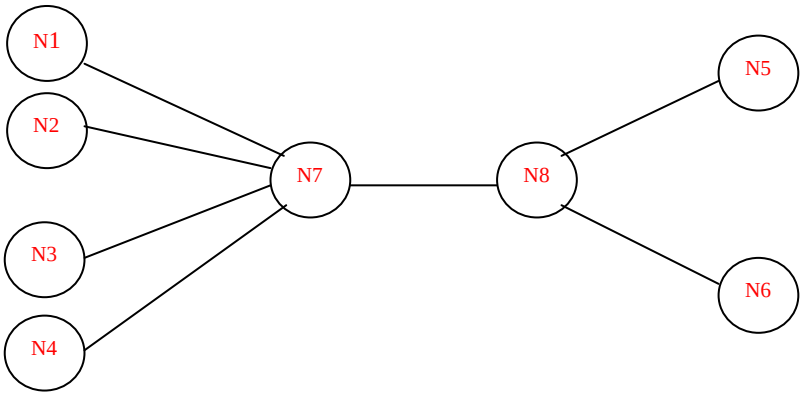
Exercise - 3

Create the following simple fixed topology with point to point connection among all nodes using NS2/NS3. The client nodes N1, N2, N3 and N4 are connected to server nodes N5 and N6 through the intermediate nodes N7 and N8. Perform TCP flow from the nodes N1 and N2 to node N5 and also perform UDP flow from the nodes N3 and N4 to the node N6. Add a drop tail queue to the nodes N7and N8. Initially client nodes send a packet every 100ms with the fixed packet size of 100 bytes.



a) Start the TCP application at t_1=1s, UDP application at t_2=5s and the run the simulation for 50s. Show the packet flow using network animator and measure the throughput of the network. Plot a graph time vs throughput.

b) Change queue size of the nodes N7 and N8 to 50 and measure the packet drop rate. Plot a graph for queue size vs packet drop rate.

c) Change the packet size to 256 bytes and packet arrival rate to 200ms. Measure the packet drop rate experienced by TCP and UDP applications. Compare TCP and UDP application in terms of packet drop rate over time (every second) and plot a graph.