# Operators?

- An **operator** is a special symbol in Java.
- It is used to perform operations on variables and values.

- Example: +, -, *, / are operators.

# Types of Operators in Java

## Arithmetic Operators

Used for basic math operations.

- `+` → Addition
- `-` → Subtraction
- `*` → Multiplication
- `/` → Division
- `%` → Modulus (remainder after division)

**Example**

**int a = 10, b = 3;**

```
System.out.println(a + b); // 13
System.out.println(a - b); // 7
System.out.println(a * b); // 30
System.out.println(a / b); // 3
System.out.println(a % b); // 1
```

# (c) Logical Operators

**Used with conditions (true/false).**

&& → Logical AND (both must be true)

|| → Logical OR (any one true is enough)

! → Logical NOT (reverse the result)

**int age = 20;**

```
System.out.println(age > 18 && age < 30); // true
System.out.println(age < 18 || age > 30); // false
System.out.println(!(age > 18));          // false
```

# (d) Assignment Operators

Used to assign values to variables.

= → assign value

+= → add and assign

-= → subtract and assign

*= → multiply and assign

/= → divide and assign

int num = 10;

num += 5;

num = num + 5 → 15

num -= 3;

num = num - 3 → 12

# (b) Relational Operators

**Used to compare values (result will be true or false).**

== → equal to

!= → not equal to

> → greater than

< → less than

>= → greater than or equal to

<= → less than or equal to

**int x = 5, y = 8;**

```
System.out.println(x == y);
System.out.println(x > y);
System.out.println(x < y);
System.out.println(x >= y);
System.out.println(x <= y);
System.out.println(x != y);
```

# (e) Unary Operators

Work with a single variable.

++ → increment by 1

-- → decrement by 1

+ → positive (just shows number is positive)

- → negative (changes sign)

# (f) Ternary Operator

Shortcut for if-else.

condition? value_if_true : value_if_false

# (g) Bitwise Operators (advanced use)

Work on bits (0 and 1).

& → AND

| → OR

^ → XOR

~ → NOT

<< → left shift

>> → right shift

# Hands on

**Thankyou**