**EE4204 Lab Report**

Requirements:

Measure the **message transfer time** and **throughput** for various sizes of data-units and compare it with the stop-and-wait protocol where the batch size is always fixed to be 1.

Repeat the experiment several times and plot the average values in a report with a brief description of results, assumptions made, etc.

Results:

Different data-units (i.e. variable DATALEN) from 10 to 10000 were experimented with in order to test the behaviors at extremely small and extremely large values. The results are as follows:

From the graph, both UDP and Stop and Wait protocols follow a decreasing trend as DATALEN increases. This is because the number of packets decreases as DATALEN increases, so there is less time spent on waiting for the ack.

we can see that Stop and Wait time taken is consistently larger than UDP time taken. This is because in Stop and Wait, more time is spent on waiting for the ack since ack is needed for every packet, where as for UDP, an ack is needed only after 1, 2, 3, and 4 packets.

From the graph, we can see that both UDP and Stop and Wait increases in average data rate as DATALEN increases. This is because less time is spent on waiting for the ack.

The average data rate of UDP is always higher than that of Stop and Wait. Again, this is because UDP spends less time waiting for the ack.

Assumptions:

The above is done on the same laptop by making the client send to the IP address of the server, obtained through “hostname -I”. Therefore, it is assumed that the performance obtained in this way is similar to that between different laptops.