End of the program		Ex: WAP for checking the number is a single digit no. or not  <pre> print("Start Of Program") num = int(input("enter a number")) if num &gt;= -9 and num &lt;= 9:     print("A single digit number") print("Rest of the code") print("End of the program")           </pre> <p>#Run1            enter a number5            A single digit number            Rest of the code            End of the program</p> <p>#Run2            enter a number17            Rest of the code            End of the program</p>

It is used if the requirement is only for the execution of True statements and the False statements ignored

2. if..else statement : In this we have a dedicated block for the False statements i.e., when the condition becomes False a False block will get executed  
 It is generally used when we deal with Binary conditional programs

Syntax	Flowchart	Example
if condition: True statements else : False Statement		#WAP to check whether a no. is a single digit number or not  <pre> num = int(input("enter a number")) if -9 &lt;= num &lt;= 9:     print("A single digit number") else:     print("Not a single digit number")           </pre> <p>#Run1            enter a number14            Not a single digit number</p> <p>#Run2            enter a number6            A single digit number</p>

#WAP to check whether a number is Positive or Negative

```

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

#Run1



enter a number5  
Positive Number

#Run2  
enter a number-6  
Negative Number

#Run3  
enter a number0  
Negative Number

In the above program if the condition is False the False block gets executed without any condition check, this may lead to inconclusive output

3. if..elif statement : These kind of if statements will be helpful for providing multiple conditions so that we can have the executions depending on the right condition and which avoid inconclusive output

Syntax	Flowchart	Example
<pre> if condition1:     Trustatement elif condition2:     Trustatement elif condition3:     True statement : : : else :     False Statement                     </pre>		<pre> #Check whether a number is a positive or negative or zero num = int(input("enter a number")) if num&gt;0:     print("Positive Number") elif num&lt;0:     print("Negative Number") else:     print("Zero")  #Run1 enter a number4 Positive Number  #Run2 enter a number-5 Negative Number  #Run3 enter a number0 Zero                     </pre>

#Check the no. of digits in a program

```

num = int(input("enter a number"))
if -9<=num<=9:
    print("Single Digit Number")
elif -99<=num<=99:
    print("Double Digit Number")
elif -999<=num<=999:
    print("Triple Digit Number")
elif -9999<=num<=9999:
    print("Four Digit Number")
elif -99999<=num<=99999:
    print("Five Digit Number")
else:
    print(">5 Digit Number")
                    
```

#Run1  
enter a number8  
Single Digit Number

#Run2  
enter a number695  
Triple Digit Number

#Run2  
enter a number14589637  
>5 Digit Number

