

## Conditional Statements

- To Check whether given condition is either True or False
- if -> Checks only for single case
  - Syntax:
 

```
if (condition):
    //stmnts
```
- if-else -> Checks for 2 cases
  - Syntax:
 

```
if (condition):
    //stmnts
else:
    //stmnts
```
- Nested if -> If first condition is True it checks for inner of if or if-else or it return the else part
  - Syntax:
 

```
if (condition1):
    //stmnts
    if(condition2):
        //stmnts
    else:
        //stmnts
else:
    //stmnts
```
- elif -> Checks for n number of cases
  - Syntax:
 

```
if (condition1):
    //stmnts
elif (condition2):
    //stmnts
elif (condition3):
    //stmnts
|
|
|
else:
    //stmnts
```

In [2]:

```
1 a = 10
2 b = 20
3 if a<b:
4     print('b is big number')
5 print('a is big value')
```

b is big number

a is big value

In [4]:

```
1 a = int(input("enter a value"))
2 b = int(input("enter b value"))
3 c = int(input("enter c value"))
4 if a>b and a>c:
5     print('{} is higher number '.format(a))
6 elif b>c:
7     print('{} is higher number '.format(b))
8 else:
9     print("{} is higher ".format(c))
10
11
```

enter a value674

enter b value4855

enter c value8475

c is higher

In [6]:

```
1 n = int(input('enter number'))
2 if n%2 == 0:
3     print('even number')
4 else:
5     print('odd number')
```

enter number65786

even number

Task-1:

username: raju

password: raju123

Testcase-1:

Input: Enter Username: rajesh

Enter Password: raju

Output: Invalid Username rajesh or Password

Testcase-2:

Input: Enter Username: raju

Enter Password: rajesh

Ouput: Invalid Username raju or Password

Testcase-3:

Input: Enter Username: raju

Enter Password: raju123  
Output:Welcome User: raju

```
In [9]: 1 username = input("Enter Username: ")
2 password = input("Enter Password: ")
3 if username == 'raju':
4     if password == 'raju123':
5         print("Welcome User: {}".format(username))
6     else:
7         print("Invalid Username {} or Password".format(username))
8 else:
9     print("Invalid Username {} or Password".format(username))
```

Enter Username: raju  
Enter Password: raju123  
Welcome User: raju

```
In [10]: 1 username = input("Enter Username: ")
2 password = input("Enter Password: ")
3 if username == 'raju' and password == 'raju123':
4     print("Welcome User: {}".format(username))
5 else:
6     print("Invalid Username {} or Password".format(username))
```

Enter Username: raju  
Enter Password: rajesh  
Invalid Username raju or Password

```
In [13]: 1 print("Registration")
2 print("+++++")
3 uname = input("Enter Username to Fix: ")
4 pwd = input("Enter Password to Fix:")
5 print("+++++")
6 print("Validation Process")
7 username = input("Enter Username: ")
8 password = input("Enter Password: ")
9 if username == uname and password == pwd:
10     print("Welcome User: {}".format(username))
11 else:
12     print("Invalid Username {} or Password".format(username))
```

Registration  
+++++  
Enter Username to Fix: giri  
Enter Password to Fix:gi123  
+++++  
Validation Process  
Enter Username: giri  
Enter Password: gi123  
Welcome User: giri

## Task-2

username: lalitha  
password: lalitha123@

Test case-1

Input: Enter Username: rakesh  
Output: Invalid Username rakesh

Test case-2

Input: Enter Username: lalitha  
Enter Password: 123  
Output: Invalid Password

Test case-3

Input: Enter Username: lalitha  
Enter Password: lalitha123@  
Output: Welcome User lalitha

```
In [73]: 1 username = input("Enter Username: ")
          2 if username == 'lalitha':
          3     password = input("Enter Password: ")
          4     if password == 'lalitha123@':
          5         print("Welcome Username: {}".format(username))
          6     else:
          7         print("Invalid Password")
          8 else:
          9     print("Invalid Username {}".format(username))
```

Enter Username: lalitha  
Enter Password: lalitha123@  
Welcome Username: lalitha

```
In [16]: 1 print("Registration Process:")
2 print("=====")
3 uname = input("Enter username to Fix: ")
4 passwd = input("Enter password to Fix: ")
5 print("=====")
6 print("Validation Process")
7 print("-----")
8 username = input("Enter Username: ")
9 if username == uname:
10     password = input("Enter Password: ")
11     if password == passwd:
12         print("Welcome Username: {}".format(username))
13     else:
14         print("Invalid Password")
15 else:
16     print("Invalid Username {}".format(username))
```

```
Registration Process:
=====
Enter username to Fix: prasad
Enter password to Fix: 1212
=====
Validation Process
-----
Enter Username: prasad
Enter Password: 1212
Welcome Username: prasad
```

```
In [20]: 1 s="string"
2 if('z' in s):
3     print("Exists")
4 else:
5     print("Does not exist")
```

```
Does not exist
```

## Loops

- for

Syntax:

```
for variable in range(start,stop,incre/decre/updation):
    statements
-----
-----
```

```
In [30]: 1 for x in range(10):
2         print(x,end=' ')
```

```
0 1 2 3 4 5 6 7 8 9
```

In [37]:

```

1  for x in range(10,0,-1):
2      print(x,end=' ')

```

10 9 8 7 6 5 4 3 2 1

In [34]:

```

1  for x in range(1,12,2):
2      print(x,end=' ')

```

1 3 5 7 9 11

In [39]:

```

1  ### Forward order of natural numbers
2
3  sr = int(input("Enter starting range: "))
4  er = int(input("Enter ending range: "))
5  for i in range(sr,er):
6      print(i,end=" ")

```

Enter starting range: 1

Enter ending range: 20

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

In [72]:

```

1  ### Reverse order of natural numbers
2
3  sr = int(input("Enter starting range: "))
4  er = int(input("Enter ending range: "))
5  for i in range(er,sr-1,-1):
6      print(i,end=' ')

```

Enter starting range: 10

Enter ending range: 20

20 19 18 17 16 15 14 13 12 11 10

In [45]:

```

1  ### Natural numbers sum
2  ### input: 1--10
3  ### output: 55
4  s = int(input())
5  e = int(input())
6  tot=0
7  for i in range(s,e+1):
8      tot+=i
9  print(tot)

```

1

10

55

In [51]:

```

1  # 1--10
2  # even numbers: 2 4 6 8 10
3  # odd numbers: 1 3 5 7 9
4  # even numbers sum: 30
5  # odd numbers sum: 25
6  # even numbers count: 5
7  # odd numbers count: 5
8
9  s = int(input())
10 e = int(input())
11 es = os = ec = oc = 0
12 print("even numbers: ",end=' ')
13 for i in range(s,e+1):
14     if(i%2==0):
15         es+=i
16         ec+=1
17         print(i,end=' ')
18 print("\nOdd numbers: ",end=' ')
19 for i in range(s,e+1):
20     if(i%2!=0):
21         os = os+i
22         oc = oc + 1
23         print(i,end=' ')
24 print("\neven numbers sum: ",es)
25 print("odd numbers sum: ",os)
26 print("even number count: ",ec)
27 print("Odd number count: ",oc)
28

```

```

1
10
even numbers:  2 4 6 8 10
Odd numbers:  1 3 5 7 9
even numbers sum:  30
odd numbers sum:  25
even number count:  5
Odd number count:  5

```

## Tasks

1.Factors of numbers

```

input : 10
output: Factors of number: 1 2 5 10
        Factors count : 4

```

2.Check whether the given number is prime or not

```

input: 5
output: Prime number

```

3.Check whether the given number is perfect or not

input: 6  
output: Perfect

#### 4. Print table

input: 5  
output: 5\*01=05  
5\*02=10  
5\*03=15  
5\*04=20  
|  
|  
5\*10=50

```
In [70]: 1 n = int(input())
2 fc = 0
3 print("Factors of number: ",end=' ')
4 for i in range(1,n+1):
5     if(n%i==0):
6         print(i,end=' ')
7         fc=fc+1
8 print("\nFactors count: ",fc)
```

10  
Factors of number: 1 2 5 10  
Factors count: 4

### while

syntax:

```
initialization
while(condition):
    statements
    incre/decrement
```

```
In [59]: 1 i=1
2 while(i<=10):
3     print(i,end=" ")
4     i=i+1
```

1 2 3 4 5 6 7 8 9 10

```
In [ ]: 1 i=10
2 while(i>=1):
3     print(i,end=' ')
4     i=i-1
```



```
In [63]: 1 # input: 10
2 # output: 1 2 3 4 5 6 7 8 9 10
3 n=int(input())
4 i=1
5 while(i<=n):
6     print(i,end=' ')
7     i=i+1
```

20

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

```
In [62]: 1 # Indefinite while
2 while(True):
3     a=input()
4     if(a=='EXIT'):
5         break
6
```

Jkdhjdr  
 jdhrueht  
 dkjiejr  
 djrioheior  
 jdirjeirj  
 EXIT

```
In [67]: 1 # Reverse of a number and its digit count
2 #input: 1235
3 #output : digit count=4
4 n=int(input())
5 c=0
6 while(n>0):
7     n=n//10 #1235//10=123    123//10=12    12//10=1    1//10=0
8     c+=1 # c=1            c=2            c=3            c=4
9 print("digit count= ",c)
```

1235

digit count= 4

```
In [69]: 1 # Reverse of a number
2 # input: 5678
3 # output: 8765
4
5 n=int(input())
6 rev=0
7 while(n>0):
8     rem=n%10 # 5678%10=8    567%10=7    56%10=6    5%10=5
9     rev=rev*10+rem # 0*10+8=8    8*10+7=87    87*10+6=876    876*10+5=8765
10    n=n//10 # 5678//10=567    567//10=56    56//10=5    5//10=0
11 print("reverse=",rev)
```

5678

reverse= 8765

Task-5:

```
input: 121
output: Palindrome
input: 145
output: Not Palindrome
```

```
Task-6:
Input: 123123721673514

Output: 22264
```

In [ ]:

1