Tutorial 2

Instructions

1. Form ad-hoc groups of 2 to 3 students to solve this week's exercise.
2. Each group must answer the following review Q's and problems
3. Each group will use shared google docs to work with all group members and tutor. The document must include the group member's names and the tutorial sheet number.

Review Questions

1. Q2-1. Assume we add a new protocol to the application layer. What changes do we need to make to other layers?

2. Q2-3. In the client-server paradigm, explain why a server(process) should be running all the time; While a client can initiate its request process when it is needed.

3. Q2-7. A new application is to be designed using the client-server paradigm. If only small messages need to be exchanged between the client and the server without the concern for message being lost or corrupted, what transport-layer protocol do you recommend?

4. Q2-9. A source socket address is a combination of an IP address and a port number. Explain what each section identifies.

5. Q2-10. Explain how a client process finds the IP address and the port number to be inserted in a remote socket address.

6. Q2-13. Alice has a video clip that Bob is interested in getting it; Bob has another video clip that Alice is interested in getting it. Bob creates a web page and runs an HTTP server. How can Alice get Bob's clip? How can Bob get Alice's clip?

7. Q2-17. FTP uses two separate well-known port numbers for control and data connection. Does this mean that two separate TCP connections are created for exchanging control information and data?

8. Q2-18. FTP uses the services of TCP for exchanging control information and data transfer. Could FTP have used the services of UDP for either of these two connections used in previous question? Explain.

9. Q2-21. In FTP, if the client needs to retrieve one file from the server site and store one file on the server site, how many control connections and how many data transfer connections are needed?

10. Q2-23. In FTP, can a server get the list of the files or directories from the client?

11. Q2-33. Alice has been on a long trip without checking her e-mail. She then finds out that she has lost some e-mails or attachments her friends claim they have sent to her. What can be the problem?
12. Q2-35. The TELNET application has no commands such as those found in FTP or HTTP to allow the user to do something such as transfer a file or access a web page. In what way can this application be useful?

13. (P2-5). Draw a diagram to show the use of a proxy server that is part of the client network:

    a. Show the transactions between the client, proxy server, and the target server when the **response is stored** in the proxy server.

    b. Show the transactions between the client, proxy server, and the target server when the **response is not stored** in the proxy server.

14. (P2-6.) In Chapter 1, we mentioned that the TCP/IP suite, unlike the OSI model, has no presentation layer. But an application-layer protocol can include some of the features defined in this layer if needed. Does HTTP have any presentation layer features?

15. (P2.8) In Chapter 1, we mentioned that the TCP/IP suite, unlike the OSI model, has no session layer. However, an application-layer protocol can include some of the features defined in this layer if needed. Does HTTP have any session-layer features?