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Welcome

Hosted and prepared by

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Operators
in C Language

An operator is a symbol that tells the compiler to perform a certain mathematical or logical manipulation. Operators are used in programs to manipulate data and variables.

Operators in C Language

C operators can be classified into following types:

A. Arithmetic operators
B. Relational operators
C. Logical operators
D. Bitwise operators
E. Assignment operators
F. Conditional operators
G. Special operators

Arithmetic operators

Operator	Description
+	adds two operands
-	subtract second operands from first
*	multiply two operand
/	divide numerator by denominator
%	remainder of division
++	Increment operator - increases integer value by one
--	Decrement operator - decreases integer value by one

++	**Increment operator** increases the integer value by one.	**A++ = 11**
--	**Decrement operator** decreases the integer value by one.	**A-- = 9**

Relational operators

| Operator	Description
==	Check if two operand are equal
!=	Check if two operand are not equal.
>	Check if operand on the left is greater than operand on the right
<	Check operand on the left is smaller than right operand
>=	check left operand is greater than or equal to right operand
<=	Check if operand on left is smaller than or equal to right operand
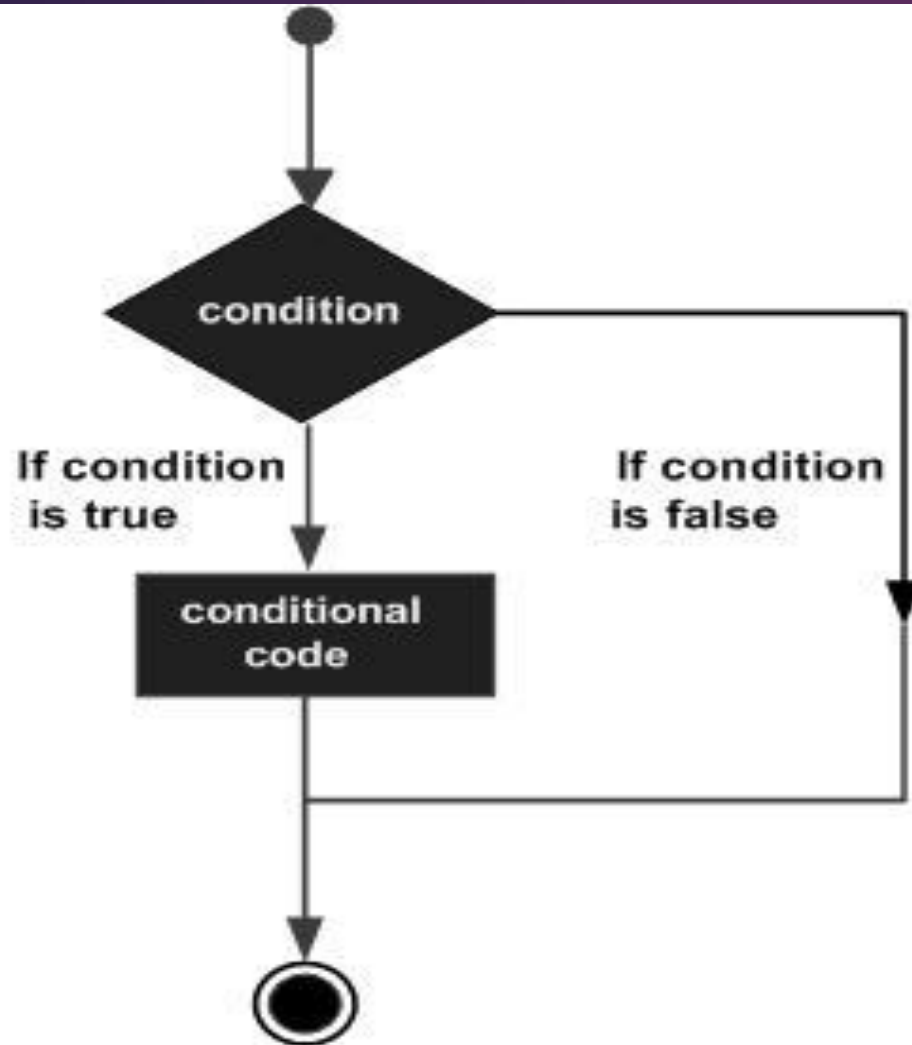
This is How **if** condition works

if statement

An **if** statement consists of a **Boolean expression** followed **by one or more statements.**

Syntax
The syntax of an 'if' statement in C programming language is −

```
if(boolean_expression)
 {
     /* statement(s) will execute if the
                          boolean expression is true */
 }
```
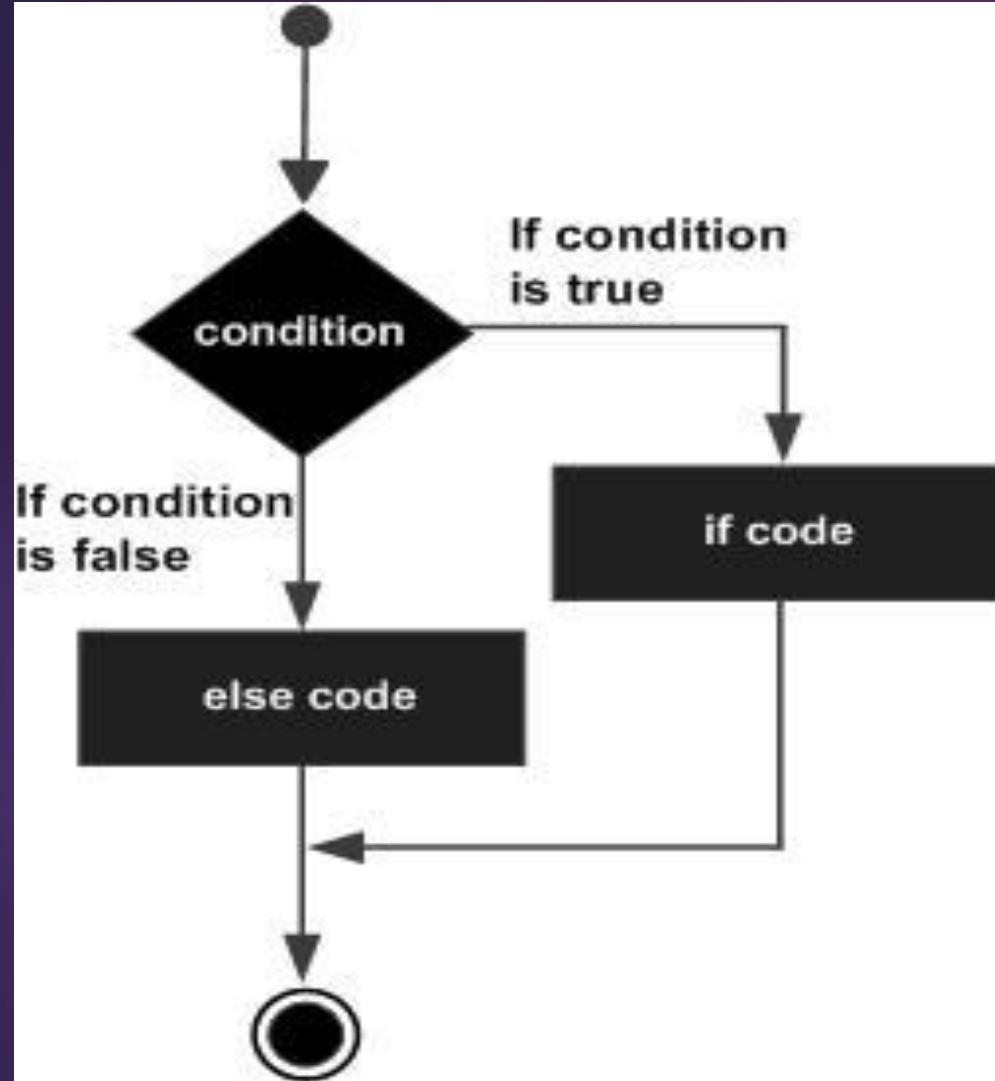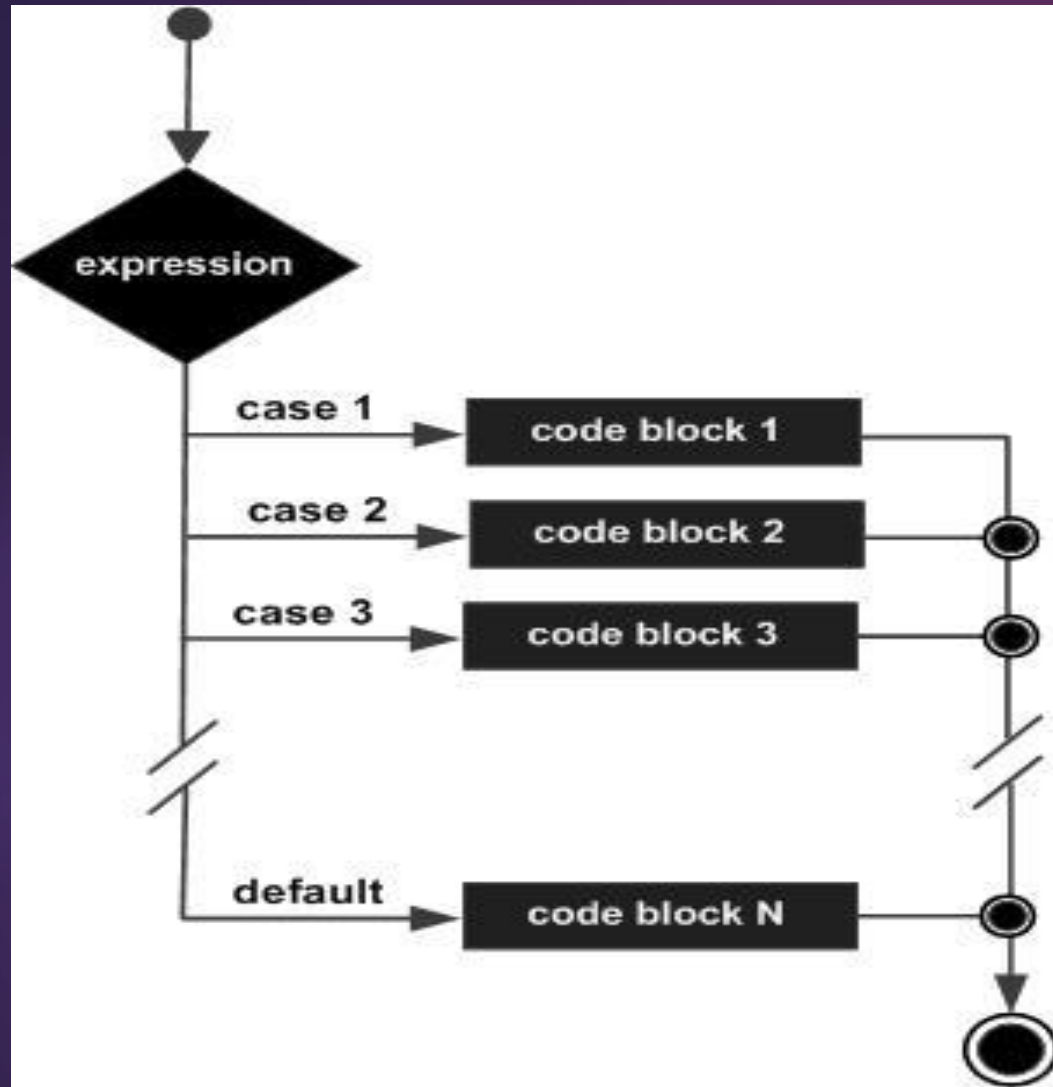
if...else statement

An **if** statement can be followed by an optional **else** statement, which executes when the Boolean expression is false.
Syntax
The syntax of an **if...else** statement in C programming language is −

```
if(boolean_expression) {
    /* statement(s) will execute if the boolean expression is true */
}
else {
    /* statement(s) will execute if the boolean expression is false */
}
```

if...else statement

Syntax
The syntax for
a **switch** statement in C
programming language
is as follows −

```c
switch(expression)
 {
 case constant-expression :
      statement(s);
      break; /* optional */

case constant-expression :
      statement(s);
       break; /* optional */


      /* you can have any number of case statements */
default : /* Optional */
      statement(s);
}
```

Logical operator

C language supports following 3 logical operators.

Suppose **a = 1** and **b = 0**,

Operator	Description	Example	Ans
&&	Logical AND	(a && b)	false
||	Logical OR	(a || b)	true
!	Logical NOT	(!a)	false

Bitwise operators

Bitwise operators perform manipulations of data at bit level. These operators also perform shifting of bits from right to left. **Bitwise operators are not applied to float or double.**

Operator	Description
&	Bitwise AND
|	Bitwise OR
^	Bitwise exclusive OR
<<	left shift
>>	right shift

Example :

```
a = 00011000
      b = 3

a << b = 1100000
a >> b = 0000011
```

Assignment Operators

Operator	Description	Example
=	assigns values from right side operands to left side operand	a=b
+=	adds right operand to the left operand and assign the result to left	a+=b is same as a=a+b
-=	subtracts right operand from the left operand and assign the result to left operand	a-=b is same as a=a-b
*=	mutiply left operand with the right operand and assign the result to left operand	a*=b is same as a=a*b
/=	divides left operand with the right operand and assign the result to left operand	a/=b is same as a=a/b
%=	calculate modulus using two operands and assign the result to left operand	a%=b is same as a=a%b

Conditional operator

It is actually the **if** condition that we use in C language decision making, but using conditional operator, we turn the **if** condition statement into a short and simple operator. The syntax of a conditional operator is :

```
expression 1 ? expression 2: expression 3
```

Explanation:

•The question mark **"?"** in the syntax represents the **if** part.

•The first expression (expression 1) generally returns either true or false, based on which it is decided whether (expression 2) will be executed or (expression 3)

•If (expression 1) returns true then the expression on the left side of **" : "** i.e (expression 2) is executed.

•If (expression 1) returns false then the expression on the right side of **" : "** i.e (expression 3) is executed.

Special operator

Operator	Description	Example
sizeof	Returns the size of an variable	sizeof(x) return size of the variable x
&	Returns the address of an variable	&x ; return address of the variable x
*	Pointer to a variable	*x ; will be pointer to a variable x

Operators Precedence in C

Category	Operator	Associativity
Postfix	() [] -> . ++ - -	Left to right
Unary	+ - ! ~ ++ - - (type)* & sizeof	Right to left
Multiplicative	* / %	Left to right
Additive	+ -	Left to right
Shift	<< >>	Left to right
Relational	< <= > >=	Left to right
Equality	== !=	Left to right
Bitwise AND	&	Left to right

Category	Operator	Associativity
Bitwise XOR	^	Left to right
Bitwise OR	|	Left to right
Logical AND	&&	Left to right
Logical OR	||	Left to right
Conditional	?:	Right to left
Assignment	= += -= *= /= %=>>= <<= &= ^= |=	Right to left
Comma	,	Left to right

Kocu, Hahahaha

Any questions?

পারবা ......?

Chat এ লিখে পেল দ্রুত!

যেকোনো ৮ টা অপারেটর এর নাম লিখতে পারবা (শুধু চিহ্ন লিখলে হবে!) ....?

Thanks
(Jajakallah Khairan)

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