

# **C** Operators

**Topics :** <u>C</u> **Written on** <u>April 12, 2023</u>

In C programming language, operators are used to perform operations on operands. An operand is a variable or a value on which the operator operates. C programming language supports various types of operators, such as arithmetic operators, relational operators, logical operators, bitwise operators, assignment operators, and conditional operators.

Here are the most commonly used operators in C programming language:

1. Arithmetic Operators: Arithmetic operators are used to perform arithmetic operations on numeric values.

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus (remainder after division)
Example:	

int a = 10, b = 5, c; c = a + b; // c is now 15 c = a - b; // c is now 5 c = a \* b; // c is now 50 c = a / b; // c is now 2 c = a % b; // c is now 0

2. Relational Operators: Relational operators are used to compare two values.

scription

- == Equal to
- != Not equal to
- > Greater than
- < Less than
- >= Greater than or equal to
- <= Less than or equal to

Example:

```
int a = 10, b = 5;
if (a == b) {
    printf("a is equal to b\n");
}
if (a > b) {
    printf("a is greater than b\n");
}
if (a < b) {
    printf("a is less than b\n");
}
```

3. **Logical Operators**: Logical operators are used to perform logical operations on boolean values.

### **Operator Description**

&& Logical AND || Logical OR ! Logical NOT

Example:

```
int a = 10, b = 5, c = 15;
if (a > b && c > a) {
    printf("Both conditions are true\n");
}
if (a > b || c < a) {
    printf("At least one condition is true\n");
}
if (!(a > b)) {
    printf("a is not greater than b\n");
}
```

4. **Bitwise Operators**: Bitwise operators are used to perform bitwise operations on binary values.

#### **Operator Description**

&	Bitwise AND
	Bitwise OR
^	Bitwise XOR
~	Bitwise NOT
<<	Left shift
>>	Right shift

Example:

unsigned int a = 60; // 0011 1100 unsigned int b = 13; // 0000 1101 unsigned int c; c = a & b; // 0000 1100 c = a \| b; // 0011 1101 c = a ^ b; // 0011 0001 c = ~a; // 1100 0011 c = a << 2; // 1111 0000 c = a >> 2; // 0000 1111

5. Assignment Operators: Assignment operators are used to assign values to variables.

#### **Operator Description**

= Assignment	
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+= Add and assign

int x = 10;

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