Lecture 8: (finish up DNS) Transport Layers

reading 3.1-3.4 (up to, not including, principles of reliable data transfer)

main difficulty: best-effort service
- lose packets
- reordered
- low throughput
- delay - latency / jitter
- data corruption
UDP - User Datagram Protocol

no additional guarantees
(option checksum)

link layer - post truck (local deliveries)
network layer - postal network (house to house)
transport layer - mom (name on the envelope)

All UDP does is add ports to your packet.

Figure 3.3: Source and destination port-number fields in a transport-layer
with TCP
- no lost packets
  - ask dst. to ACK each packet
  - retx on packet loss

- ordering guarantee
  - sequence number in each packet
  - buffer packets and sort by seq. no

- low throughput
  - compression (possible)
  - parameter tuning (possible)

- delay - latency / jitter
  propagation delay latency is a lost cause
  link speed could use smaller packets

- data corruption
  - detect errors (through checksum)
  - fix errors (through error correcting codes)