Computer Networks Lab Report- Assignment 6

TITLE:

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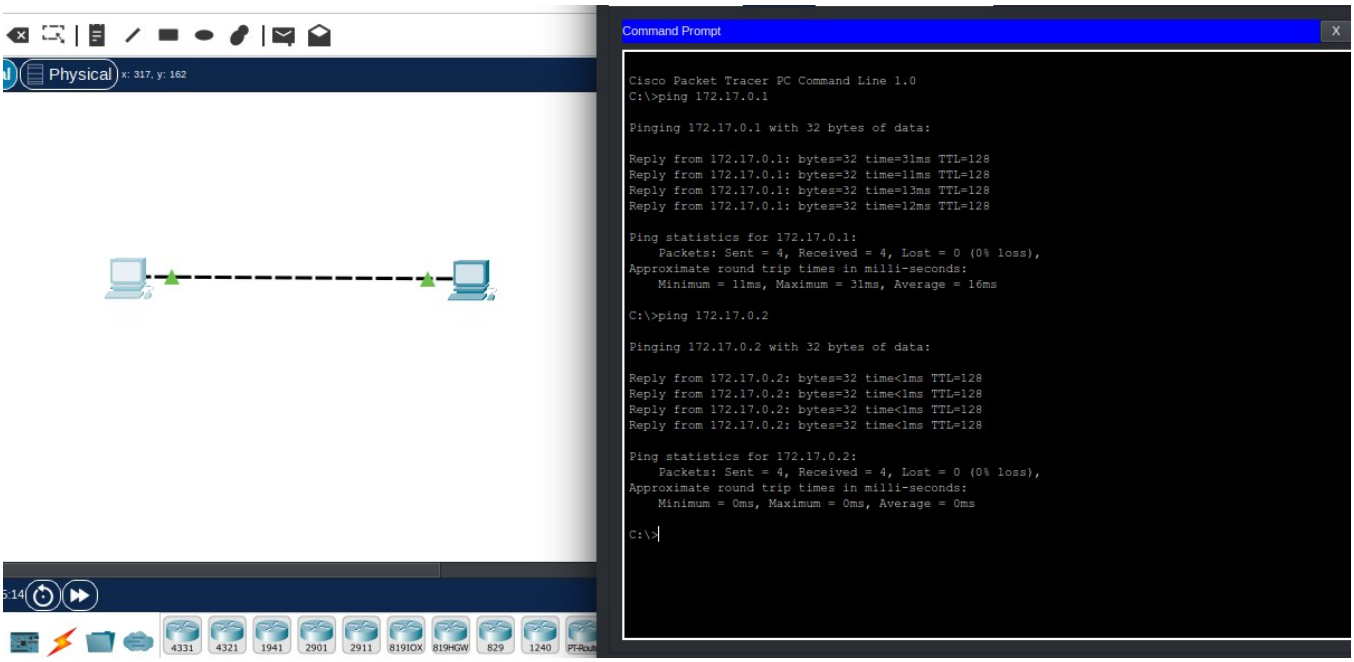
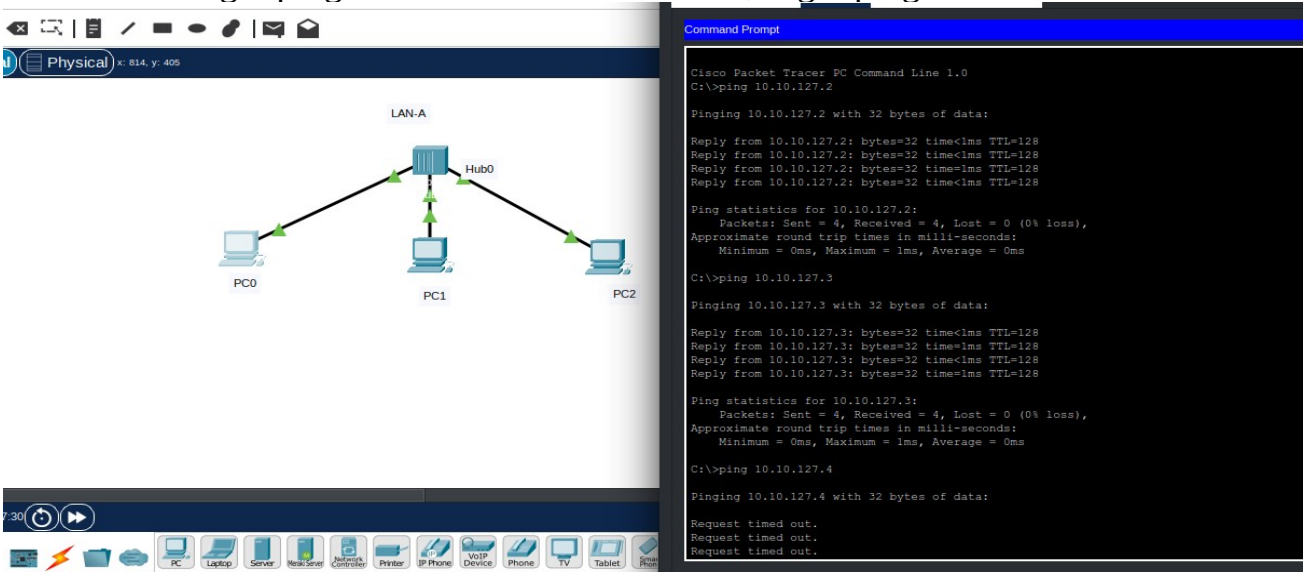
Class: BCSE 3 rd Year
Group: A3
Submission Date: 21/10/2022

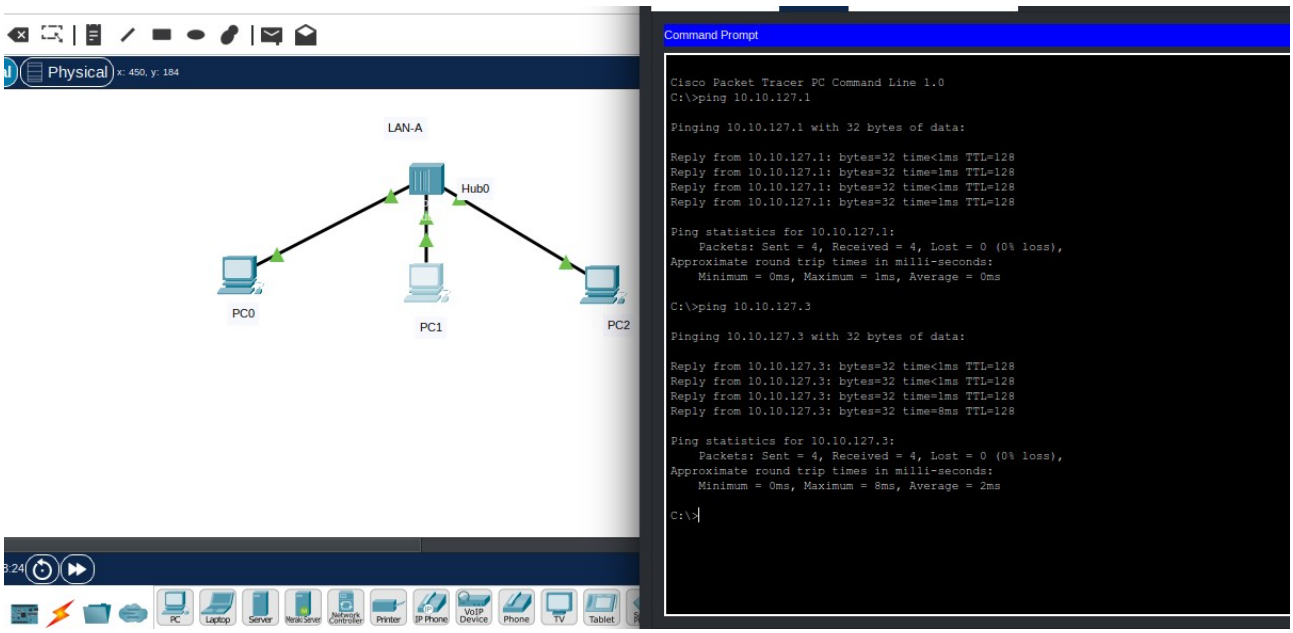
Q1) Connect two hosts back-to-back with a cross over cable. Assign IP addresses, and see whether they are able to ping each other.

RESULTS:



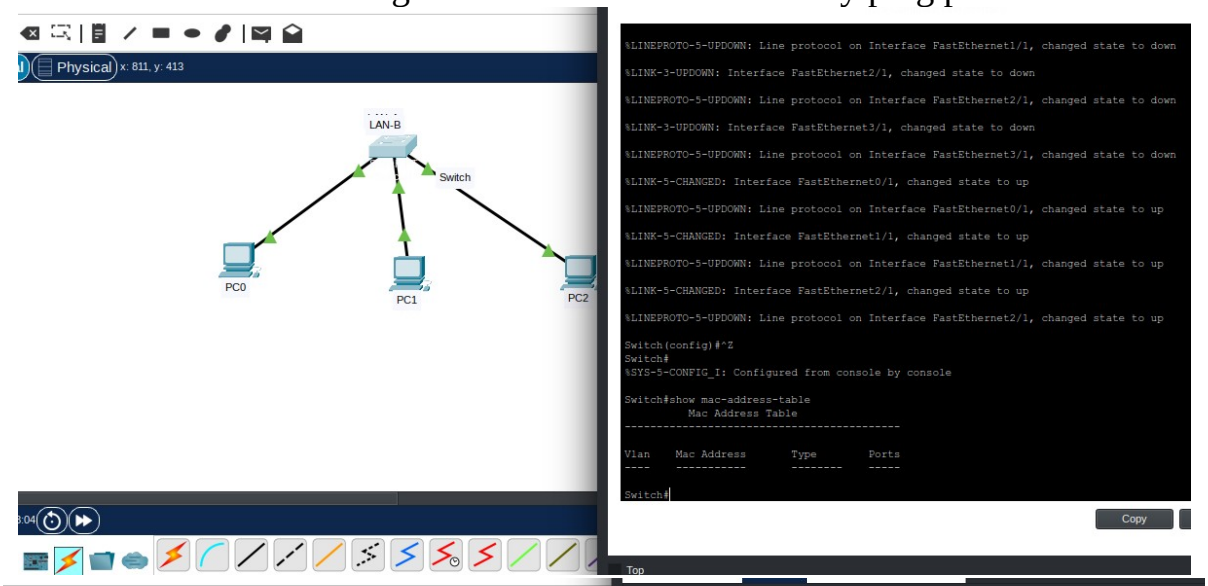
Q2) Create a LAN (named LAN-A) with 3 hosts using a hub. Ping each pair of nodes.
RESULTS: Fig1: ping from PC0 to PC1 and PC2, Fig2: ping from PC1 to PC2

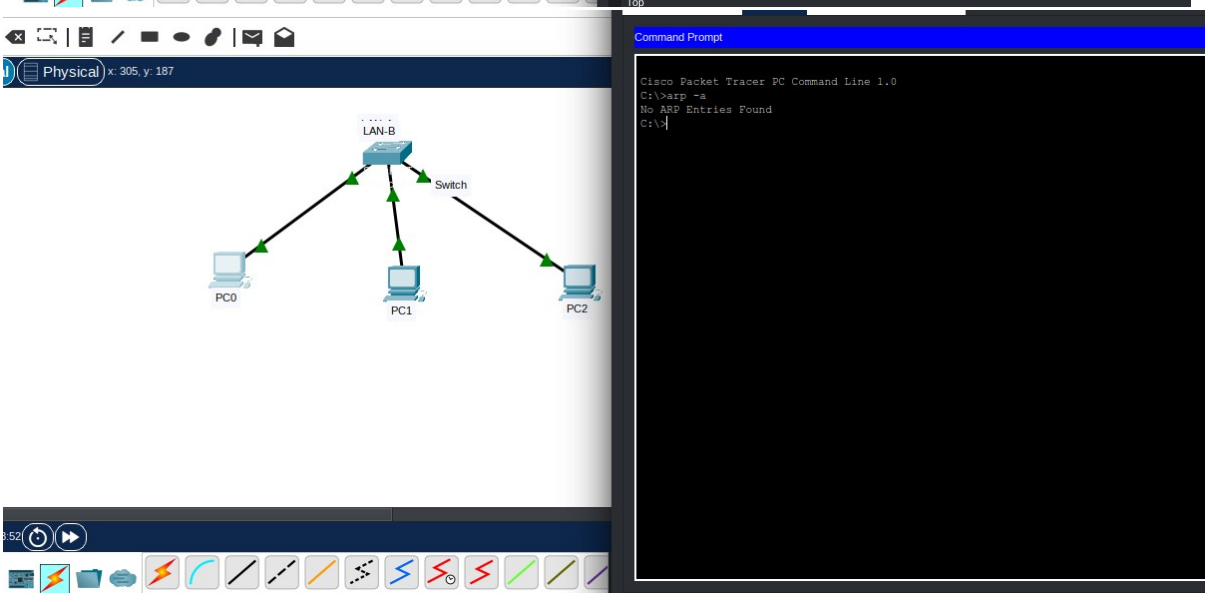


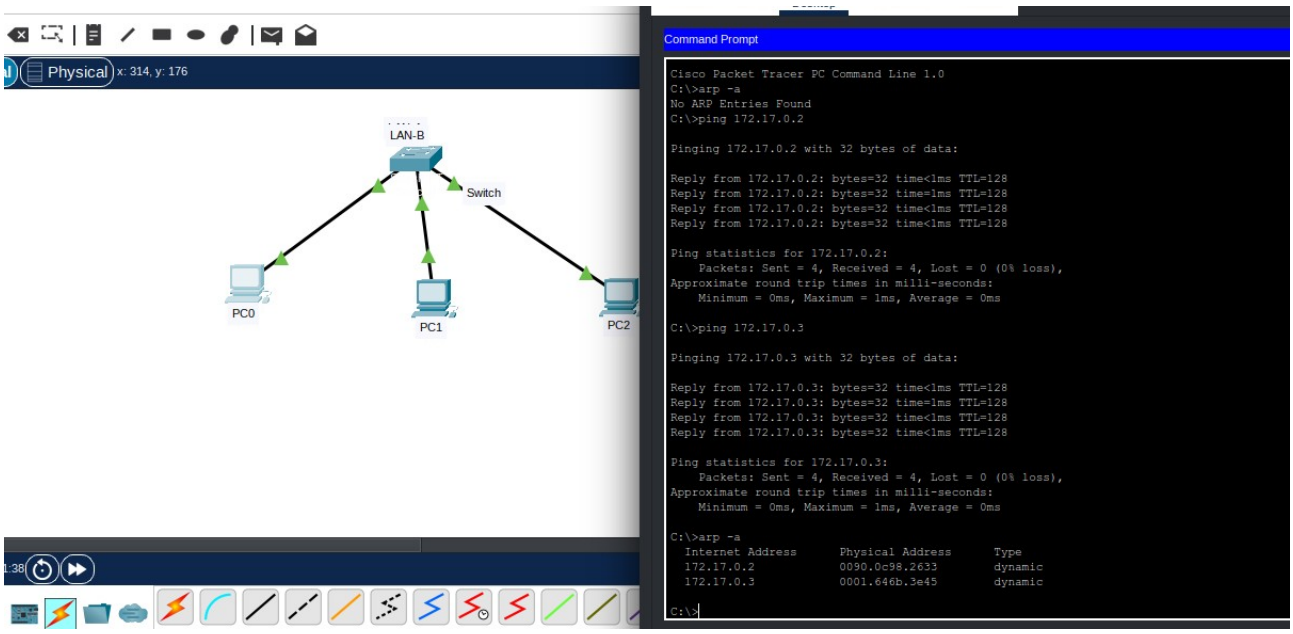


Q3) Create a LAN (named LAN-B) with 3 hosts using a switch. Record contents of the ARP Table of end hosts and the MAC Forwarding Table of the switch. Ping each pair of nodes. Now record the contents of the ARP Table of end hosts and the MAC Forwarding Table of the switch again.

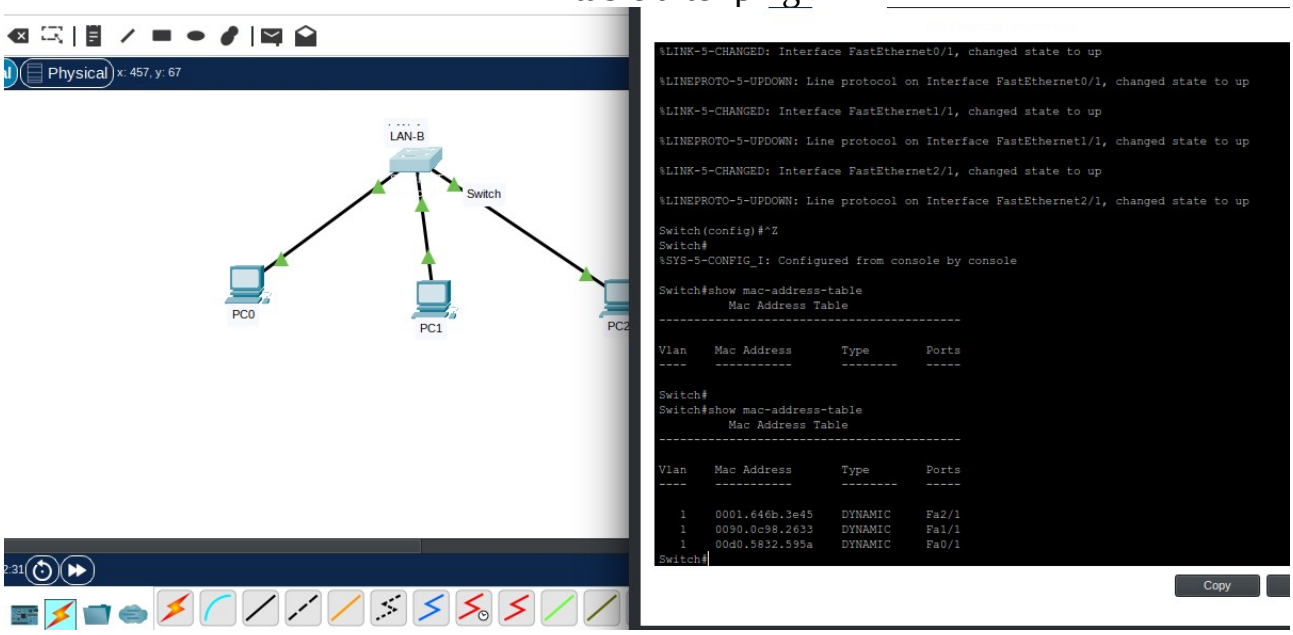
RESULTS: MAC forwarding table & ARP table before any ping performed.







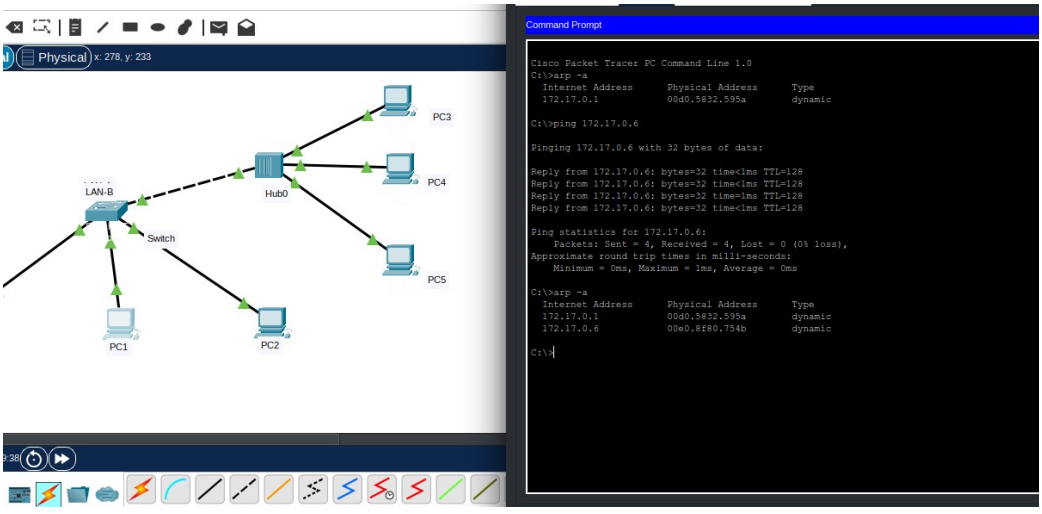
ARP table after ping

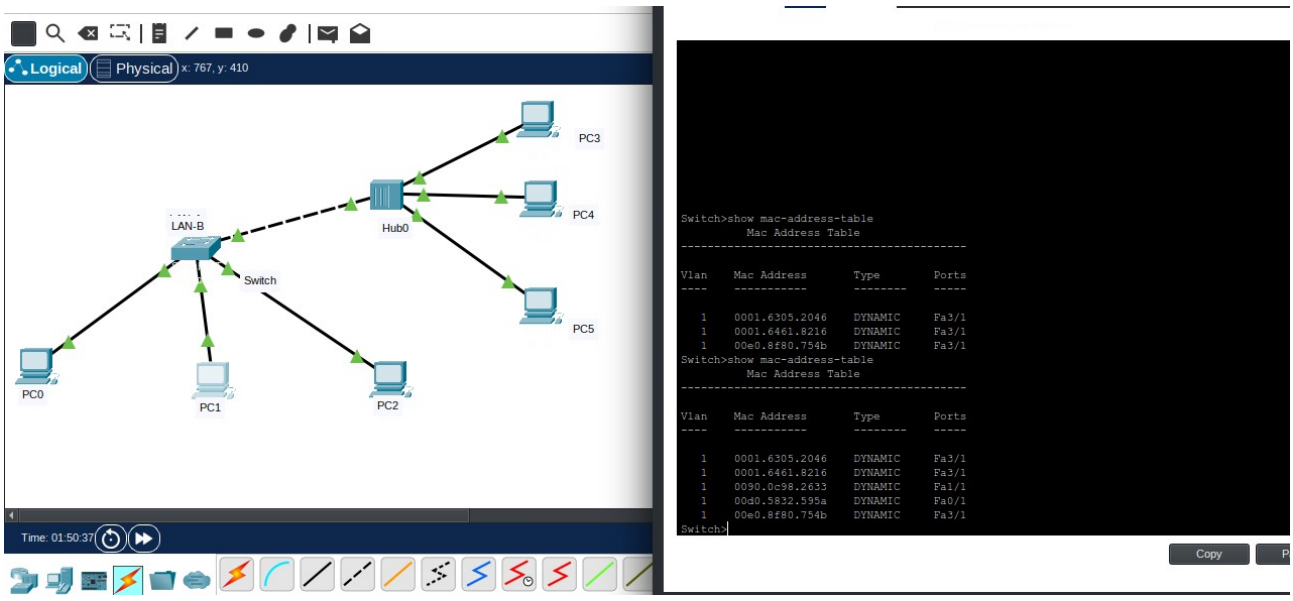


MAC forwarding table after ping

Q4) Connect LAN-A and LAN-B by connecting the hub and switch using a cross-over cable. Ping between each pair of hosts of LAN-A and LAN-B. Now record the contents of the ARP Table of end hosts and the MAC Forwarding Table of the switch again.

RESULTS:

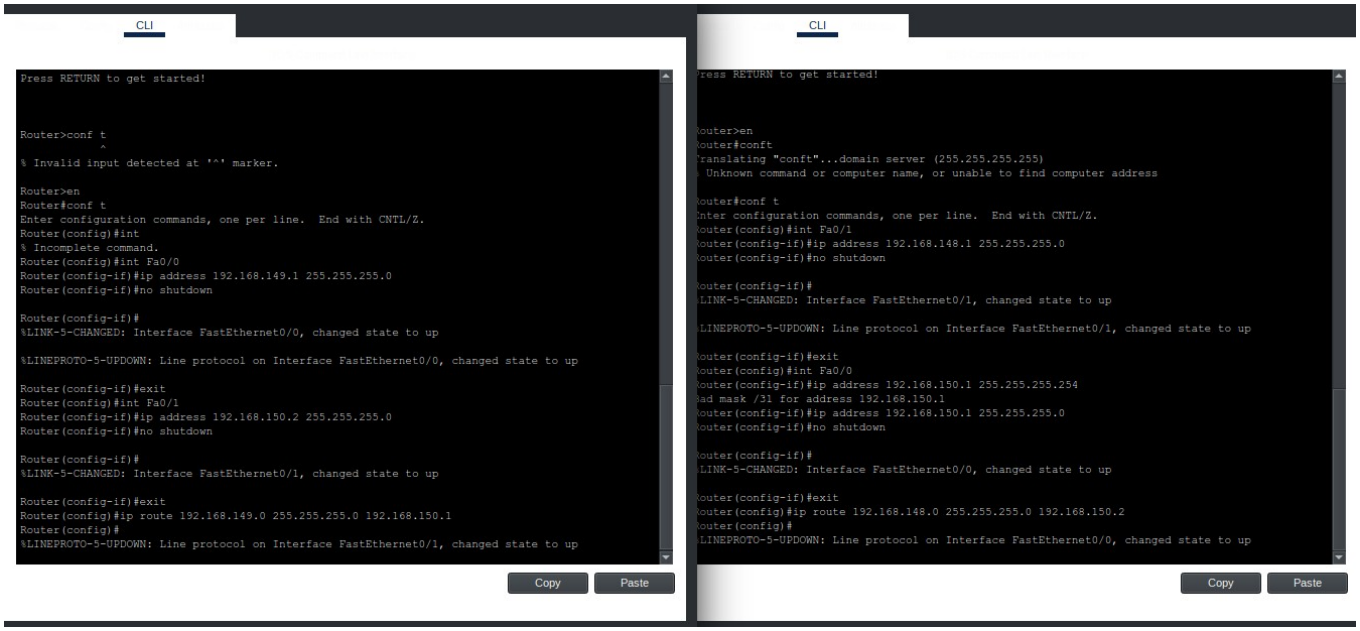




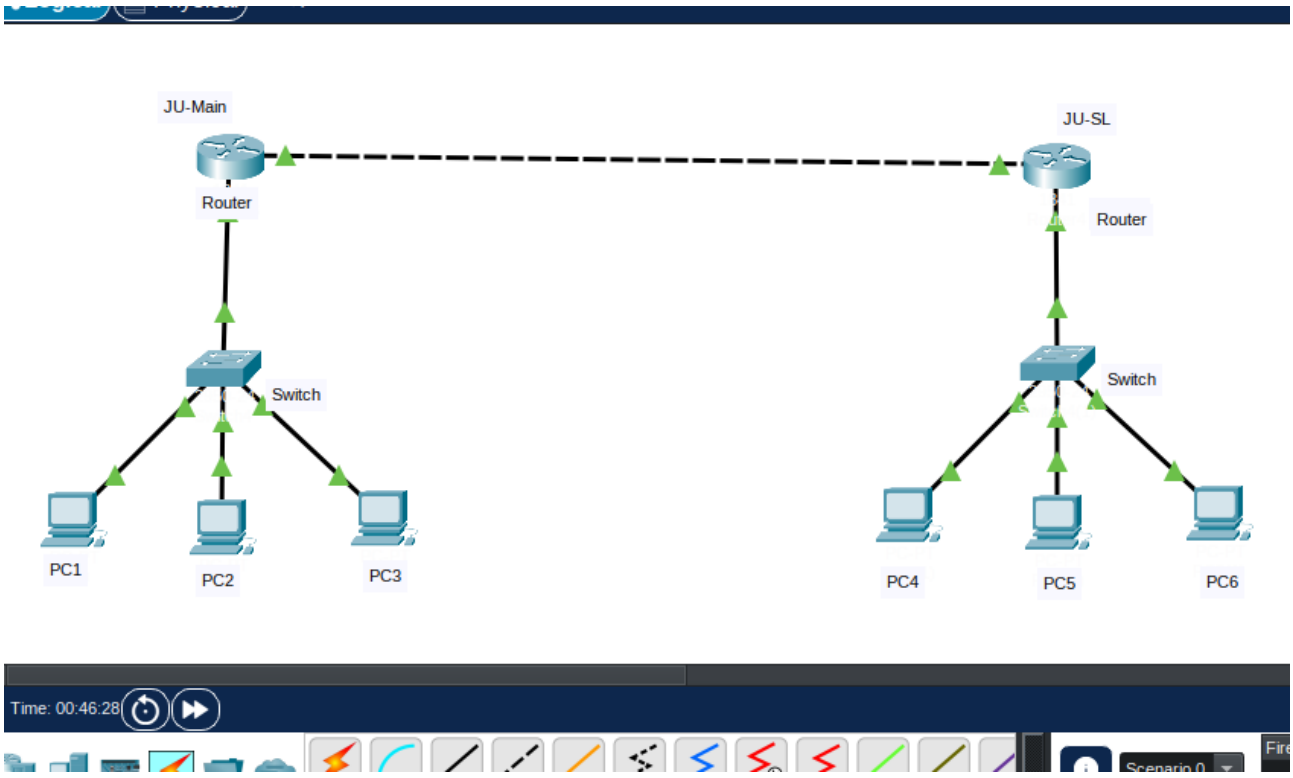
MAC forwarding table after performing ping across LAN-A and LAN-B

Q5) Create a LAN (named JU-Main) with three hosts connected via a layer-2 switch (Cisco 2950 switch PC-LAB1-Switch). Connect the switch to a router (Cisco 1818). Assign IP addresses to all the hosts and the router interface connected to this LAN from network 192.168.148.0/24. Configure default gateway of each hosts as the IP address of the interface of the router which is connected to the LAN. Create another LAN (named JU-SL) with three hosts connected via a layer-2 switch (Cisco 2950 switch PC-LAB2-Switch). Connect this switch to another router (Cisco 1818). Assign IP addresses to all the hosts and the router interface connected to this LAN from network 192.168.149.0/24. Configure default gateway of each hosts as the IP address of the interface of the router which is connected to the LAN. Connect the two routers through appropriate WAN interfaces. Assign IP addresses to the WAN interfaces from network 192.168.150.0/24. Add static route in both of the routers to route packets between two LANs.

RESULTS:



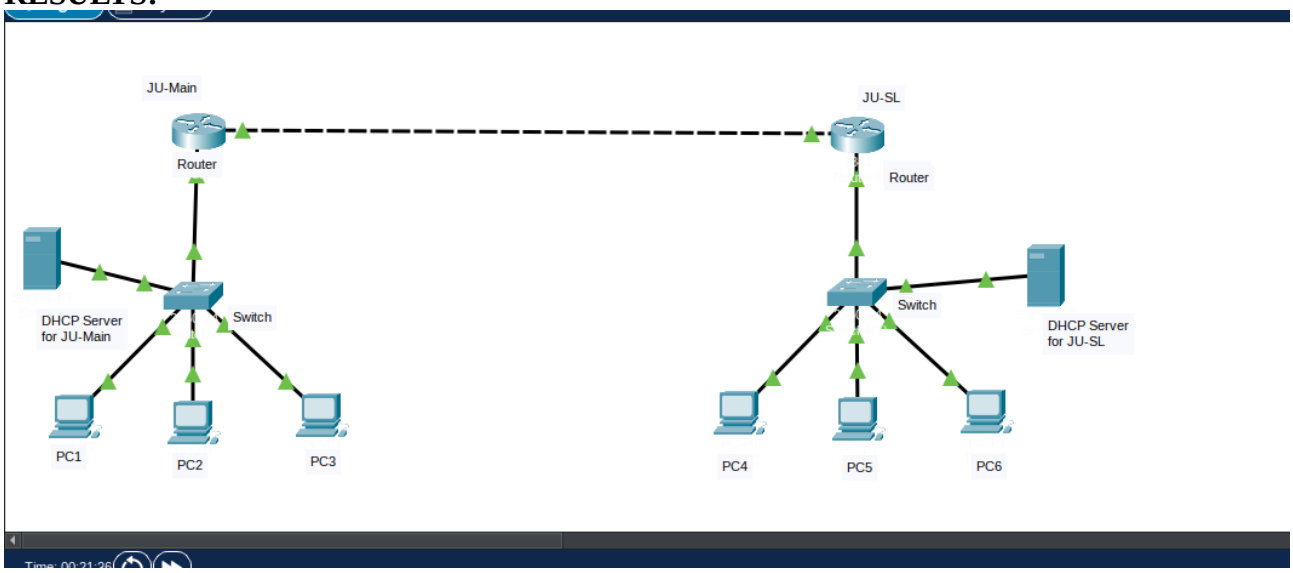
Configuration of the routers to route between 192.168.149.0/24, 192.168.148.0/24 and 192.168.150.0/24 and assigning the subnet masks.



Structure of the Network

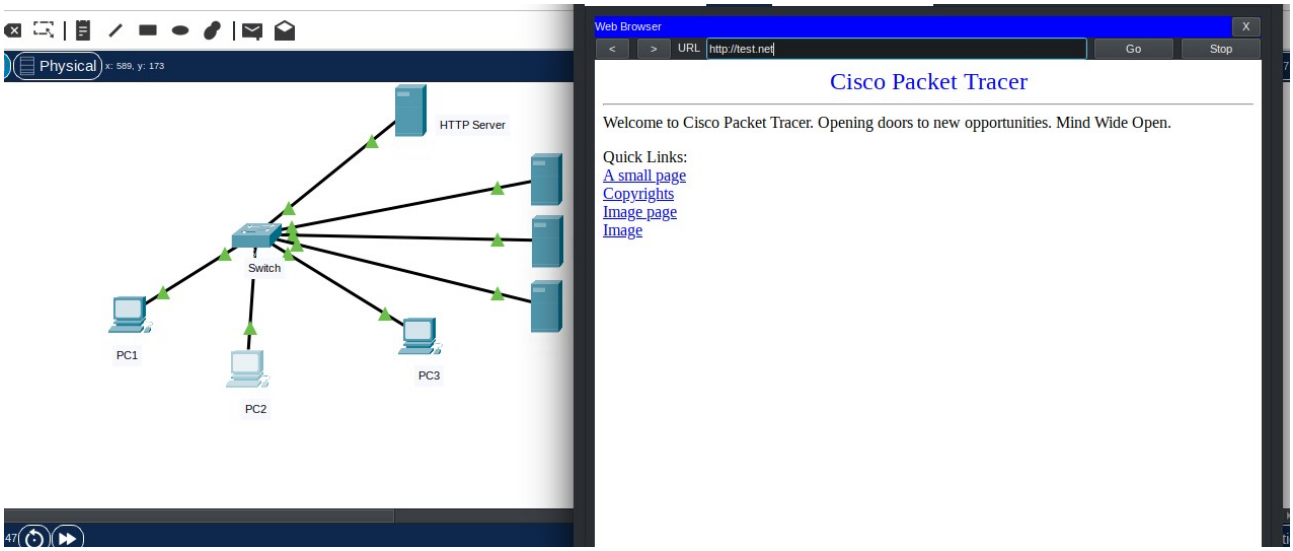
Q6) Add servers to the individual LANs (in problem 5) and configure them as a DHCP server. Configure the hosts in the individual LAN to obtain IP addresses and address of the default gateway via this DHCP server.

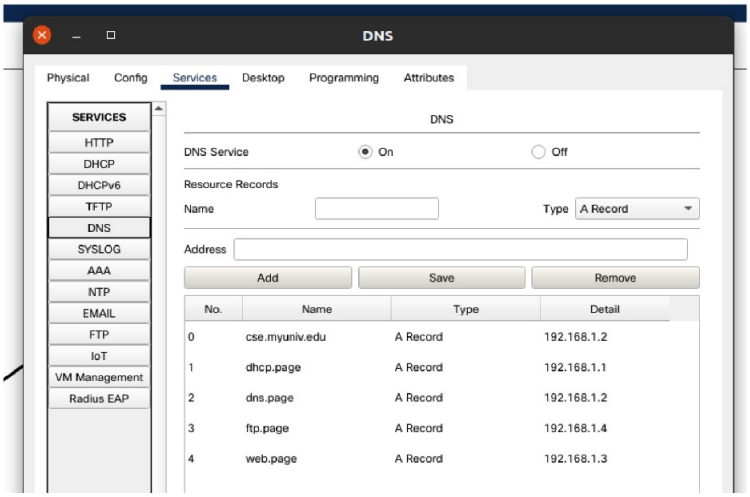
RESULTS:

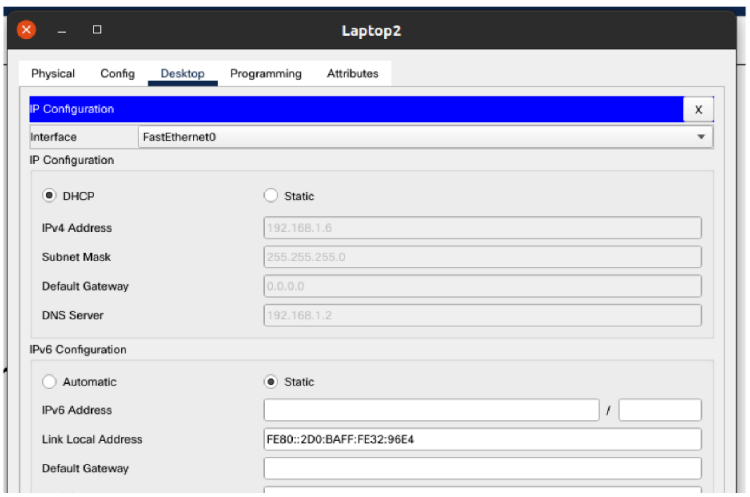


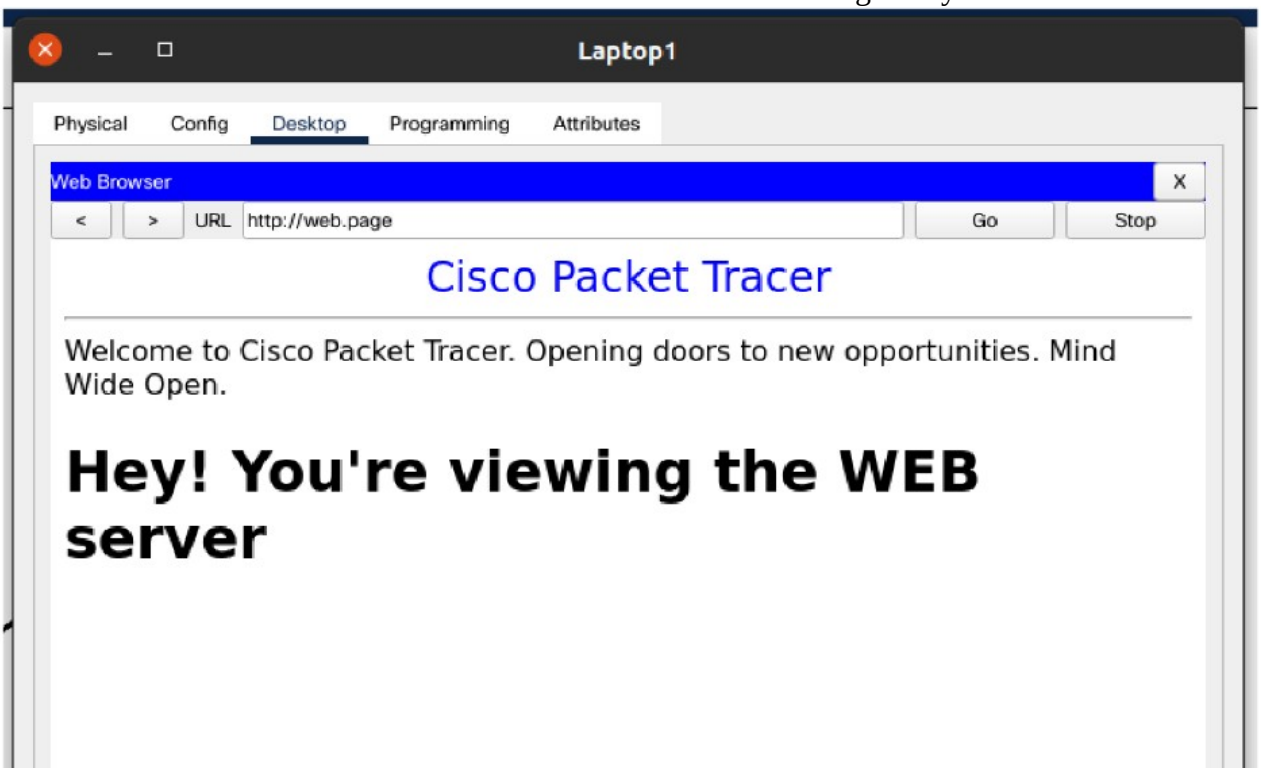
Q7) Create a LAN (CSE) with three hosts connected via a layer-2 switch (Cisco 2950 switch CSE-Switch). Also add a web server and a ftp server to this LAN. The hosts dynamically get their IP addresses from a local DHCP server. Servers are assigned fixed IP addresses. Configure the individual hosts to use the local DNS server for name resolution. Add a Domain Name Server (DNS) to this LAN. Create appropriate records in the DNS server for the individual servers in the LAN. The domain name of the LAN is cse.myuniv.edu. Configure the individual hosts to use the local DNS server for name resolution.

RESULTS:







DNS entries

IPs Assigned by DHCP server