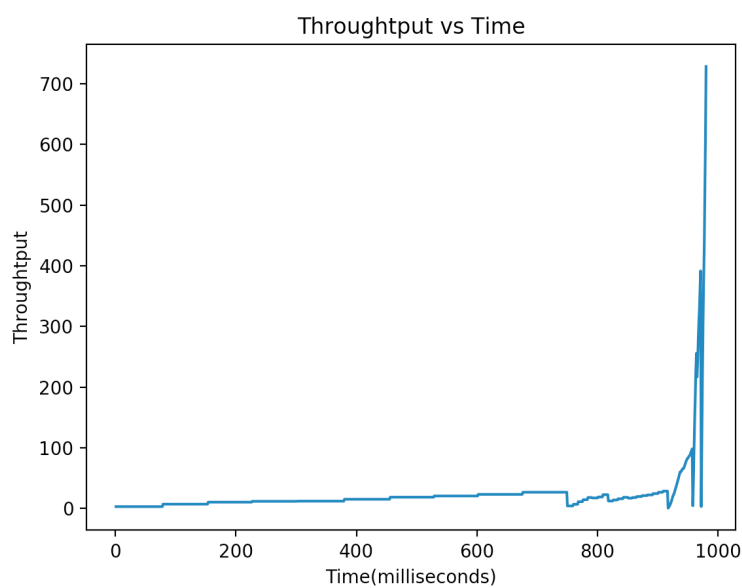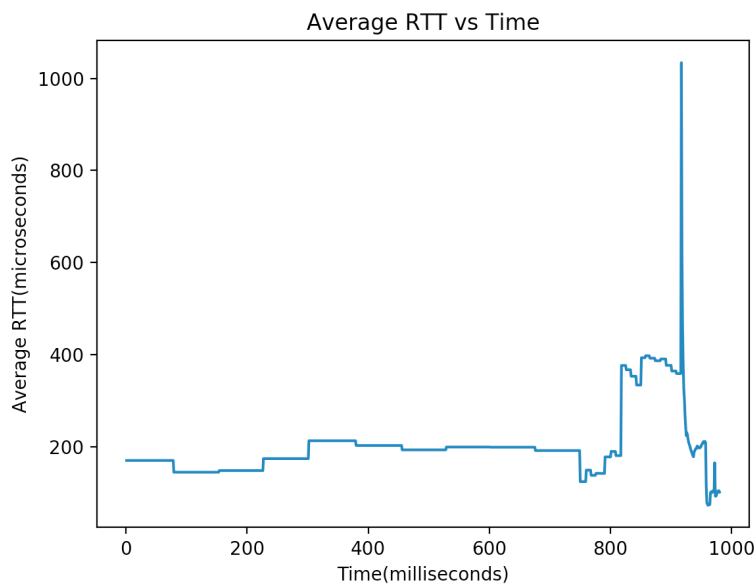Arjun D'Cunha

CS14BTECH11039

26 February 2017

Assignment 1
Creating a UDP Echo Client-Server Model

Ques 2) I got the following graphs from the various tests required as per the assignment instructions :

Average RTT vs Time

Throughtput vs Time

Design :

Question 1)

The client first establishes a UDP Connection with the server and then the sending of data starts. The user has control over the speed at which data is going.

In order to make the calculation of RTT much more faster, the sending message contains the time-stamp at which a message is sent. When it receives the message back in the form of an echo, I just note down the time-stamp value when the value is received as find the difference between them. This is the RTT for a packet.

What is interesting is also the fact the by using threads, I made the entire program concurrent just the value ping actually works. A separate thread is used to send messages and a separate one is used to receive messages. I consider a message to be timed-out if I don't hear a echo in 3 seconds (Used for testing purposes).

In most cases, the failure rate varied between 10-30 percent.

Question 2)

The major difference in this code is the fact that I introduced a new thread which does all the calculations. For each interval, the calculations are done and stored in their respective files (Binaries). Then I used a python program to plot the graphs from the received data.

In order to try out various intervals, I wrote a loop and keep using the sender, receiver and calculator threads to obtain the required results. For every loop, the interval reduces while the number of messages increases (As per the question). I also keep the message size a constant 512 bytes.