



Operators in C Programming

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What is Operators?

- An Operator is a symbol that use to perform certain mathematic or logical operations.
- Operator is used to manipulate data and variables

Types of Operators

- In C Programming operator classified into various categories.
- 1. Arithmetic operators.
- 2. Relational operators.
- 3. Logical operators.
- 4. Assignment operators.
- 5. Increment & decrement operators.
- 6. Conditional operators.
- 7. Bitwise operators.
- 8. Special operators.

Arithmetic operators

- Arithmetic operators used to perform arithmetic operations.
- There are following arithmetic operators in C language.

Operator	Meaning
+	Addition or unary plus
-	Subtraction or unary minus
*	Multiplication
/	Division
%	Modulo(Return remainder of division)

Relational Operators

- Relational operators compare between two operands and return in terms of true or false.
- There are following relational operators.

Operator	Meaning
>	Greater then
<	Less then
>=	Greater then Equal to
<=	Less then Equal to
==	Equal to
!=	Not Equal to

Logical operator

- A logical operator is used to compare or evaluate logical and relational expressions.
- There are following Logical operators.

Operator	Meaning
&&	Logical AND
	Logical OR
!	Logical NOT



Assignment operator

- An assignment operator is used to assign a constant or a value of one variable to another.
- `=` is a assignment operator.
- You can use the assignment for multiple assignments as follows:
- `x = y = z = 20;`

Increment & Decrement Operator

- Increment Operator(++).
 - Increment operators are increase the value of subsequent.
 - Increment operator are two types as follows.
 - Post increment
 - Ex: `x=5; x++; x=5.`
 - Pre increment
 - Ex: `x=5; ++x, x=6.`

Increment & Decrement Operator(cont.)

- Decrement Operator(--).
 - decrement operators decrease the value to one, two and so on.
 - decrement operators are also two type as :
 - Post decrement
 - Ex: `x=5; x--; x=5.`
 - Pre decrement
 - Ex: `x=5; --x, x=4.`


Conditional operator.

- Main features of conditional operator as follows :
 - There are three operand.
 - It works from left to right
 - Example of ternary operator is conditional operator.
Symbol of conditional operator
 - condition ? True_parts : False_parts

Bitwise operator

- One of the c powerful features is a set of bit manipulation operators.
- There are various bitwise operators in C as following table.

Operator	Meaning
&	Bitwise AND
	Bitwise OR
^	Bitwise XOR(Exclusive OR)
>>	Left Shift
<<	Right Shift
~	One's Compliment




Special Operator

- There are many Special operators use in c programming.
 - Comma operator.
 - Sizeof Operator.

Comma Operator(,)

- Evaluate of comma operator- Left to right.
- Uses of comma operator as following :
 - Multiples declaration
 - Multiples initialization
 - Multiples variation
 - Multiples statement
- Example of comma operator.
 - `X=12, Y=10, Z=18;`
 - `for(i=0, j=0; i<5, j<5, i++, j++)`



Sizeof Operator

- Sizeof operator calculate the size of data i.e. how many bit a specific data having.
- Syntax of sizeof operator :
 - `sizeof(<variable>);`



Thank you

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