

Module-16
SDE

TCP header

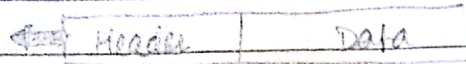
TCP services

- Process-to-process commⁿ
- ~~Stream~~ delivery
 - Sending and receiving buffer (circular array of 1 byte locations)
 - Segments
- Full duplex commⁿ
- Multiplexing & demultiplexing
- Connection-oriented service
- Reliable service

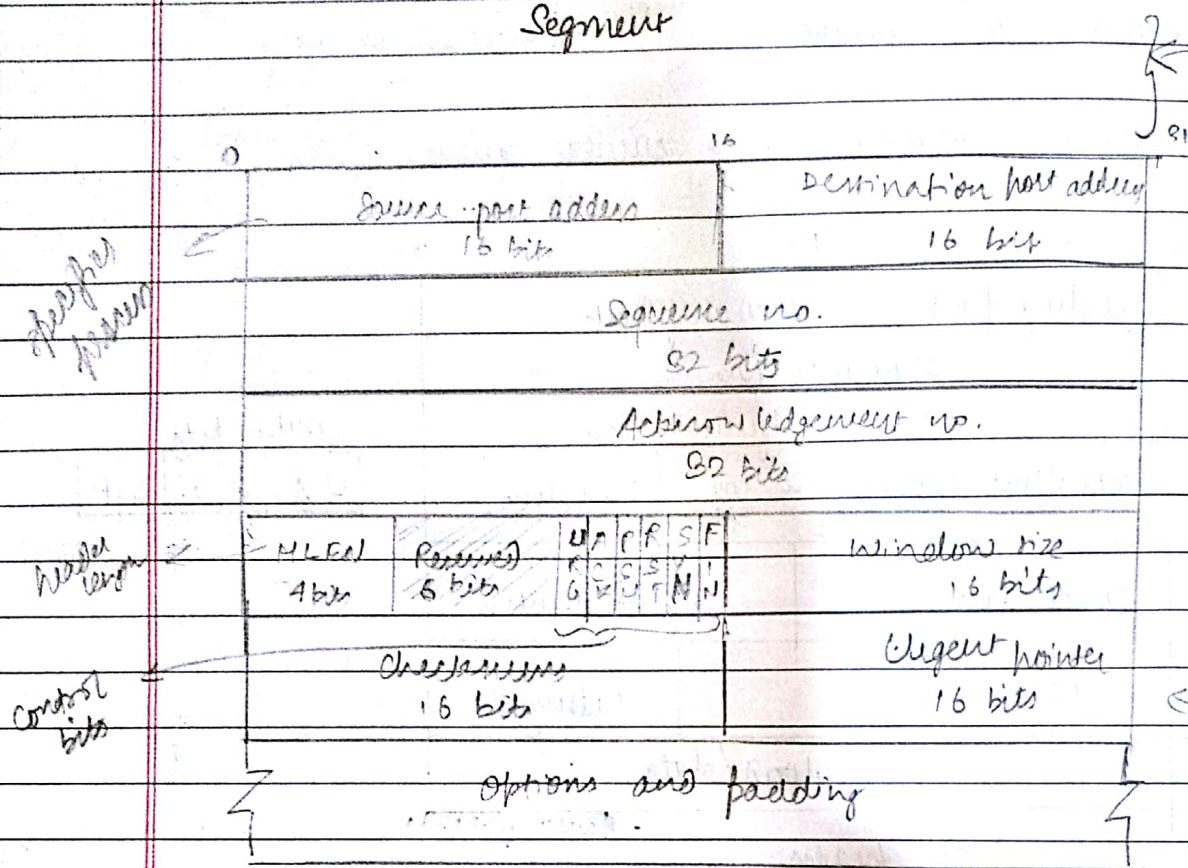
TCP features

- Numbering system
 - Byte number
 - Sequence number
 - Acknowledgement number
- Flow control
- Error control
- Congestion control

TCP segment format

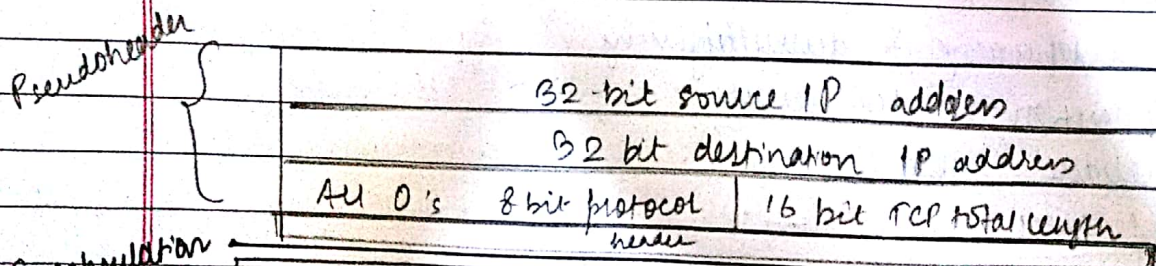


Segment

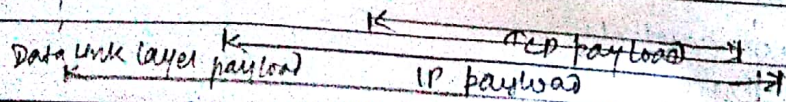
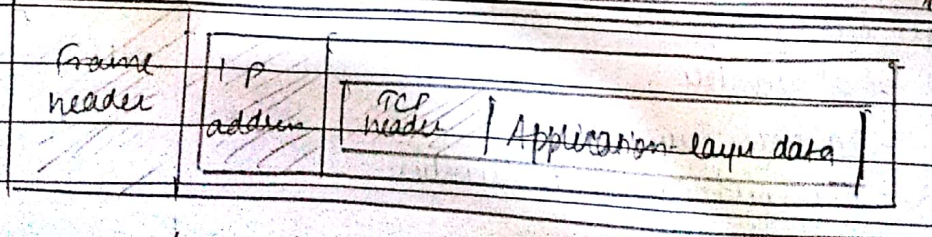


Header format

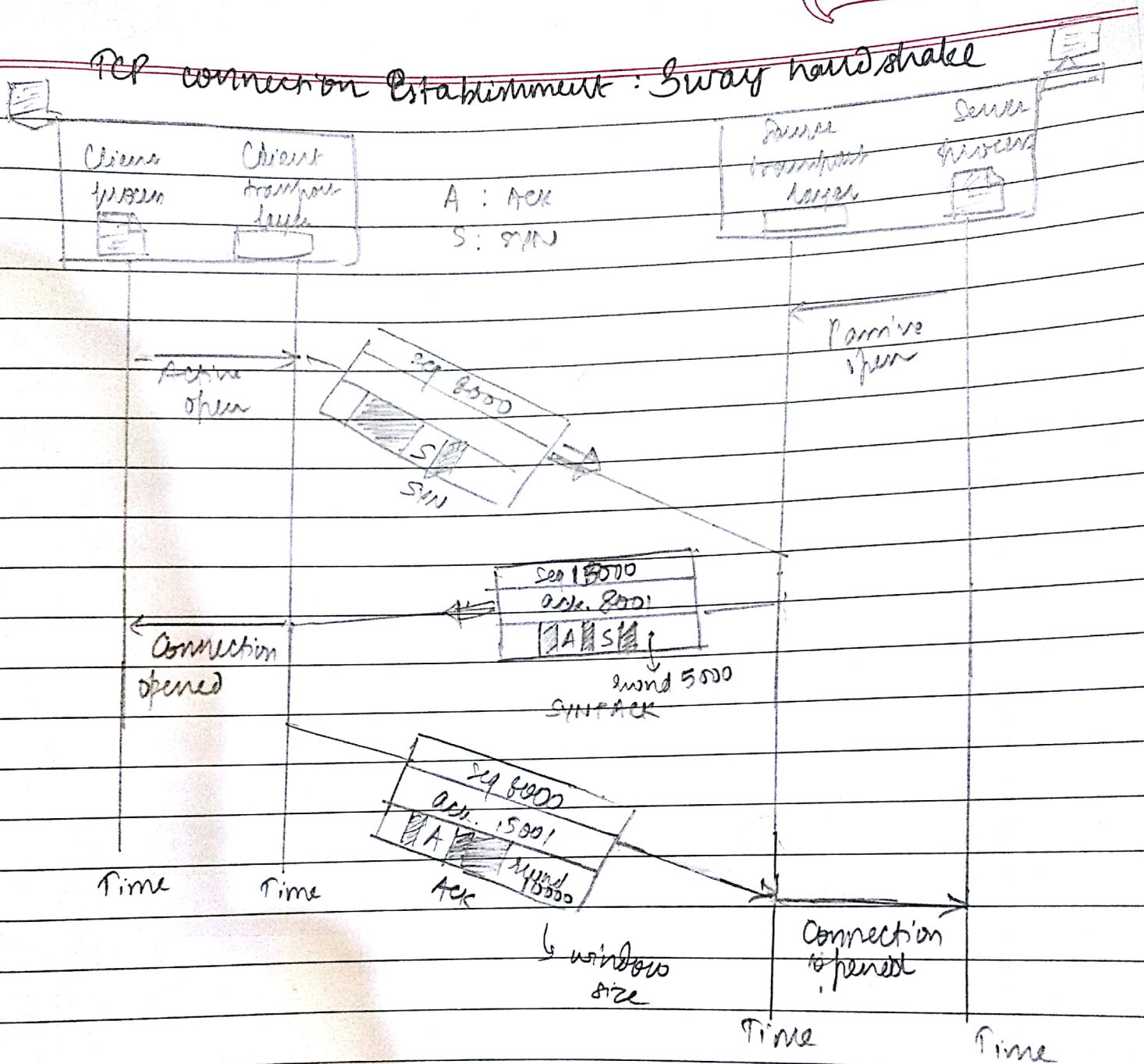
- URG: Urgent
- ACK: Acknowledgement
- PSH: Push data
- RST: Reset
- SYN: Synchronize
- FIN: Finish



Encapsulation



TCP connection Establishment : 3-way handshake



Uncommon issues in a 3-way handshake

- Simultaneous open
- SYN Flooding Attack (e.g. - DDOS)