- Bits and target

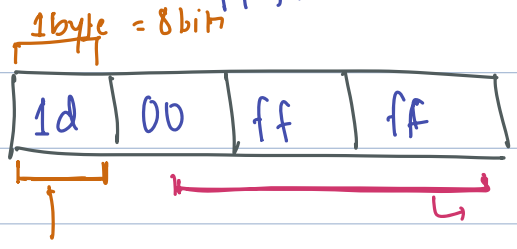
- Bits is a 32-bit representation of target.

Goal: convert bits into target

32 bit (4 bytes) → bits

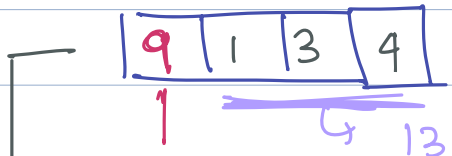
256 bits (32 bytes) → target

Ex BITS = 1d00 ff ff



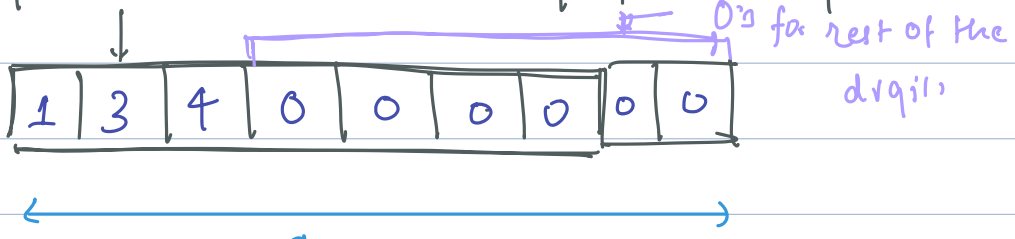
- Floating point arithmatic.

let say you want to represent 134982642 in 4 digits, How to do that.?



How to interpret it ?

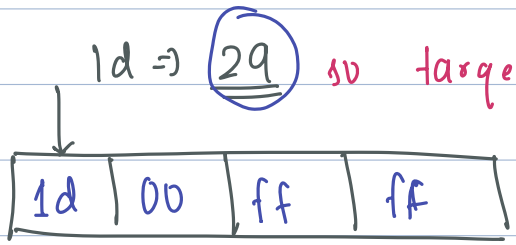
↳ A 9 digit no. with 134 as significant digits



formula : $137 \times 10^{(\text{digit length} - \text{co-efficient digit})}$

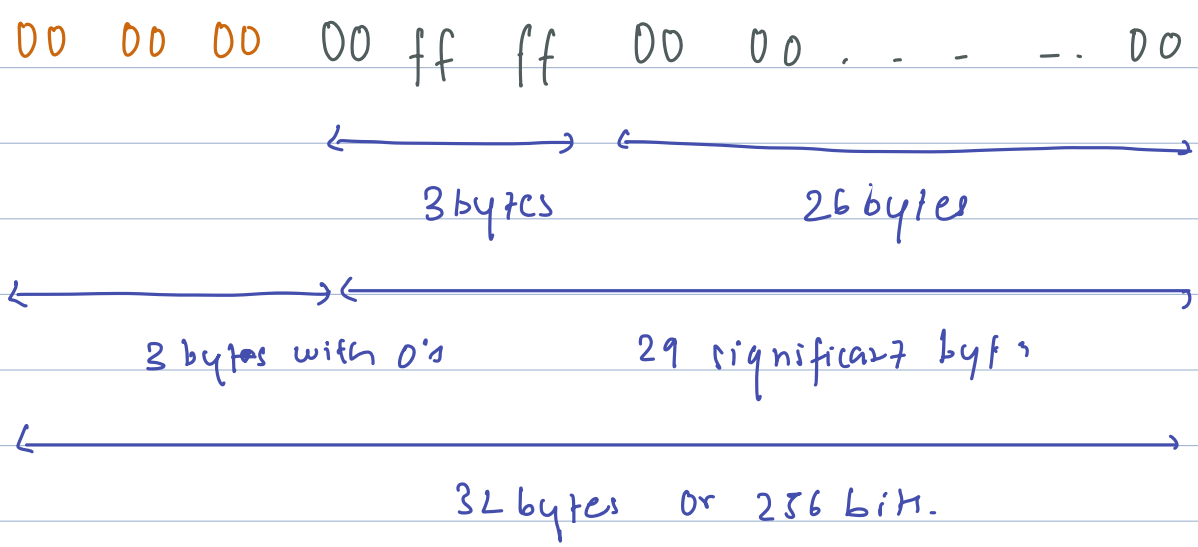
Bits are same as floating point arithematic

in the example of 1d00ffff



Total size of target = 32

number of significant bytes : 29



Formulaizing :-

In floating point arithematic

9 137
↑ co-efficient

digit length

137 x $10^{(9-3)}$ = 137×10^6

Formula => (co-efficient) * 10 (digit length − no. of co-efficient)

In case of bits and target :-

Bits = 1d 00 ff ff
↑ 1byte or 8 bits is index
↳ co-efficient

1d => index

** [in bits]

Target = (co-efficient) * 2 (8 * index − 3)
↑ 3 bytes co-efficient length

1 byte = 8 bits

My example is in byte
but formula is for bit.

Target = (co-efficient) x 2 (8 * index − 3)