Bit manipulation (C++)

1. Debugging

#include <bitset>

→ To print data in binary.

Example
int a = -58
std::cout << std::bitset <16> (a)

2. Fixed size int types

#include <cstdint>

int8_t ——— **uint8_t**
int16_t ——— **uint16_t**
int32_t ——— **uint32_t**
int64_t ——— **uint64_t**

→ Unsigned int.

3. Bit wise operations

$a = 1101$ $(a \gg 1 = 0110)$ $(a \ll 1 = 11\underline{010})$

$b = 0110\boxed{111}$
$a = 0000$ LCB
$a = b$
$a = \boxed{1111}$

4. Sign (+/-)

100 -4
101 -3
110 -2
111 -1
000   0 $\big\}$ 2ˢ Compliment$\big\}$
001   1
010   2
011   3