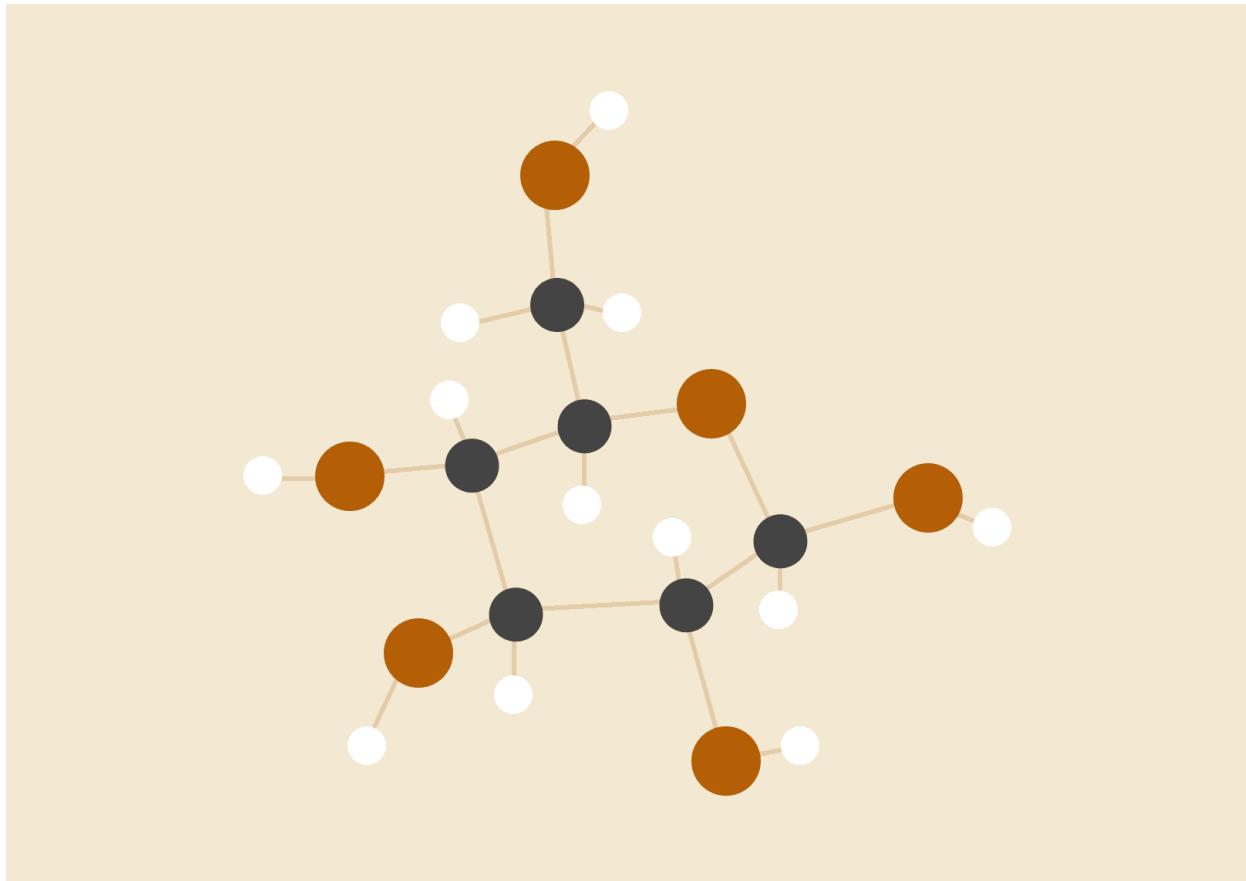


NETWORKING LAB REPORT

CLASS BCSE III

SEM FIFTH

YEAR 2021



NAME Neeladri Pal

ROLL 001910501015

GROUP A1

ASSIGNMENT - 6

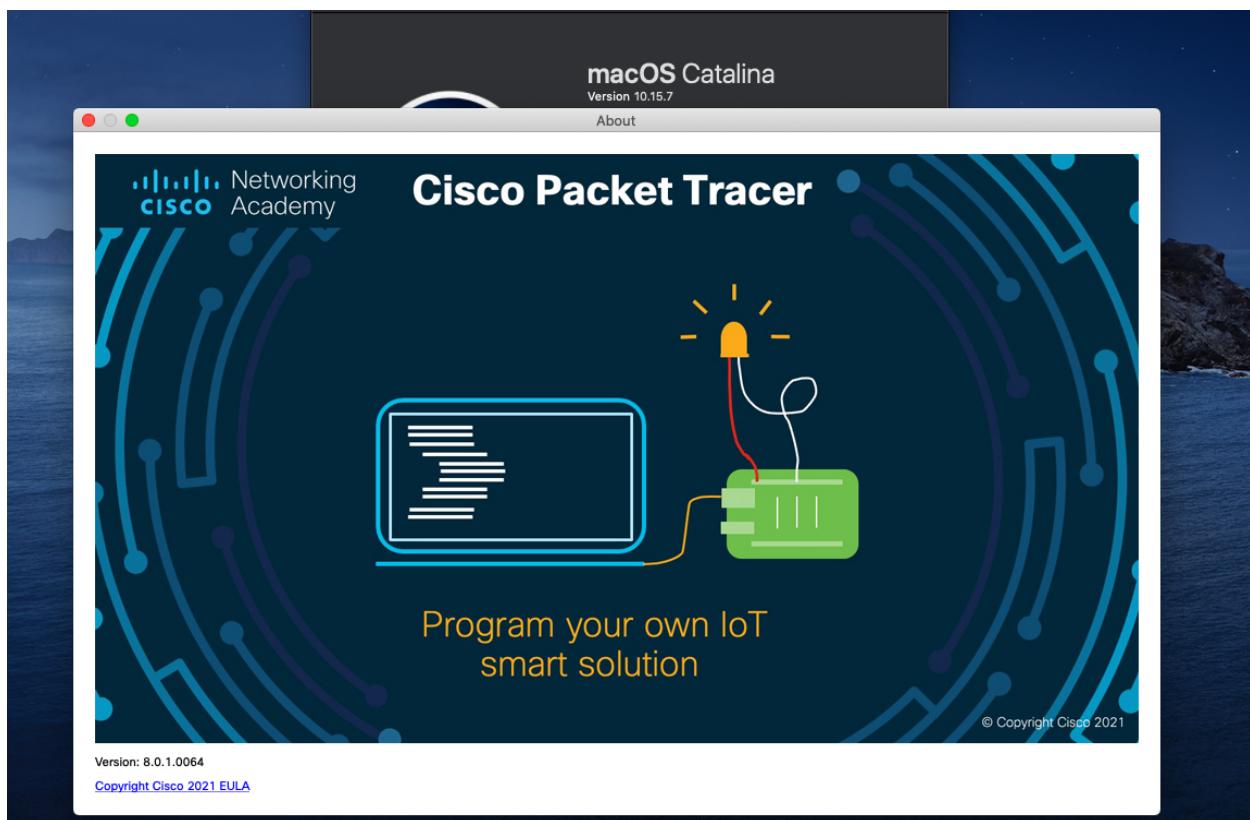
OVERVIEW

Cisco Packet Tracer is one of the most useful visual simulation programs for networking certifications. With this tool, students are able to experiment with network behavior. As such, they're able to ask a wide range of questions and explore different scenarios for better results. Since Cisco Packet Tracer is an important part of the Networking Academy, it provides students with an extensive learning experience. Additionally, it offers several visualization, simulation, assessment, collaboration, and authoring capabilities to facilitate hassle-free learning and teaching of complex IT concepts.

OBJECTIVE

Use Cisco Packet Tracer software to do some experiments.

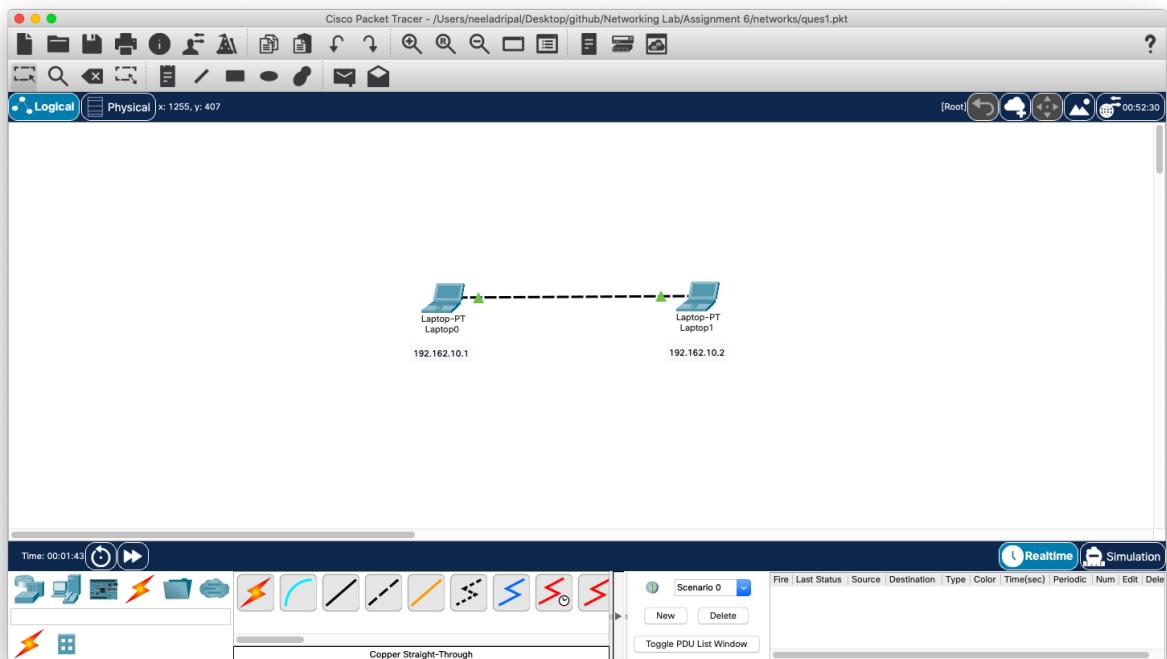
SPECIFICATIONS



QUESTIONS AND SOLUTIONS

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

Two hosts with IP addresses 192.162.10.1 and 192.162.10.2 were made and connected with a crossover cable.



Laptop0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.2

Pinging 192.162.10.2 with 32 bytes of data:

Reply from 192.162.10.2: bytes=32 time=17ms TTL=128
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 17ms, Average = 4ms

C:\>
```

Top

Laptop1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.1

Pinging 192.162.10.1 with 32 bytes of data:

Reply from 192.162.10.1: bytes=32 time=17ms TTL=128
Reply from 192.162.10.1: bytes=32 time<1ms TTL=128
Reply from 192.162.10.1: bytes=32 time<1ms TTL=128
Reply from 192.162.10.1: bytes=32 time<1ms TTL=128

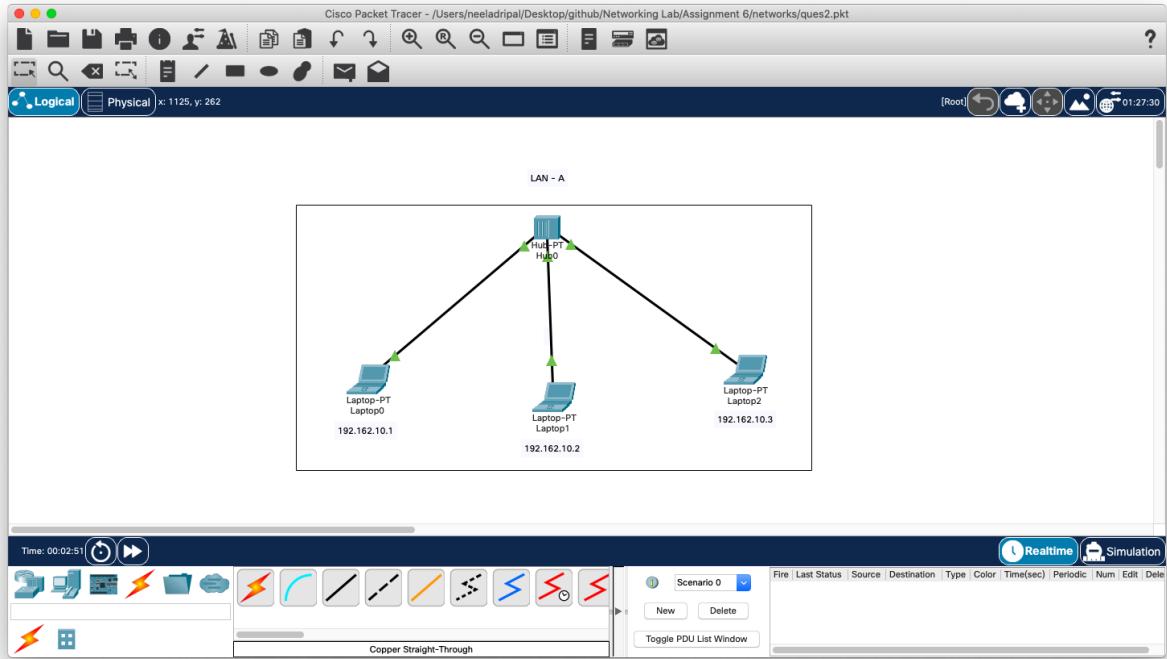
Ping statistics for 192.162.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 17ms, Average = 4ms

C:\>
```

Top

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

LAN-A was created using a hub and three hosts were connected to it using straight through cable.



Laptop0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.2

Pinging 192.162.10.2 with 32 bytes of data:

Reply from 192.162.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.162.10.3

Pinging 192.162.10.3 with 32 bytes of data:

Reply from 192.162.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Top

Laptop1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.1

Pinging 192.162.10.1 with 32 bytes of data:

Reply from 192.162.10.1: bytes=32 time<1ms TTL=128
Reply from 192.162.10.1: bytes=32 time<1ms TTL=128
Reply from 192.162.10.1: bytes=32 time<1ms TTL=128
Reply from 192.162.10.1: bytes=32 time=11ms TTL=128

Ping statistics for 192.162.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 2ms

C:\>ping 192.162.10.3

Pinging 192.162.10.3 with 32 bytes of data:

Reply from 192.162.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Top

The screenshot shows a laptop interface titled "Laptop2". The top menu bar includes "Physical", "Config", "Desktop" (which is underlined), "Programming", and "Attributes". Below the menu is a blue header bar labeled "Command Prompt" with a close button ("X"). The main window displays a terminal session for "Packet Tracer PC Command Line 1.0". The user has run two ping commands: one to 192.162.10.1 and another to 192.162.10.2. Both pings were successful with 0% loss and 0ms round trip times.

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.1

Pinging 192.162.10.1 with 32 bytes of data:

Reply from 192.162.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.162.10.2

Pinging 192.162.10.2 with 32 bytes of data:

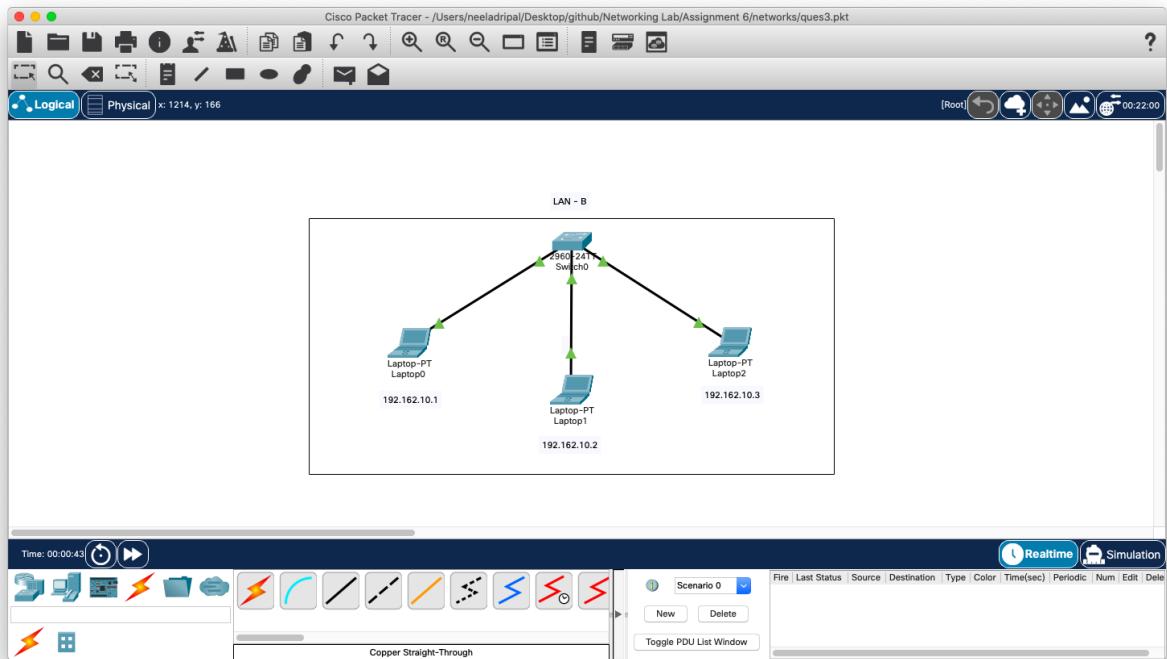
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

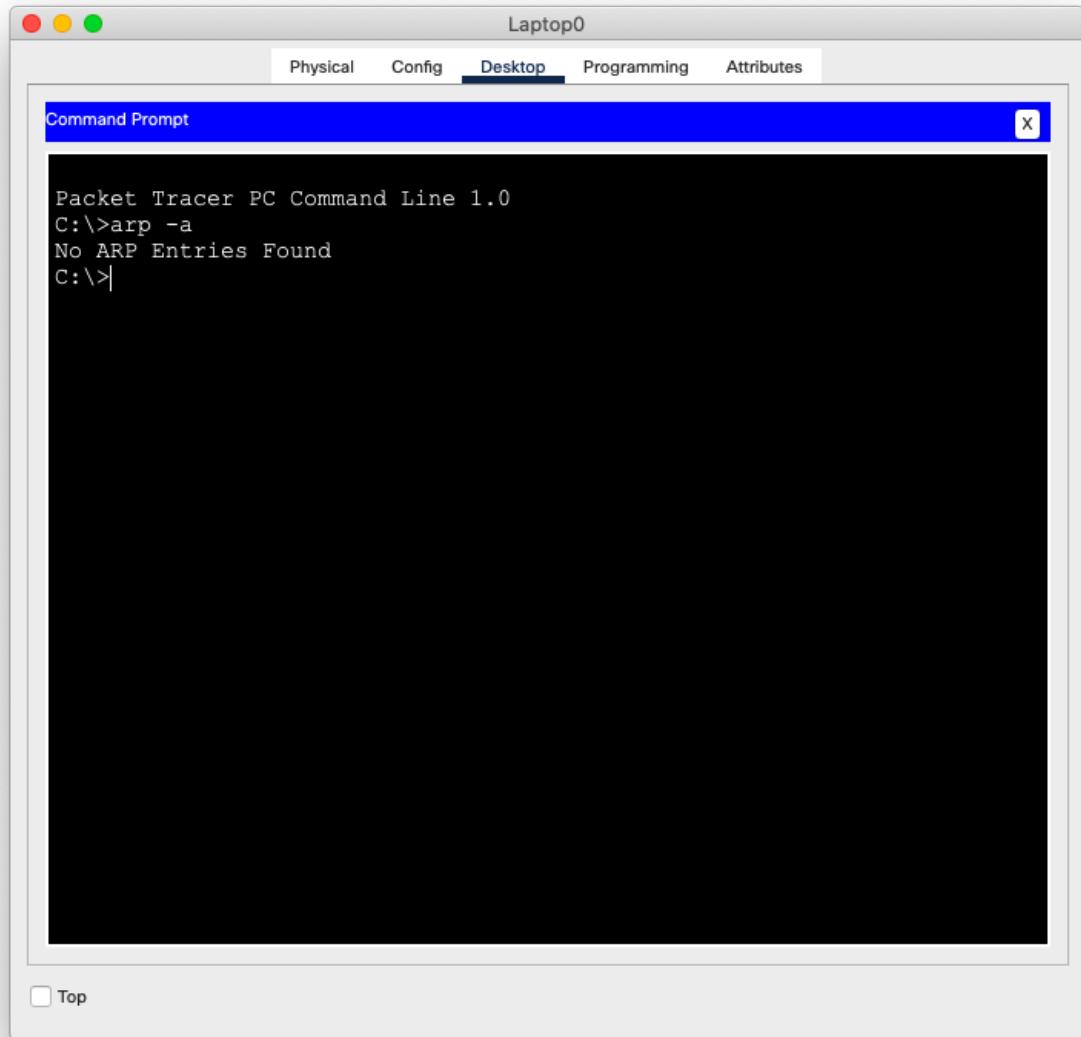
C:\>
```

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.

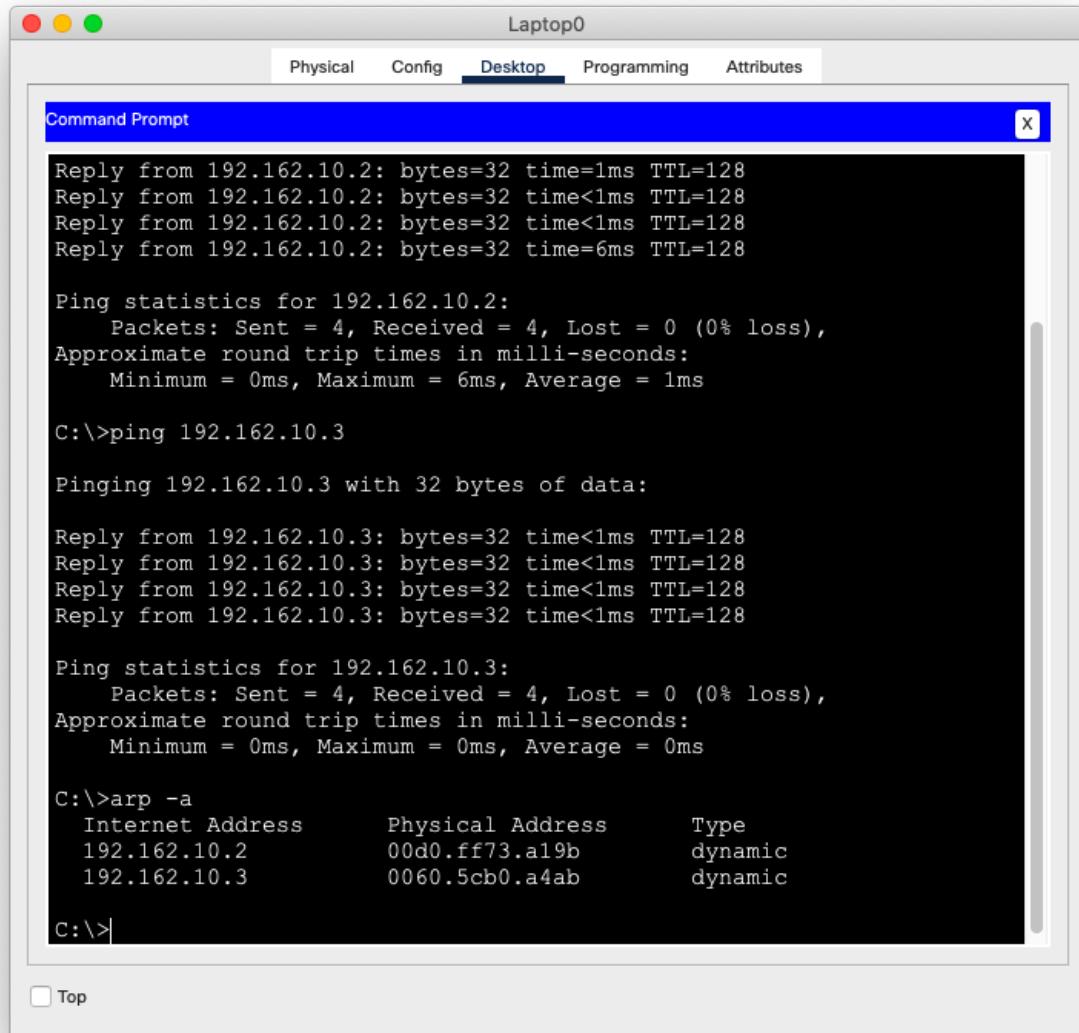
LAN-B was created using a switch (Cisco 2960) and three hosts were connected to it.



Before any ping, no ARP entries were found in any end host.



After pinging each possible pair of nodes,



The screenshot shows a window titled "Laptop0" with a tab bar at the top. The "Desktop" tab is selected. Below the tabs is a "Command Prompt" window. The command prompt displays the following output:

```
Reply from 192.162.10.2: bytes=32 time=1ms TTL=128
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128
Reply from 192.162.10.2: bytes=32 time<1ms TTL=128
Reply from 192.162.10.2: bytes=32 time=6ms TTL=128

Ping statistics for 192.162.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 6ms, Average = 1ms

C:\>ping 192.162.10.3

Pinging 192.162.10.3 with 32 bytes of data:

Reply from 192.162.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.3:
    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
  192.162.10.2           00d0.ff73.a19b        dynamic
  192.162.10.3           0060.5cb0.a4ab        dynamic

C:\>
```

At the bottom left of the command prompt window, there is a checkbox labeled "Top".

Laptop1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.162.10.3

Pinging 192.162.10.3 with 32 bytes of data:

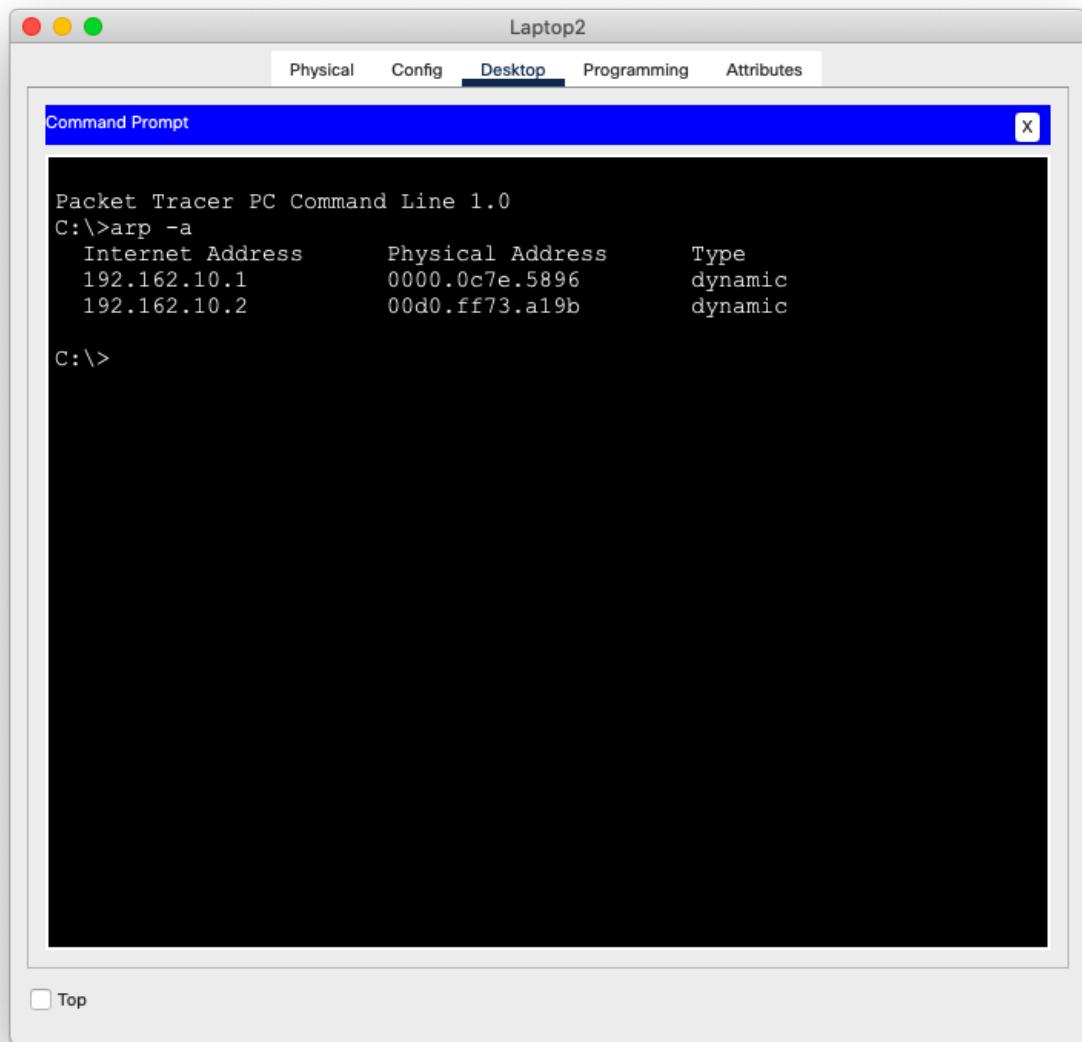
Reply from 192.162.10.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.3:
    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
      192.162.10.1              0000.0c7e.5896        dynamic
      192.162.10.3              0060.5cb0.a4ab        dynamic

C:\>
```

Top



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#show mac-address-table
      Mac Address Table
-----
Vlan     Mac Address          Type        Ports
----     -----              -----      -----
    1      0000.0c7e.5896    DYNAMIC    Fa0/1
    1      0060.5cb0.a4ab    DYNAMIC    Fa0/3
    1      00d0.ff73.a19b    DYNAMIC    Fa0/2
Switch#
```

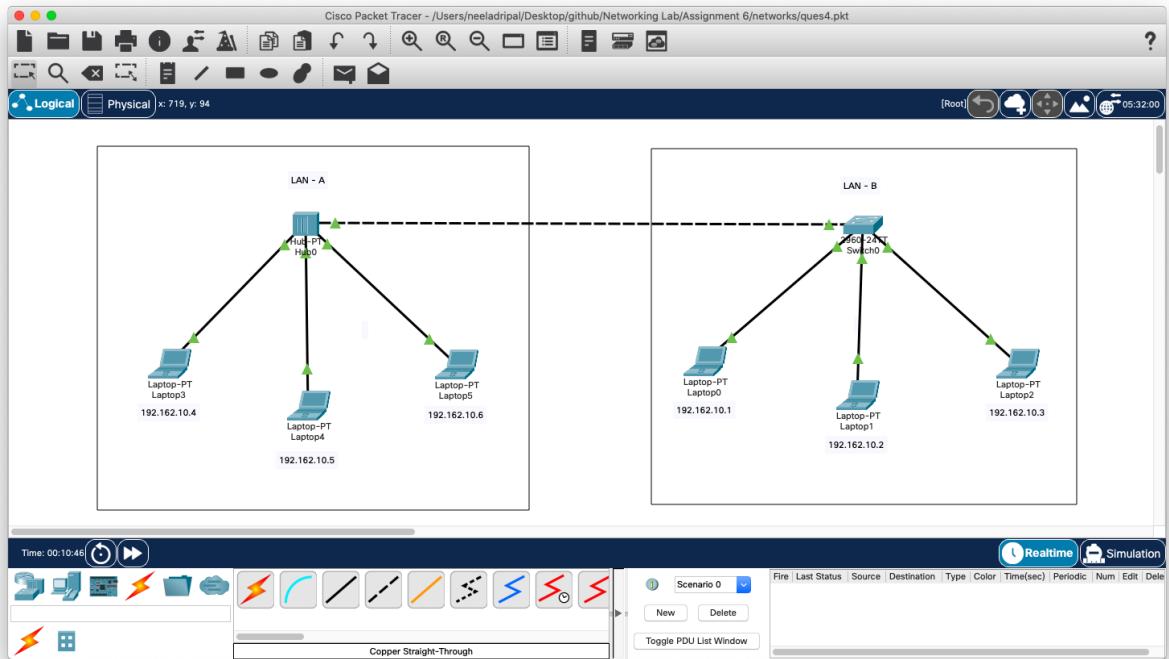
Command+F6 to exit CLI focus

Top

Copy **Paste**

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.

LAN-A and LAB-B are connected by using a crossover cable. After that, each possible pair of nodes is pinged again.



ARP tables of the end hosts of both LAN A and LAN B:

Laptop0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Reply from 192.162.10.5: bytes=32 time=16ms TTL=128
Ping statistics for 192.162.10.5:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 16ms, Average = 5ms

C:\>ping 192.162.10.6

Pinging 192.162.10.6 with 32 bytes of data:

Reply from 192.162.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.6:
  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
  192.162.10.2          00d0.ff73.a19b      dynamic
  192.162.10.3          0060.5cb0.a4ab      dynamic
  192.162.10.4          0002.163d.75c1      dynamic
  192.162.10.5          00d0.58cc.c1a7      dynamic
  192.162.10.6          0030.f2e7.3d69      dynamic

C:\>
```

Top

Laptop1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Reply from 192.162.10.5: bytes=32 time<1ms TTL=128
Ping statistics for 192.162.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 17ms, Average = 4ms

C:\>ping 192.162.10.6

Pinging 192.162.10.6 with 32 bytes of data:

Reply from 192.162.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.6:
    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
   192.162.10.1          0000.0c7e.5896      dynamic
   192.162.10.3          0060.5cb0.a4ab      dynamic
   192.162.10.4          0002.163d.75c1      dynamic
   192.162.10.5          00d0.58cc.c1a7      dynamic
   192.162.10.6          0030.f2e7.3d69      dynamic

C:\>
```

Top

Laptop2

Physical Config Desktop Programming Attributes

Command Prompt X

```
Reply from 192.162.10.5: bytes=32 time=1ms TTL=128
Ping statistics for 192.162.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 8ms, Average = 2ms

C:\>ping 192.162.10.6

Pinging 192.162.10.6 with 32 bytes of data:

Reply from 192.162.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.6:
    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
   192.162.10.1          0000.0c7e.5896      dynamic
   192.162.10.2          00d0.ff73.a19b      dynamic
   192.162.10.4          0002.163d.75c1      dynamic
   192.162.10.5          00d0.58cc.c1a7      dynamic
   192.162.10.6          0030.f2e7.3d69      dynamic

C:\>
```

Top

Laptop3

Physical Config Desktop Programming Attributes

Command Prompt X

```
Reply from 192.162.10.5: bytes=32 time<1ms TTL=128
Ping statistics for 192.162.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 17ms, Average = 4ms

C:\>ping 192.162.10.6

Pinging 192.162.10.6 with 32 bytes of data:

Reply from 192.162.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.6:
    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
   192.162.10.1          0000.0c7e.5896      dynamic
   192.162.10.2          00d0.ff73.a19b      dynamic
   192.162.10.3          0060.5cb0.a4ab      dynamic
   192.162.10.5          00d0.58cc.c1a7      dynamic
   192.162.10.6          0030.f2e7.3d69      dynamic

C:\>
```

Top

Laptop4

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>arp -a
   Internet Address      Physical Address      Type
   192.162.10.1           0000.0c7e.5896      dynamic
   192.162.10.2           00d0.ff73.a19b      dynamic
   192.162.10.3           0060.5cb0.a4ab      dynamic
   192.162.10.4           0002.163d.75c1      dynamic

C:\>ping 192.162.10.6

Pinging 192.162.10.6 with 32 bytes of data:

Reply from 192.162.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.162.10.6:
    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
   192.162.10.1           0000.0c7e.5896      dynamic
   192.162.10.2           00d0.ff73.a19b      dynamic
   192.162.10.3           0060.5cb0.a4ab      dynamic
   192.162.10.4           0002.163d.75c1      dynamic
   192.162.10.6           0030.f2e7.3d69      dynamic

C:\>
```

Top

Laptop5

Physical Config Desktop Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>arp -a
   Internet Address      Physical Address      Type
   192.162.10.1          0000.0c7e.5896      dynamic
   192.162.10.2          00d0.ff73.a19b      dynamic
   192.162.10.3          0060.5cb0.a4ab      dynamic
   192.162.10.4          0002.163d.75c1      dynamic
   192.162.10.5          00d0.58cc.c1a7      dynamic

C:\>
```

Top

The screenshot shows a Cisco Switch CLI window titled "Switch0". The window has tabs for Physical, Config, CLI (which is selected), and Attributes. The main area displays the IOS Command Line Interface. The output shows interface status changes and a mac-address-table listing.

```

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

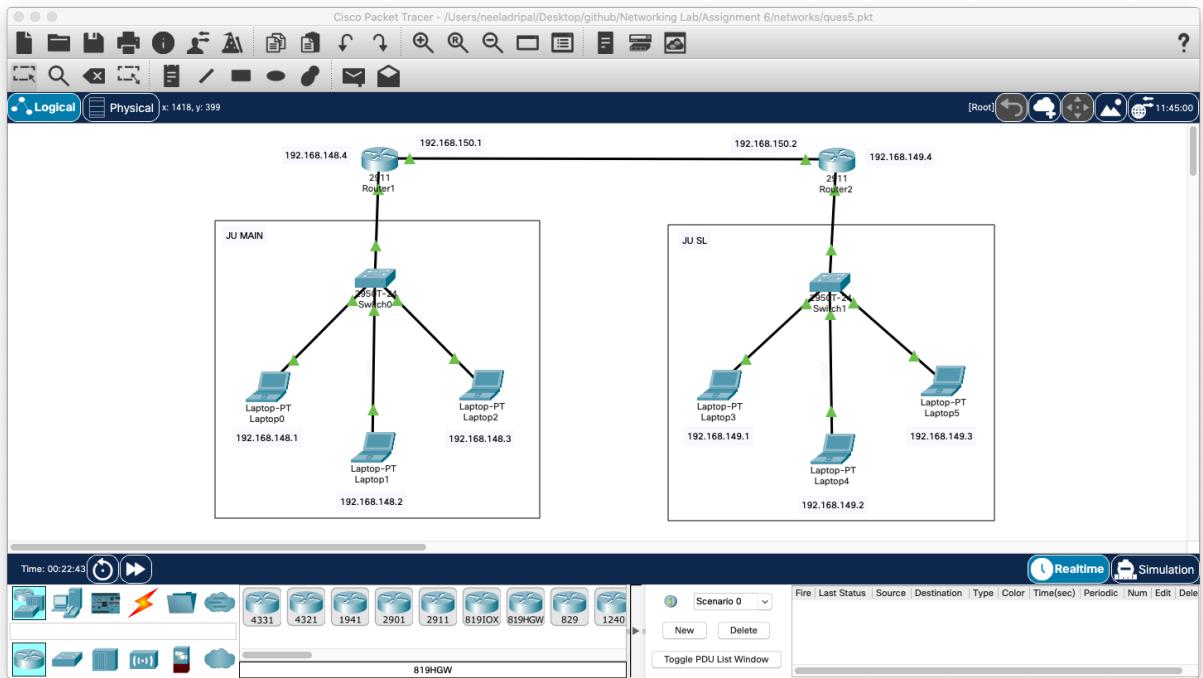
Switch>EN
Switch#show mac-address-table
  Mac Address Table
-----
Vlan      Mac Address          Type      Ports
----      -----
  1        0000.0c7e.5896    DYNAMIC   Fa0/1
  1        0002.163d.75c1    DYNAMIC   Fa0/4
  1        0030.f2e7.3d69    DYNAMIC   Fa0/4
  1        0060.5cb0.a4ab    DYNAMIC   Fa0/3
  1        00d0.58cc.c1a7    DYNAMIC   Fa0/4
  1        00d0.ff73.a19b    DYNAMIC   Fa0/2
Switch#

```

At the bottom of the window, there are buttons for "Copy" and "Paste". A checkbox labeled "Top" is also present.

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 the default gateway of each host 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 host 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 GigabitEthernet0/1,
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#
```

Command+F6 to exit CLI focus

Top

Copy Paste

Router2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%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#
```

Command+F6 to exit CLI focus

Top

Copy Paste

Laptop0

Physical Config Desktop Programming Attributes

Command Prompt X

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::20C:85FF:FE04:4E29
IPv6 Address.....: ::
IPv4 Address.....: 192.168.148.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                           192.168.148.4

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                           0.0.0.0

C:\>ping 192.168.149.1

Pinging 192.168.149.1 with 32 bytes of data:

Reply from 192.168.149.1: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.149.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Top

Laptop3

Physical Config Desktop Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::2D0:D3FF:FE30:91BD
IPv6 Address.....: ::
IPv4 Address.....: 192.168.149.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                           192.168.149.4

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                           0.0.0.0

C:\>ping 192.168.148.1

Pinging 192.168.148.1 with 32 bytes of data:

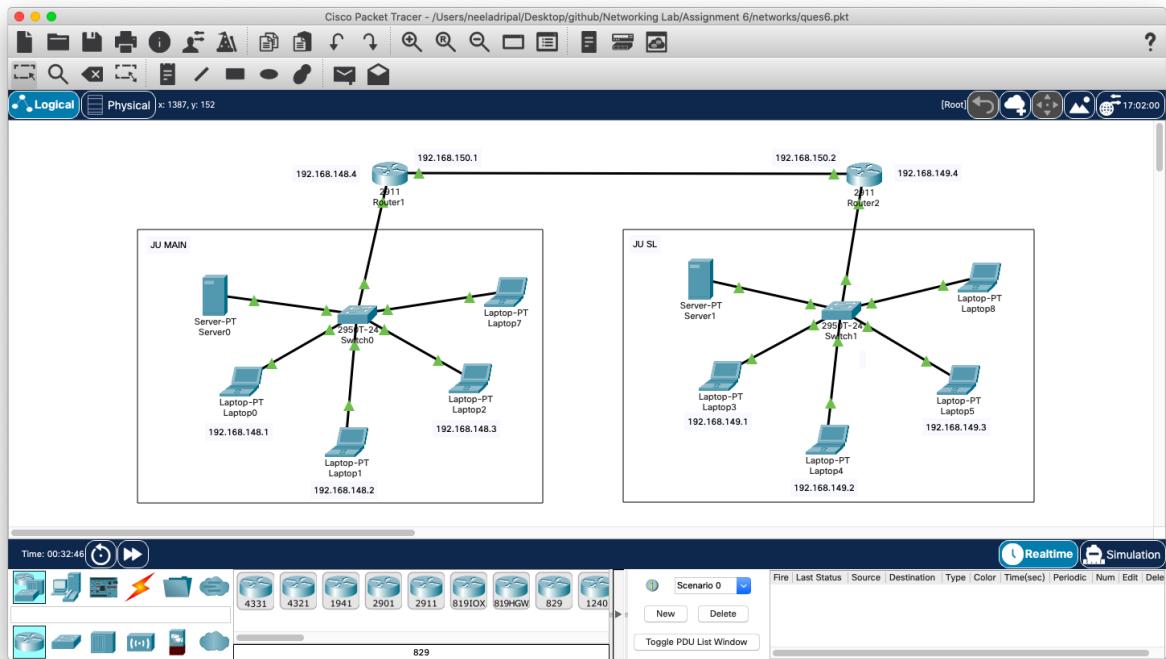
Reply from 192.168.148.1: bytes=32 time<1ms TTL=126
Reply from 192.168.148.1: bytes=32 time<1ms TTL=126
Reply from 192.168.148.1: bytes=32 time=4ms TTL=126
Reply from 192.168.148.1: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.148.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms
```

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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.

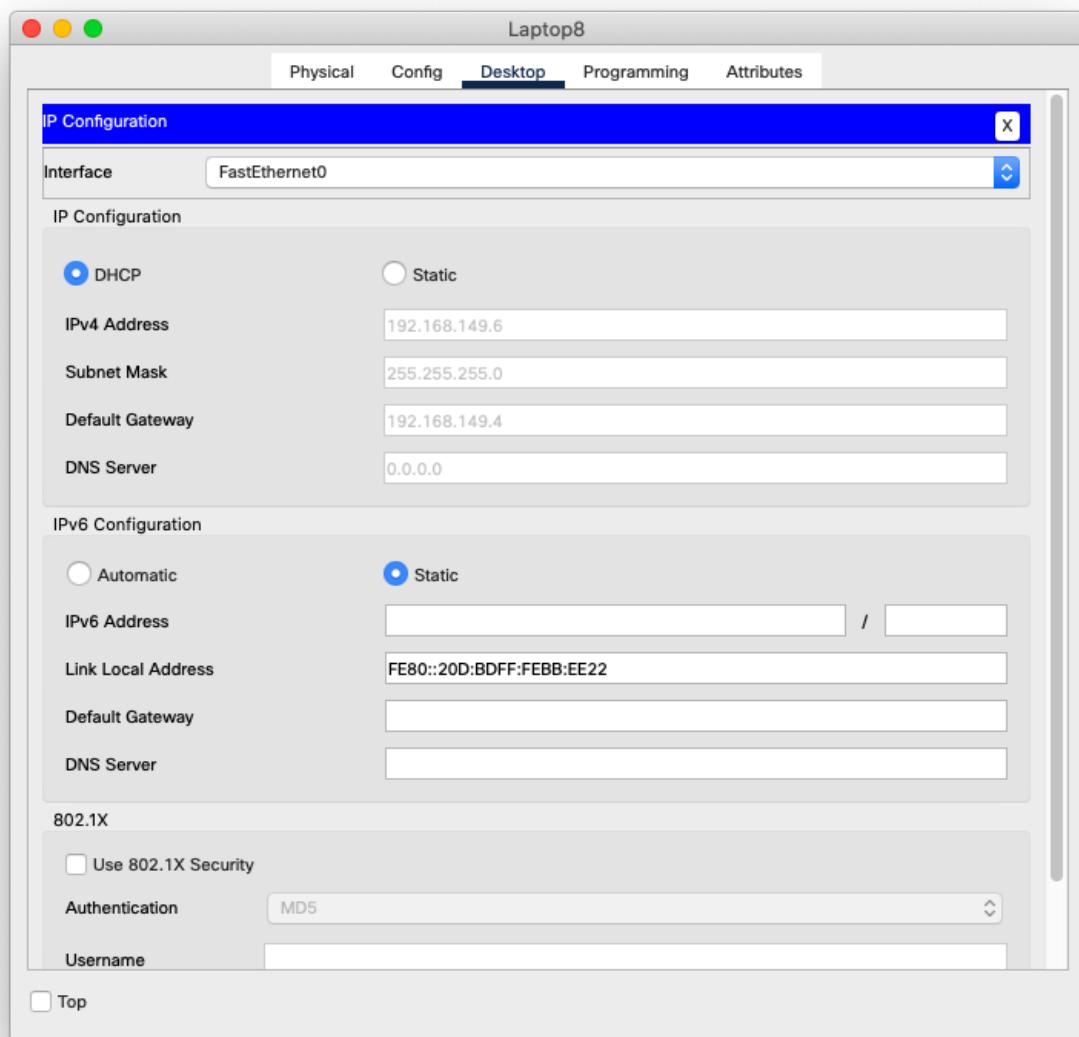
In each LAN, a server was added and it was configured as a DHCP server. The default gateway was set to the IP of the router of that particular interface. The IP of the server is set as 192.168.148.5 in JU MAIN and 192.168.149.5 in JU SL. Now, when new hosts are added, IP address and gateway is provided via the DHCP server.



New host is added in JU MAIN -

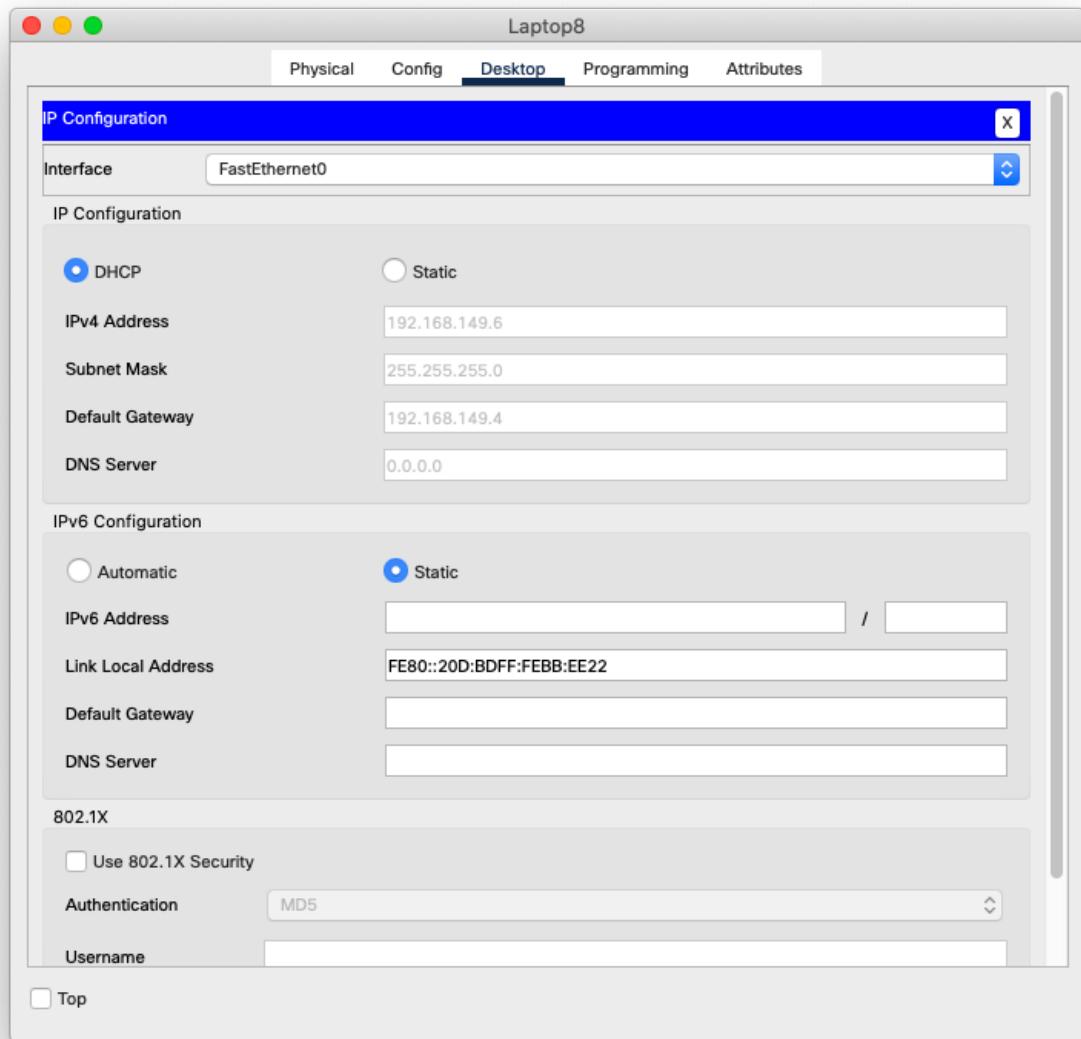
Assigned IP : 192.168.148.6

Gateway: 192.168.148.4

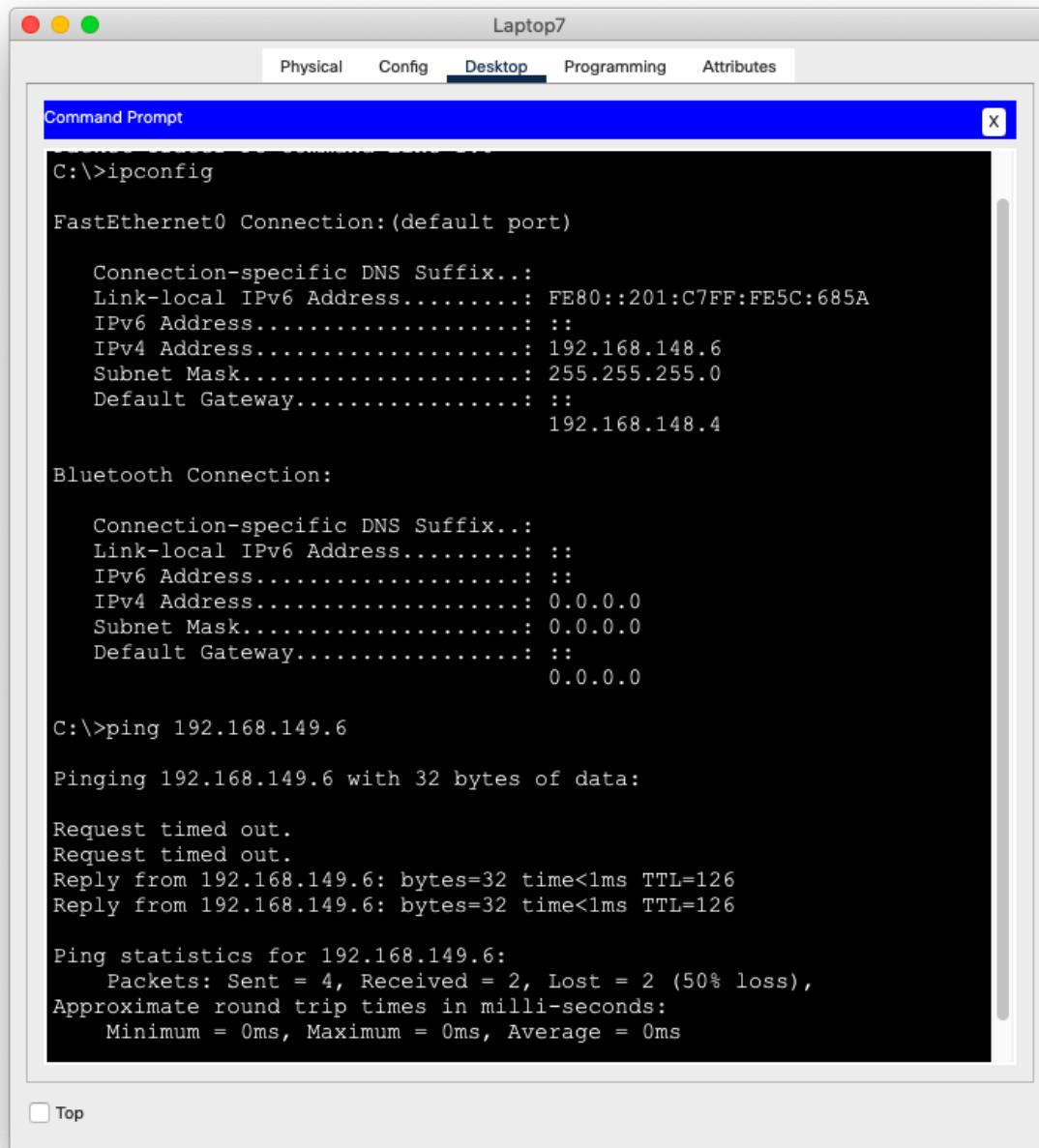


New host is added in JU SL -

Assigned IP : 192.168.149.6
Gateway: 192.168.149.4



PING command was also successfully executed between the new hosts that were created via the DHCP server -



The screenshot shows a laptop interface titled "Laptop7" with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is selected. A Command Prompt window is open, showing the output of the ipconfig and ping commands.

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

  Connection-specific DNS Suffix...:
  Link-local IPv6 Address.....: FE80::201:C7FF:FE5C:685A
  IPv6 Address.....: ::
  IPv4 Address.....: 192.168.148.6
  Subnet Mask.....: 255.255.255.0
  Default Gateway.....: ::
                           192.168.148.4

Bluetooth Connection:

  Connection-specific DNS Suffix...:
  Link-local IPv6 Address.....: ::
  IPv6 Address.....: ::
  IPv4 Address.....: 0.0.0.0
  Subnet Mask.....: 0.0.0.0
  Default Gateway.....: ::
                           0.0.0.0

C:\>ping 192.168.149.6

Pinging 192.168.149.6 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.149.6: bytes=32 time<1ms TTL=126
Reply from 192.168.149.6: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.149.6:
  Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Top

Laptop8

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::20D:BDFF:FEBB:EE22
IPv6 Address.....: ::
IPv4 Address.....: 192.168.149.6
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                           192.168.149.4

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                           0.0.0.0

C:\>ping 192.168.148.6

Pinging 192.168.148.6 with 32 bytes of data:

Reply from 192.168.148.6: bytes=32 time<1ms TTL=126

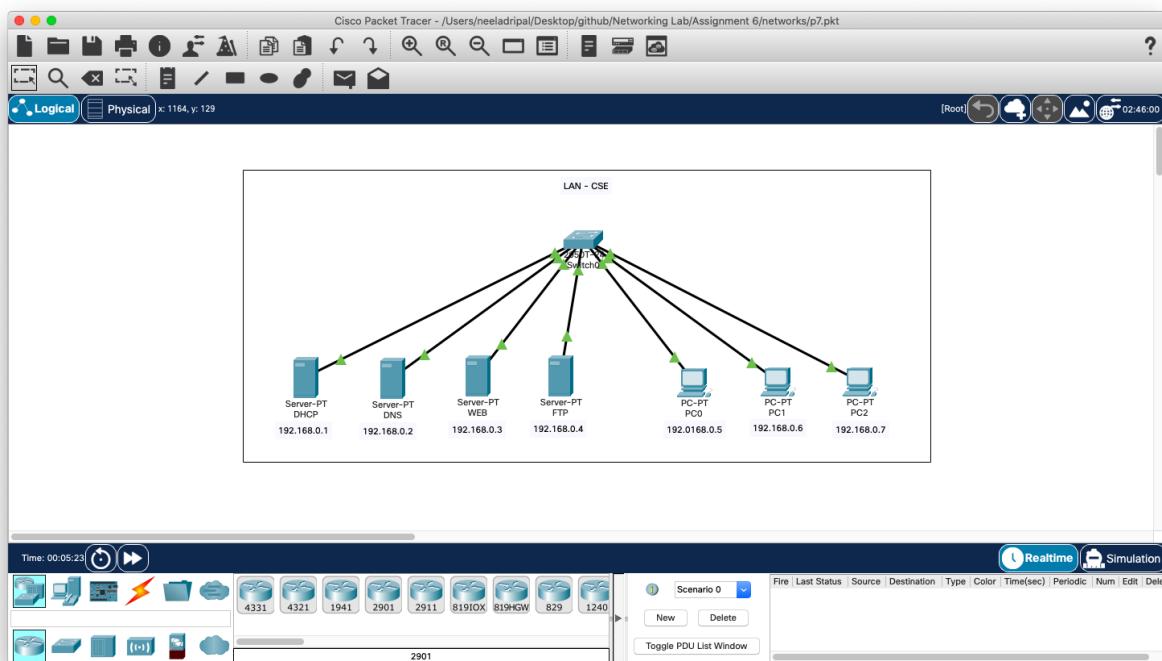
Ping statistics for 192.168.148.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Top

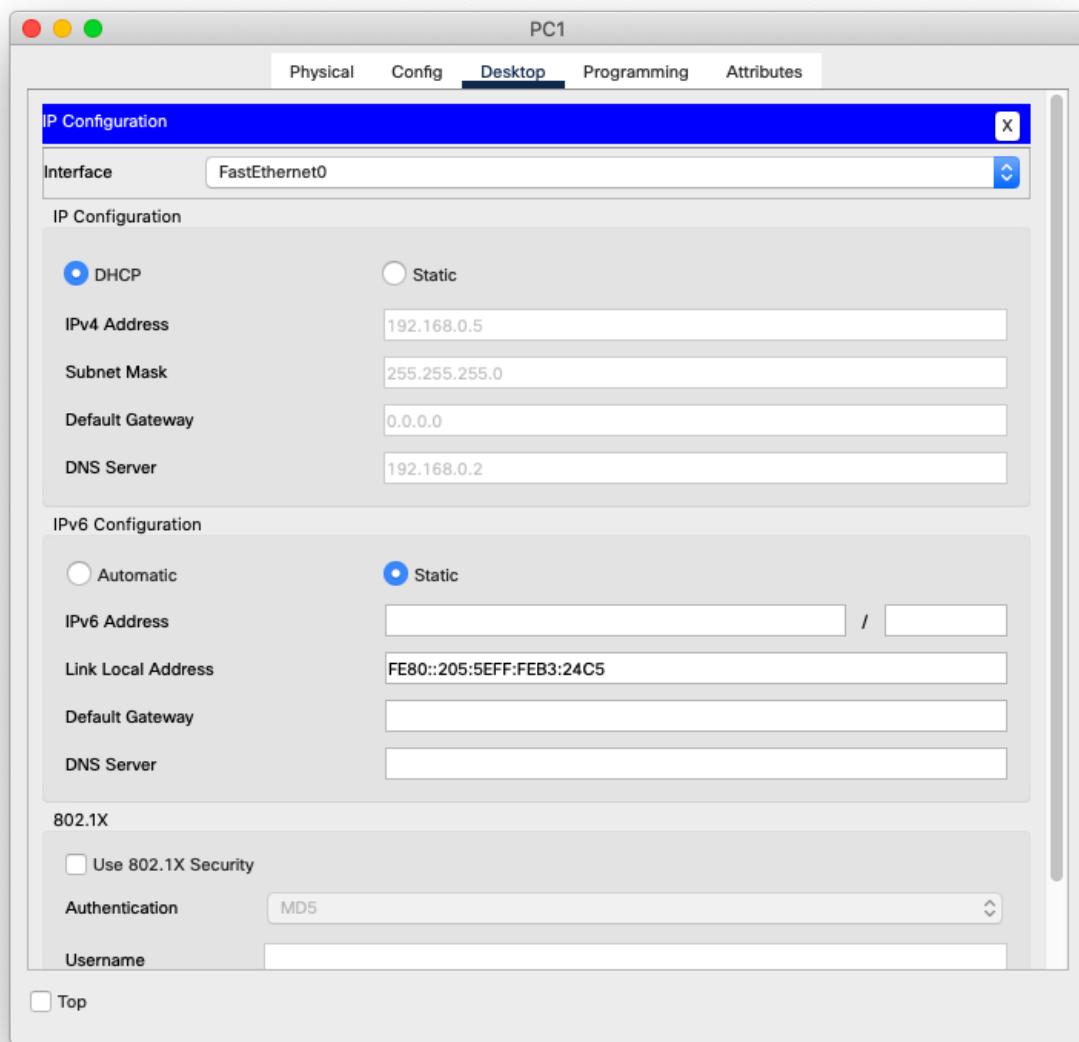
7. Create a LAN (CSE) with three hosts connected via a layer-2 switch (Cisco 2950 switch CSE-Switch). Also add a web server and a ftp server to this LAN. The hosts dynamically get their IP addresses from a local DHCP server. Servers are assigned fixed IP addresses. Configure the individual hosts to use the local DNS server for

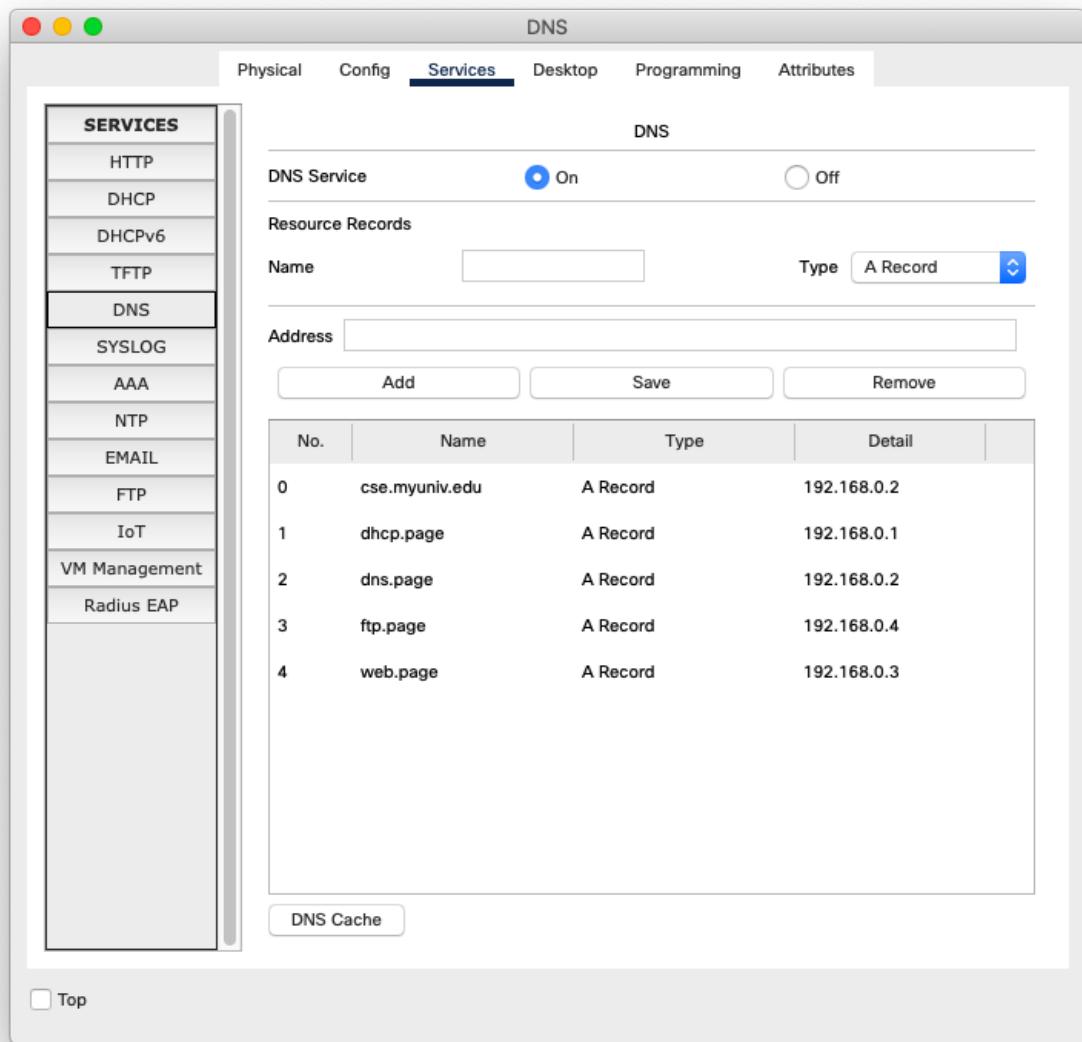
name resolution. Add a Domain Name Server (DNS) to this LAN. Create appropriate records in the DNS server for the individual servers in the LAN. The domain name of the LAN is cse.myuniv.edu. Configure the individual hosts to use the local DNS server for name resolution.

A LAN was created using a switch and three hosts. Four servers were also added to the switch as per the given question. One of them is the DHCP server which was configured so that the hosts added to the switch could generate their own IP address using the DHCP server. A WEB and a FTP server were also added. A DNS server was added and configured. Now, the following were obtained.

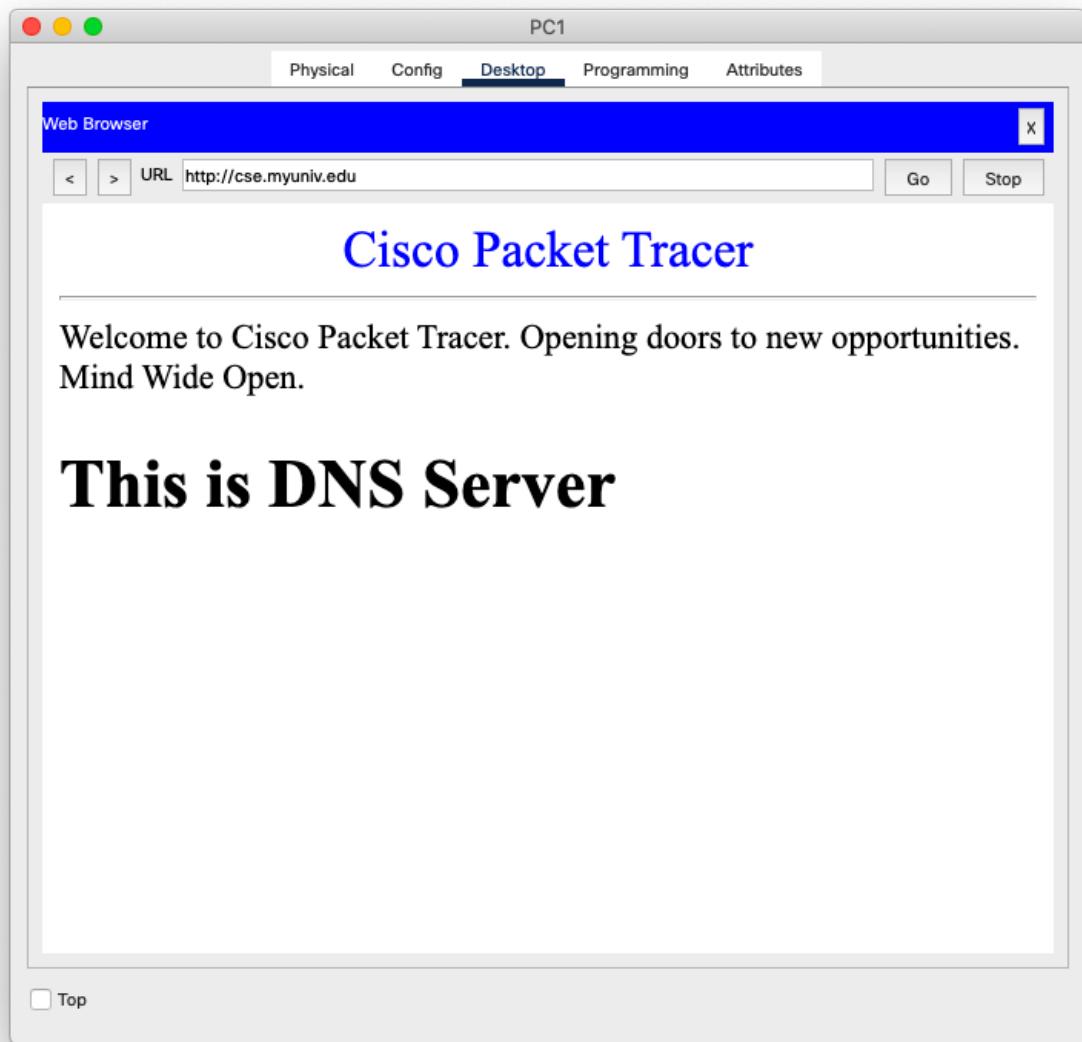


Dynamic IP address generation for a new host:

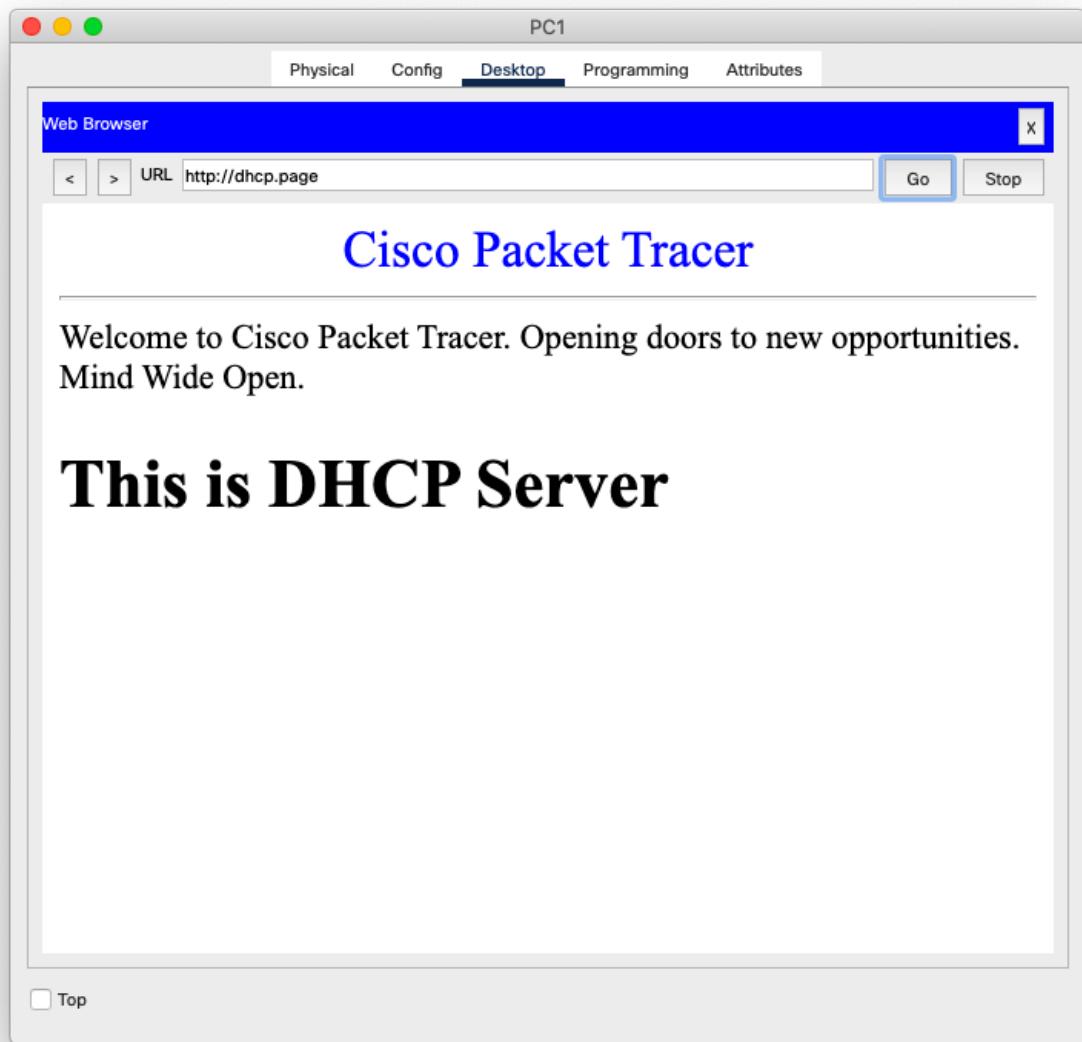


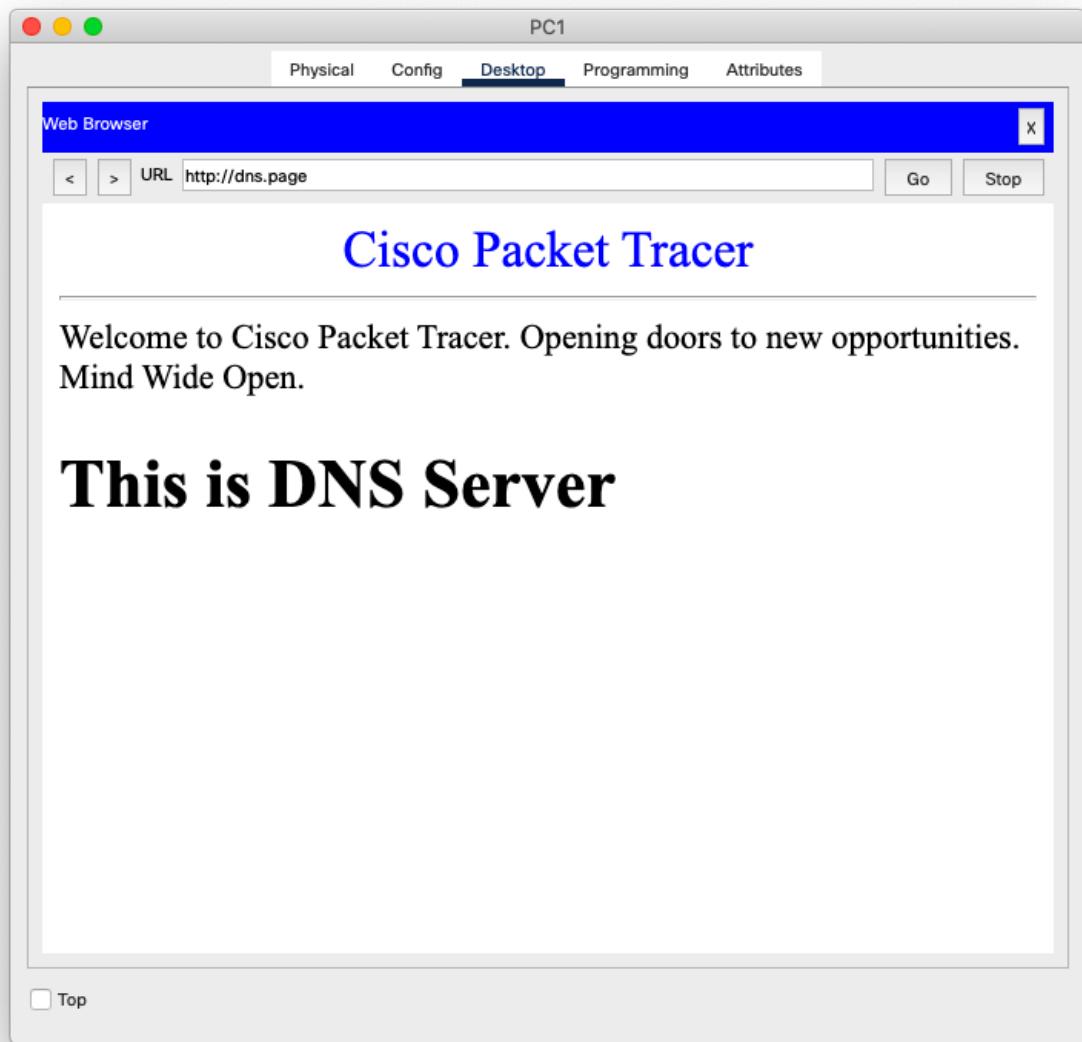


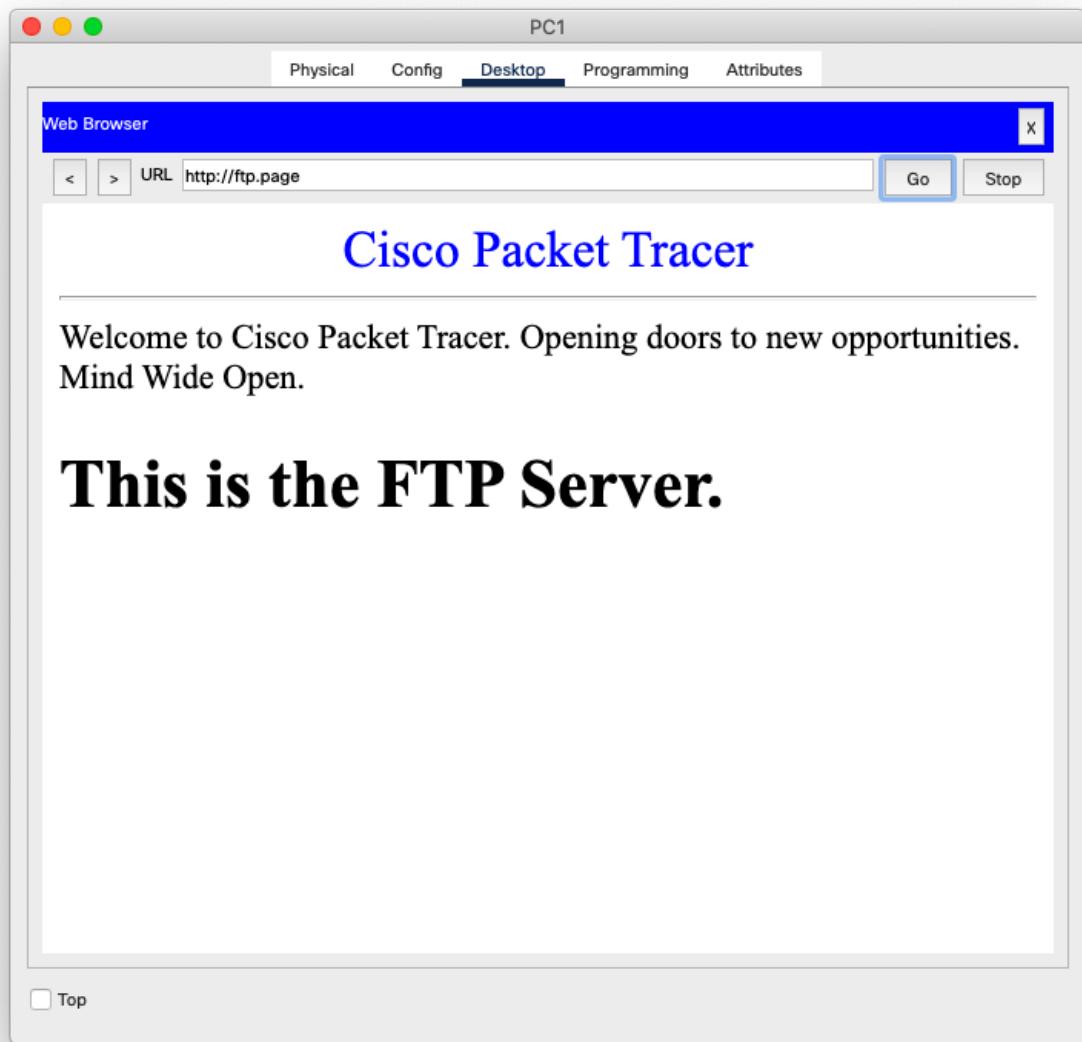
On using the web browser in a host computer connected to the LAN:

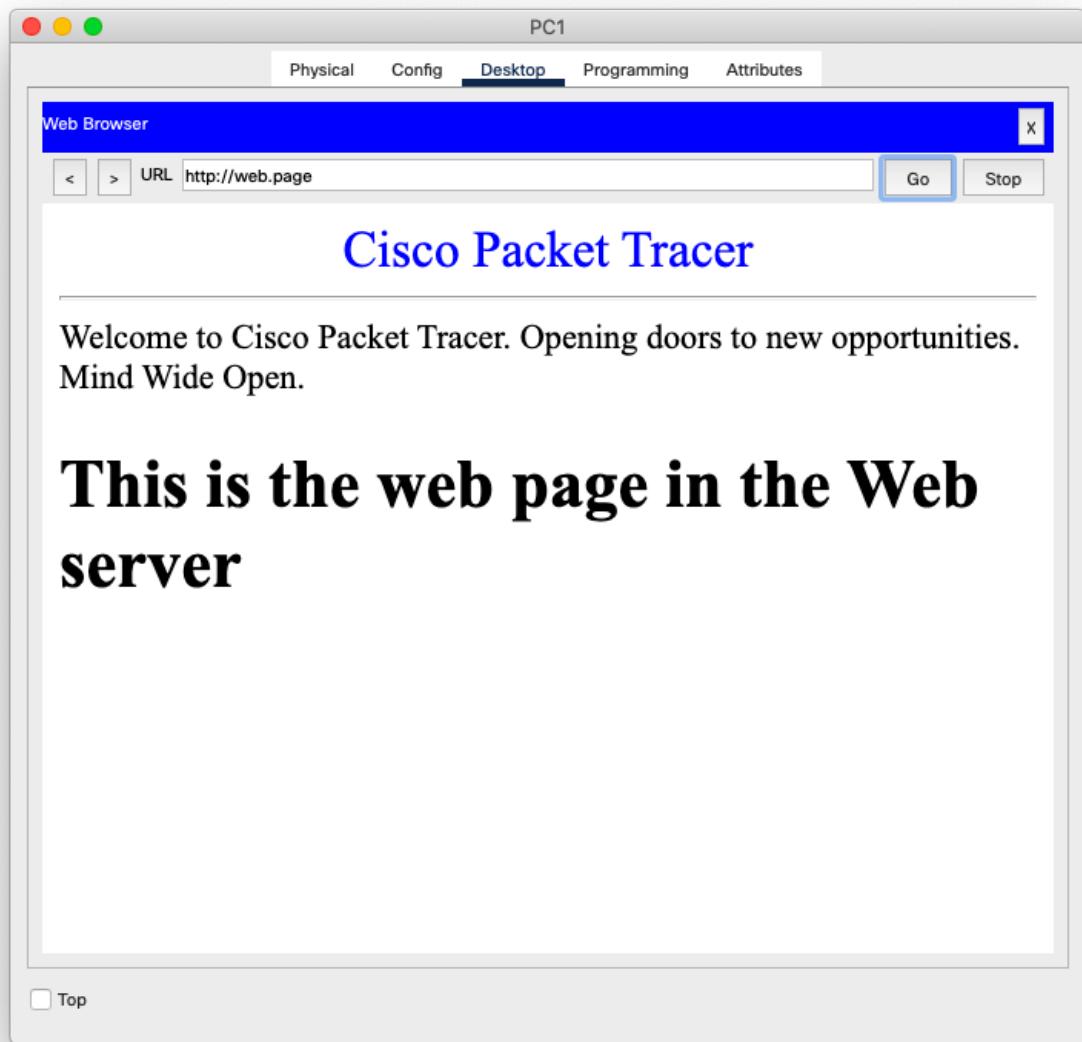


This is DNS Server









COMMENTS

The assignment helps to get a real world scenario of how packets are transmitted over the network using a tool called Cisco Packet Tracer.