Operators

UNIT-II

C include large number of operators that fall under different categories:

- Arithmetic operators
- Assignment operators
- Increment and decrement operators
- Relational operators
- Logical operators
- Conditional operators
- Bitwise operators

Arithmetic Operators

- Unary arithmetic operators-require only one operand.

  +x

  -y

- Binary arithmetic operators-require two operands.

  x+y

  x-y

Assignment Operator

- X=8 /* 8 is assigned to x */
- Y=5 /* 5 is assigned to y */
- x= x+5 can also be written as x+=5
- y=y*5 can also be written as y*=5

Increment and Decrement Operator

- These are unary operators they operate on single operand.
- ++ increment the value of the variable by one.
- -- decrement the value of the variable by one.
- ++x is equivalent to x=x+1
- --x is equivalent to x=x-1
- These operators should only be used with variables not with constant or expressions.
- These operators are of two types:

  -Prefix increment/decrement

  -Postfix increment/decrement

Prefix Increment/Decrement

- y = ++x means first increment the value of x by 1,then assign its value into y.

    1. x=x+1
    2. y=x

- y = --x means first decrement the value of x by 1,then assign its value into y.

    1. x = x-1
    2. y =x

Postfix Increment/Decrement

- y = x++ means first assign value of x into y then increment the value of x by 1.
  1. y=x
  2. x=x+1
- y = x-- means first assign value of x into y then decrement the value of x by 1.

Relational Operators

Operator	Meaning
<	Less than
<=	Less than or equal to
==	Equal to
!=	Not equal to
>	Greater than
>=	Greater than or equal to

Logical Operators

Operator	Meaning
&&	AND
||	OR
!	NOT

NOT(!) Operator

Condition	Result
False	True
True	False

AND(&&) Operator

Condition1	Condition2	Result
False	False	False
False	True	False
True	False	false
True	True	true

OR(II) Operator

Condition1	Condition2	Result
False	False	False
False	True	True
True	False	True
True	True	true

Conditional Operator

- It is a ternary operator(? And :) which require three expressions as operands.

  Test expression ? Expression1 : Expression2

  Firstly test expression is evaluated then

  1.If test expression is true then expression1 is evaluated.

  2. If test expression is false then expression2 is evaluated.

WAP to find larger among two numbers using conditional operator

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a, b, max;
clrscr();
scanf(“%d%d”, &a,&b);
max= a>b?a:b;
printf(“largest=%d”,max);
 getch();
}
```

Bitwise Operators

- These operators are used for operation on individual bits.
- These operators operate on integers only.

Operators	Meaning
&	Bitwise AND
|	Bitwise OR
<<	Left shift
>>	Right shift
^	Bitwise XOR

BitwiseXOR

Condition1	Condition2	Result
False	False	False
True	False	True
False	True	True
True	True	False