

C Operators

Topics : [C](#)

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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.

Operator	Description
==	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
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=	Assignment
+=	Add and assign

```
int x = 10;
```

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