Aim:- write a python program to perform & display the result of python basic operation

Theory:-

In Python programming, Operators in general are used to perform operations on values and variables. These are standard symbols used for logical and arithmetic operations. In this article, we will look into different types of Python operators.

- OPERATORS: These are the special symbols. Eg- + , * , /, etc.
- OPERAND: It is the value on which the operator is applied.

Arithmetic Operator

In Python, arithmetic operators are used to perform mathematical operations such as addition, subtraction, multiplication, division, etc.

These operators work with numeric values (integers, floats) and return a result based on the operation.

Operator	Name	Description	Example (a = 10, b = 3)	Result
+	Addition	Adds two numbers	a + b	13
-	Subtraction	Subtracts second number from the first	a - b	7
*	Multiplication	Multiplies two numbers	a * b	30
/	Division	Divides first number by second (float)	a / b	3.33
//	Floor Division	Division that returns an integer (floor)	a // b	3
%	Modulus	Returns the remainder of the division	a % b	1
**	Exponentiation	Raises first number to the power of second	a ** b	1000

Comparison (Relational) Operators

A comparison operator in Python is used to compare two values. It returns a Boolean value:

True if the comparison is correct

False if the comparison is not correct

These are essential in decision-making, such as in if, while, and other control structures.

Operator	Description	Example	Result
==	Equal to	a == b	False
!=	Not equal to	a != b	True
>	Greater than	a > b	True
<	Less than	a < b	False
>=	Greater than or equal to	a >= b	True
<=	Less than or equal to	a <= b	False

Logical Operators

n Python, logical operators are used to combine multiple conditions (Boolean expressions). They return True or False depending on the truth value of the expressions.

Logical operators are mostly used in conditional statements like if, while, etc.

Operator	Description	Example	Result
and	Logical AND	a > 5 and b < 5	True
or	Logical OR	a < 5 or b < 5	True
not	Logical NOT	not(a > b)	False

Assignment Operators

Assignment operators in Python are used to assign values to variables.

They can also be combined with arithmetic and bitwise operators to update the value of a variable in a shorter way.

Operator	Description	Example	Equivalent To
=	Assign	x = a	-
+=	Add and assign	x += b	x = x + b
-=	Subtract and assign	x -= b	x = x - b
*=	Multiply and assign	x *= b	x = x * b
/=	Divide and assign	x /= b	x = x / b
//=	Floor divide and assign	x //= b	x = x // b
%=	Modulus and assign	x %= b	x = x % b
**=	Power and assign	x **= b	x = x ** b

Program

```
# Input from user
a = int(input("Enter value for a: "))
b = int(input("Enter value for b: "))

print("\n--- Arithmetic Operations ---")
print("Addition of a & b :",a + b)
print("Subtraction a & b :",a - b)
print("Multiplication of a & b :",a * b)
```

```
print(“Division of a & b :”,a / b)
print(“Modulus of a & b :”,a % b)
print(“Floor division of a & b :”,a // b)
print(“Exponentiation of a & b :”,a ** b)

print("\n--- Comparison Operations ---")
print(“a == b”,a == b)
print(“a != b”,a != b)
print(“a > b”,a > b)
print(“a < b”,a < b)
print(“a >= b”,a >= b)
print(“a <= b”,a <= b)

print("\n--- Logical Operations ---")
print(“a > 3 and b < 10:" ,a > 3 and b < 10)
print("a > 3 or b < 10:",a > 3 or b < 10)
print("not(a > 3) or b < 10:",not(a > 3 or b < 10))

print("\n--- Assignment Operations ---")
x = a
print(“ x =”, x)
x += b
print(“x += b →”, x)
x -= b
print(“x -= b →”, x)
x *= b
print(“x *= b →”, x)
x /= b
print(“x /= b →”, x)
x%=b
print(“x%=b→”, x)

print("\n--- Bitwise Operations ---")
print(“a & b =”, a & b)
print("a | b =”, a | b)
print("a ^ b = “,a ^ b)
print("a << 1 =”, a << 1)
print("a >> 1 = “,a >> 1)
print(“~a=”,~a)
```

Output:

Result:Hence, we successfully performed basic operation of python.