COMPUTER NETWORKS LAB

NAME: ARITRA DATTA

ROLL NO: 002010501054

CLASS: BCSE – III

GROUP: A2

ASSIGNMENT: 6

DEADLINE: 20th October, 2022

Problem Statement: Use Cisco Packet Tracer software to do the following experiments.

Date of Submission: 17th November, 2022

QUESTION 1

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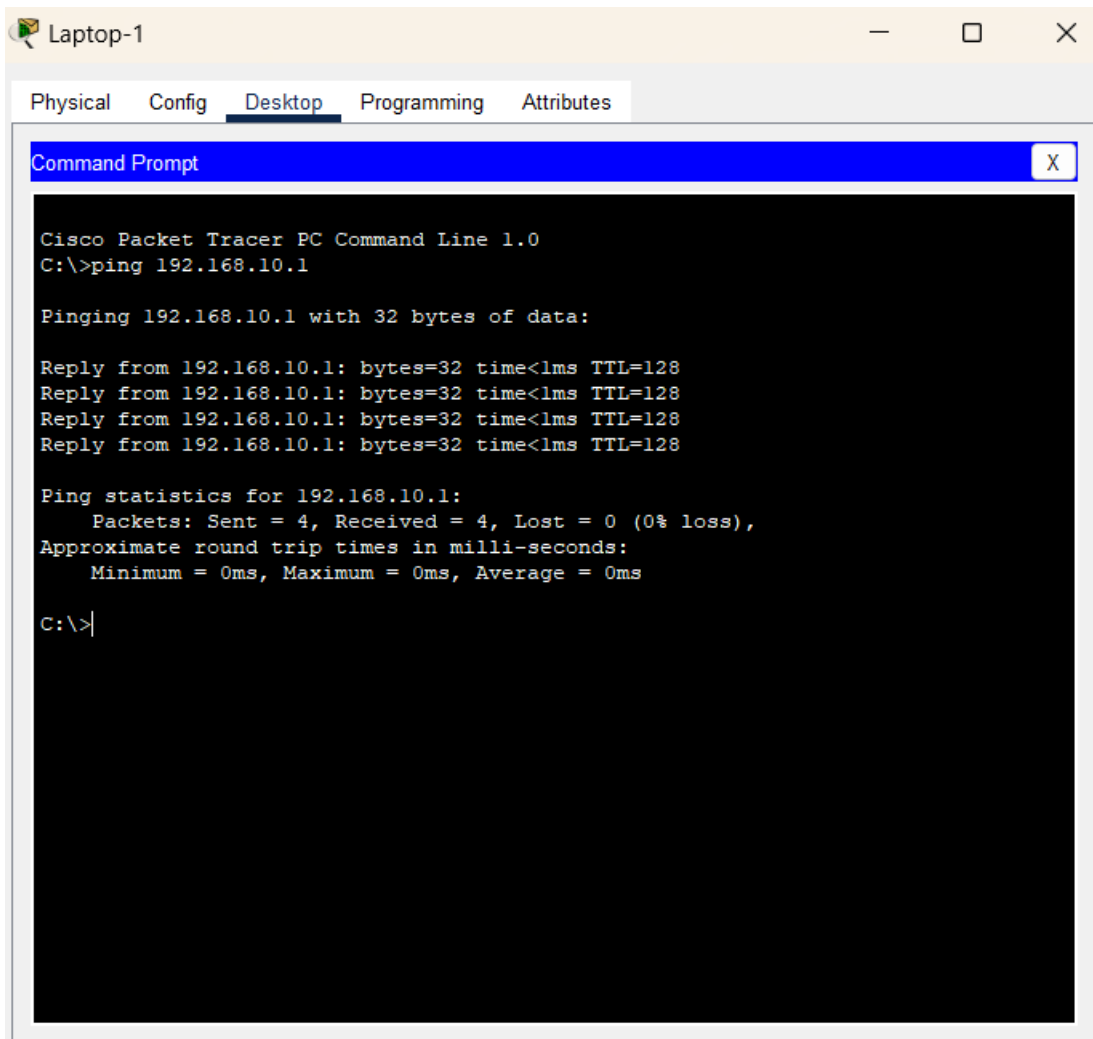


```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```
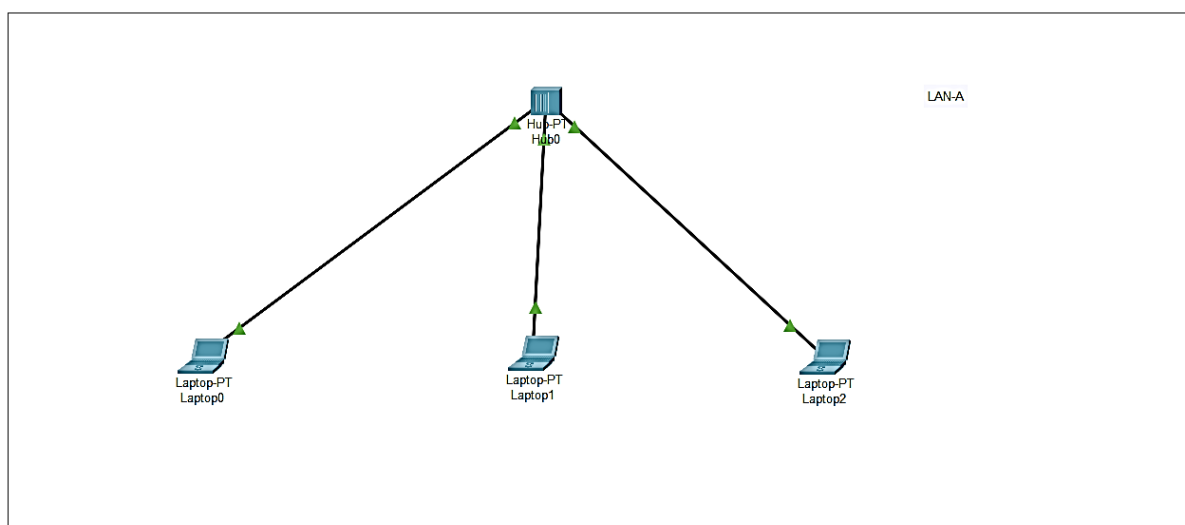
```
Laptop-1                                                    —   □   ✕

Physical   Config   Desktop   Programming   Attributes

Command Prompt                                                      X

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

QUESTION 2

Create a LAN (named LAN-A) with 3 hosts using a hub. Ping each pair of nodes.

Laptop0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time=5ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>
```

Laptop1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
Laptop2                                                    —    □    ×

Physical    Config    Desktop    Programming    Attributes

Command Prompt                                                       X

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time=7ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 7ms, Average = 1ms

C:\>
```
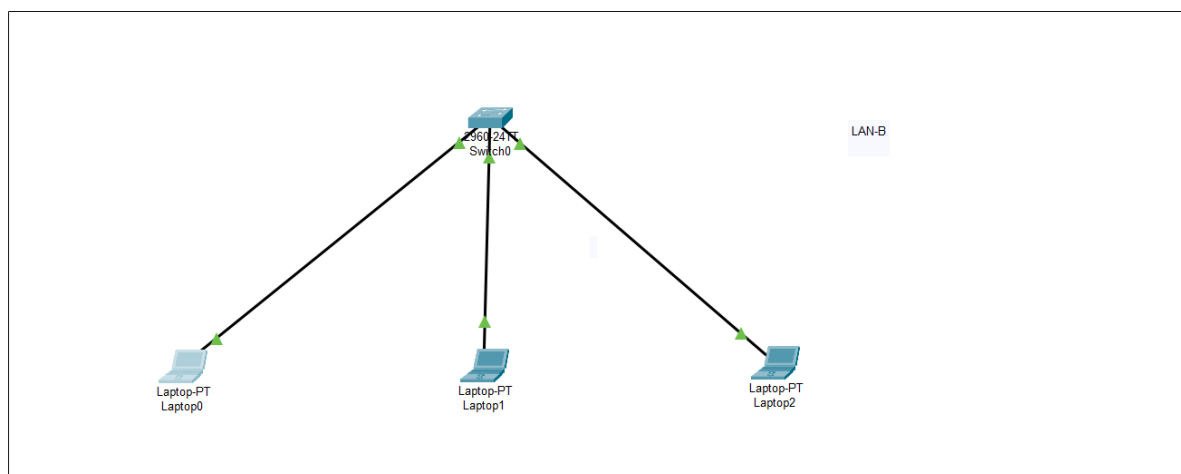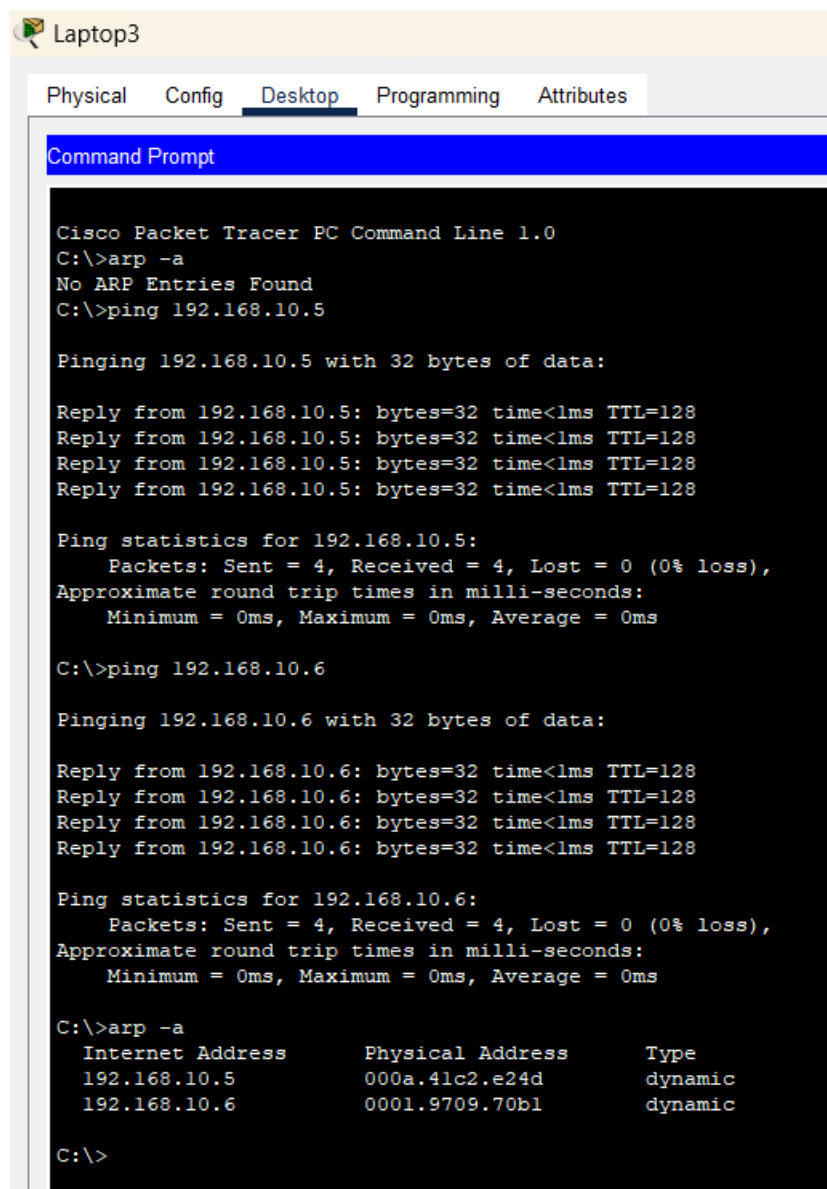
QUESTION 3

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.

Before use of any **ping** command, the ARP entries of all the laptops were empty. Also, the MAC Forwarding Table of the switch was empty. After the laptops have pinged each other, the ARP entries for each laptop get filled up with the physical address of the other laptops. Also, the MAX Forwarding Table of the switch gets filled up using the Port of the switch and the MAC address of the laptops.


```
Laptop3

Physical    Config    Desktop    Programming    Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>arp -a
No ARP Entries Found
C:\>ping 192.168.10.5

Pinging 192.168.10.5 with 32 bytes of data:

Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.6

Pinging 192.168.10.6 with 32 bytes of data:

Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address       Physical Address       Type
  192.168.10.5           000a.41c2.e24d         dynamic
  192.168.10.6           0001.9709.70b1         dynamic

C:\>
```

Physical   Config   Desktop   Programming   Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>arp -a
No ARP Entries Found
C:\>ping 192.168.10.6

Pinging 192.168.10.6 with 32 bytes of data:

Reply from 192.168.10.6: bytes=32 time=9ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms

C:\>ping 192.168.10.4

Pinging 192.168.10.4 with 32 bytes of data:

Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time=7ms TTL=128

Ping statistics for 192.168.10.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 7ms, Average = 1ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.10.4          0060.2f49.920a        dynamic
  192.168.10.6          0001.9709.70b1        dynamic

C:\>
```

Laptop5

Physical   Config   Desktop   Programming   Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>arp -a
No ARP Entries Found
C:\>ping 192.168.10.4

Pinging 192.168.10.4 with 32 bytes of data:

Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.5

Pinging 192.168.10.5 with 32 bytes of data:

Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address        Physical Address        Type
  192.168.10.4            0060.2f49.920a          dynamic
  192.168.10.5            000a.41c2.e24d          dynamic

C:\>
```

```
Switch0                                                    —    □    ✕

Physical    Config    CLI    Attributes

                        IOS Command Line Interface

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed
state to up

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed
state to up


Switch>EN
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address        Type        Ports
----    -----------        --------    -----

Switch#
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address        Type        Ports
----    -----------        --------    -----

   1    0001.9709.70b1     DYNAMIC     Fa0/3
   1    000a.41c2.e24d     DYNAMIC     Fa0/2
   1    0060.2f49.920a     DYNAMIC     Fa0/1
Switch#

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```
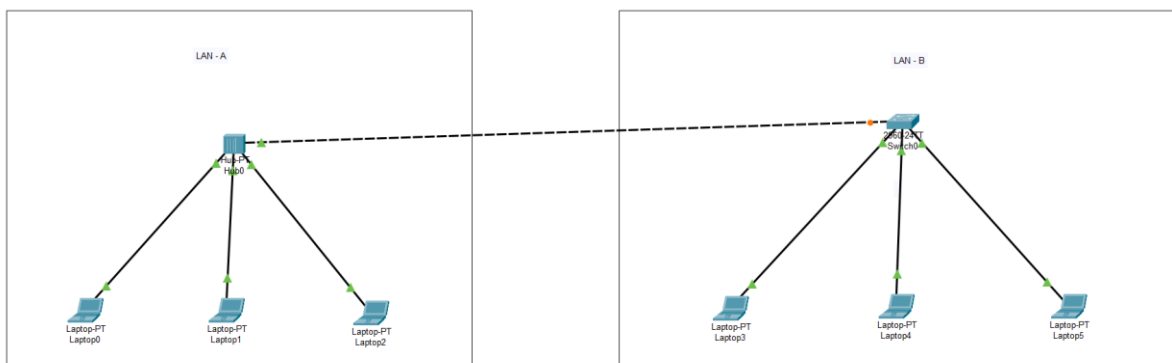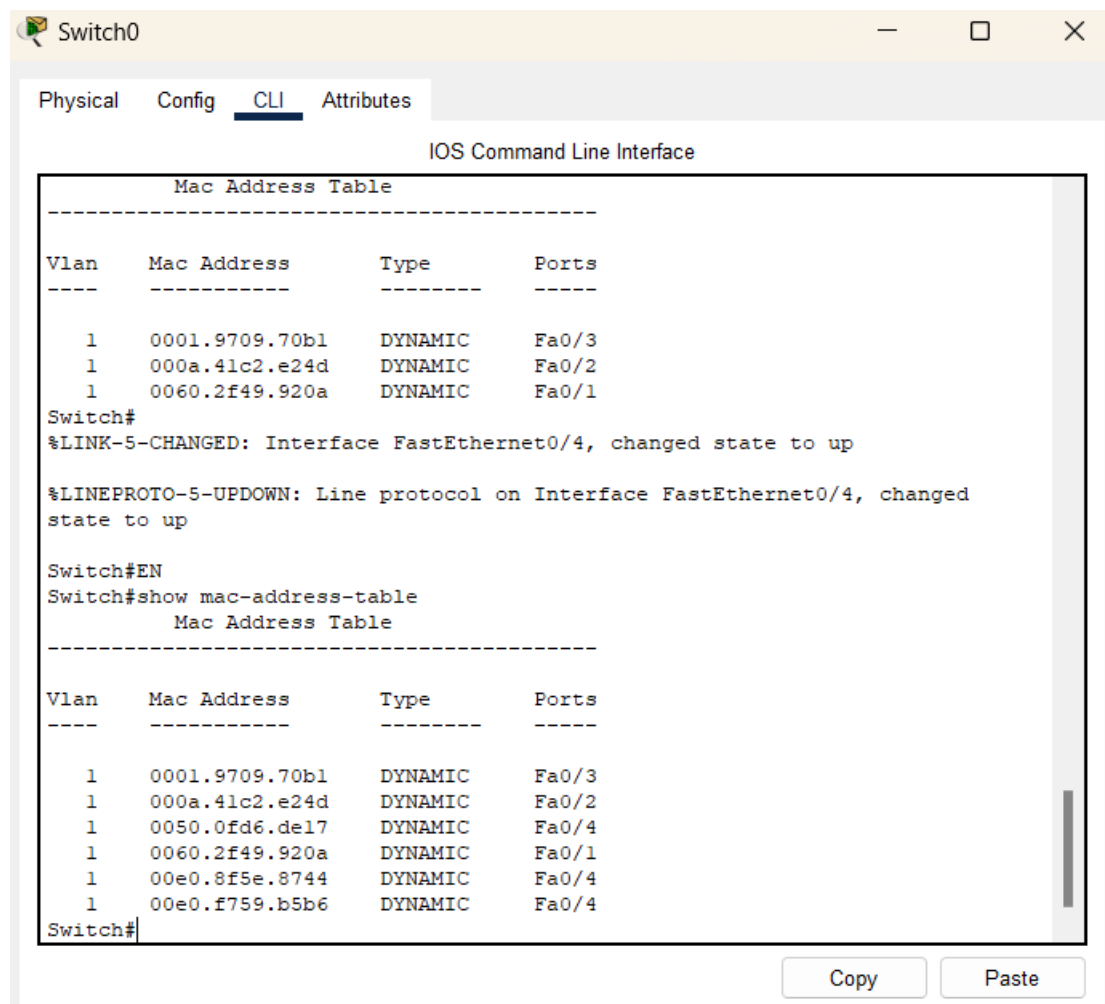
QUESTION 4

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.

The MAC Forwarding Table gets filled up with the MAC addresses of hosts in LAN-A. Also, the ARP entries get filled up with the physical addresses of the hosts in LAN-A.

```
Switch0                                          —    □    ✕

Physical   Config   CLI   Attributes

                    IOS Command Line Interface
            Mac Address Table
-------------------------------------------

Vlan     Mac Address       Type        Ports
----     -----------       --------    -----

   1     0001.9709.70b1    DYNAMIC     Fa0/3
   1     000a.41c2.e24d    DYNAMIC     Fa0/2
   1     0060.2f49.920a    DYNAMIC     Fa0/1
Switch#
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed
state to up

Switch#EN
Switch#show mac-address-table
            Mac Address Table
-------------------------------------------

Vlan     Mac Address       Type        Ports
----     -----------       --------    -----

   1     0001.9709.70b1    DYNAMIC     Fa0/3
   1     000a.41c2.e24d    DYNAMIC     Fa0/2
   1     0050.0fd6.de17    DYNAMIC     Fa0/4
   1     0060.2f49.920a    DYNAMIC     Fa0/1
   1     00e0.8f5e.8744    DYNAMIC     Fa0/4
   1     00e0.f759.b5b6    DYNAMIC     Fa0/4
Switch#

                                  Copy          Paste
```

Physical   Config   Desktop   Programming   Attributes

Command Prompt

```
C:\>
C:\>
C:\>
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time=10ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 2ms

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time=9ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.10.1          00e0.f759.b5b6        dynamic
  192.168.10.2          0050.0fd6.de17        dynamic
  192.168.10.3          00e0.8f5e.8744        dynamic
  192.168.10.5          000a.41c2.e24d        dynamic
  192.168.10.6          0001.9709.70b1        dynamic

C:\>
```

Physical   Config   Desktop   Programming   Attributes

Command Prompt

```
    192.168.10.4            0060.2f49.920a          dynamic
    192.168.10.6            0001.9709.70b1          dynamic

C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time=13ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 13ms, Average = 3ms

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address        Physical Address        Type
  192.168.10.1            00e0.f759.b5b6          dynamic
  192.168.10.2            0050.0fd6.de17          dynamic
  192.168.10.3            00e0.8f5e.8744          dynamic
  192.168.10.4            0060.2f49.920a          dynamic
  192.168.10.6            0001.9709.70b1          dynamic

C:\>
```

Physical   Config   Desktop   Programming   Attributes

Command Prompt

```
  192.168.10.4          0060.2f49.920a        dynamic
  192.168.10.5          000a.41c2.e24d        dynamic

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128
Reply from 192.168.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.10.1          00e0.f759.b5b6        dynamic
  192.168.10.2          0050.0fd6.de17        dynamic
  192.168.10.3          00e0.8f5e.8744        dynamic
  192.168.10.4          0060.2f49.920a        dynamic
  192.168.10.5          000a.41c2.e24d        dynamic

C:\>
```

QUESTION 5

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 witch 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.
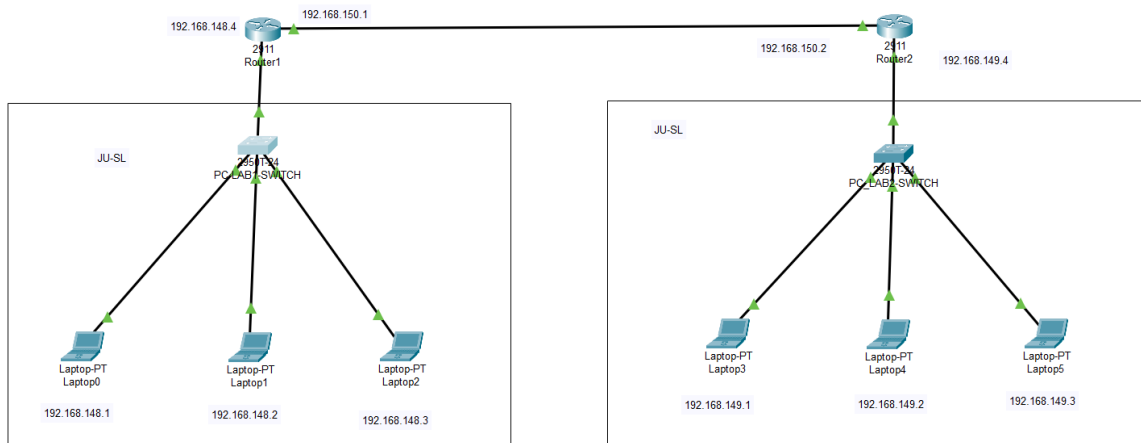
Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up


Router>EN
Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.148.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.148.0/24 is directly connected, GigabitEthernet0/0
L       192.168.148.4/32 is directly connected, GigabitEthernet0/0
S    192.168.149.0/24 [1/0] via 192.168.150.2
     192.168.150.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.150.0/24 is directly connected, GigabitEthernet0/1
L       192.168.150.1/32 is directly connected, GigabitEthernet0/1

Router#
```

Copy   Paste

Router2

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up


Router>EN
Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

S    192.168.148.0/24 [1/0] via 192.168.150.1
     192.168.149.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.149.0/24 is directly connected, GigabitEthernet0/0
L       192.168.149.4/32 is directly connected, GigabitEthernet0/0
     192.168.150.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.150.0/24 is directly connected, GigabitEthernet0/1
L       192.168.150.2/32 is directly connected, GigabitEthernet0/1

Router#
```

QUESTION 6

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.

QUESTION 7

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 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.

LAN - CSE

| Server-PT DHCP 192.168.0.1 | Server-PT DNS 192.168.0.2 | Server-PT WEB 192.168.0.3 | Server-PT FTP 192.168.0.4 | PC-PT PC0 192.0168.0.5 | PC-PT PC1 192.168.0.6 | PC-PT PC2 192.168.0.7 |
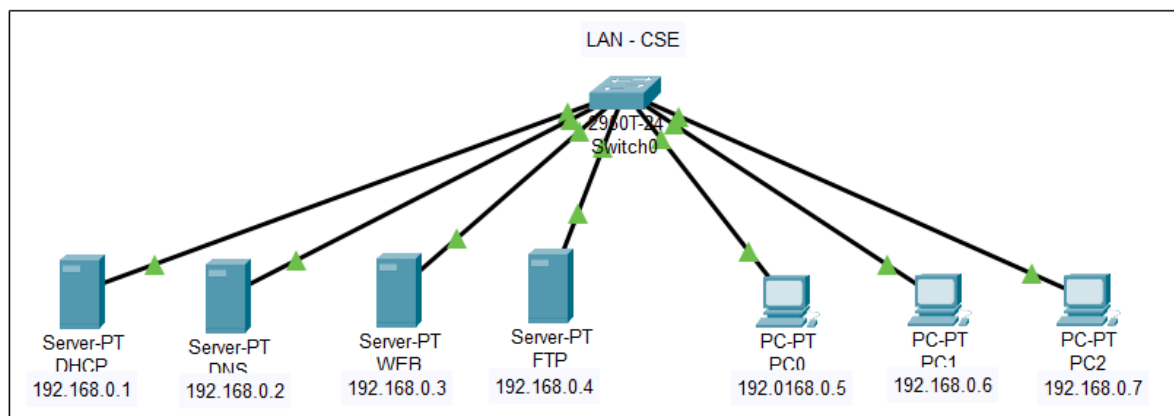
DNS

Physical	Config	Services	Desktop	Programming	Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- **DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service   ⦿ On   ○ Off

Resource Records

Name [   ]   Type [A Record ⌄]

Address [   ]

Add	Save	Remove

No.	Name	Type	Detail
0	cse.myuniv.edu	A Record	192.168.0.2
1	dhcp.page	A Record	192.168.0.1
2	dns.page	A Record	192.168.0.2
3	ftp.page	A Record	192.168.0.4
4	web.page	A Record	192.168.0.3

[DNS Cache]

PC0 ▯ □ ✕

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

< | > | URL http://cse.myuniv.edu | Go | Stop

Assignment 6
___

Screenshot of DNS Server.

This is DNS Server

PC0

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

< | > | URL | http://dhcp.page | Go | Stop

Assignment 6

Screenshot of DHCP Server.

This is DHCP Server

PC0 — □ ✕

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

< | > | URL | http://dns.page | Go   Stop

Assignment 6

Screenshot of DNS Server.

This is DNS Server

PC0 — □ ×

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

< | > | URL http://ftp.page   Go   Stop

Assignment 6

Screenshot of FTP Server.

This is FTP Server

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

< | > | URL http://web.page | Go | Stop

Assignment 6

Screenshot of Web Server.

This is Web Server