

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.