Assignment 9
(**Due date: 12/9/2009, Wednesday, in class**)

Your name:	Grade:

Important notice on how to submit and grade this assignment:

- Write your answers on **different papers** from the question sheets; otherwise, they will **NOT** be graded.
- You do **NOT** have to write the question text, but you need to **write the question number** for each question.
- Put your solutions in the **same order** as the questions appear on the assignment; otherwise, **missed or misplaced** solutions will **NOT** be graded.
- **How to Grade:**
  - The total score for the assignment is **100** points.
  - **An extra 8%** will be added to the **TYPEWRITTEN** submissions.
  - **3 points will be deducted** from your total score if you **missed any ONE** of the following (this is a *cumulative penalty*, e.g., 9 points will be taken for 1 missed name and 2 missed required blank lines):
    - **Your name** and **assignment number** on the top of each solution sheet/paper,
    - At least **one blank line** between solutions of adjacent questions (**except for** those of *Multiple Choice* or *True/False* questions).

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The following questions are taken from the textbook Chapter 15 (p. 500-503).

- **For questions 1~20, using A, B, C, D, E, or F as your answers** for each of these questions (you may write text solutions alongside these A, B, …F). **50%** will be deducted if your solutions are **NOT** one of these A, B, …F (even though your texts give the correct answers).

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For Exercises 1–6, match the word or acronym with the definition or the appropriate blank.

A. LAN
B. WAN
C. Gateway
D. Bus topology
E. Ethernet
F. Internet

1. The Internet is a _____.

2. The industry standard for LANs.

3. A node that handles communication between its LAN and othernetworks.

4. A network that connects other networks.

5. Star technology is a _____ configuration.

6. Ethernet uses _____.

For Exercises 7–15, match the word or acronym with the definition or the appropriate blank.

A. DSL
B. TCP/IP
C. UDP
D. IP
E. TCP
F. Broadband

7. _____ and voice communication can use the same phone line.

8. DSL and cable modems are_____ connections.

9. An Internet connection made using a digital signal on regular phonelines.

10. Network technologies that generally provide data transfer speeds greater than 128 Kbps.

11. The network protocol that breaks messages into packets, reassembles them at the destination, and takes care of errors.

12. The suite of protocols and programs that support low-level network communication.

13. An alternative to TCP that achieves higher transmission speeds.

14. Software that deals with the routing of packets.

15. _____ has more reliability than UDP.

For Exercises 16–20, match the protocol or standard with what it specifies or defines.

A. SMTP
B. FTP
C. Telnet
D. HTTP
E. MIME type

16. Transfer of electronic mail.

17. Log in to a remote computer system.

18. Transfer files to and from another computer.

19. Format of email attachments.

20. Exchange of World Wide Web documents.

For Exercises 21–25, mark the answers true or false as follows:

A. True
B. False

21. A port is a numeric designation that corresponds to a particular high-level protocol.

22. A firewall protects a local-area network from physical damage.

23. Each company can establish its own access control policy.

24. Some top-level domains are based on the country in which the registering organization is based.

25. Two organizations cannot have the same name for a computer.

Exercises 26–63 are problems or short answer questions.

26. What is a computer network?

27. How are computers connected together?

28. To what does the word node (host) refer?

29. Name and describe two key issues related to computer networks.

31. Describe the client/server model.

33. Distinguish between the following LAN topologies: ring, star, and bus.

36. Distinguish between the Internet backbone and an Internet service provider (ISP).

37. Name at least two national ISPs.

38. Name and describe three technologies for connecting a home computer to the Internet.

41. Phone modems and digital subscriber lines (DSL) use the same kind of phone line to transfer data. Why is DSL so much faster than phone modems?

43. Messages sent across the Internet are divided into packets. What is a packet, and why are messages divided into them?

50. What is an open system, and how does it foster interoperability?

54. What is a firewall, what does it accomplish, and how does it accomplish it?

55. What is a hostname, and how is it composed?

56. What is an IP address and how is it composed?

57. What is the relationship between a hostname and an IP address?

61. What is a domain name?

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The following questions are taken from the textbook Chapter 16 (p. 525-529).

- **For questions 1~22, using A, B, C, D, E, or F as your answers** for each of these questions (you may write text solutions alongside these A, B, …F). **50%** will be deducted if your solutions are **NOT** one of these A, B, …F (even though your texts give the correct answers).

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For Exercises 1–12, mark the answers **true or false (or T/F)**:

1. The Internet and the Web are essentially two names for the same thing.

2. The computer that is set up to respond to Web requests is a Web browser.

3. When we visit a Website, we actually bring the site to us.

4. Most search engines use a context-based approach for finding candidate pages.

8. All elements associated with a particular Web page are brought over when a request for that Web page is made.

9. Networks have been used to connect computers since the 1950s.

10. Network communication was not possible until the advent of the Web.

11. The Web was developed in the mid-1990s.

For Exercises 13–22, match the word or acronym with the definition or blank.

A. JSP scriptlet
B. URL
C. HTML
D. Tag
E. Java applet

14. Uniquely identifies every Web page.

15. _____ runs on the Web server.

16. _____ runs on the Web browser.

17. Tags in _____ are fixed.

21. The syntactic element in a markup language that indicates how information should be displayed.

22. Part of a _____ is the hostname of the computer on which the information is stored.

33. What is a markup language? Where does the name come from?

35. Describe the syntax of an HTML tag.

39. Write the HTML statement that inputs the image on file mine.gif into the Web page.

40. Write the HTML statement that sets up a link to http://www. cs.utexas.edu/users/ndale/ and shows the text “Dale Home Page” on the screen.

41. What happens when a user clicks on “Dale Home Page” as set up in Exercise 40?
A copy of the page at http://www.cs.utexas.edu/users/ndale is displayed on the user’s browser.