

Java Operators

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Java Operators

Operators are used to perform operations on variables and values.

The value is called an operand, while the operation (to be performed between the two operands) is defined by an **operator**:

Operand	Operator	Operand
100	+	50

In the example below, the numbers 100 and 50 are **operands**, and the **+** sign is an **operator**:

Example

```
int x = 100 + 50;
```

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Although the **+** operator is often used to add together two values, like in the example above, it can also be used to add together a variable and a value, or a variable and a variable:

Example

```
int sum1 = 100 + 50;           // 150 (100 + 50)
int sum2 = sum1 + 250;         // 400 (150 + 250)
int sum3 = sum2 + sum2;         // 800 (400 + 400)
```

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Java divides the operators into the following groups:

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Bitwise operators

Arithmetic Operators

Arithmetic operators are used to perform common mathematical operations.

Operator	Name	Description	Example	Try it
+	Addition	Adds together two values	<code>x + y</code>	Try it »
-	Subtraction	Subtracts one value from another	<code>x - y</code>	Try it »
*	Multiplication	Multiplies two values	<code>x * y</code>	Try it »
/	Division	Divides one value from another	<code>x / y</code>	Try it »
%	Modulus	Returns the division remainder	<code>x % y</code>	Try it »
++	Increment	Increases the value of a variable by 1	<code>++x</code>	Try it »
--	Decrement	Decreases the value of a variable by 1	<code>--x</code>	Try it »

Java Assignment Operators

Assignment operators are used to assign values to variables.

In the example below, we use the **assignment** operator (`=`) to assign the value **10** to a variable called **x**:

Example

```
int x = 10;
```

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The **addition assignment** operator (**+=**) adds a value to a variable:

Example

```
int x = 10;  
x += 5;
```

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A list of all assignment operators:

Operator	Example	Same As	Try it
=	x = 5	x = 5	Try it »
+=	x += 3	x = x + 3	Try it »
-=	x -= 3	x = x - 3	Try it »
*=	x *= 3	x = x * 3	Try it »
/=	x /= 3	x = x / 3	Try it »
%=	x %= 3	x = x % 3	Try it »
&=	x &= 3	x = x & 3	Try it »
=	x = 3	x = x 3	Try it »
^=	x ^= 3	x = x ^ 3	Try it »
>>=	x >>= 3	x = x >> 3	Try it »
<<=	x <<= 3	x = x << 3	Try it »

Java Comparison Operators

Comparison operators are used to compare two values:

Operator	Name	Example	Try it
==	Equal to	x == y	Try it »
!=	Not equal	x != y	Try it »
>	Greater than	x > y	Try it »
<	Less than	x < y	Try it »
>=	Greater than or equal to	x >= y	Try it »
<=	Less than or equal to	x <= y	Try it »

Java Logical Operators

Logical operators are used to determine the logic between variables or values:

Operator	Name	Description	Example	Try it
&&	Logical and	Returns true if both statements are true	x < 5 && x < 10	Try it »
	Logical or	Returns true if one of the statements is true	x < 5 x < 4	Try it »
!	Logical not	Reverse the result, returns false if the result is true	!(x < 5 ! && x < 10)	Try it »

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