COMP 6320 – Design and Analysis of Computer Networks.

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Report on Lab Assignment 1

1.1 Datagram socket programming.

a. UDP Echo Server (server11.c) is a server designed to handle concurrently multiple requests from the client. As per the RFC report for Lab 1.1 the server runs on the port 10010. You can execute the server11.c by running it on gcc –o and also it's written in a way where you can give the port number you want or the default port would be set as 10010.
b. UDP Client (client11b.c) is a client designed to send a message to the server and receive a response from it and calculate the Round Trip Time (RTT) and it runs with the same gcc with command line parameters ./exec <serverIP>. It runs properly and calculates the roundtrip time by using the timestamp generated by the packet while sending and receiving according to the RFC build message function.
c. UDP Client (client11c.c) is a client designed to send 1-10,000 strings to the server and receive a response back from it. From this we have to calculate the Round Trip Time, the average RTT and the Fastest RTT. The code has bugs and acts weird while calculating the Fastest Round Trip Time. The client sends 1-10,000 string to the server though, according to the RFC requirements.

1.2 TCP Calculator.

a. TCP calculator has a server (server12.c) and it's designed to take in clients which provide values for a simple calculator function. The server works fine and it takes a default port 10010 just like the socket datagram programming.
b. TCP calculator has a client (client12.c) and it's designed to send operations and arguments on the command line as per the RFC12 Protocol. The client can be executed by running it in the gcc –o with the command line arguments as ./execObjFile (intVariable1) (intVariable2) (Operation) <serverIP>