Project Topics:

Note: C++ or Java is allowed. Consult me for any other language you prefer to use.

You are required to write socket programs to send UDP packets from a sender to a receiver. The receiver should compute the *actual* data rate of the communication through the total bits it receives within a certain period of time. The sender should compute the *attempted* data rate of the communication through the total bits it sends within a certain period of time. Therefore, there is a pair of (attempted data rate, actual data rate) that shows you how much bandwidth the network can support.

Requirements:

(1) You should gradually increase attempted data rate by either (a) reduce the sending interval; (b) increase the packet size. For packet size, you can send dummy messages.

(2) Get a graph (using EXCEL, e.g.) to show the relationship of attempted data rate and actual data rate at any given time.

(3) Create a 2-hop relay scenario and perform the same experiment and present the graph.

(4) Send TCP data to perform the same experiment and present the graph. Does your sending rate matter?

Any questions/comments are welcome!