

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

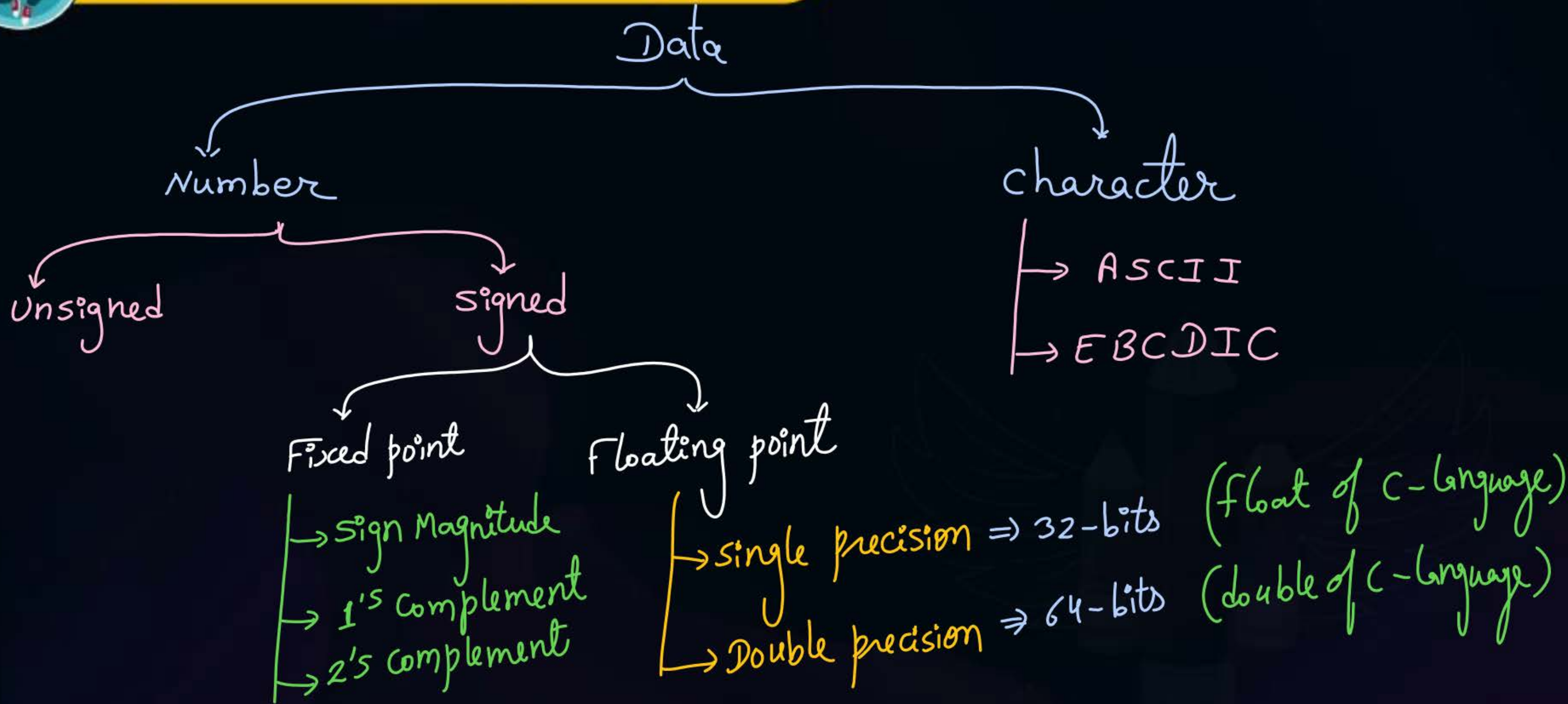


Topic : Data in Computer System

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 \Rightarrow The numbers on which arithmetic operations
to be performed.

\rightarrow These are signed numbers



Topic : Fixed Point & Floating-Point Numbers

number directly
represented

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

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



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

Least significant Bit

Most significant Bit

101011001

MSB

LSB

4, 35, 643

4, 35, 640

0, 35, 643



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



↓
represents each character \Rightarrow 8-bits



2 mins Summary



Topic

Data

Topic

Fixed Point & Floating Point

Topic

Signed & Unsigned

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ASCII Encoding



Happy Learning

THANK - YOU