

Operators in C++

The symbols that are used in C++ programs to form an expression are known as operators. C++ has a rich set of operators including all C language's operators and also some new operators. There are three categories of operators in C++. These are:

- Unary Operators
- Binary Operators
- Ternary Operators

Unary Operators

The operators that operate a single operand to form an expression are known as unary operators. The operators like ++ (increment) operator, -- (decrement) operator etc. are the part of unary operators.

Binary Operators

The operators that operate two or more operands are known as binary operators. The operators like +, -, *, /, % etc. are binary operators.

E.g. a+b, a-b, a*b, a/b etc.

Ternary Operators

The operator that operates minimum or maximum three operands is known as ternary operator. There is only one ternary operator available in C++. The operator ? : is the only available ternary operator used as a substitute of if-else statement.

E.g. a>b ? a:b

Types of Operators in C++

- Arithmetic Operators
- Logical Operators
- Comparison Operators
- Bitwise Operators
- Scope resolution Operators
- Line feed Operators
- Field width Operators

1. C++ Arithmetic Operators

Arithmetic operators are used to perform arithmetic operations on variables and data. For example, $a + b$;

Example:

```
#include <iostream>
using namespace std;

int main() {
    int a, b;
    a = 7;
    b = 2;

    // printing the sum of a and b
    cout << "a + b = " << (a + b) << endl;

    // printing the difference of a and b
    cout << "a - b = " << (a - b) << endl;

    // printing the product of a and b
    cout << "a * b = " << (a * b) << endl;

    // printing the division of a by b
    cout << "a / b = " << (a / b) << endl;

    // printing the modulo of a by b
    cout << "a % b = " << (a % b) << endl;

    return 0;
}
```

Output:

```
a + b = 9
a - b = 5
a * b = 14
a / b = 3
a % b = 1
```

2. C++ Logical Operators

Logical operators are used to check whether an expression is true or false. If the expression is true, it returns 1 whereas if the expression is false, it returns 0.