Operators In Python

1.Arithmetic Operators:

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division (/)
- Floor Division (//)
- Modulus (%)
- Exponentiation (**)

In [2]:
```
print(5+6) # Addtion -> adding the numbers

print(5-6) # subtraction-> subtract the number

print(5*6) # Multiplication -> Multiply the number

print(5/2) # Divsion -> Divide the numnber

print(5//2) # Floor Division -> It trasform into integer number= 2.5 convert into 2

print(5%2) # Modulus -> It Provides remainder of the Divsion

print(5**2) # Exponential -> raising a number to a certain power.(raised to power)
```

```
11
-1
30
2.5
2
1
25
```

2. Comparison Operators/ Relational Opeartors:

- Equal to (==)
- Not equal to (!=)
- Less than (<)
- Greater than (>)
- Less than or equal to (<=)
- Greater than or equal to (>=)

In [5]:
```
print(4==4)

print(4!=4)

print(4<5)

print(4>5)

print(4<=4)
```

```
print(4>=4)
```

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

2. Logical Operators:

- Logical AND (and)
- Logical OR (or)
- Logical NOT (not)

In [7]:
```
p = True
q = False

print(p and q) # true and false -> 1 and 0 = 0
print(p or q) # true or false -> 1 or 0 = 1
print(not p)
```

```
False
True
False
```

3. Assignment Operators:

- Assignment (=)
- Add and Assign (+=)
- Subtract and Assign (-=)
- Multiply and Assign (*=)
- Divide and Assign (/=)
- Floor Divide and Assign (//=)
- Modulus and Assign (%=)
- Exponentiate and Assign (**=)

In [12]:
```
x = 10
x += 5
print(x)  # Equivalent to x = x + 5
```

```
15
```

In [16]:
```
x = 10
x -= 3  # Equivalent to x = x - 3
x *= 2  # Equivalent to x = x * 2
x /= 4  # Equivalent to x = x / 4
x //= 2 # Equivalent to x = x // 2
x %= 3  # Equivalent to x = x % 3
x **= 2 # Equivalent to x = x ** 2
```

4.Bitwise Operators:

- Bitwise AND (&)

- Bitwise OR (|)
- Bitwise XOR (^)
- Bitwise NOT (~)
- Left Shift (<<)
- Right Shift (>>)

In [23]:
```
m = 5  # 101 in binary
n = 3  # 011 in binary
bitwise_and = m & n  # 001 (1 in decimal)
print(bitwise_and)

bitwise_or = m | n   # 111 (7 in decimal)
print(bitwise_or)

bitwise_xor = m ^ n  # 110 (6 in decimal)
print(bitwise_xor)

bitwise_not_m = ~m   # -6 (in decimal)
print(bitwise_not_m)

left_shift = m << 1  # 010 (2 in decimal)
print(left_shift)

right_shift = m >> 1 # 010 (2 in decimal)
print(right_shift)
```

```
1
7
6
-6
10
2
```

These are the basic operators in Python. You can use them to perform various operations on variables and values in your Python programs.