

Day-12Operators in C++

*

BODMASArithmetic Operator

Unary

Binary

Operator

(2+3=5)

operand

+
-
*
/

⇒

Ex:

$12 / 4 = 3$

$12.4 / 4 = 3.1$

because the float is have higher
~~prese~~ position than int

⇒

 $\{ *, /, \% \} \leftarrow > \{ +, - \} \leftarrow$

Associativity: left to right

Ex:

$2 * 4 - 6 / 2$

⇒

$8 - 3 = 5$

⇒

Unary Operator : ++, --

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①. Post increment $\rightarrow a++$

②. Pre increment $\rightarrow ++a$

Ex: $b = a++$

\Rightarrow First, ~~it will~~ a will give his value to b then increment.

$b = ++a$

\Rightarrow Here, first a will be increment himself then ~~assign~~ give his new value to b .

③. Post decrement $\rightarrow a--$

④. Pre decrement $\rightarrow --a$

* Comparison Operator $\rightarrow 1$
 $\searrow 0$

$\{ =, >, <, >=, <=, != \}$

Ex: $2 == 3 \rightarrow 0$ ($0 \rightarrow \text{False}$)

$2 == 2 \rightarrow 1$ ($1 \rightarrow \text{True}$)

$2 < 5 \rightarrow 1$

\Rightarrow $\frac{5 > 4 > 3}{1 > 3}$ Here the associativity is also left to right.
 0

\Rightarrow $4 != 5 \rightarrow 1$ $\{ >, <, >=, <= \}$ $\{ =, != \}$

\Rightarrow $\frac{5 > 4 < 3 == 2}{1 < 3}$ L to R L to R
 $1 == 2 \rightarrow 0$

*

Logical Operator

{ &, ||, ! }

And Or Not

Ex: $2 \& 3 \rightarrow 1$

$0 \& 3 \rightarrow 0$

$0 \& 0 \rightarrow 0$

$0 || 5 \rightarrow 1$

$5 || 5 \rightarrow 1$

$0 || 0 \rightarrow 0$

$!0 = 1$

$!5 = 0$

$!1 = 0$

=

These will always give answer in 0 & 1.

*

Bitwise Operator:

{ &, |, ^, ~, <<, >> }

⇒

$2 \& 3 \rightarrow 2$

~~01~~

10

10

~~++~~

11

11

10 → 2

11 → 3

Xor (^)

$00 \rightarrow 00$

$01 \rightarrow 01$

$10 \rightarrow 10$

$11 \rightarrow 00$

Ex: $2 \wedge 3 \rightarrow 1$

10

11

01

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⇒ << (Left shift)

$$5 \ll 1 \rightarrow 10$$

⇒

Num

x

1 0 1

↙ ↘ ↙

1 0 1 0

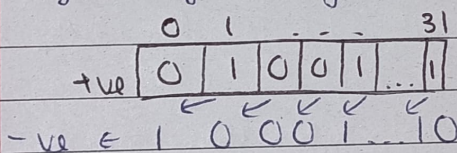
⇒

So, we can say →

$$\text{Num} \ll x = \text{Num} \times 2^x$$

⇒

Sometimes you will get -ve number if you left shift large +ve number.



⇒

Right shift (>>)

⇒

$$6 \gg 1 \rightarrow 3$$

1 1 0 → 6

0 1 1 → 3

⇒

~ (Complement)

$$\sim 5 \rightarrow -6$$

⇒

$$\begin{array}{rcl} & 00 & \dots 00101 \\ -ve \leftarrow & 11 & \dots 11010 \end{array}$$

$$1's \quad 00 \quad \dots \quad 00101$$

$$2's \quad \underline{\quad \quad \quad} \quad \quad \quad +1$$

$$\underline{00 \quad \dots \quad 00110} \rightarrow 6$$

{<<, >>} > {&, !, ^}

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⇒

Assignment Operaton

$$a = 3$$

$$a * = 3 \quad (\Rightarrow) \quad a = a * 3$$

$$a / = 10 \quad (\Rightarrow) \quad a = a / 10$$