

If statement

```
In [12]: 1 #if given "if" statement is true it comes under if block and will execute gi
2 a=100
3 if a > 50:
4     print("if statement is executed")
5     print("if statement will not executed")
```

if statement is executed

if statement will not executed

```
In [13]: 1 #if given "if" statement is false it does not falls under if block and will
2 #but it will execute other statement which is outside the block
3 a=100
4 if a > 150:
5     print("if statement is executed")
6     print("if statement will not executed")
```

if statement will not executed

If else statement

```
In [17]: 1 #if the statement in "if" block is true then "if" block will be execeuted or
2 a=20
3 if a%2 == 0:
4     print("even")
5 else:
6     print("odd")
```

even

```
In [19]: 1 #if the statement in "if" block is false then "if" block will not execeute i
2 a=23
3 if a%2 == 0:
4     print("even")
5 else:
6     print("odd")
```

odd

Nested if statement

```
In [5]: 1 #it is used when you want to filter variables multiple times
2 a=50
3 if a >10:
4     print("a is greater than 50")
5     if a%2==0:
6         print("a is even number less than 50")
7 else:
8     print("a is either less than 50 or even number")
```

a is greater than 50
a is even number less than 50

```
In [8]: 1 a=50
2 if a >63:
3     print("a is greater than 50")
4     if a%2==0:
5         print("a is even number less than 50")
6 else:
7     print("a is either less than 50 or even number")
```

a is either less than 50 or even number

If ,elif,else statement

```
In [11]: 1 var="z"
2 if var== "a":
3     print("a is a vowel")
4 elif var== "e":
5     print("e is a vowel")
6 elif var== "i":
7     print("i is a vowel")
8 elif var== "o":
9     print("o is a vowel")
10 elif var== "u":
11     print("u is a vowel")
12 else:
13     print("non of the above")
```

non of the above

In [12]:

```
1 var="o"
2 if var== "a":
3     print("a is a vowel")
4 elif var== "e":
5     print("e is a vowel")
6 elif var== "i":
7     print("i is a vowel")
8 elif var== "o":
9     print("o is a vowel")
10 elif var== "u":
11     print("u is a vowel")
12 else:
13     print("non of the above")
```

o is a vowel

Loops

whileloop

In [61]:

```
1 #creating user input Loops
2 val=int(input("enter a odd number : "))
3 while val%2==0:
4     print("please enter only odd number")
5     val=int(input("enter a odd number : "))
6 else:
7     print("congratulations %d is a odd number"%val)
```

enter a odd number : 2
please enter only odd number
enter a odd number : 4
please enter only odd number
enter a odd number : 6
please enter only odd number
enter a odd number : 3
congratulations 3 is a odd number

for loop

```
In [79]: 1 s="vaishnavi"
          2 for i in s:
          3     print(i)
```

v
a
i
s
h
n
a
v
i

```
In [84]: 1 l=["hi","vaishnavi","how uh" ]
          2 for i in l:
          3     print(i)
```

hi
vaishnavi
how uh

```
In [87]: 1 t=("python","is","easy")
          2 for i in t:
          3     print(i)
```

python
is
easy

nested loops

```
In [107]: 1 x=[[1,2,3],["a","b","c"],[4,5,6]]
          2 for i in x:
          3     for j in i:
          4         print(j,end=" ")
          5     print()
```

123
abc
456

Loop control statements

break

```
In [114]: 1 x=[1,2,3,4,5,6,7,8]
          2 for i in x:
          3     if i==6:
          4         break
          5     print(i)
```

```
1
2
3
4
5
```

continue

```
In [120]: 1 x=[1,2,3,4,5,6,7,8,9,10]
          2 for i in x:
          3     if i<6:
          4         continue
          5     print(i)
```

```
6
7
8
9
10
```

For loops

```
In [136]: 1 sum=0
          2 for i in range(0,21):
          3     if i%2==0:
          4         sum=sum+i
          5     print(sum,end=" ")
```

```
110
```

```
In [164]: 1 val=int(input("please enter a number"))
          2 for i in range(1,val+1):
          3     for j in range(1,i+1):
          4         print(j,end=" ")
          5     print()
```

```
please enter a number5
1
12
123
1234
12345
```

While loops

```
In [191]: 1 i=1
          2 while i<=10:
          3     print("vaishnavi")
          4     i+=1
```

vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi
vaishnavi

```
In [1]: 1 sum=0
        2 i=1
        3 while i<=10:
        4     i+=1
        5     sum=sum+i
        6     print(sum)
```

65

```
In [28]: 1 #creating a programm which gives Length
        2 l=["1","2","vaihsnavi",3.2,"26","7"]
        3 length=0
        4 i=0
        5 try:
        6     while l[i]:
        7         length=length+1
        8         i=i+1
        9 except Exception as e:
        10     print(length)
```

6

```
In [34]: 1 n=int(input("enter a number "))
2 i=1
3 while i<=n:
4     j=1
5     while j<=i:
6         print(i,end=" ")
7         j+=1
8     i+=1
9     print()
```

```
enter a number 9
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7 7
8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9
```

```
In [10]: 1 #programm of a small game
2 import random
3 nump=random.randint(1000,9999)
4 print (nump)
5 n=int(input("please enter your four digit numbers: "))
6 while n!=10:
7     num=nump
8     cor=0
9     while num%10:
10        numc=num%10
11        nc=n%10
12        num=num//10
13        n=n//10
14        if numc==nc:
15            cor+=1
16    if cor==4:
17        print("congrats! you guessed it right")
18        break
19    else:
20        print("%d digits were guess right" %cor)
21        n=int(input("please enter your four digit numbers: "))
22 else:
23    print("you quit the game")
```

```
1517
please enter your four digit numbers: 2347
1 digits were guess right
please enter your four digit numbers: 2311
1 digits were guess right
please enter your four digit numbers: 10
you quit the game
```

Array

```
In [25]: 1 from array import *
          2 arr=array("b",[1,2,3,4])
          3 print(arr)
```

```
array('b', [1, 2, 3, 4])
```

```
In [26]: 1 arr=array("B",[1,2,3,4])
          2 print(arr)
```

```
array('B', [1, 2, 3, 4])
```

```
In [30]: 1 arr.buffer_info()
```

```
Out[30]: (2510742607664, 4)
```

```
In [32]: 1 for i in arr:
          2     print(i)
```

```
1
2
3
4
```

```
In [33]: 1 arr.reverse()
```

```
In [34]: 1 print(arr)
```

```
array('B', [4, 3, 2, 1])
```

```
In [35]: 1 print(arr[3])
```

```
1
```

```
In [2]: 1 from array import*
          2 arr=array("i",[])
          3 x=int(input("enter size of array "))
          4 print("enter %d elemets" %x)
          5 for i in range(x):
          6     n=int(input())
          7     arr.append(n)
          8 print(arr)
```

```
enter size of array 4
```

```
enter 4 elemets
```

```
1
2
3
4
```

```
array('i', [1, 2, 3, 4])
```

Functions


```
In [3]: 1 def welcome():  
        2     print("Good morning")
```

```
In [4]: 1 welcome()
```

Good morning

```
In [5]: 1 def addition(a,b):  
        2     total=a+b  
        3     print("the sum is" ,total)
```

```
In [8]: 1 addition(3,5)
```

the sum is 8

```
In [9]: 1 x=1085369  
        2 y=8745774  
        3 addition(x,y)
```

the sum is 9831143