EE3204 / EE3204E Computer Communication Networks I (Part 1)
Socket Programming Assignment (Sem1, 2012-13)

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[For Problems 1-3 solutions are given and they are for your learning. Problem 4 is the Lab assignment problem]

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1. Develop a socket program in UNIX/Linux that uses (i) TCP as the transport protocol and (ii) UDP as the transport protocol for transferring a short message between a client and server. The client sends a string (input by the user) to the server and the server prints the string on the screen after receiving it.

2. Develop a TCP-based client-server socket program for transferring a large message. Here, the message transmitted from the client to server is read from a large file (size is about 30000 bytes). The entire message is sent by the client as a single data-unit. After receiving the file, the server sends an ACK message to the receiver. Verify if the file has been sent completely and correctly by comparing the received file with the original file ("*diff*" command could be used). Measure the message transfer time and throughput.

3. Same as problem (2) above, but the message is split into short data-units which are sent one by one without waiting for any acknowledgement between transmissions of two successive data-units. Verify if the file has been sent completely and correctly by comparing the received file with the original file. Measure the message transfer time and throughput. Repeat it for different (at least six) data-unit sizes (say, from 100 bytes to 1000 bytes).

Lab Assignment Problem:

4. Same as problem (4) above, but the file is transferred using stop-and-wait flow control protocol. Prepare a lab report, describing your implementation, experimental setup, results and discussion. In the report, plot the results for this problem and that for problem (3) and provide a brief discussion comparing them.

[ALL THE BEST]