Lecture 10 Outline

Reading: White, §24–27 **Assignments due:** Lab #5 ("Building a Simple Web Page") due Feb. 8 at 11:55PM
Midterm on Feb. 10 in class
"Spew" paper due Feb. 17 in class

1. Greetings and felicitations!
   a. Midterm is next Thursday, a week from today
   b. On Tuesday, Phoebe Ayers from the Library will give a session on library research
   c. Review session will be Tuesday afternoon; I will post details as an announcement
2. Networking basics and terms
   a. Network connects systems to one another; systems often called "nodes" or "hosts"
   b. Client/server vs, peer-to-peer
   c. Networked operating system
   d. Distributed system
   e. Dumb terminal
   f. Local area network, Metropolitan area network, Wide area network, Internet
   g. Packet
3. Network topologies
   a. Bus
   b. Token ring
   c. Star
4. Moving data around
   a. Hub
   b. Switch
   c. Router
5. Physical connections
   a. Network interface card (NIC)
   b. Coaxial cable and twisted-pair wiring
   c. Fiber optic
   d. Wireless
6. Ethernet
7. Connecting from home
   a. Modem
   b. DSL
   c. Cable modems
8. Connecting over Wireless
   a. Access point
   b. Broadcast
   c. IEEE 802.11 protocol family: 802.11b, 802.11g, 802.11n, 802.11x
9. Inside a network, from you to the wire
   a. Application layer converts message to bits and attaches sending and receiving computer
   b. Presentation layer converts bits to ASCII, compresses and encrypts (if you are encrypting)
   c. Session layer sets boundaries for a message
   d. Transport layer divides data into segments and creates checksums
   e. Network layer selects route and forms segments into packets.
   f. Data Link layer confirms checksum, and addresses packets appropriate for medium.
   g. Physical layer encodes for the medium that will carry the packets.
10. Addresses
    a. Host name

   b. Network address
   c. MAC address
11. Moving packets around the network
   a. Router
   b. Gateway
   c. Network access point