

Size of data-types & format Specifiers: →

* We use the `sizeof()` function to determine the size of any variable.

%llu → long long unsigned

Sizeof () → zu → binary unsigned

Operators: →

int a = 20;
int b = 30;
a + b = 50;
a, b → operands
+ → addition arithmetic
= → assignment
Expression

Operators:

(I) Arithmetic: → C, C++, Java +, -, /, *, % Python //, **

(II) Assignment Operators: → =, +=, -=, /=, *=, %= ...

✓ Shorthand operators
✓ Augmented operators
a = 5
a = a + 2 = 5 + 2 = 7
a += 2
shorthand

(III) Comparison / Relational: → >, <, >=, <=, ==, !=

(IV) Logical: → &&, ||, ! (and, or, not) → Python

(V) Unary / Inc / Dec / Prefix / Postfix: → ++, --

(VI) Ternary Operator / Shorthand if-else operator / Conditional Operator:

→ (Condition) ? trueValue : falseValue;

Syntax: Mathematical

Bitwise Operators: → xxxx

(Toggle) → Transformers → AC → DC

Bit Manipulation / Bit Masking (Sakken, Bosch, Tata Tech, Intel, IBM)

Apti / Tech coding | F2F → DSA (e.g., EEE, EEE, Robotics, AE)

(I) Bitwise AND → &

(II) Bitwise OR → |

(III) Bitwise XOR → ^

(IV) Bitwise Right Shift → >>

(V) Bitwise Left Shift → <<

(VI) Bitwise NOT → ~

int 7 & 8 int BIN → 0111 & 1000 → 0000 → int 0

Shift Operations:

value a = 10

unit/step = 2

8 bit Representation

a << 2

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑

discarded 10 << 2 = 40

LS ↑