04 June 2024 17:18

num

Int num = 25;

1 byte = 8 bits
4 bytes = 32 bits

25

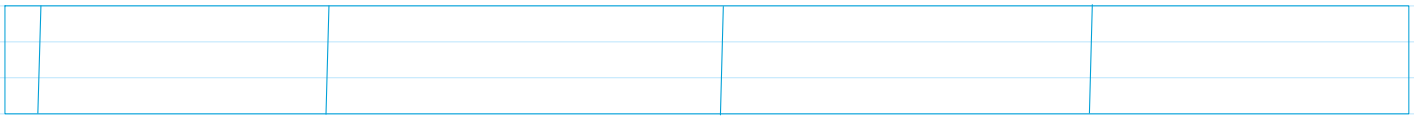
4 bytes

100

Most Significant Bit

0 : positive
1: negative

Binary format



4th byte 3rd byte 2nd byte 1 byte

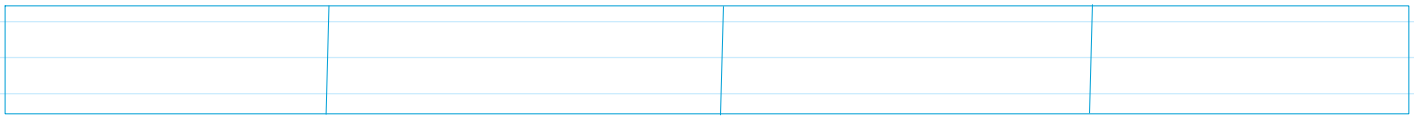
32 bits - 1bit (reserved for MSB)
31 bits for actual data

2^31 = 2147483648 - 1(0 is considered as a positive number)

= 0 to 2147483647

= -1 to -2147483648

Unsigned int num2 = 20;

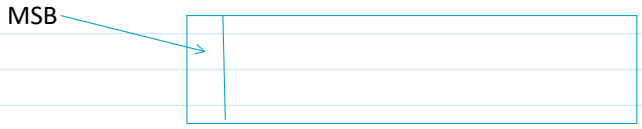


4th byte 3rd byte 2nd byte 1 byte

2^32 = 4,29,49,67,296 -1

4294967295

Char ch = 'A'; // 65 signed char



1 byte

Signed char range :
8 bits - 1 bit (reserved for MSB)

7 bits for actual data

2^7 = 128 -1 = 127 (0 is considered as positive)

Unsigned char range
2^8 = 256
256 - 1 = 255 (0 is a positive number)
Unsigned char = 0 to 255

Char : 0 to 127
 -1 to -128

Signed char :
-128 to 127