CS 4133/ 5133 – Data Networks – Project Four
Due November 28, 2018, 11:59 PM

Background

In this project you will use a routing table based forwarding of packets instead of the flooding algorithm we use.

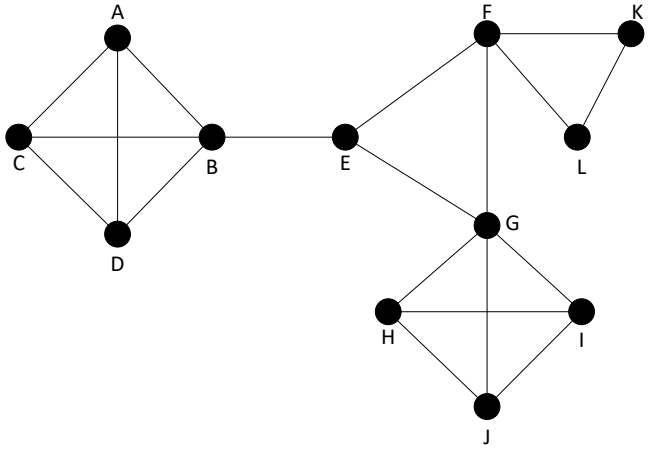
Project Description

As in Project 3, we will compare the Fake IP address of the node receiving the frame with the destination IP address in the received Frame. If **there is a match** it will print the **header and payload part (content within IP of the frame).** If **it is not a match**, then we have to execute the following routing algorithm.

The Routing Algorithm: We will modify the input file nodename_i.txt (as in Project 3) as follows. There will be an integer N indicating the total number of nodes in the network, after the last integer (that indicates the number of frames in the input file nodename_f.bin). After this integer there will be N rows that represents the routing table for this node. Each row will have two Fake IP addresses, the first one is the destination and the second one will be next hop. Your program should read the routing table and store it in the appropriate data structure.

Each node that receives a frame containing a fake destination IP address that does not match its Fake IP address will send the frame to the node that has the next hop IP address as its Fake IP (it will be one of its neighbors).

The following topology (virtual) will be used to generate the necessary input files.



Constraints

1. The project is due on DATE by 11:59pm. Source files should be submitted to the digital drop box on http://learn.ou.edu.
2. This project will be done individually. Consultation in any form with other members of the class is strictly prohibited.
3. Your program should be documented thoroughly and **20%** of the project grade will be for documentation.
4. You are required to demonstrate the functionalities of your programs for grading. The schedule will be announced later. The demonstration will take about 10-15 minutes.