



```
int main() {
    int x;
    scanf("%d", &x);
    if (x >= 0)
        // Condition block
    else
        // Condition block
}
```

$\hookrightarrow \text{cin} \geqslant x;$

`printf("%d", x);`

`cout < x;`

`for(int i=0; i<10; i++) {`

`cout <---`

$i=0, i < 10$

`cout <--`

$i++$

$i=1, i < 10$

operators

\rightarrow Arithmetic $\rightarrow +, -, /, *, \%$ \rightarrow cout
 \rightarrow Logical $\rightarrow \&, \&&, ||,$
 \rightarrow Bitwise $\rightarrow \wedge, \vee, !, ^$

\rightarrow Unary $\rightarrow ++, --$

\rightarrow Binary $\rightarrow (, *, +, -, \%, \wedge, \vee) \rightarrow i++, i--$

\rightarrow Ternary $\rightarrow ? : \rightarrow 2) ++i, -i$

3) /, *, %

4) +, -

int v = 5 * 2

int x = 9++;

4) +, -
5) ^
6) 1, 3

$$a = a + b \Rightarrow \frac{a +}{a} = \frac{b}{a}$$

$$a - = b$$

$$a\gamma = b$$

$a^* b^* c$

$a^1 b^1 c$

o o o o o
↓ ↓ ↓ ↓ ↓
2x 2x 2x 2x 2

00-0
01-1
10-2
11-3

$$(10)_{10} \Rightarrow ()_2$$

$$\begin{array}{r}
 2 | 10 & 0 \\
 \hline
 2 | 5 & 1 \\
 \hline
 2 | 2 & 0 \\
 \hline
 & 1
 \end{array}$$

1910

char \Rightarrow 1 byte \Rightarrow 00000000 = 2^8

0-255

Integer \Rightarrow 4 byte \hookrightarrow 32 bit \Rightarrow

$$\begin{array}{r} 28 \quad 1 \\ \hline 28 \quad 9 \end{array} \qquad 101$$

$$2 \rightarrow 10 - 2^8 \rightarrow -1$$

$$1 \quad 0 \rightarrow 2^{\frac{1}{3}} - 1$$

32 bit \rightarrow 2^{32}

1

$$\begin{array}{r} 40 \\ \hline 22 \quad 0 \\ \hline 1 \end{array}$$

101

$$2^{-2}10 - 2 \rightarrow -1$$

$$\boxed{-2^{81} - 2^{31} - 1}$$

$$\begin{array}{r} 2^2 + \\ \hline 1000 \dots 000 \end{array}$$

$$\Rightarrow 872 = 10$$

80

$$A \Rightarrow S^-$$

$$B=2$$

$$\begin{array}{r} 101 \\ \hline 510 \\ \hline 000 \end{array}$$

$$A \oplus B = ?$$

$$\begin{array}{r} 101 \\ \hline 011 \\ \hline 001 \end{array}$$

$$\begin{array}{r} 221 \\ \hline 210 \quad 0 \\ \hline 2 \quad 5 \quad 1 \\ \hline 2 \quad 2 \quad 0 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 1010 \\ \hline 0011 \end{array}$$

$$\begin{array}{r} 00101 \\ \hline 2 \quad 0 \end{array} \Rightarrow$$

$$2^2 + 2^0$$

$$\Rightarrow 5$$

$$\begin{array}{r} 1000 \xrightarrow{\text{v v v v}} 1010 \xrightarrow{\text{v v v v}} 21/2 \\ \downarrow \qquad \downarrow \\ 10 \times 2 = 20 \end{array}$$

$$\begin{array}{r} 10101 \\ \hline 00111 \\ \hline 10111 \end{array}$$

$$\begin{array}{r} 1 \quad 2 \quad 2 \quad 2 \quad 2 \\ \hline 10101 \end{array}$$

$$\begin{array}{r} 10101 \\ \hline 10101 \end{array}$$

$$2^4 + 2^3 + 2^2 + 2^1 + 2^0$$

$$\begin{array}{r} 16 + 8 + 4 + 2 + 1 \\ \hline \Rightarrow 31 \end{array} \Rightarrow 23$$

$$\begin{array}{r} 11111 \\ \hline 11111 \end{array}$$

□

(10111)

2 1^7 1^1

(1011)₂
1100

1010
01100
1100

$2^4 + 2^3 + 2^0$
 $\rightarrow 16 + 8 + 1 = 25$

88, 11

