

CS 447 : CH01 Notes

Disclaimer: The following is an outlined list of topics covered during **Aug. 18 – 27** lectures. This list is not a substitute for missing classes or not taking your own (much more comprehensive) notes based on in-class discussions, but rather a quick reference guide based on the instructor’s own notes and recollection. The list also does not reflect the order in which the topics were discussed in the classes. *The objective* of this list is to help you refresh your memory and fill any gaps in your own notes.

Topics Covered

- 08/18/2014
 - The nuts-and-bolts view of the Internet – end-systems, packet switches, routers, links
 - How data is transmitted in computer networks
 - Define a “packet”
 - Define a *Packet Switch*
 - Who is ISP?
 - What is a Protocol?
- 08/20/2014
 - Network Performance – Processing Delay, Queuing Delay, Transmission Delay, Propagation Delay, Packet Loss,
 - Relationship of transmission delay and propagation delay with distance, packet length, transmission rate, propagation speed
 - End-to-End Delay
 - Throughput
 - How to measure network performance
- 08/25/2014
 - Bandwidth
 - A discussion on how end-systems are connected to each other through a network of communication links and packet switches
 - The service view of the Internet - An infrastructure that provides services to applications
 - What is a RFC?
 - Network Core vs. Network Edge
- 08/27/2014
 - Further discussion on the service view of the Internet
 - Where are applications run? Is it in the core or at the edge?
 - Circuit Switching
 - Packet Switching vs. Circuit Switching – advantages and disadvantages
 - Multiplexing in circuit switching – FDM and TDM
 - How to calculate transmission rate in TDM
 - Introduction to network stack and the layered TCP/IP suite
 - Data flow – Simplex, Half-Duplex, Full-Duplex

- Protocol layers
- Names for “*packet*” in each layer
- End-to-end connectivity vs. hop-by-hop connectivity
- logical connections vs. physical connections
- Control plane vs. Data plane

Questions? Comments? – Contact the instructor at his email address.