Unary Operator in C

Based on the number of operands an operator operates in the C programming language, the operators are classified as unary, binary, and ternary. Let us discuss each one for the upcoming GATE CSE exam separately:

- **Unary Operator:** A unary operator operates on only a single operand. For example, in the expression -8, “-“ is a unary minus operator as it operates on only one operand. The operand can be present towards the right of the unary operator. Example of unary operators are:- &(address-of operator), size of operator, !(logical negation), ~(bitwise negation), ++(increment operator), --(decrement operator), unary +, unary -, etc.
- **Binary Operators**: A binary operator operates on two operands. It requires an operand on both sides that are left and right. For example, in the expression 3+9, “+” is a binary operator with 3 and 9 as its left and right operands, respectively. These are different from the modulus operators in C. Examples of binary operators are:- *(multiplication), %(modulus operator), ==(equality operator), &&(logical AND operator), &(Bitwise AND operator), etc.
- **Ternary operator:** operates on three operands. The conditional operator(? :) is the only ternary operator available in C.

What is an Operator?

An operator specifies the operation to be applied to its operands. An operand specifies an entity on which an operation is to be performed. An operand can be a variable name, a constant, a function call, or a macro name. The operators in C, as per the GATE CSE syllabus, are classified based on the following criteria:

- The number of operands on which an operator operates.
- The role of an operator.

Unary Operator in C Symbol

Check out the symbols of the various Unary Operator in C important for the GATE exam in the table provided below. These symbols are widely used in constructing a program.

Unary Operator	Symbol
Prefix Increment Operator	++a
Post Increment Operator	a++
Unary plus	+
Unary Minus	-
Prefix Decrement Operator	--a
Post Decrement Operator	a--

Types of Unary Operators in C

Having discussed the unary operator in C and various other types of operators based on the number of operands. Let us now see a few unary operators important as per the GATE question paper perspective, along with examples:

- **Prefix Increment Operator:** It increments the value of the operator first and then stores it in the memory. In this, the operator is present on the left side of the operand. For instance int a=6; int b=++a; // b=7, a=7.
- **Post Increment Operator:** It increments the value of the operator value after storing it in the memory. In this, the operator is present on the right side of the operand. For instance int a=6; int b=a++; // b=6, a=7.
- **Unary plus:** It just signifies that a number is positive. The operand is an arithmetic type. Its result is the value of the operand. For example: int a= +8.
- **Unary minus:** It just signifies that a number is negative. The operand is an arithmetic type. Its result is the value of the operand. For example: int a= -8.
- **Prefix Decrement Operator:** It first decreases the operator's value and stores it in the memory. In this, the operator is present on the left side of the operand. For instance int a=6; int b=--a; // b=5, a=5.
- **Post Decrement Operator:** It decreases the operator's value after storing it in the memory. In this, the operator is present on the right side of the operand. For instance int a=6; int b=a--; // b=6, a=5.