Addition Subtraction } overflow when MSB can't be stored in that register

Shift ← ×2
→ ÷2

Number

2 10 16

Hex code: color error
address: Mac IpV6

sign magnitude

0 0 0 0 = +0
+ 0

1 0 1 1 = −3
− 2+1

prefix

KiB 2^{10}	KB 10^3
MiB 2^{20}	MB 10^6
GiB 2^{30}	GB 10^9
TiB 2^{40}	TB 10^{12}

2's complement → just need one zero for positive

0 1 1 1 = 7

0 1 1 1 = 7

base conversion

Σ place value · digit → base 10

base 10 → other base 24_{10} → base 5 =

	R	$5^2 5^1 5^0$
5 | 34 ÷6	4	= 114
5 | 6 ÷1	1	114_5 → 10
5 | 1 ÷0	1	25+5+4 = 34

file − file header = metadata

Text
char ← binary

Image
pixel ← binary
Drawing object ← property and mathematical formula
many ↓
drawing list
resolution is num of px

(bitmap)
(vector)

Sound
amplitude ← binary ← sampling that
sampling rate, num sample/second

bit/color depth
resolution
num of bit we to map

Compression
↓ unnecessary information
↓ storage ↓ bandwidth ↓ cost

Lossy Lossless
→ RLE run-length encoding