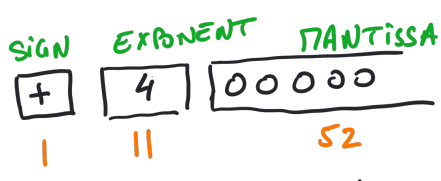


Bit = 0 or 1

$$(16)_{10} = (10000)_2$$

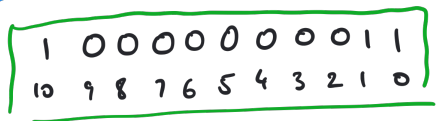
$$= + (1.0000 \dots 0)_2 \times 2^4$$



$$1 + 11 + 52 = 64$$

$$1023 + 4 = 1027 = 1024 + 2 + 1$$

0

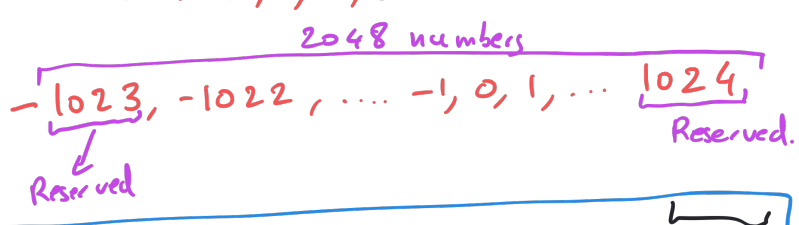


$$1027 = (100000000011)_2$$

11 bits represents the exponent 4

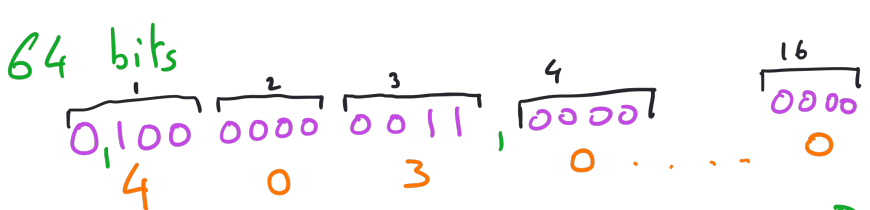
$$2^n = 2^{1024}$$

~~0, 1, 2, 3 ... 2047~~



exponent is 4

$$\frac{1023}{2} + 4 = 1027 = (-1/2)$$



$$37.24 = + 3.724 \times 10^1$$

$$(12.5)_{10} = (1100.1)_2$$

$$= (1.1001)_2 \times 2^3$$

|    |      |   |
|----|------|---|
| 0  | 0000 | 0 |
| 1  | 0001 | 1 |
| 2  | 0010 | 2 |
| 3  | 0011 | 3 |
| 4  | 0100 | 4 |
| 5  | 0101 | 5 |
| 6  | 0110 | 6 |
| 7  | 0111 | 7 |
| 8  | 1000 | 8 |
| 9  | 1001 | 9 |
| 10 | 1010 | A |
| 11 | 1011 | B |
| 12 | 1100 | C |
| 13 | 1101 | D |
| 14 | 1110 | E |
| 15 | 1111 | F |

$$(23)_{16} = (35)_{10}$$

$$(1F)_{16} = (31)_{10}$$

$$0x(4030 \ 0000 \ 0000 \ 0000)$$

↑  
represents 16 in 64-bit  
on the computer