Operators and Expressions in Python

Operator: An operator is a symboal use for performing some operation on values OR objects OR variables => If two are more operators values or objects or variables connected with some operator then it called on expression. => In otherwords, an expression is collection of objects or values connected with an operator

In [ ]:
```
=>In python programming we have 7 Type of Operators they are:
 1.Arthmetic Operators
 2.Assigment Operartor
 3.Relational Operator(comparision operators)
 4.Logical Operator(comparision operators)
 5.Bitwise Operator =>(Most Importent)
 6.Membership Operators
     .IN operator
     .Not operator
 7.Identity Operators
      .is operator
      .is not operator
```

In [ ]:
```
Note:
=> Python does not support unarry opertors like ++ and --
=> Python does not support Ternary opertor of c++ and Java
=> Python Programming contains its own Ternary Operator like if and else operators
=> Python supports to short hand operators like +=, -=, *=, %=, >>= .
```

In [ ]:
```
1.Arthmetic Operators:
=> The purpose of Arthmetic operator is that "To perform arthmetic operations" such
=> If two are more values are connected with arthemtic operators then it is arthmet
=> In Python programming we have 7 Types of Arthmetic operators.
=> They are
   1.Addition --> (+)
   2.substraction --> (-)
   3.Multiplication --> (*)
   4.Division --> (/) (Float Quotient)
   5.Floor Division --> (//) (Integer Quoatient)
   6.Modulo Division --> (%) (Gives remainder)
   7.Exponentiation --> (**) (Power Operator)
```

In [9]:
```
a=50
b=25
print(a+b)
```

```
75
```

In [11]:
```
print(a-b)
```

```
25
```

In [13]:
```
print(a*b)
```

```
1250
```

In [15]:
```
print(a/b)
```

```
2.0
```

In [17]:
```
print(10/3)
```

```
3.3333333333333335
```

In [19]:
```
print(10//3)
```

```
3
```

In [4]:
```
# Write a python program which will demonstrate the
# functionality of arithmetic operators?
a=int(input("Enter the first value:"))
b=int(input("Enter the second value:"))
print("*"*50)
print("\tSum({},{})={}".format(a,b,a+b))
print("\tSub({},{})={}".format(a,b,a-b))
print("\tMul({},{})={}".format(a,b,a*b))
print("\tDiv({},{})={}".format(a,b,a/b))
print("\tFloor Div({},{})={}".format(a,b,a//b))
print("\tMod Div({},{})={}".format(a,b,a**b))
print("*"*50)
```

```
**************************************************
        Sum(10,3)=13
        Sub(10,3)=7
        Mul(10,3)=30
        Div(10,3)=3.3333333333333335
        Floor Div(10,3)=3
        Mod Div(10,3)=1000
**************************************************
```

In [8]:
```
# Write a python program which will calculate square root of a number?
n=int(input("Enter the number for finding the squar root:"))
res=n**0.5 # OR res=n**(1/2)
print("sqrt({})={}".format(n,res))
```

```
sqrt(10)=3.1622776601683795
```

In [14]:
```
# Write a python program which will calculate Cube root of  number?
n=int(input("Enter the number for finding the cube root:"))
res=n**0.5 # OR res=n**(1/3)
print("cube({})={}".format(n,res))
```

```
cube(25)=5.0
```

In [16]:
```
# Program for Swaping of Two Values?
a=input("Enter the value of a:")
b=input("Enter the value of b:")
print("-"*50)
print("original value of a={}".format(a))
print("original value of b={}".format(b))
print("-"*50)
#Swapping Logic:
x=a
a=b
```

```
b=x
print("swap value of a={}".format(a))
print("swap value of b={}".format(b))
print("-"*50)
```

```
--------------------------------------------------
original value of a=10
original value of b=40
--------------------------------------------------
swap value of a=40
swap value of b=10
--------------------------------------------------
```

In [18]:
```
# Program for Swaping of Two Numeric Values?
a=int(input("Enter the value of a:"))
b=int(input("Enter the value of b:"))
print("-"*50)
print("original value of a={}".format(a))
print("original value of b={}".format(b))
print("-"*50)
#Swapping Logic for two Numeric values?
a=a+b
b=a-b
a=a-b
print("swap value of a={}".format(a))
print("swap value of b={}".format(b))
print("-"*50)
```

```
--------------------------------------------------
original value of a=19
original value of b=34
--------------------------------------------------
swap value of a=34
swap value of b=19
--------------------------------------------------
```

In [20]:
```
a=int(input("Enter the value of a:"))
b=int(input("Enter the value of b:"))
print("-"*50)
print("original value of a={}".format(a))
print("original value of b={}".format(b))
print("-"*50)
#Swapping Logic for two Numeric values?
a=a*b
b=a//b
a=a//b
print("swap value of a={}".format(a))
print("swap value of b={}".format(b))
print("-"*50)
```

```
--------------------------------------------------
original value of a=-13
original value of b=-123
--------------------------------------------------
swap value of a=-123
swap value of b=-13
--------------------------------------------------
```

In [24]:
```
a=int(input("Enter the value of a:"))
b=int(input("Enter the value of b:"))
print("-"*50)
print("original value of a={}".format(a))
print("original value of b={}".format(b))
print("-"*50)
#Swapping Logic for two Numeric values?
a,b=b,a
print("swap value of a={}".format(a))
print("swap value of b={}".format(b))
print("-"*50)
```

```
--------------------------------------------------
original value of a=10
original value of b=20
--------------------------------------------------
swap value of a=20
swap value of b=10
--------------------------------------------------
```

In [28]:
```
print("*"*30,"END THE CLASS","*"*30)
```

```
****************************** END THE CLASS ******************************
```