Assignment 2

UDP Client-server

Due: August 10, 2009, 1-00 pm

1. Write a simple UDP iterative server and client to convert a given DNS name (for ex., *www.google.com*) into its IP address(es). The client will read the DNS name as a string from the user and send it to the server. The server will convert it to one or more IP addresses and return it back to the client. The client will then print **all** the addresses returned, and exit.

   For basic UDP socket communication, see the sample program given. To get the IP address corresponding to a DNS name, use the function *gethostbyname( )*. Look up the description of the function from the man page and the tutorial on the webpage.

2. Now suppose that some clients will request over the UDP socket, and some will connect over a TCP socket and then request. Thus, the server now needs to open both a TCP socket and a UDP socket, and accept request from any one (using the *accept*() + *read*()/*send*() call for TCP, and *recvfrom*() call for UDP), whichever comes first. Use the *select*() call to make the server wait for any one of the two connections, and handle whichever comes first. All handlings are iterative.

You should submit four C files, the UDP iterative server in Part 1 (*udp_server.c*), the UDP client in Part 1 (*udp_client.c*), the combined server in Part 2 (*dns_server.c*) and the TCP client in Part 2 (*tcp_clint.c*). Note that the UDP client from Part 1 can be used as it is as the UDP client in Part 2.