

# Arithmetic Operators:

Operators can be categorized as:

1. Unary operators. Eg -12
2. Binary operators. Eg. 2+3
3. Ternary operators: [on\_true] if [expression] else [on\_false]

## ▼ 1. Unary Operator

```
# + and - sign before number play the role of unary operator  
a=-2  
print(a)
```

📄 -2

```
# Increment operator is invalid in Python  
a++
```

```
File "<ipython-input-4-22e3d6dc1353>", line 1  
  a++  
    ^  
SyntaxError: invalid syntax
```

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## ▼ 2. Binary Operator

1. Addition (+)
2. Subtraction (-)
3. Multiplication (\*) : Eg.  $25 * 10 \Rightarrow 250$
4. True Division (/) : Eg.  $25/10 \Rightarrow 2.5$
5. Truncating Division (//): Eg.  $25//10 \Rightarrow 2$  Eg.  $25//10.0 \Rightarrow 2.0$
6. Modulus Operator (%) : Eg.  $25\%10 \Rightarrow 5$
7. Exponentiation ( \*\* ): Eg.  $2^3 \Rightarrow 2^{**3} \Rightarrow 8$

```
a = int(input('Enter any number:'))  
b = int(input('Enter any number:'))
```

```
Enter any number:3  
Enter any number:5
```

```
# Addition  
a+b
```

```
8
```

```
# Subtraction  
a-b
```

```
-2
```

```
# Multiplication  
a*b
```

```
15
```

```
# True Division
```

```
b/a
```

```
1.6666666666666667
```

```
# Truncating Division (//): Gives the integer part as output
```

```
b//a
```

```
1
```

```
# Modulus Operator (%): Gives remainder
```

```
b%a
```

```
2
```

```
# Exponentiation ( ** )
```

```
b**a
```

```
125
```

### ▼ 3. Ternary Operator

**Syntax:** [on\_true] if [expression] else [on\_false]

```
print("a" if a > b else "b")
```

```
b
```

```
print(a if a > b else b)
```

## ▼ 4. Operator Precedence and Associativity

### 4.1 Operator Precedence Rule ( Precedence from top to Bottom)

1. Exponentiation ( \*\* )
2. Negation (-)
3. Multiplication (\*), True Division (/), Truncating Division (//), Modulus (%)
4. Addition (+), Subtraction (-)

**4.2 Operator Associativity Rule** If in the arithmetic expresion there exist multiple operators with same priority, then the one that lies on the left side will be operated first.

```
2*3%2
```

```
0
```

```
2*3**2
```

```
18
```

### Assignment:

1. Implement all the examples mentioned above.
2. Write a program to determine the area of a rectangle.
3. Write a program to determine the area of a circle.
4. Write a program to determine the average of three numbers entered by the user.
5. Write a program to concatenate three strings.

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