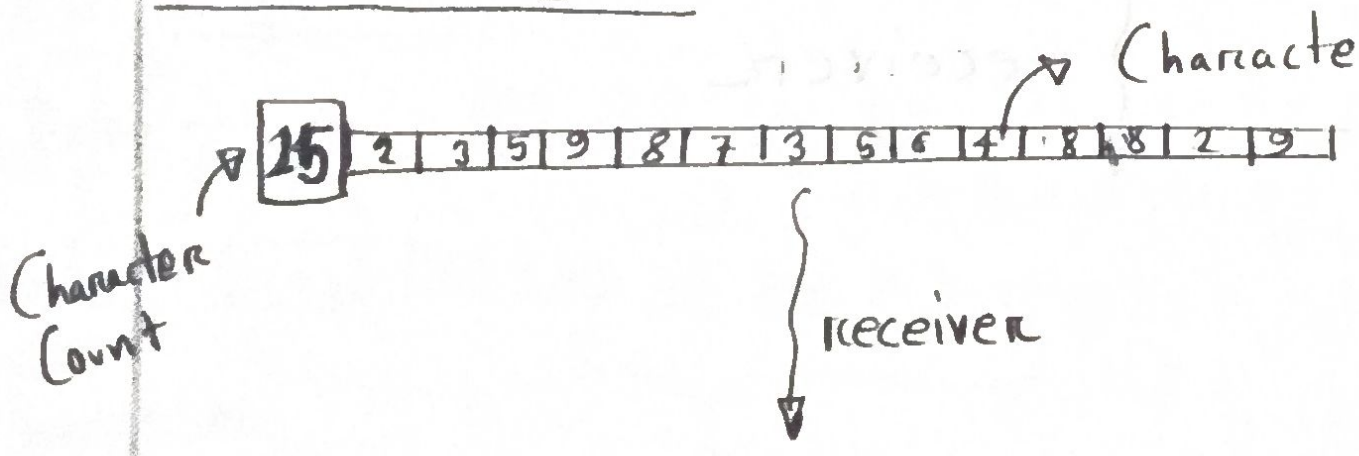
Theme: Class 3

Date 25/1/26
Sat Sun Mon Tue Wed Thu Fri

Framing Technic

① Character Count
② Byte stuffing
③ Bit Stuffing
④ Physical layer Coding violation

① Character Count



Ethernet
↳ Max Frame - 1460 byte

on that specific Standard

ATM (Asynchronous Transfer Mode)
max Frame/Cell = 53 byte

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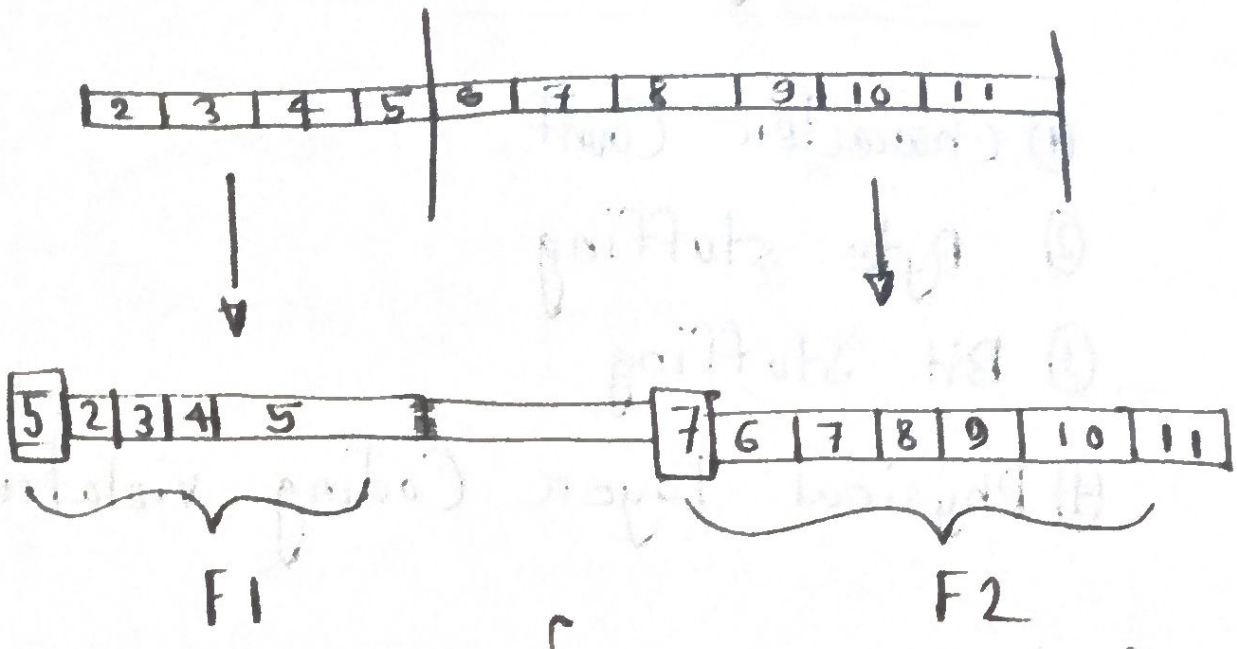
Theme:

Date: / /

Sat Sun Mon Tue Wed Thu Fri

Creating frame



receiver

First ও receiver Character Count read করবে বাকিরা Count করবে byte wise

Theme:

Date: / /

Sat Sun Mon Tue Wed Thu Fri

② Byte Stuffing

4 Byte কে frame create করবো

[Flag] [A] [B] [C] [D] [Flag]

receiver

[A] [B] [C] [D]

First ও Last এ indication থাকবে (flag)

[Flag] : 1010 ← ইচ্ছামতো

[ESC] : 1111

edge case

Data → [A] [B] [Flag] [D]

Sender এর instruction → [Flag] [A] [B] [Esc] [Flag] [D] [Flag]

receiver

[A] [B] [Flag] [D]

Ex পরে যা আসবে তা receive করতে হবে যত বার Flag data আসবে তত বার [Esc] use করবো

Esc = Escape

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Theme:

Date: / /

Data → [A] [ESC] [Flag] [B] [C]

[Flag] [A] [ESC] [ESC] [ESC] [Flag] [B] [C] [Flag]

↓ receiver

[A] [ESC] [Flag] [B] [C]

③ Bit Stuffing

Flag [Fixed] : 01111110

Fixed ইচ্ছা মতো না

[Flag] 1010110100 1 [Flag]

↓

01111110 1010110100 1 01111110

Flag flag

↓ receiver

1010110100 1

Theme:

Date: / /

Sat Sun Mon Tue Wed Thu Fri

edge Case

1010 11 0 1111 1110 1 0 11

0111110 1010 110 111111 01 0 11 0111110

101011

Sender instruction

every 5 consequtive 1 এর পর 0 insert করতে হবে

0111110 101011 0111110101011 0111110

receiver

receiver Instruction :
5টা 1 এর পর যদি 0 থাকে তাহলে 0 কে বাদ দিবে

not for this edge case this instruction is for every case

101011 0 111111 01 0 11

Theme:

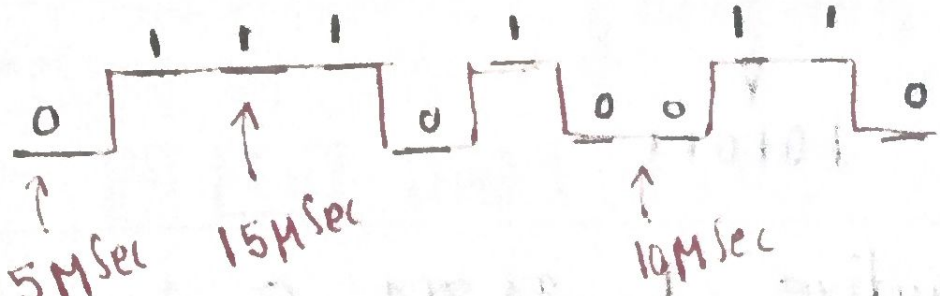
Date: / /

Sat Sun Mon Tue Wed Thu Fri

① Physical Layer Coding Violation

0 1 1 1 0 1 0 0 1 1 0

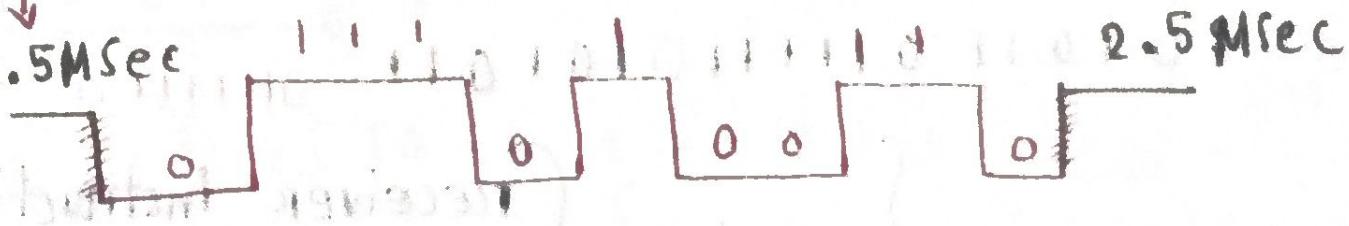
binary encoding mechanism



5MSec ≠ 2.5MSec

Violation that should be consider as Flag

Bit time = 5μsec



best violation would be half = 2.5

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