# Operators

There are many types of operators in Java which are given below:
1. Unary Operator,
2. Arithmetic Operator,
3. Relational Operator,
4. Bitwise Operator,
5. Logical Operator,
6. Ternary Operator and
7. Assignment Operator

## 1. Unary Operator

| | | |
|---|---|---|
| Unary | postfix | *expr++ expr--* |
| | prefix | *++expr --expr +expr -expr ~ !* |

The Java unary operators require only one operand. Unary operators are used to perform various operations i.e.: incrementing/decrementing a value by one.

### Example 1

```
public class OperatorExample{
public static void main(String args[]){
int x=10;
System.out.println(x++);     //10 (11)
System.out.println(++x);     //12
System.out.println(x--);     //12 (11)
System.out.println(--x);     //10
}}
```

**Output:**

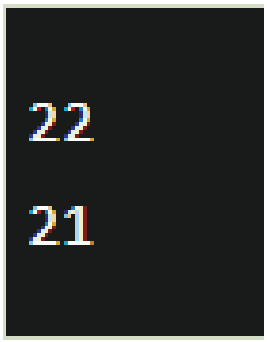
```
10
12
12
10
```

## Example 2

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=10;
System.out.println(a++ + ++a);   //10+12=22
System.out.println(b++ + b++);   //10+11=21

}}
```

**Output:**



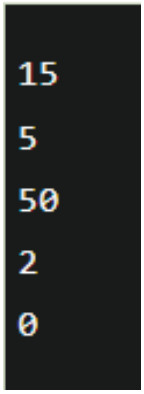

## 2. Java Arithmetic Operators

Java arithmetic operators are used to perform addition, subtraction, multiplication, and division. They act as basic mathematical operations.

### Example:

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=5;
System.out.println(a+b);     //15
System.out.println(a-b);     //5
System.out.println(a*b);     //50
System.out.println(a/b);     //2
System.out.println(a%b);     //0
}}
```

**Output:**



## Java AND Operator Example: Logical && and Bitwise &

The logical && operator doesn't check the second condition if the first condition is false. It checks the second condition only if the first one is true.

The bitwise & operator always checks both conditions whether first condition is true or false.

### Example

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=5;
int c=20;
System.out.println(a<b&&a<c);     //false && true = false
System.out.println(a<b&a<c);      //false & true = false
}}
```

**Output:**

```
false
false
```

## Java OR Operator Example: Logical || and Bitwise |

The logical || operator doesn't check the second condition if the first condition is true. It checks the second condition only if the first one is false.

The bitwise | operator always checks both conditions whether first condition is true or false.

### Example

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=5;
int c=20;
System.out.println(a>b||a<c);       //true || true = true
System.out.println(a>b|a<c);        //true | true = true

// || vs |

System.out.println(a>b||a++<c);    //true || true = true
System.out.println(a);         //10 because second condition is not checked
System.out.println(a>b|a++<c);     //true | true = true
System.out.println(a);         //11 because second condition is checked
}}
```

## Java Ternary Operator

Java Ternary operator is used as one line replacement for if-then-else statement and used a lot in Java programming. It is the only conditional operator which takes three operands.

### Example :

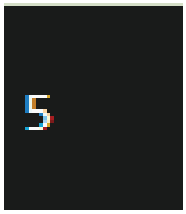
```
public class OperatorExample{
public static void main(String args[]){
int a=2;
int b=5;
int min=(a<b)?a:b;
System.out.println(min);
}}
```

**Output:**


### Example :

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=5;
int min=(a<b)?a:b;
System.out.println(min);
}}
```

**Output:**




## Java Assignment Operator Example

Java assignment operator is one of the most common operators. It is used to assign the value on its right to the operand on its left.

### Example :

```
public class OperatorExample{
public static void main(String args[]){
int a=10;
int b=20;
a+=4; //a=a+4 (a=10+4)
b-=4;  //b=b-4 (b=20-4)
System.out.println(a);
System.out.println(b);
}}
```

**Output:**