Operators:

Operators are symbols that *perform operations on variables and values*.

Types of Operators:

There are four major types of operators in Python:

1. Arithmetic Operators
2. Assignment Operators
3. Comparison Operators
4. Logical Operators

1. Arithmetic Operators:

- ***Arithmetic operators*** are used to perform mathematical operations.

For example: +, -, *, /, %, **, // a = 30;

```
a = 10;
b = 20;

print(a+b) # Addition
print(a-b) # Subtraction
print(a*b) # Multiplication
print(a/b) # Division
print(a%b) # Modulus
print(a**b) # Exponent


# Floor Division
print(a//b) # Floor Division (returns only integer part)
# Example:

a = 10
b = 3

result = a // b
print(result)  # Output: 3
```

- In this example, 10 // 3 equals 3, not 3.33, because // performs floor division

2. Assignment Operators:

- ***Assignment operators*** are used to assign values to variables.

For example: =, +=, -=, *=, /=, %=, != etc.

```
# Example:
a = 10      # Assign value 10 to variable a
print(a)

a += 5      # increment: Add 5 to variable a and assign the result to variable a
print(a)

a -= 5      # decrement: Subtract 5 from variable a and assign the result to
variable a
print(a)

a *= 5      # multiplication: Multiply variable a by 5 and assign the result to
variable a
print(a)

a /= 5      # division: Divide variable a by 5 and assign the result to variable a
print(a)

a %= 5      # modulus: Find the remainder of variable a divided by 5 and assign
the result to variable a
print(a)
```

3. Comparison Operators:

- ***Comparison operators*** are used to compare two values.

For example: ==, !=, >, <, >=, <= etc.

```
# Example:
a == 10     # equal to
print(a)

a != 10     # not equal to
print(a)

a > 10      # greater than
print(a)

a < 10      # less than
print(a)

a >= 10     # greater than or equal to
print(a)

a <= 10     # less than or equal to
print(a)
```

4. Logical Operators:

- ***Logical operators*** are used to combine conditional statements.

For example: and, or, not etc.

```
# Example:
a and b    # " and " means "both conditions should be true"
print(a)

a or b     # " or " means "at least one of the conditions should be true"
print(a)

not a      # " not " means "reverse the result, returns false if the result is
true"
print(a)
```