

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

```
In [ ]: Arithmetic operator:
        used to perform mathematical calculations
        addition
        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(-=) multiply 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.comparison 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 enrollmt 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
a
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
```