

CS & IT ENGINEERING



Basics of Computer System

Data in Computer System

Lecture No.- 03

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Recap of Previous Lecture



Topic

Digital Computer

Topic

Compiler

Topic

Instructions

Topic

How Computer Works

Topics to be Covered



Topic

Data

Topic

Fixed Point & Floating Point

Topic

Signed & Unsigned

Topic

ASCII Encoding



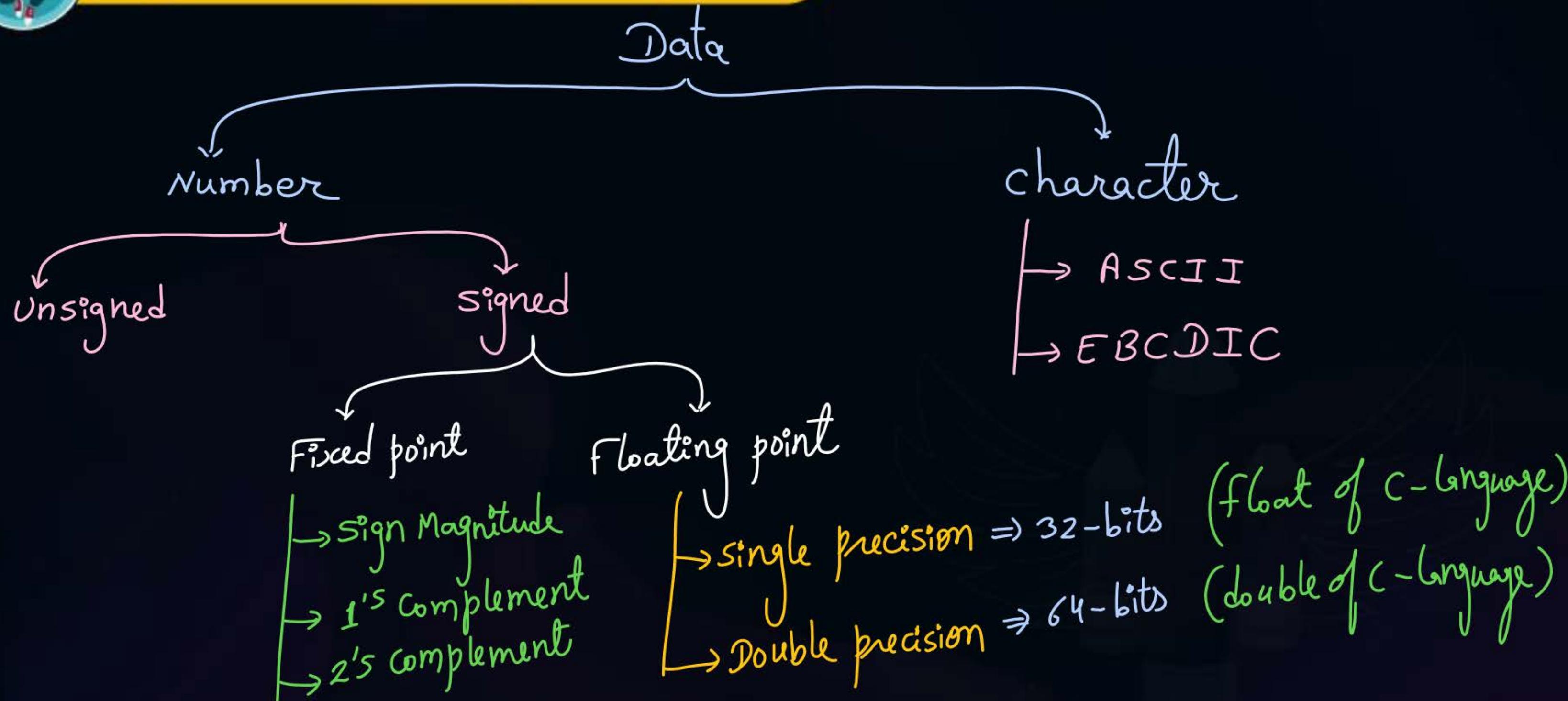
Topic : Data in Computer System



Computers represent data, including video, images, sounds and text, as binary values using patterns of just two numbers: 1 and 0



Topic : Data in Computer System





Topic : Signed & Unsigned Number

number which can
be +ve or -ve

no sign of positive or negative

Arithmetic number ⇒ The numbers on which arithmetic operations
to be performed.

→ These are signed numbers



Topic : Fixed Point & Floating-Point Numbers

number directly
represented

number \Rightarrow 1. Mantissa $* 2^{\text{exponent}}$

$$536.4 \Rightarrow 5.364 * 10^2$$





Topic : Numbers & Units

| Unit | Value |
|--------|--------|
| Bit | 1 bit |
| Nibble | 4 bits |
| Byte | 8 bits |

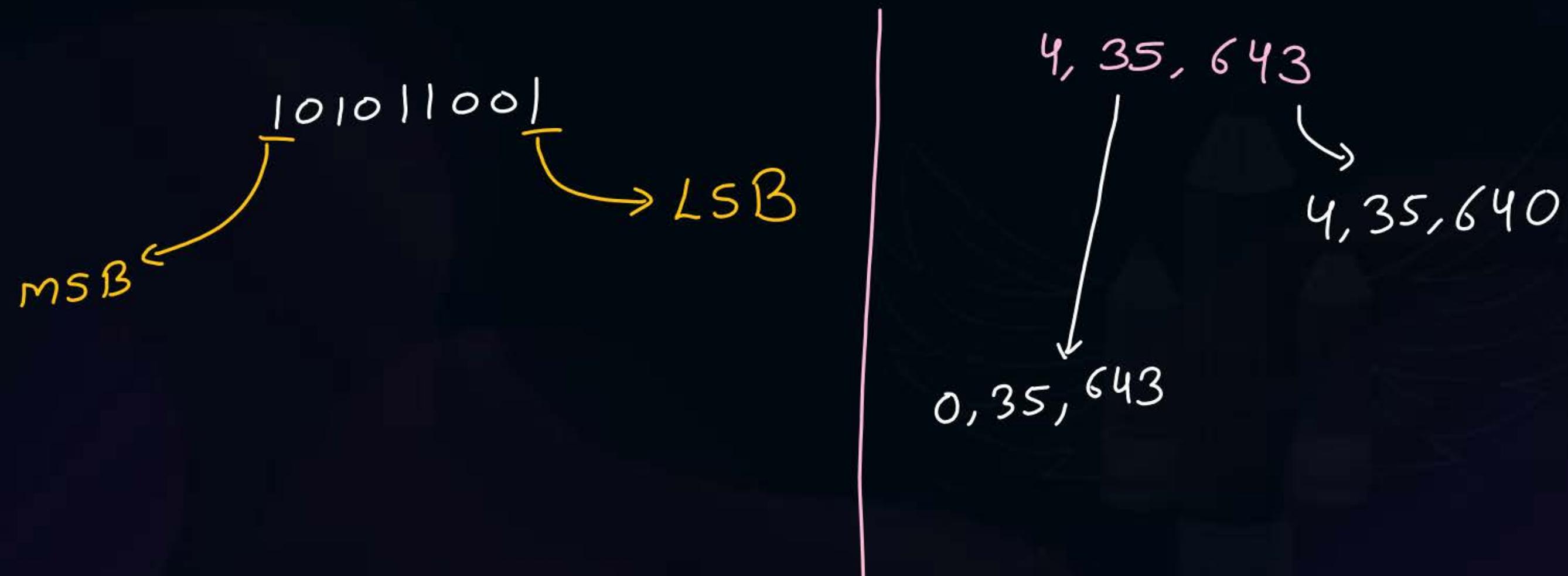
0 or 1
0110, 1100, 1010, 0001,



Topic : LSB vs MSB



↓
Most significant Bit
Least significant Bit





Topic : ASCII

→ American Standard Code for Information Interchange

↓
encoding system to represent characters into binary.

Initially \Rightarrow 7-bits

Later \Rightarrow Extended to 8-bits

C-language uses this



Topic : EBCDIC

→ Extended Binary Coded Decimal Interchange Code

P
W

represents each character \Rightarrow 8-bits



2 mins Summary



Topic

Data

Topic

Fixed Point & Floating Point

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Happy Learning

THANK - YOU