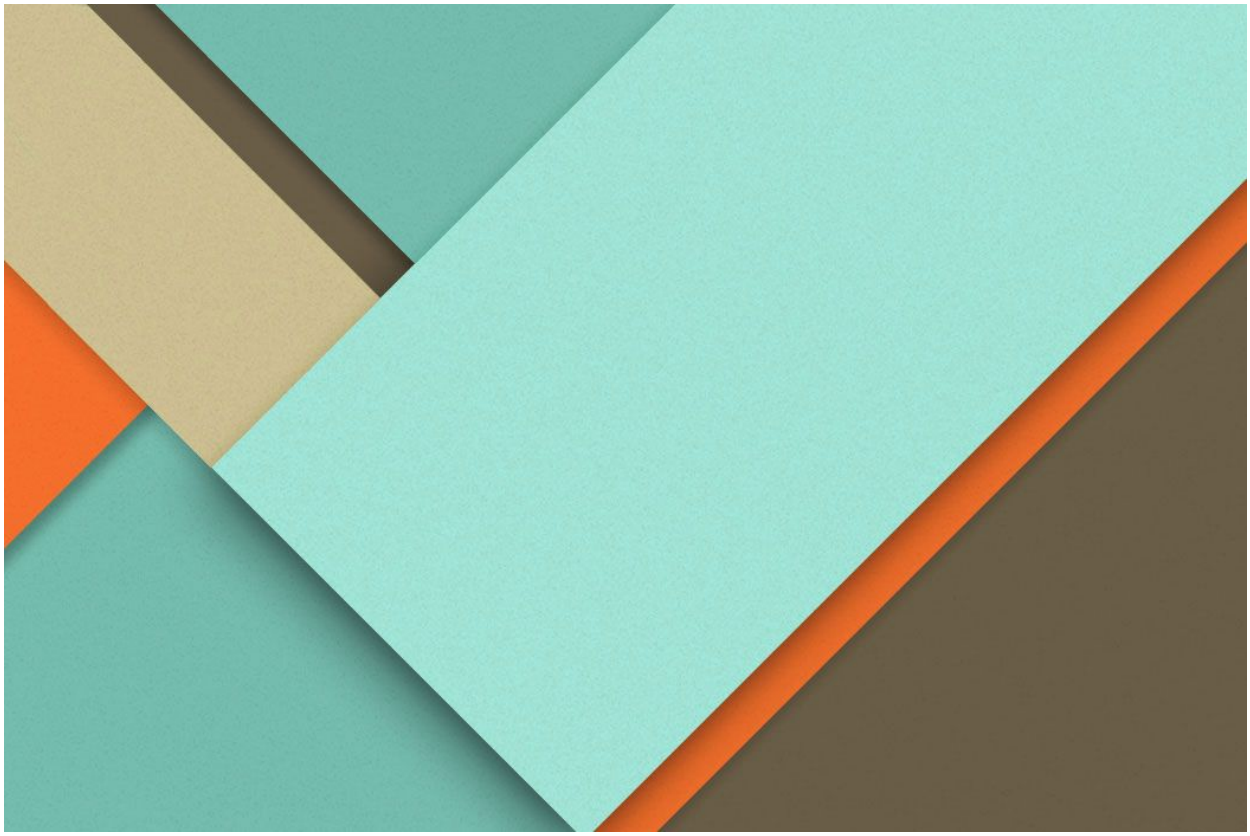

Assignment 4

05.09.2019

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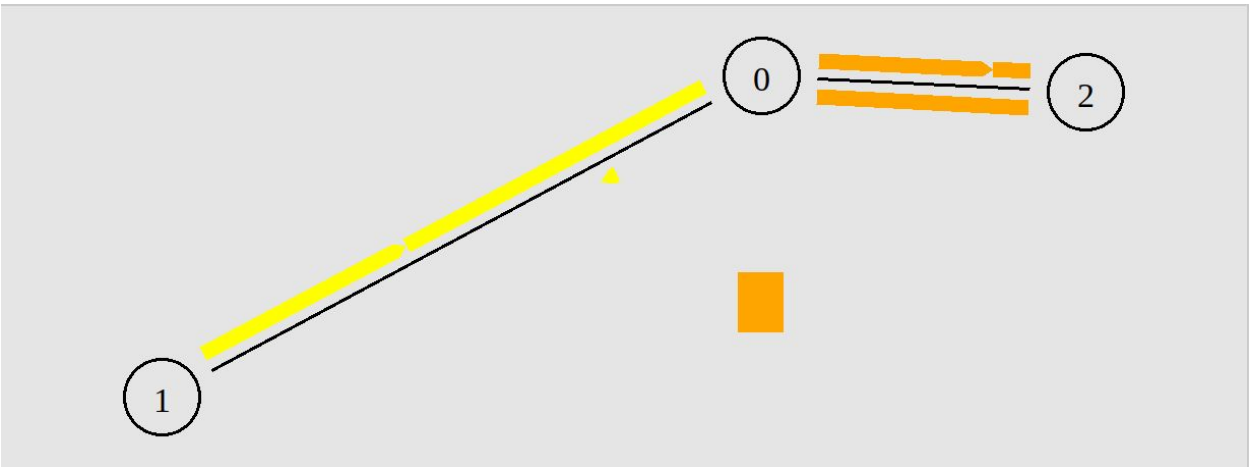
Question 1

Write a Network Simulator (NS2) code to simulate a three-node network with duplex links among them as shown in the figure. Show the topology using NAM. Study the variation in the number of packets dropped with the variation of the queue size in the nodes and with the variation of the bandwidth of the links.



Explanation

First we make FTP connections between nodes 0-1 and nodes 0-2. We keep changing the bandwidth and queue size to notice a drop in packets. As it is obvious if we decrease the queue size the number of packet drops are increased and its inversely proportional to the bandwidth.

Question 2

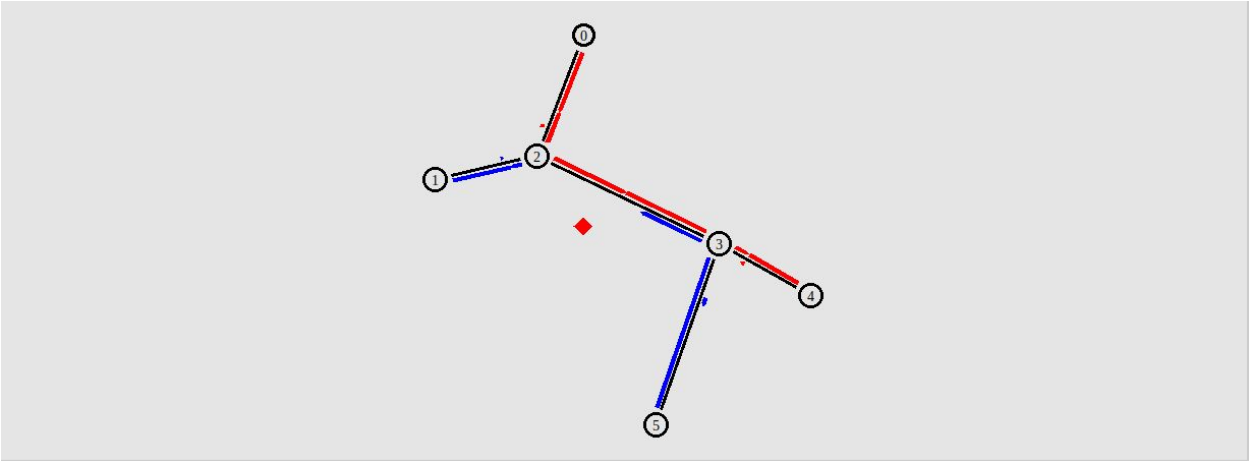
Write a Network Simulator (NS2) code to simulate the transmission of ping messages over a network topology consisting of 6 nodes and find the number of packets dropped due to congestion. Study the variation in the number of packets dropped with the variation of the queue size in the nodes and with the variation of the bandwidth of the links.

Nodes are connected as follows:

0-2, 1-2, 2-3, 3-4 and 3-5

Packet transmissions:

0-4 and 5-1



Explanation

Firstly, we make FTP connections to send data to and from nodes 0-4 and 5-1. Then we tweak the bandwidth and queue size to notice changes in the packet drop. As noticed in the above question the proportionality of packet drops and queue size and bandwidth remains same obviously.