Computer Networks (Spring 2017) [Mahavir Jhawar]
Assignment #A4 [Posted on April 2, 2017]
Submission Deadline: April 12, 2017

1. Write a computer program (Python) to simulate the following network. It has 9 hosts (H1 through H9) and 5 self learning switches (S1 through S5). Assign valid MAC addresses to each of these hosts. Every host must run in promiscuous mode. Each switch has 4 ports and they are identified by 0 (for east side port), 1(for west), 2 (north) and 3 (south). Your program must assign a unique file to each of these switches. These files contain forwarding tables corresponding to each of these switches. These forwarding tables are initially empty, but gets filled up dynamically every time a host sends message to an another host.

   On execution, your program takes user inputs in the following form and order:

   - Sender host number
   - Message
   - Destination host number

   After a successful run, your program must prints acknowledgement by every host who received this message. During initial executions, the message gets broadcasted by most of the switches and therefore the program will prints out acknowledgement by many hosts. But after a few executions, the forwarding tables will be filled up and there onwards, your program will likely to printout acknowledgement only from the destination host. [25]