

4. Types of Operators in Java

Q. What is operators?

" Symbols used to perform operations on data stored in variables "

Types of Java Operators

- 1) Arithmetic Operators.
- 2) Assignment Operators.
- 3) Comparison Operators.
- 4) Logical Operators.
- 5) Increment & Decrement Operators.
- 6) Conditional (Ternary) Operator.

1. Arithmetic Operators.

" Used to perform arithmetic operations like add, subtract, multiply, division & modulus. " $+$, $-$, $*$, $/$, $\%$ (modulus).

<pre>int a = 10; int b = 5;</pre>	<pre>// multiply (*) int product = a * b;</pre>
<pre>// addition (+) int sum = a + b;</pre>	<pre>// Division (/) int quotient = a / b;</pre>
<pre>// subtract (-) int difference = a - b;</pre>	<pre>// Modulus (%) int remainder = a % b;</pre>

2. Assignment Operators

"Used to assign values to variables."

```
int x = 10;
```

// Equivalent to: $x = x + 5$
 $x += 5;$

```
int y = 10;
```

// Equivalent to: $y = y - 5$
 $y -= 5;$

3. Comparison Operators

"used to compare 2 values"

```
int num1 = 10;
```

```
int num2 = 20;
```

// Equal to

```
boolean isEqual = (num1 == num2);
```

// Not equal to

```
boolean isNotEqual = (num1 != num2);
```

// Greater than

```
boolean isGreaterThan = (num1 > num2);
```


// Less than

boolean isLessThan = (num1 < num2);

4. Logical Operators

"Used to perform Logical operations."

boolean q = true;

boolean w = false;

// Logical AND

// When 'both true' then true

boolean result = (q & w);

// Logical OR

// When 'both False' then False.

boolean result2 = (q || w);

// Logical NOT (opposite)

boolean result3 = (!q);

5. Increment & Decrement Operators

"Used to increment / decrement the values of a variables."

int count = 10;

// increment by 1

count ++;

// decrement by 1

count --;

6. Conditional (Ternary) Operators

"Used to assign a value based on condition"

```
int age = 21;
```

```
String status = (age >= 18) ? "Adult" : "Minor";  
System.out.println(status);
```

If the condition $(age \geq 18)$ is true then the "Adult" value will store in status variable & if the condition gets false then "Minor" value gets store in status variable.