

1. Write a computer program (Python) to simulate datagram packet switching in the network given in Figure 1.
 - It has 13 hosts and 5 self learning switches.
 - Assign valid MAC addresses to each of these hosts.
 - Every host must run in promiscuous mode.
 - Each switch has 5 ports.
 - You must have a file for each switch containing its forwarding tables. These files contain forwarding tables corresponding to each of these switches. Before the first execution of the program, each of these tables are empty. Entries (if any) are added over every subsequent execution of the program.

The **inputs** to your program are:

- Sender host address
- Message
- Destination host address

It **outputs**:

- Acknowledgments by those hosts who received the message.
- Populate forwarding tables with entries (if any) by writing them into the files corresponding to each switch.

During initial executions, messages will be broadcasted by most switches and as a result program output will have acknowledgments printed by several hosts. Later executions will likely to have only destination host printing the acknowledgment - the switches present in between the path will have relevant entries in their forwarding tables required to guide the message. [25]

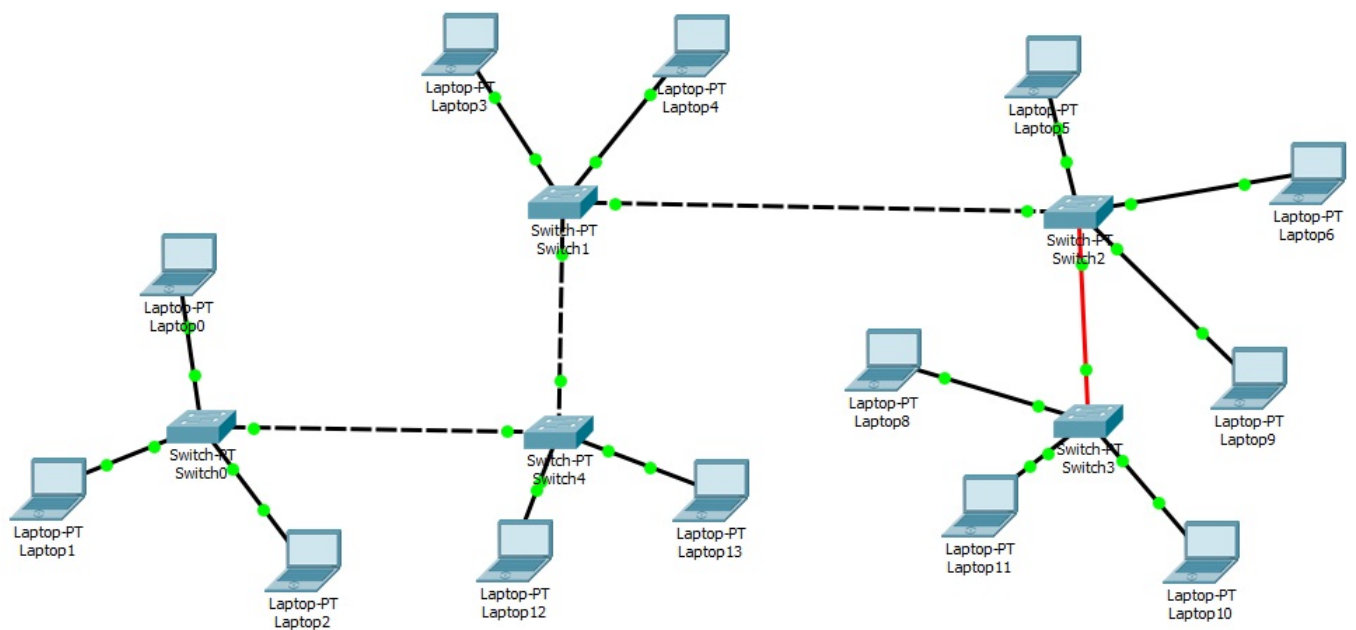


Figure 1