

A job ready bootcamp in C++, DSA and IOT

Fundamentals of Computers



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Agenda

- ① What is a Computer?
- ② Binary Number System
- ③ Concept of 0 & 1 in Computer

Computer

- Computer is an electronic device which takes some input, processes it and gives output



Binary Number System

Decimal Number System

0 to 9

345

Binary Number System

0 & 1

11001

bits

17	10001
18	10010
19	10011
20	10100

Dec Bin

0	0
1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001
10	1010
11	1011
12	1100
13	1101
14	1110
15	1111
16	10000

Convert Decimal to Binary

2^7	2^6	2^5	$\frac{2^4}{2}$	2^3	2^2	2^1	2^0
128	64	32	16	8	4	2	1

25

1 1 0 0 1

2 | 25

2	12	1
2	6	0
2	3	0
2	1	1
	0	1

83 1 0 1 0 0 1 1

2 | 1

152 1 0 0 1 1 0 0 0

11001

200 1 1 0 0 1 0 0 0

Convert Binary to Decimal

$$\begin{array}{r} 3^2 \\ \downarrow \\ 16 \\ \downarrow \\ 2 \\ \downarrow \\ 1 \end{array}$$

$$110011 = 51$$

$$\begin{array}{r} 128 \\ \downarrow \\ 64 \\ \downarrow \\ 32 \\ \downarrow \\ 16 \\ \downarrow \\ 4 \\ \downarrow \\ 1 \end{array}$$
$$10100100 = 164$$

$$\begin{array}{r} 128 \\ \downarrow \\ 64 \\ \downarrow \\ 32 \\ \downarrow \\ 16 \\ \downarrow \\ 8 \\ \downarrow \\ 4 \\ \downarrow \\ 2 \\ \downarrow \\ 1 \end{array}$$
$$11110011 = 243$$

$$\begin{array}{r} 64 \\ \downarrow \\ 32 \\ \downarrow \\ 16 \\ \downarrow \\ 8 \\ \downarrow \\ 4 \\ \downarrow \\ 2 \\ \downarrow \\ 1 \end{array}$$
$$1010000 = 80$$

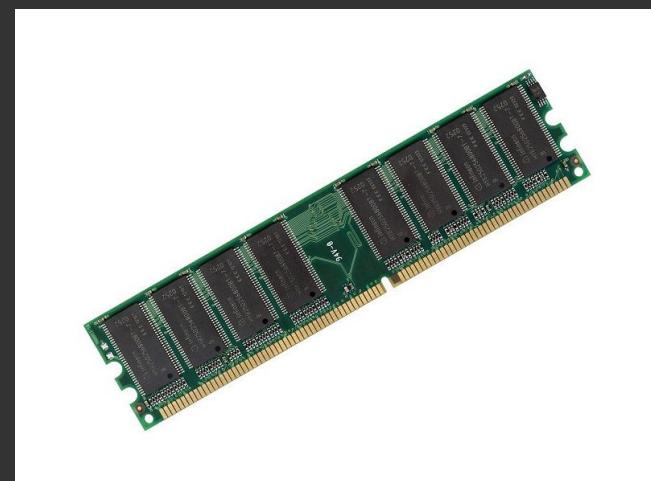
Concept of Os and 1s

There is no physical significance
of 0's and 1's in computer

They are just representation
of two states in the
hardware



DATA



Binary Language

Computer can understand only binary signals, which can be stored, transmit and processed.

