Computer Networks Lab (CS 353): Lab 3

This assignment will be graded.

1. Simulate a star topology with 5 nodes. In a star topology, the nodes are connected to a central hub. A message received from one node is passively broadcast to all the other nodes.

You can reuse code from your client-server lab assignments, with the server acting as the central hub and each node acting as the client. Each client must have an address associated with it and the destination address of the recipient must be included in the message sent by the sender. When a message is received, each node must accept it if the message is meant for it and discard it if it is not meant for it**. Note that this is only a simulation of a star topology.**

You need to demonstrate sending a message from node to all the other nodes. The node that sends and the nodes that receive must print the messages received, including the messages that are discarded. The message can be a simple text string. For example, node 1 can send a message “Message <i>” to node i, where i is not equal to 1. Nodes 2 through 5 will print the messages they accept and discard. [7 marks]

2. Install Netsim. Netsim is a network simulation tool that helps you to create network scenarios, measure performance of networks, understand network protocols etc. Create a network with the star toplogy, with the central hub as a Layer 2 switch and the nodes as hosts. Send messages from one host to all the other hosts and make sure that they are received. [3 marks]