

```
In [ ]: operators:  
it is used to perform operations on operands(values or variables)  
1.Arithemtic operator  
2.Assignment operator  
3.comparision operator  
4.Logical operator  
5.membership operator  
6.identity operator  
7.bitwise operator
```

```
In [ ]: Arithmetic operator:  
used to perform mathematical calculations  
addtion  
subtraction  
multiplication  
division  
floor division  
exponential  
modulus
```

```
In [1]: x=20  
y=67  
print(x+y)
```

87

```
In [3]: 4765876588+6457634576345
```

Out[3]: 6462400452933

```
In [5]: 13-5
```

Out[5]: 8

```
In [7]: 45/5
```

Out[7]: 9.0

```
In [9]: 45//2
```

Out[9]: 22

```
In [11]: 3**2
```

Out[11]: 9

```
In [13]: 5%2
```

Out[13]: 1

2.Assignment operator: used to assign the values add and assign(+=) subtract and assign(-=) multipy and assign(=) divide and assign(/=) modulus and assign(%=) exponential and assign(*=)

```
In [17]: x=10  
x+=5#x=x+5
```

```
In [19]: x
```

```
Out[19]: 15
```

```
In [21]: x=10
```

```
In [23]: x
```

```
Out[23]: 5
```

```
In [25]: x*=10
```

```
In [27]: x
```

```
Out[27]: 50
```

```
In [ ]: 3.comparision operator:  
used to compare two values  
equal to(==)  
not equal to(!=)  
less than(<)  
greater than(>)  
less than or equal to(<=)  
greater than or equal to(>=)
```

```
In [29]: print(10>5)
```

```
True
```

```
In [31]: 5==8
```

```
Out[31]: False
```

```
In [33]: 5!=9
```

```
Out[33]: True
```

```
In [35]: 6<9
```

```
Out[35]: True
```

```
In [37]: 7<=9
```

```
Out[37]: True
```

```
In [39]: 9>=9
```

```
Out[39]: True
```

```
In [41]: a=True#1  
b=False#0  
print(a==b)#false  
print(a!=b)#true
```

```
print(a>b)#true  
print(a<b)#false  
print(a>=b)#true  
print(a<=b)#false
```

```
False  
True  
True  
False  
True  
False
```

```
In [ ]: 4.logical operator:  
and---returns true if both conditions are true  
or---returns true if any one condition is true  
not---viceversa if statement is true o/p false
```

```
In [43]: x=5  
y=10  
z=4  
print(x<y and y>z)#true  
print(x>y and z<y)#false
```

```
True  
False
```

```
In [45]: print(x<y or y>z)
```

```
True
```

```
In [47]: print(not(x<y or y>z))
```

```
False
```

```
In [ ]: 5.membership operator:  
it checks if a value exists in a sequence  
in  
not in
```

```
In [49]: x=[1,2,3,4]  
print(3 in x)  
print(2 in x)  
print(7 not in x)  
print(2 not in x)
```

```
True  
True  
True  
False
```

```
In [ ]: 6.identity operator:
```

```
which is used to check whether the two variables or objects refer to the same location  
is  
is not
```

```
In [51]: x=7  
y=8  
print(x is y)
```

```
False
```

```
In [53]: x=[1,2,3,4]
y=[1,2,3,4]
print(x is y)
```

```
False
```

```
In [55]: x=[1,2,3,4]
y=[4,5,6,7]
x=y
print(x is y)
```

```
True
```

```
In [57]: x=[1,2,3,4]
x=[1,2,5,6]
print(x is not x)
```

```
False
```

```
In [ ]: at the execution time i want to enter the values
```

```
In [63]: x=int(input("Enter the first number"))
y=int(input("Enter the second number"))
z=x+y
```

```
In [65]: print(z)
```

```
30
```

```
In [ ]: 1    0001
2    0010
3    0011
4    0100
5    0101
6    0110
7    0111
8    1000
9    1001
10   1010
```

```
In [67]: print(5&3)
```

```
1
```

```
In [ ]: 0101---->5
0011---->3
0001---->1
```

```
In [69]: print(6&4)
```

```
4
```

```
In [71]: print(7&3)
```

```
3
```

```
In [73]: print(5|3)
```

```
7
```

```
In [75]: print(5|4)
```

```
5
```

```
In [77]: print(8|5)
```

```
13
```

```
In [ ]: 0101  
0011  
0111
```

```
In [ ]: Task 01:  
employee salary calculator(Arithmetic operator)  
  
scenerio:calculate monthly salary after bonus and tax  
  
Task 02:  
internship eligibility checker(comparision operator+logical oeprator)  
  
scenerio:check the eligibilty based on cgpa and year  
  
Task 03:  
Login authentication system(logical+conditional statement)  
  
scenerio:validate the user login credentials  
  
Task 04:  
Shooping discount engine(Assignment operator)  
  
scenerio:apply the discount to the total amount  
  
Task 05:  
course enrollment validator(membership operator+conditional statement)  
  
scenerio:check if student enrolled in python course  
  
Task 06:  
Role verification system(identity operator+conditional statement)  
  
scenerio:check if user role object is admin at the exceution time  
  
Task 07:  
Even-odd transaction checker(modulus operator)  
  
scenerio:check if transaction id is even or odd  
  
Mini project:  
Performance rating system(conditional statement)  
  
scenerio:assign performance rating
```

```
In [ ]: conditional statements:  
allows program to understand and to take some decision based on the conditions w  
if---true---print  
elif---true---print  
else---default
```

```
nested if---if inside if
ternary operator ---short hand if
switch(match statement)---multiple case
```

```
In [83]: #if statement:
age=18
if age>=18:
    print("you are eligible for vote")
```

you are eligible for vote

```
In [85]: #if-else statement
age=18
if age<18:
    print("you are eligible for vote")
else:
    print("you are not eligible for vote")
```

you are not eligible for vote

```
In [89]: #if--elif--else
age=18
if age<18:
    print("you are not eligible")
elif age==18:
    print("congrajulations,you are eligible for vote")
else:
    print("sorry,better luck next time you cant apply")
```

congrajulations,you are eligible for vote

```
In [91]: #if--elif--else
marks=80
if marks>=90:
    print("Excellent")
elif marks>=75:
    print("Very good")
else:
    print("good")
```

Very good

```
In [ ]: #write a program to check the password is correct or incorrect at the execution
#write a program to check the eligibility in the eamcet exams based on the inter
```

```
In [ ]: #nested if:
if you write if statement inside if statement then it is called as nested if
```

```
In [97]: x=int(input("enter the number"))
if x>0:
    if x%2==1:
        print("The number is positive and it is odd number")
    else:
        print("The number is positive and it is even number")
```

The number is positive and it is even number

```
In [ ]: #ternary operator:
compact way of writing if else statement in a single line
```

```
In [103...]: age=17  
status="right to vote" if age>18 else "minor"
```

```
In [105...]: status
```

```
Out[105...]: 'minor'
```

```
In [112...]: #match case statement  
day=input("Enter the day")
```

```
match day:  
    case "Monday":  
        print("first day in a week")  
    case "Wednesday":  
        print("third day in a week")  
    case "Saturday":  
        print("week end")  
    case _:  
        print("it is a normal day")
```

```
it is a normal day
```

```
In [ ]: #write a program for match case by using the months like jan feb----dec etc
```

```
In [ ]: Loopings:  
it is the process of executing block of code iteratively  
  
types of loops:  
for loop:execute a block of code a fixed number of times  
while loop:repeats a block of code as long as condition remains true  
nested for loop:a loop inside one more for loop is called as nested for loop
```

```
branching statements:  
break:condition true stops loop  
continue:condition true skips and continue the loop  
pass:placeholder
```

```
In [114...]: #Loopings through range
```

```
for x in range(7):  
    print(x)
```

```
0  
1  
2  
3  
4  
5  
6
```

```
In [116...]: #Looping through list
```

```
x=[1,2,3,4,5]  
for z in x:  
    print(z)
```

```
1  
2  
3  
4  
5
```

```
In [118...]: #Looping through the string  
fruits="banana"  
for y in fruits:  
    print(y)
```

```
b  
a  
n  
a  
n  
a
```

```
In [120...]: #Looping through tuple  
x=("da","ds","ml","dl")  
for a in x:  
    print(a)
```

```
da  
ds  
ml  
dl
```

```
In [124...]: #Looping through the list of strings  
fruits=["apple","banana","mango"]  
for x in fruits:  
    print(x,end="")
```

```
applebananamango
```

```
In [ ]: a  
p  
p  
l  
e  
b  
a  
n  
a  
n  
a
```

```
In [126...]: fruits=["apple","banana","mango"]  
for x in fruits:  
    for a in x:  
        print(a)
```

```
a  
p  
p  
l  
e  
b  
a  
n  
a  
n  
m  
a  
n  
g  
o
```

```
In [128...]: #Looping through two lists and nested for Loop  
colors=["red","blue","black"]  
fruits=["berry","cherry","mango"]  
for x in colors:  
    for y in fruits:  
        print(x,y)
```

```
red berry  
red cherry  
red mango  
blue berry  
blue cherry  
blue mango  
black berry  
black cherry  
black mango
```

```
In [132...]: for x in range(1,10):  
    if x==6:  
        break  
    print(x)
```

```
1  
2  
3  
4  
5
```

```
In [134...]: for x in range(1,10):  
    if x==6:  
        continue  
    print(x)
```

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

```
In [136...]: x=0  
while x<5:
```

```
print(x)
x+=1
```

```
0
1
2
3
4
```

```
In [138]: i=0
while i<=10:
    if i==6:
        break
    print(i)
    i+=1
```

```
0
1
2
3
4
5
```

```
In [ ]: x=0
while x<5:
    pass
```