# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

**“JnanaSangama”, Belgaum -590014, Karnataka.**



**LAB REPORT**

**on**

COMPUTER NETWORKS

***Submitted by***

**VIBHA HUGAR (1BM21CS255)**

***in partial fulfillment for the award of the degree of***

**BACHELOR OF ENGINEERING**

***in***

**COMPUTER SCIENCE AND ENGINEERING**



**B.M.S. COLLEGE OF ENGINEERING**

**(Autonomous Institution under VTU)**

**BENGALURU-560019 JUN-2023 to SEP-2023**

1

**B. M. S. College of Engineering,**

**Bull Temple Road, Bangalore 560019**

(Affiliated To Visvesvaraya Technological University, Belgaum)

**Department of Computer Science and Engineering**



**CERTIFICATE**

This is to certify that the Lab work entitled “COMPUTER NETWORKS” carried out by **VIBHA HUGAR (1BM21CS255),** who is a bonafide student of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the year 2023. The Lab report has been approved as it satisfies the academic requirements in respect of a **Computer Networks - (22CS4PCCON)** work prescribed for the said degree.

**Shravya Raj Dr. Jyothi S Nayak**

Assistant Professor Professor and Head

Department of CSE Department of CSE

BMSCE, Bengaluru BMSCE, Bengaluru

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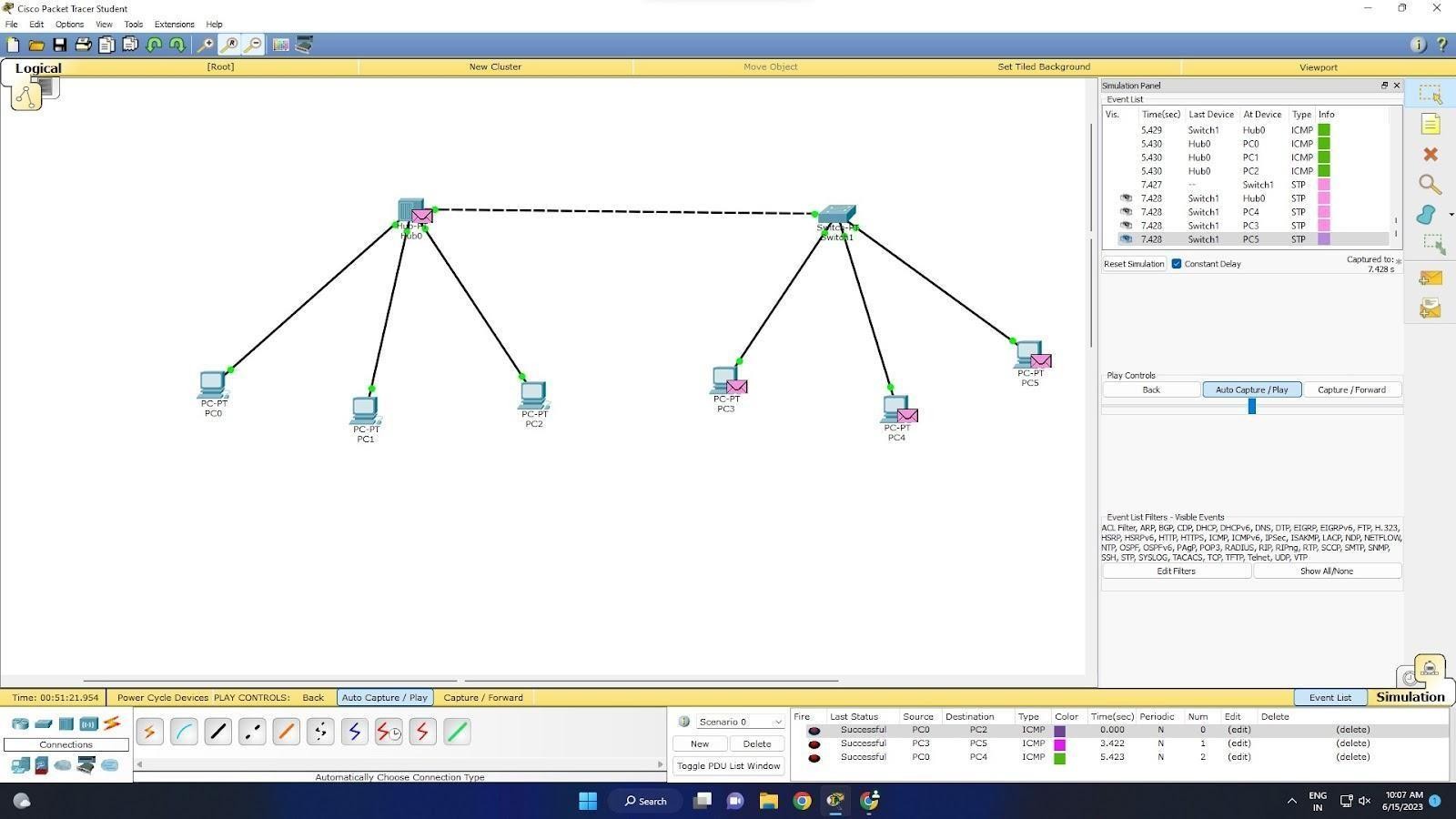
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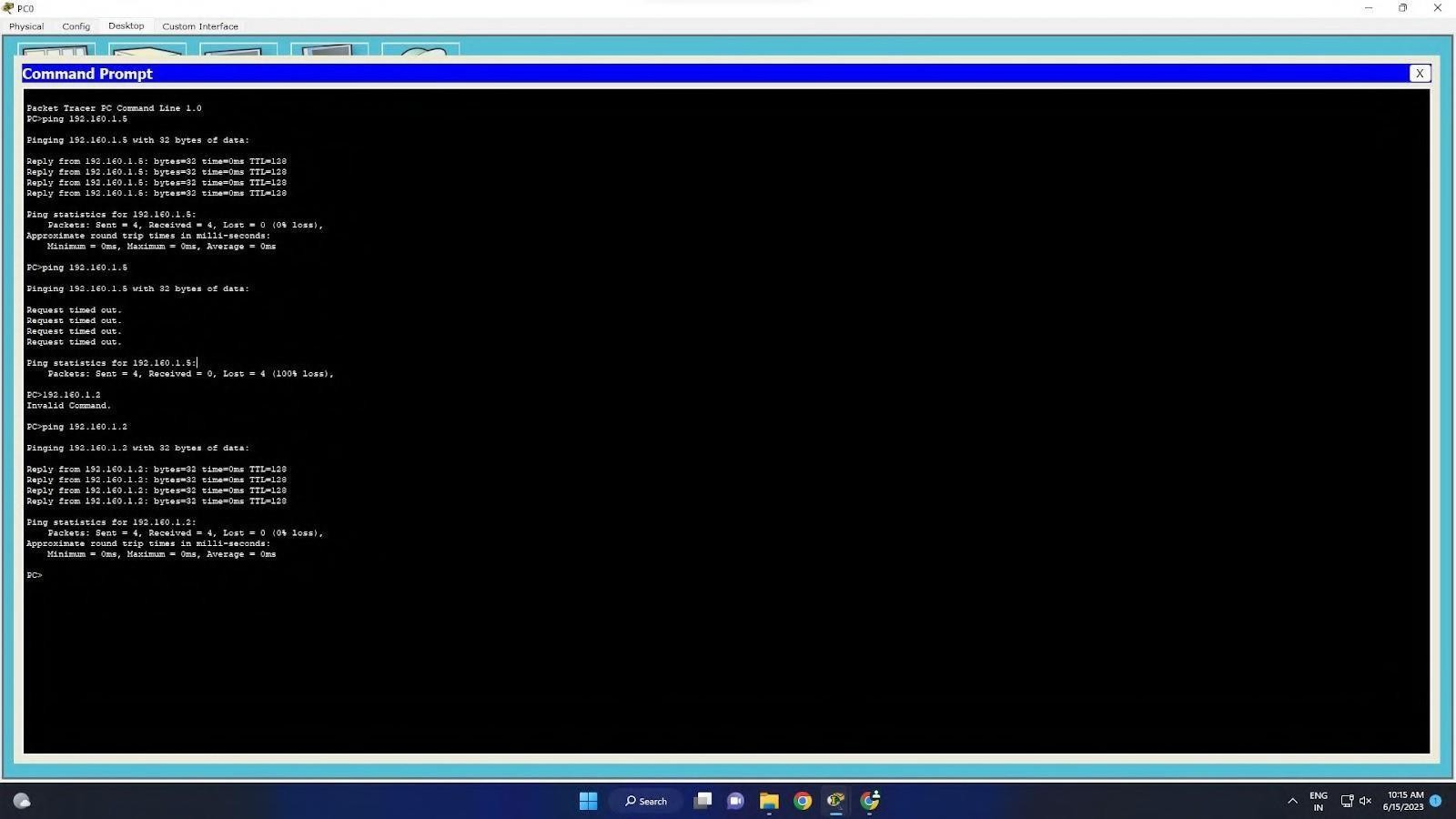
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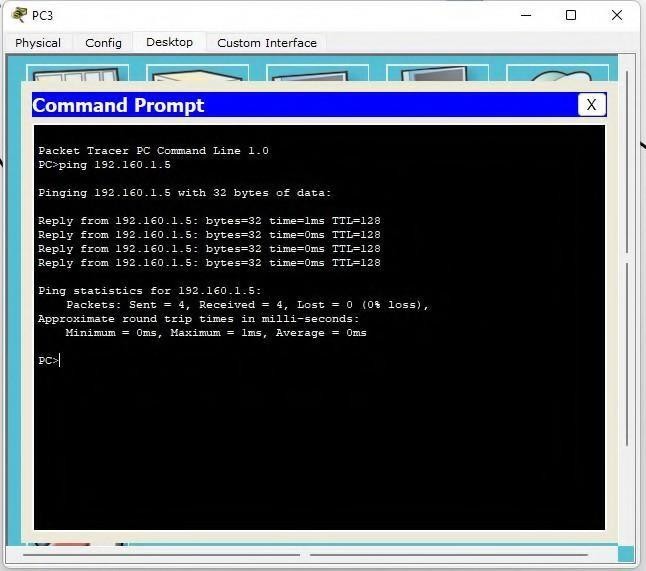
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# WEEK 1

Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping messages.

TOPOLOGY:

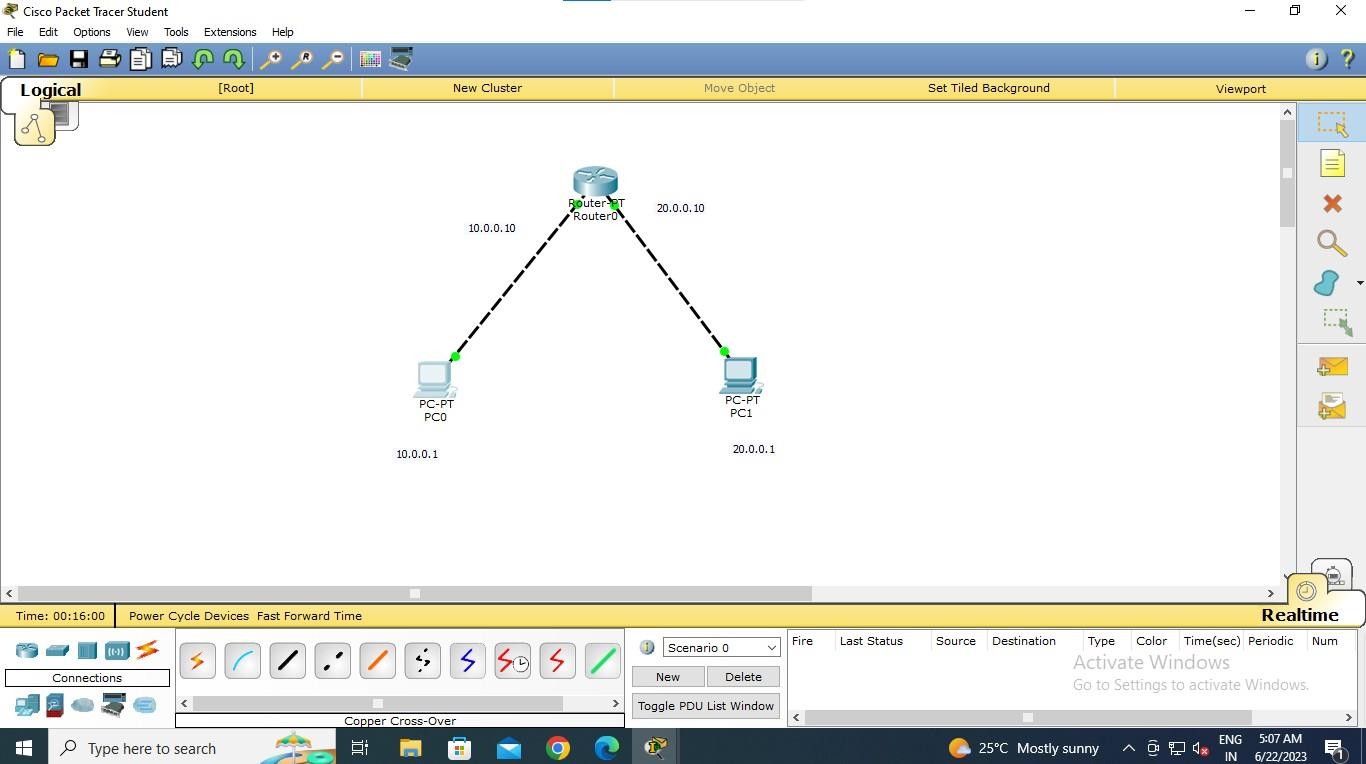
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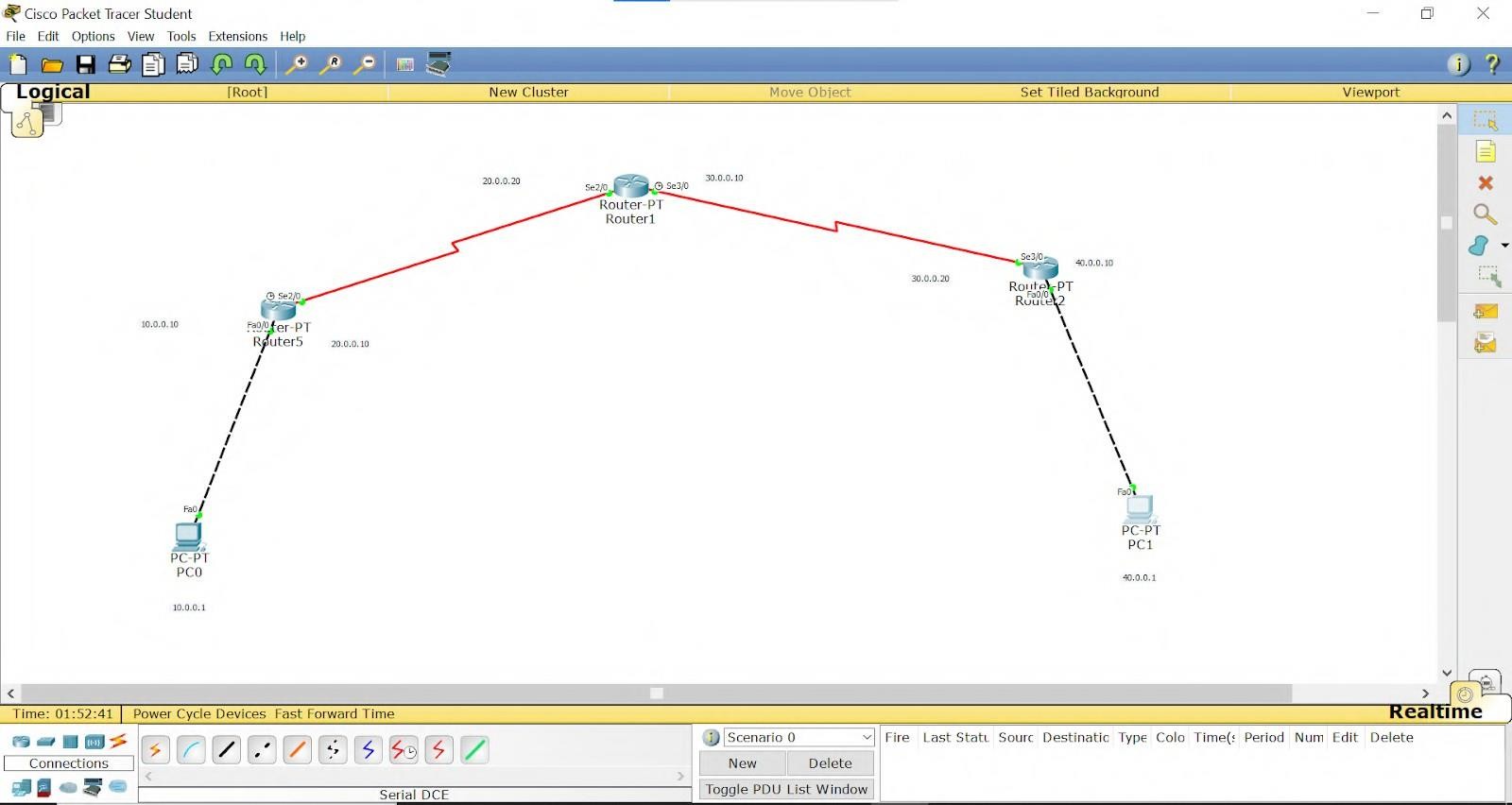


# WEEK 2

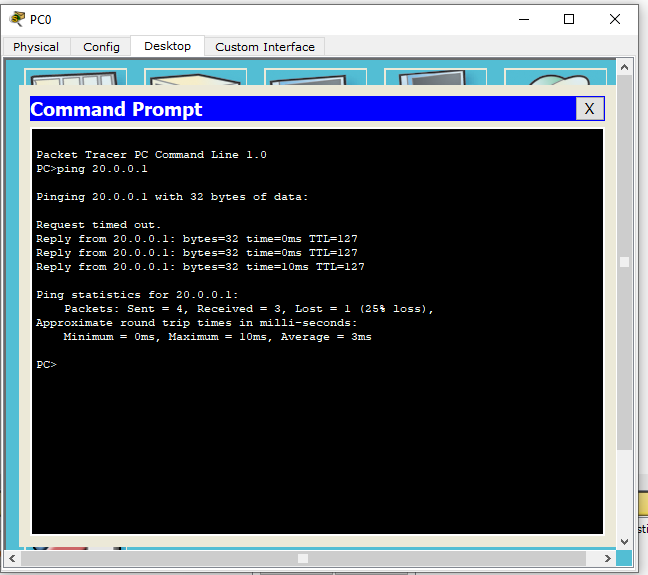
Configure IP address to routers (one and three) in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

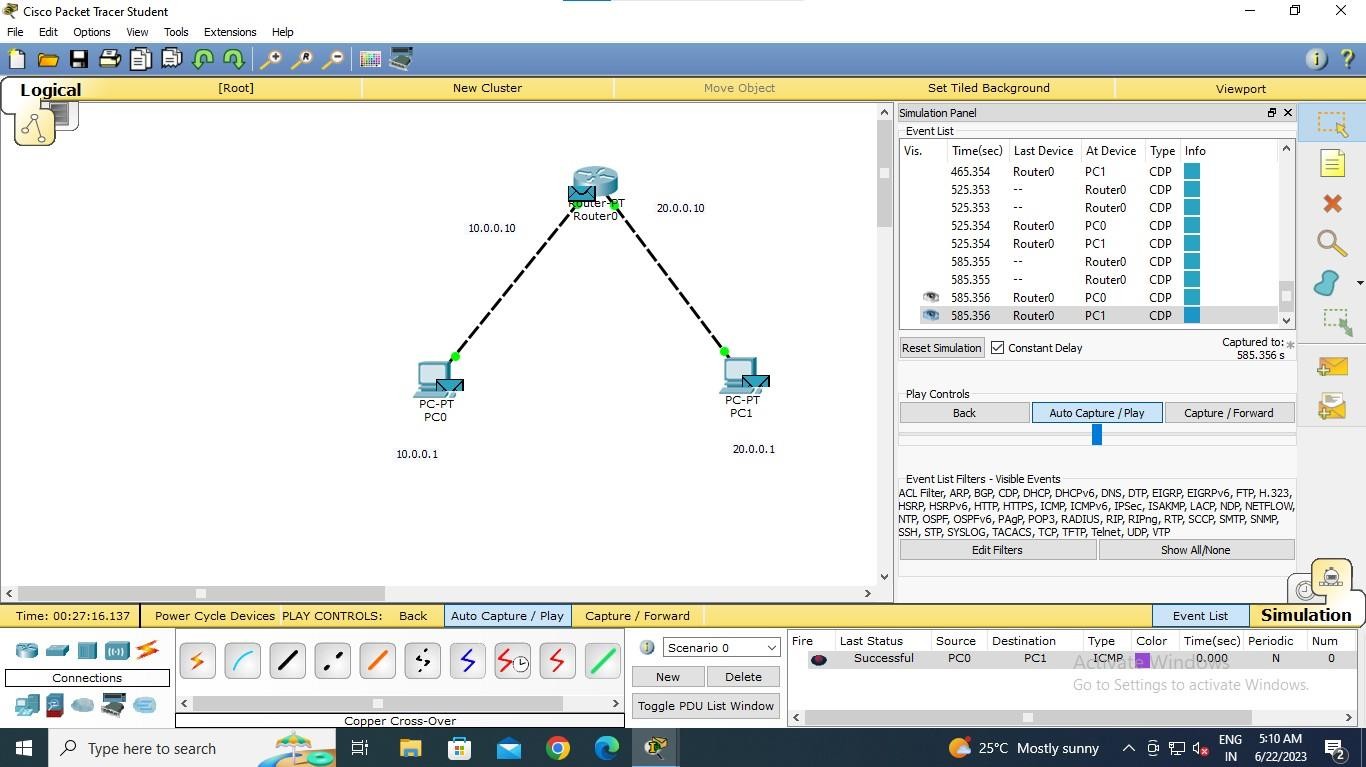
TOPOLOGY:

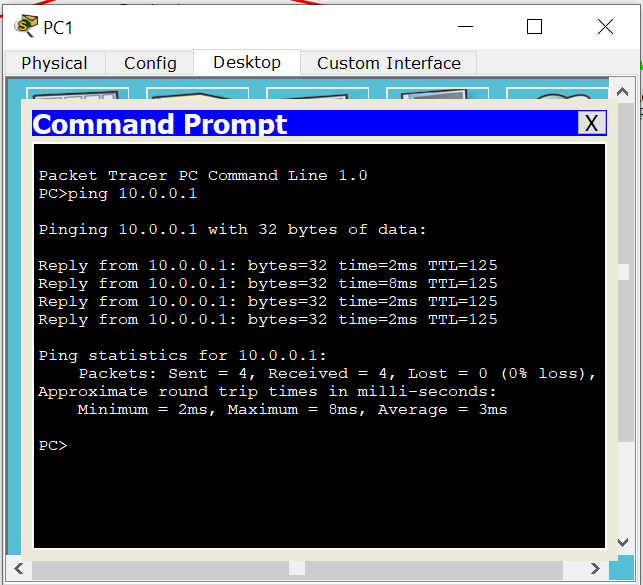
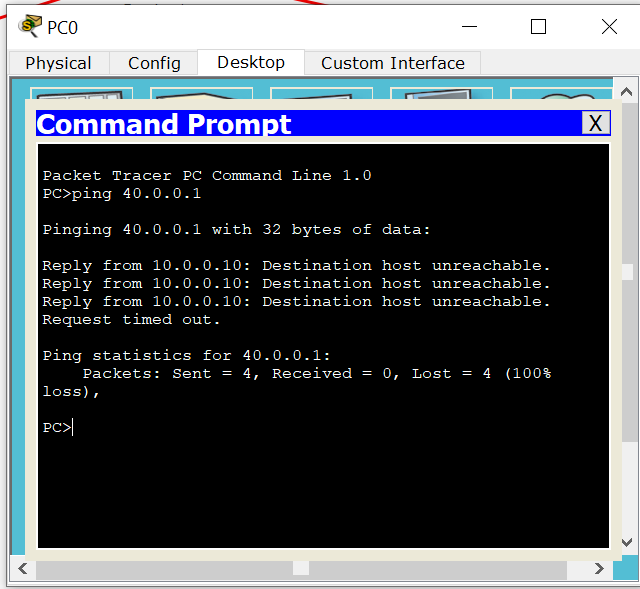
PROGRAM 2.1

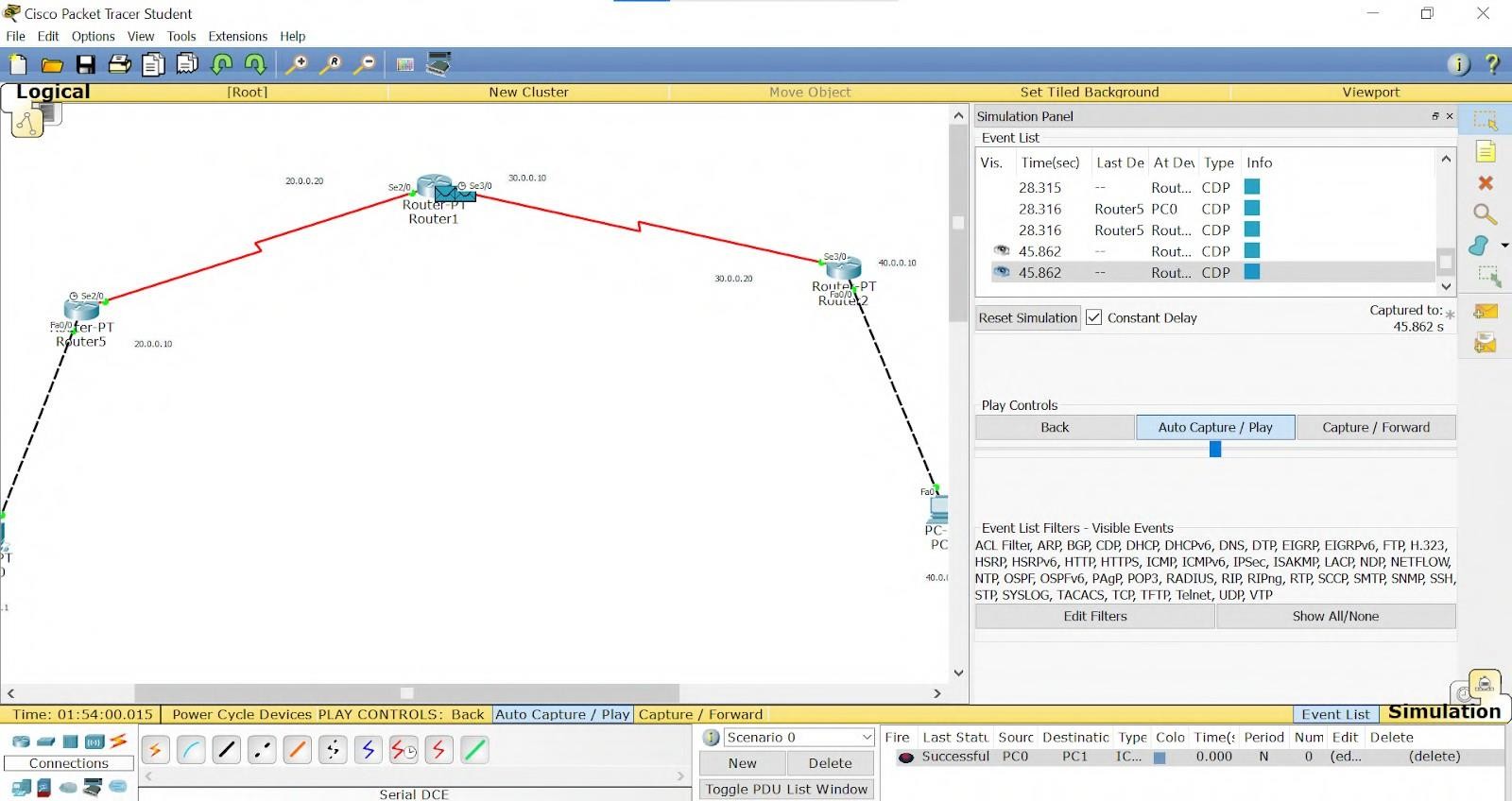
PROGRAM 2.2

OUTPUT:

PROGRAM 2.1

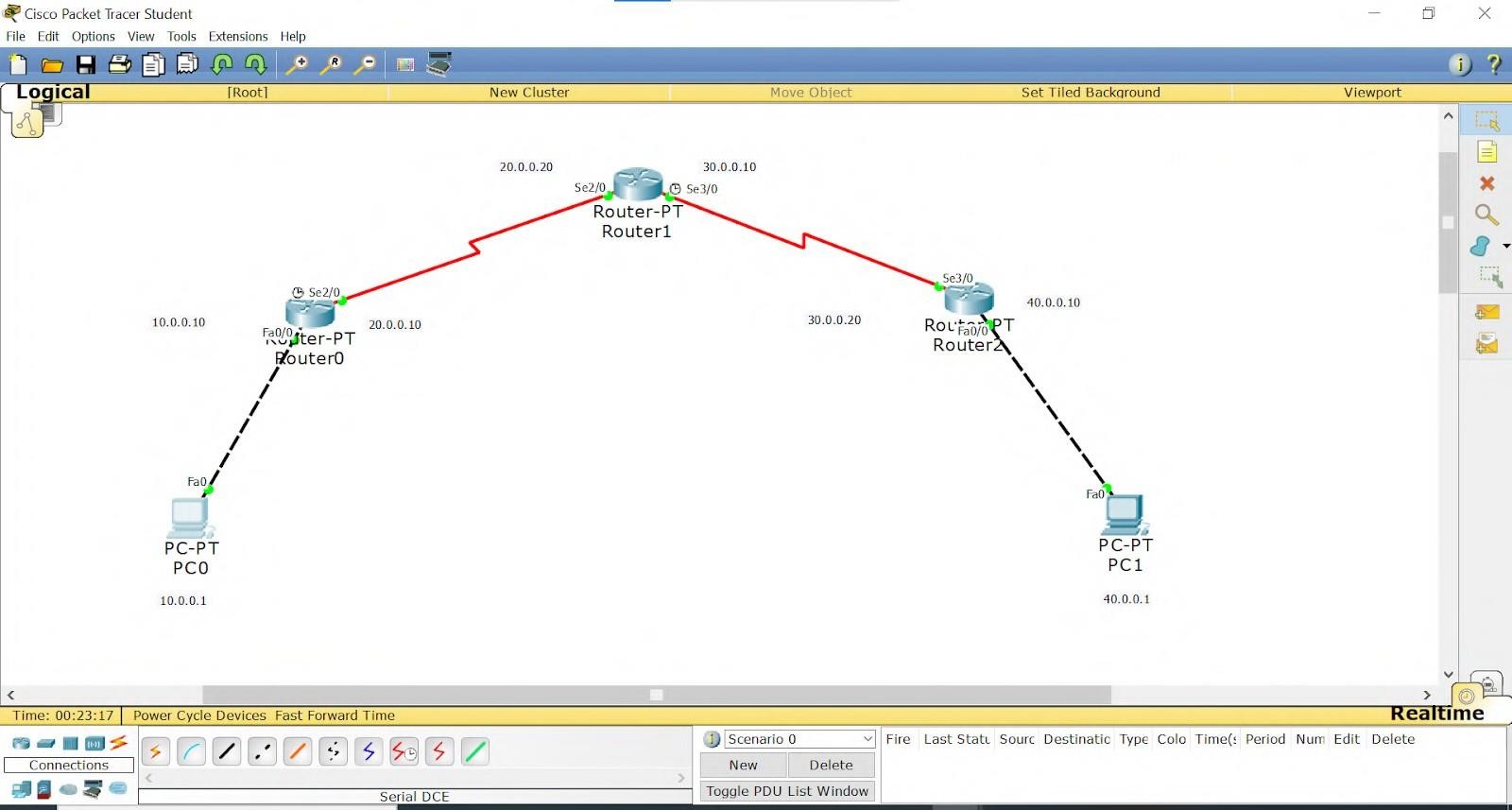


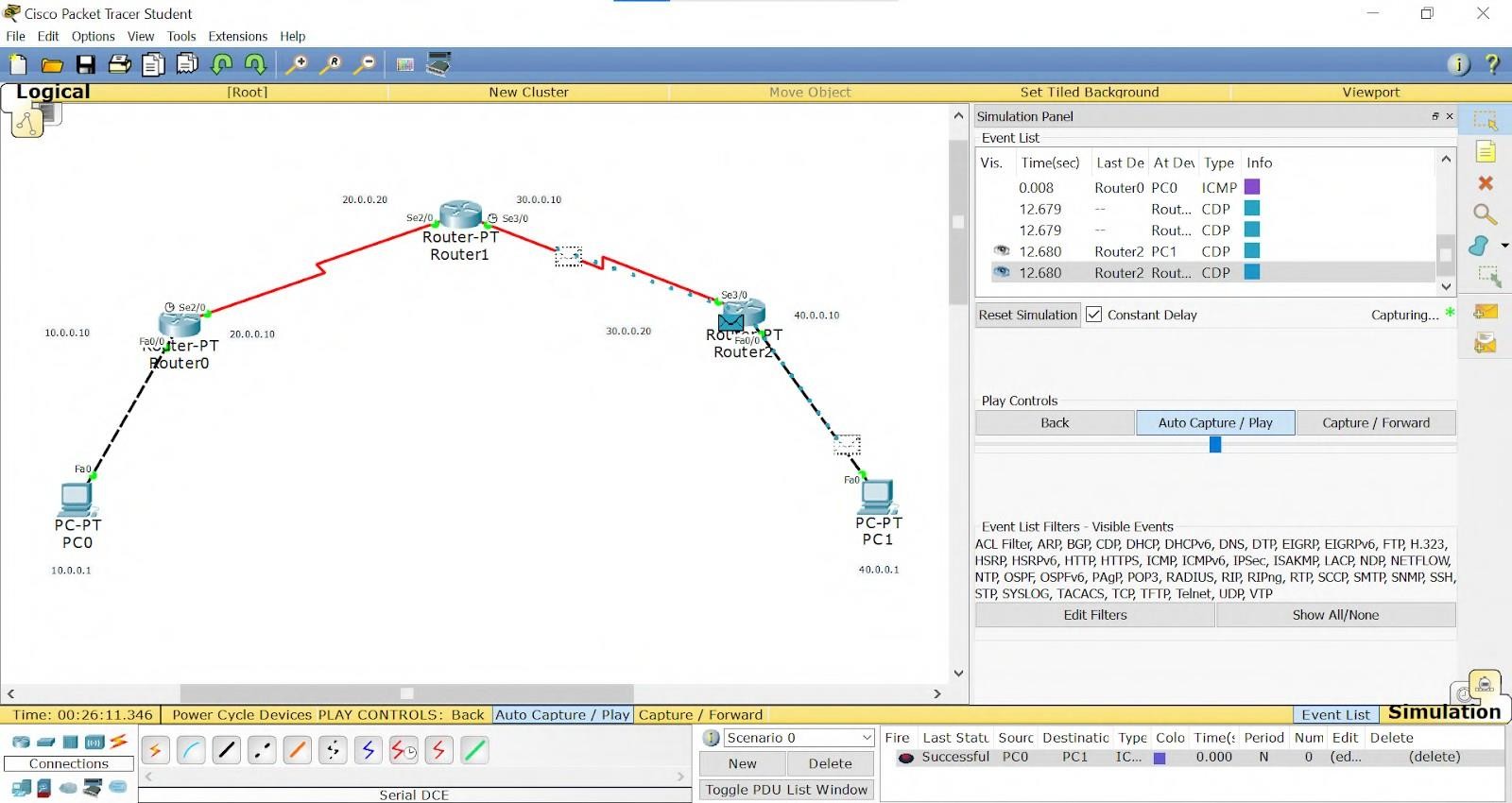
PROGRAM 2.2

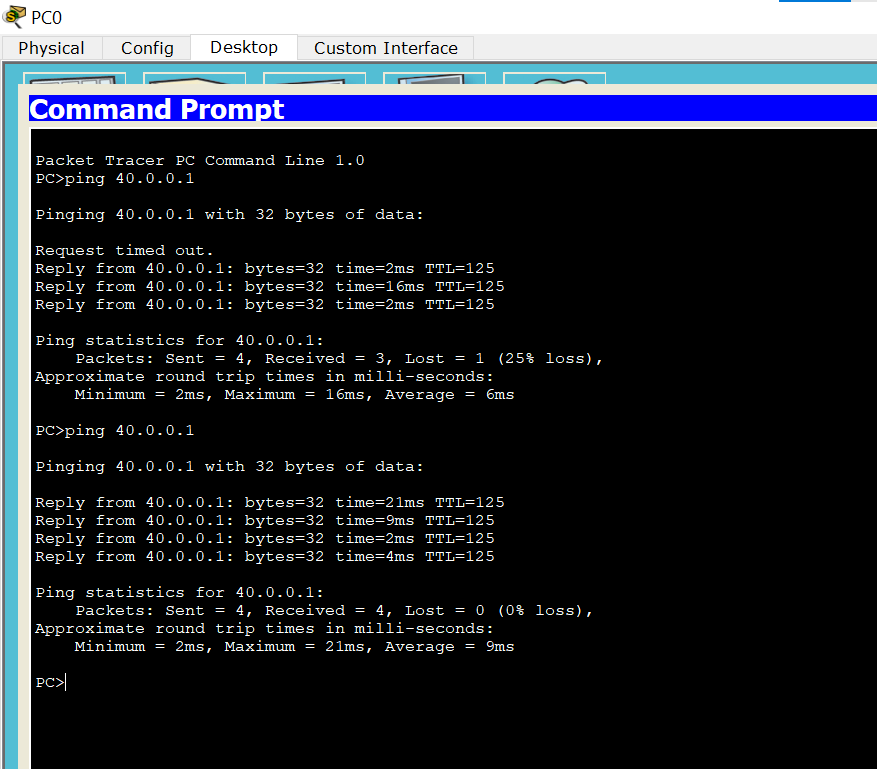


# WEEK 3

Configure default route, static route to the Router.

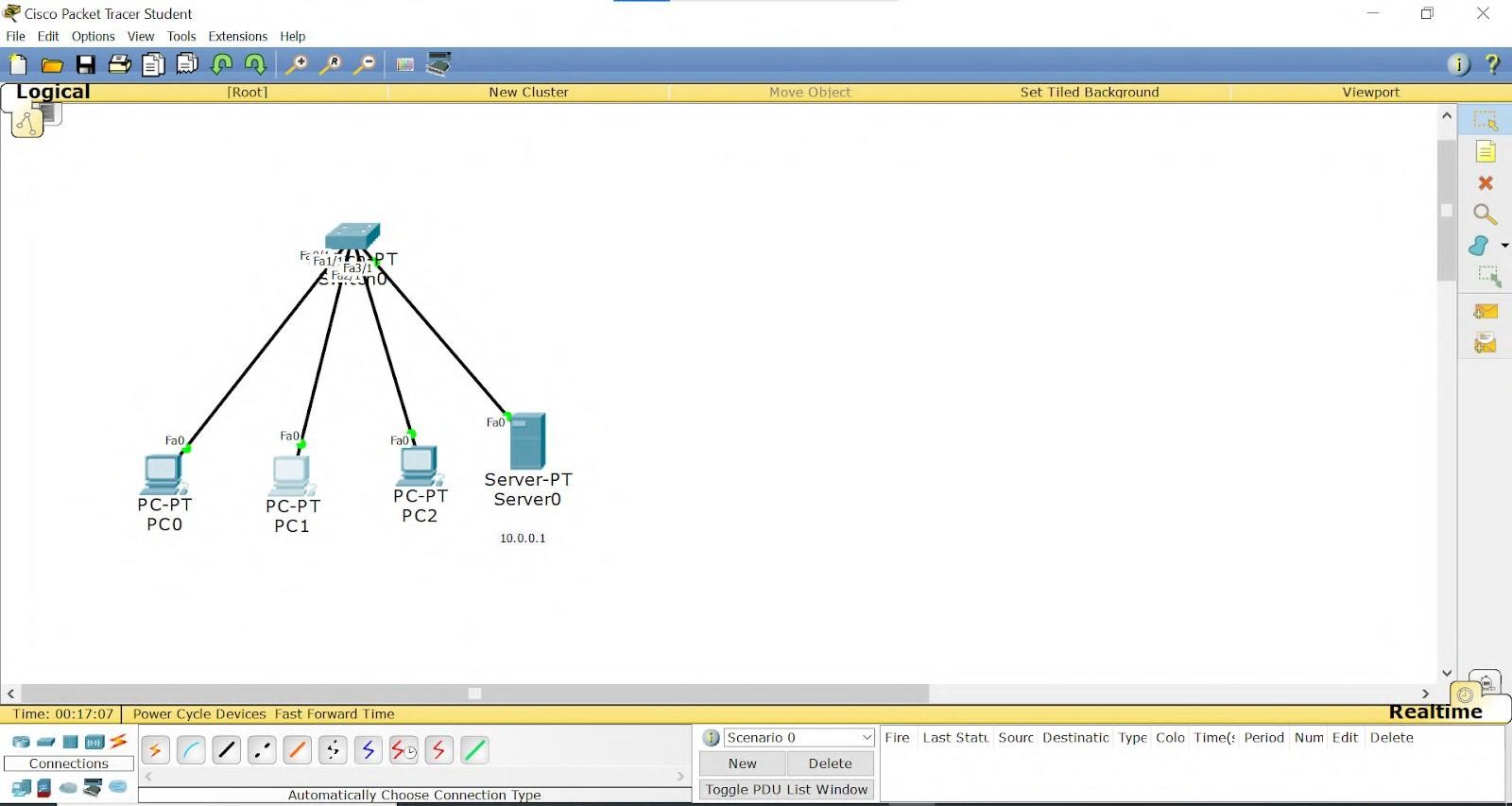
TOPOLOGY:

OUTPUT:

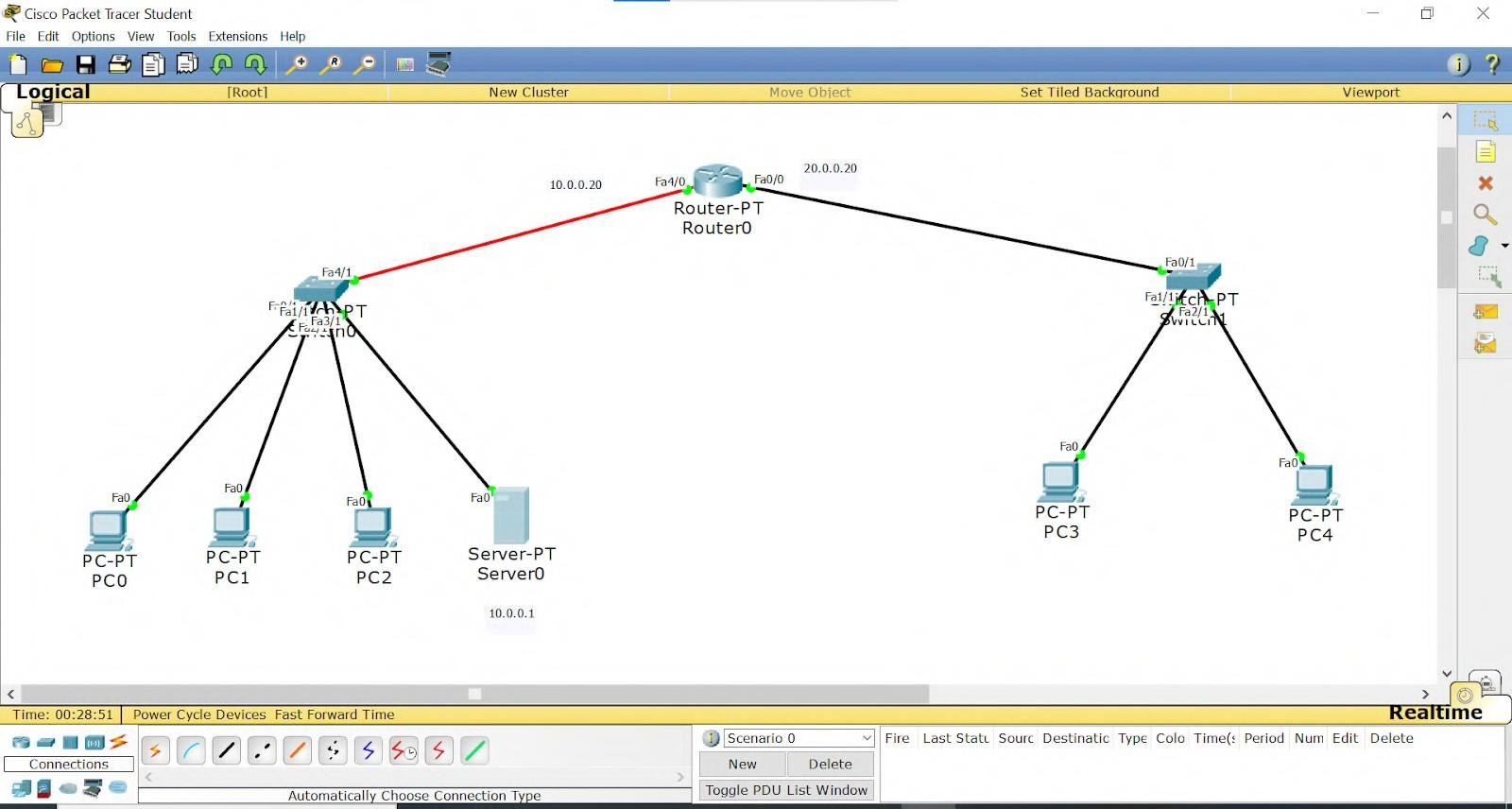


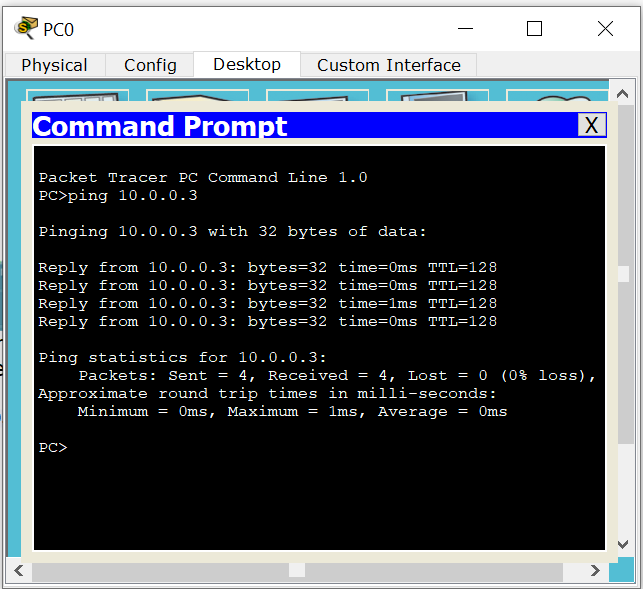
# WEEK 4

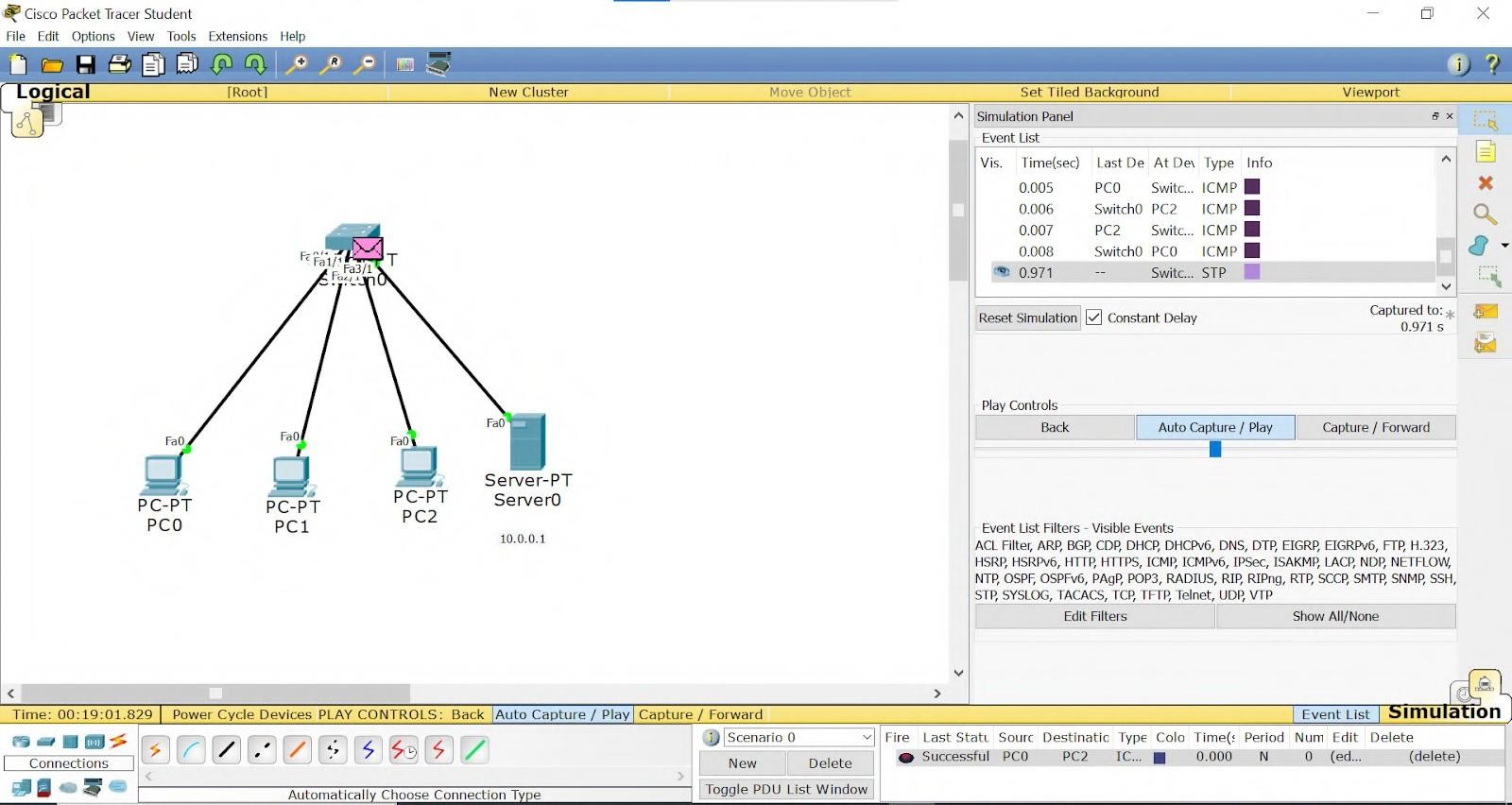
Configure DHCP within a LAN and outside LAN.

TOPOLOGY: PROGRAM 4.1:

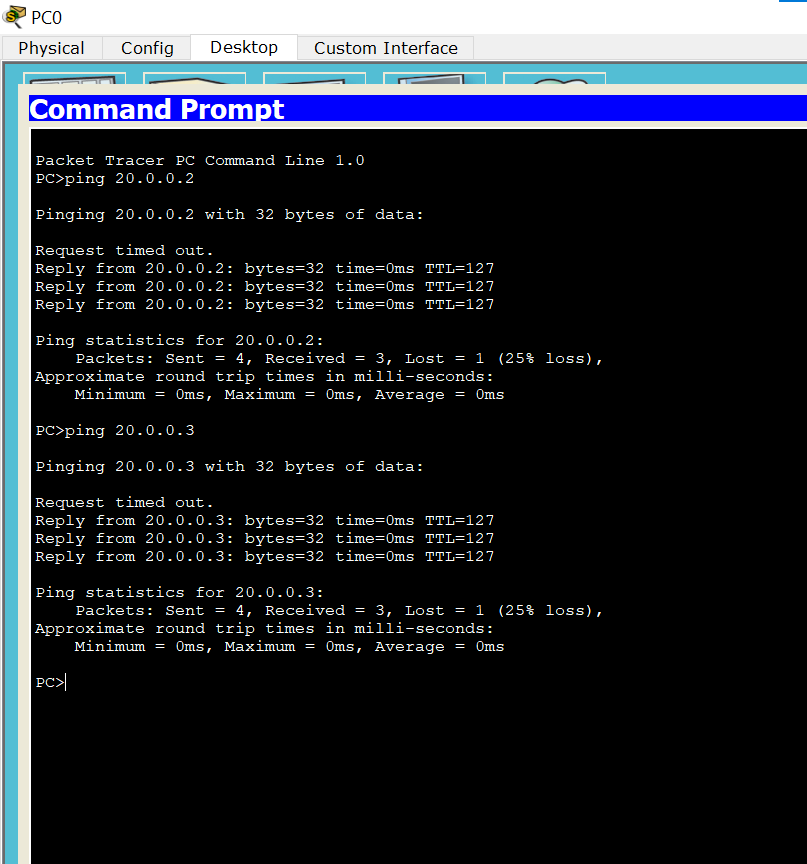
PROGRAM 4.2:

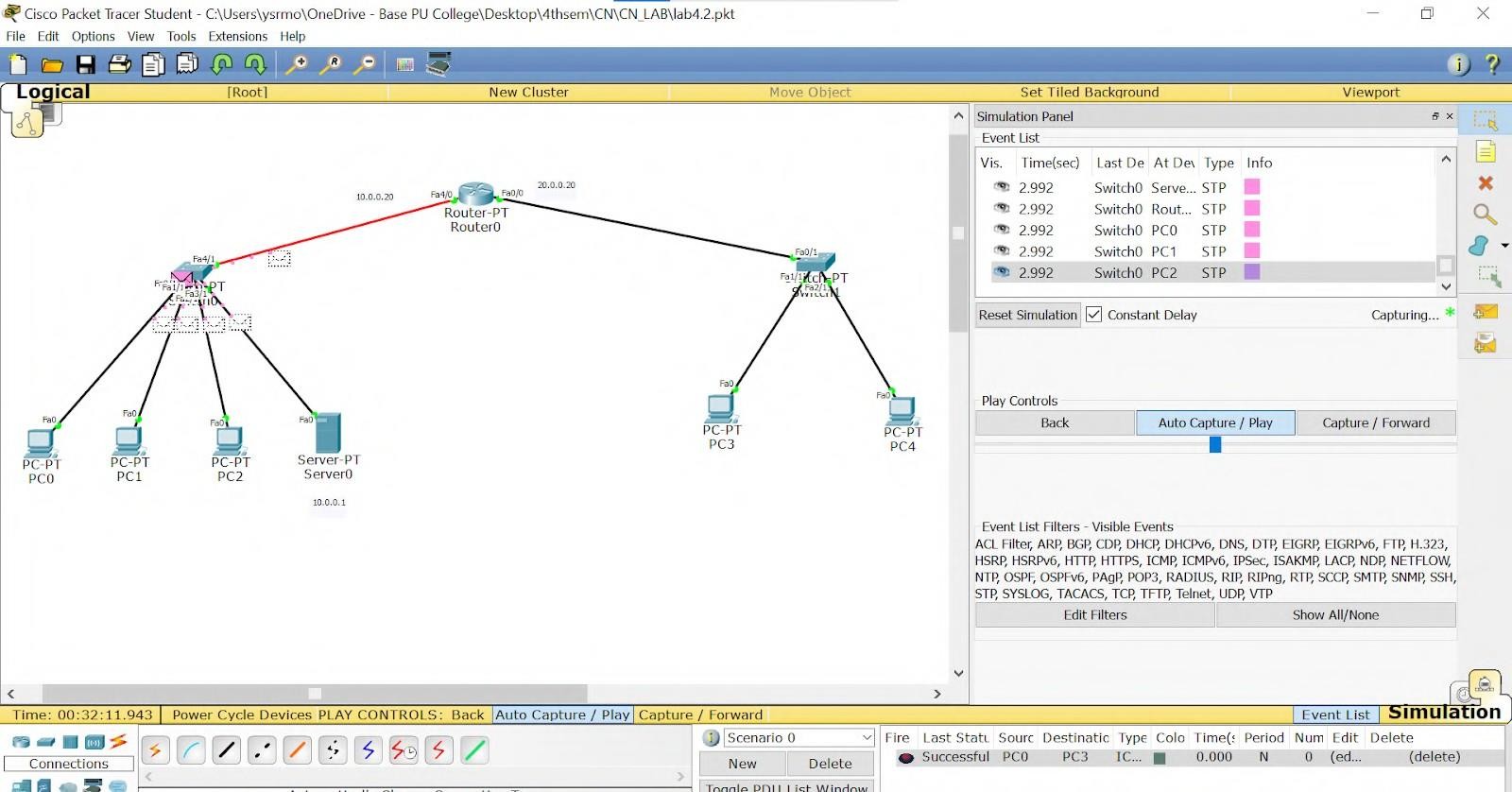


OUTPUT: PROGRAM 4.1:



PROGRAM 4.2:

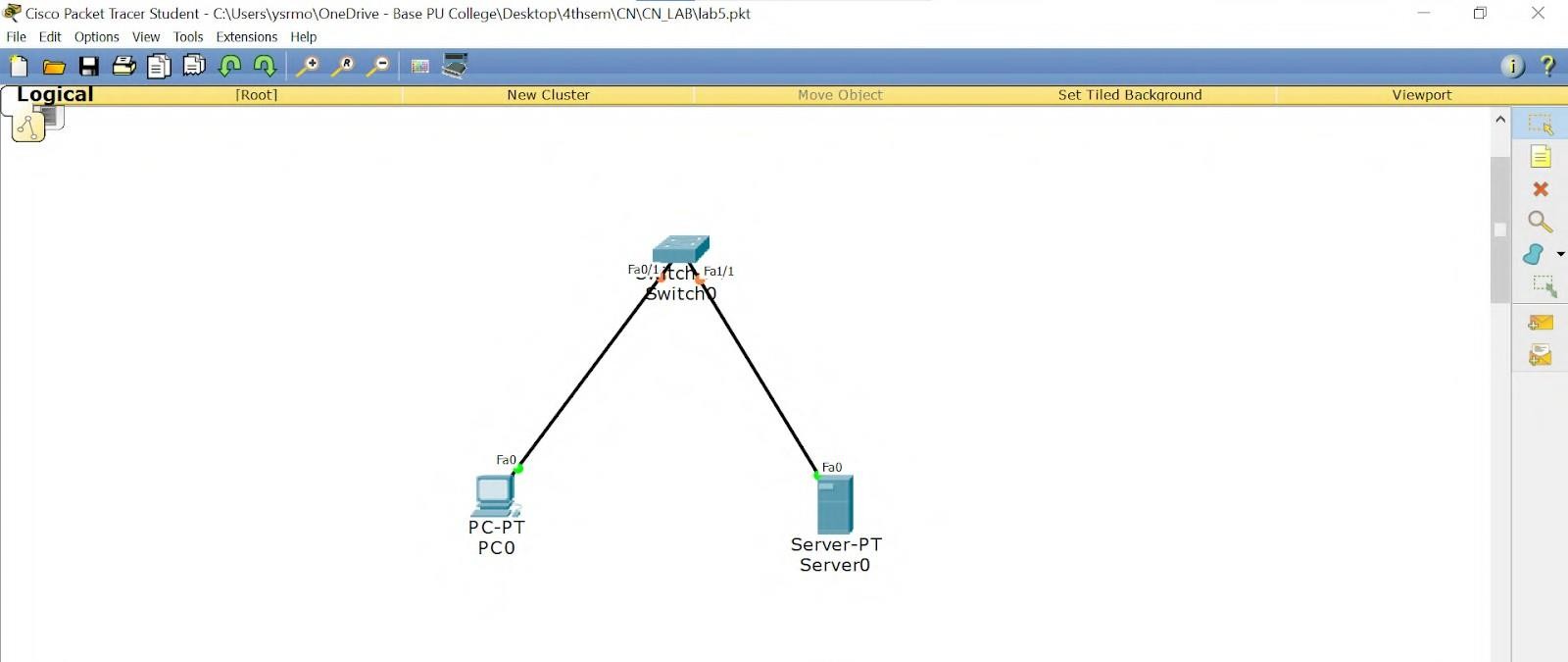




# WEEK 5

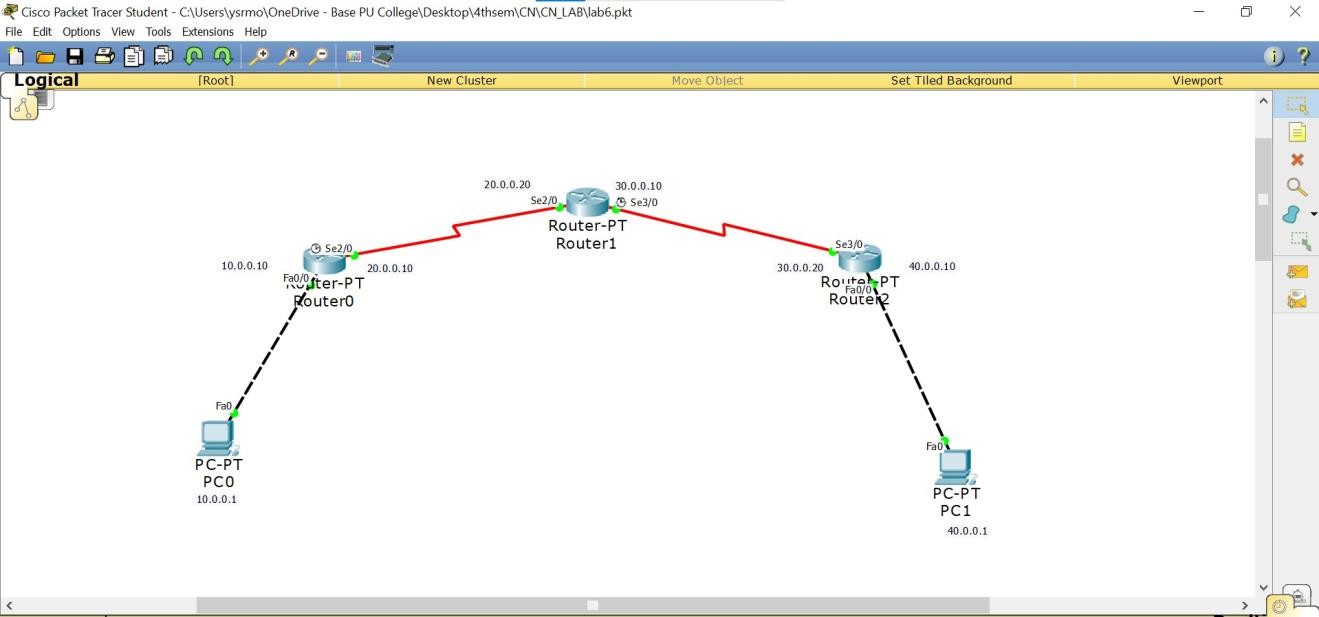
Configure Web Server, DNS within a LAN.

TOPOLOGY:

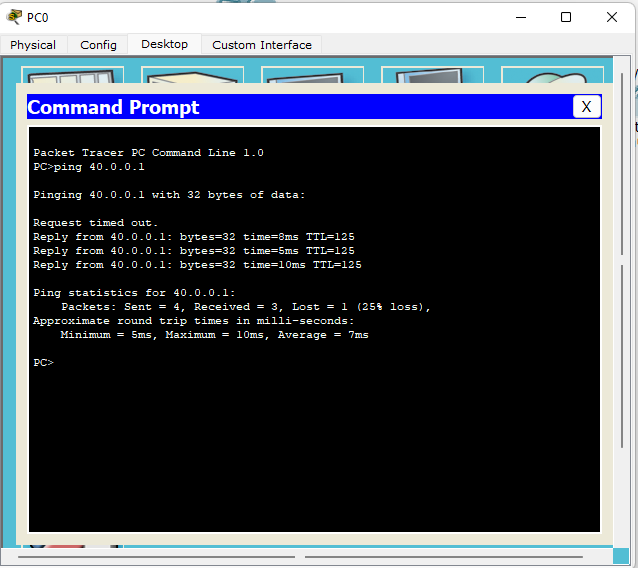


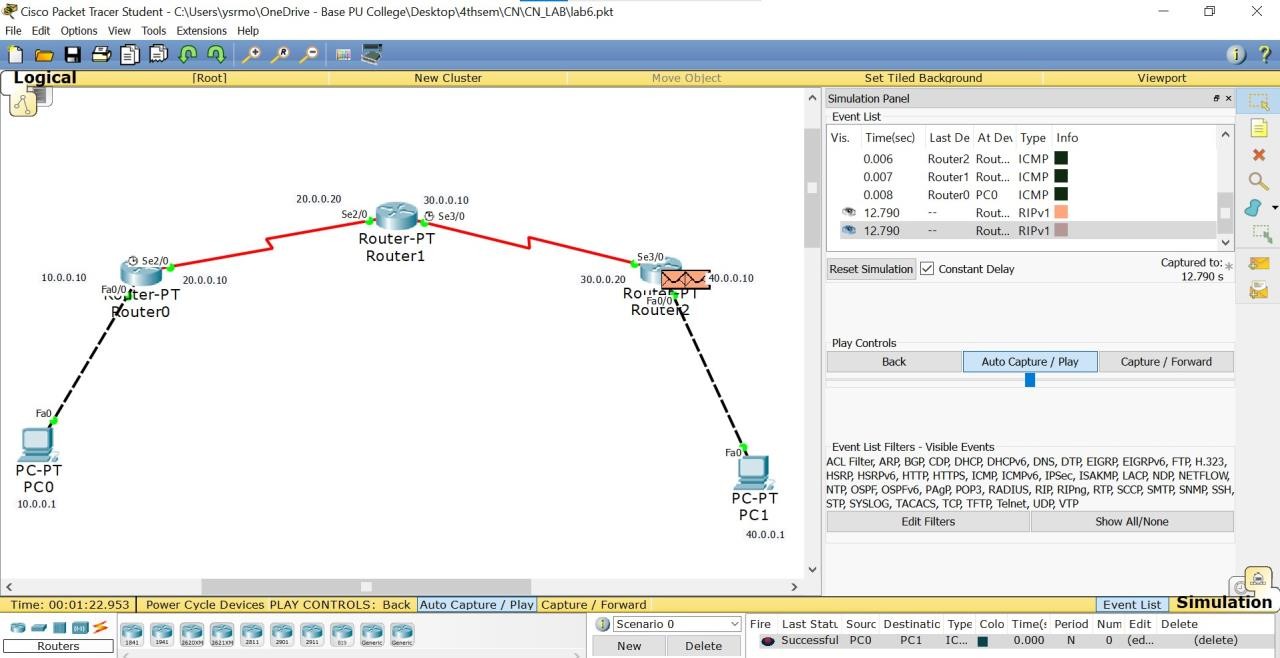
# WEEK 6

Configure RIP routing Protocol in Routers.

TOPOLOGY:

OUTPUT:

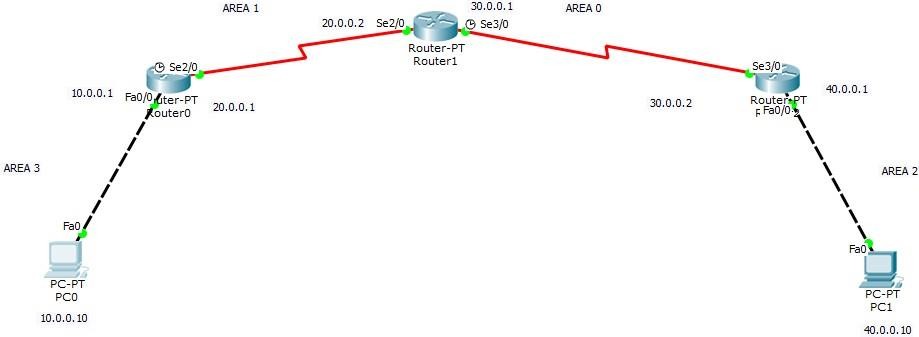


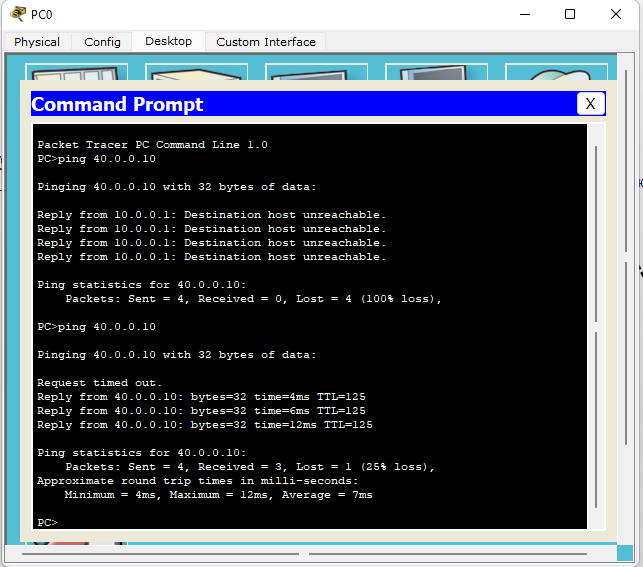


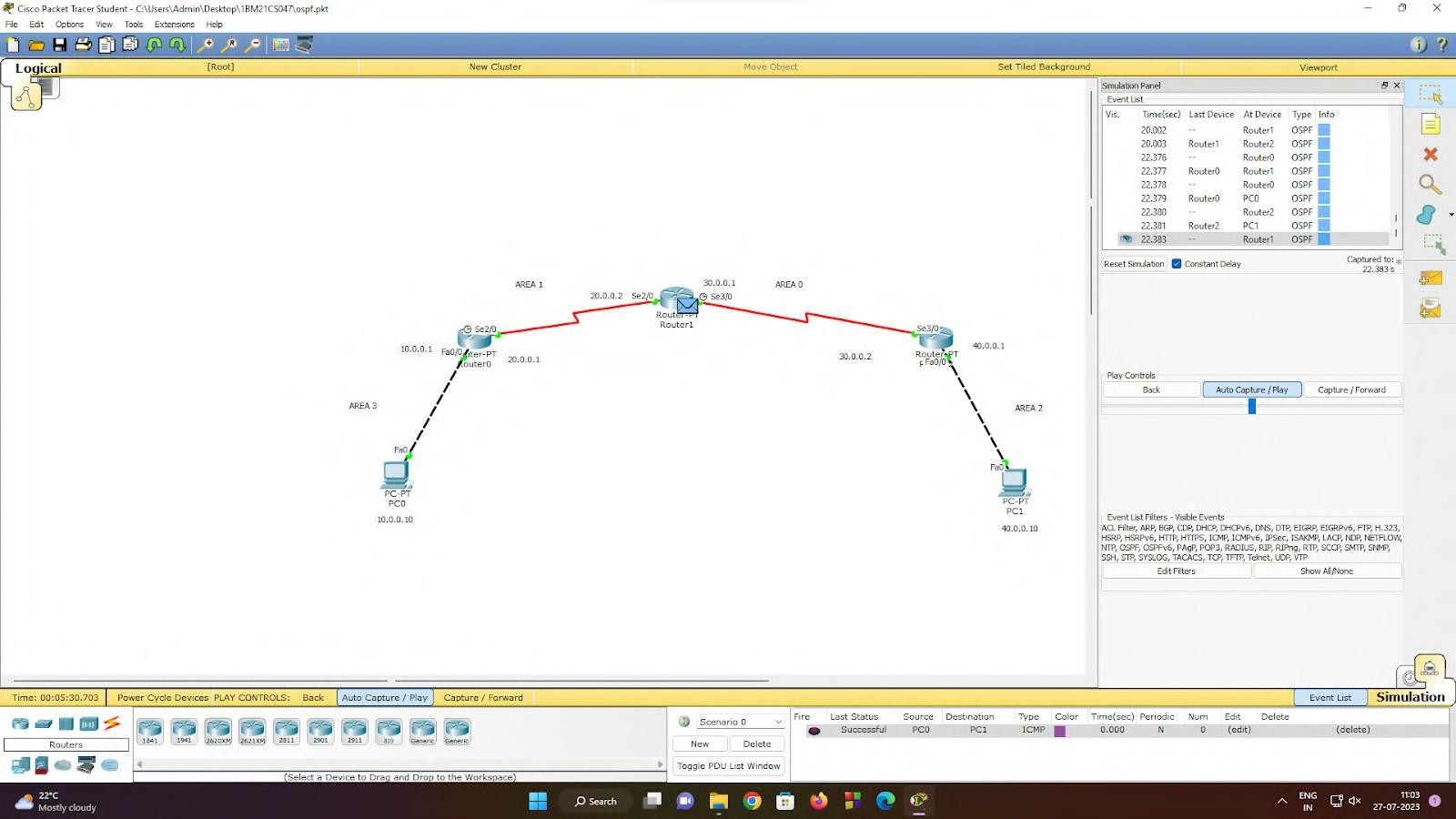
# WEEK 7

Configure OSPF routing protocol.

TOPOLOGY:

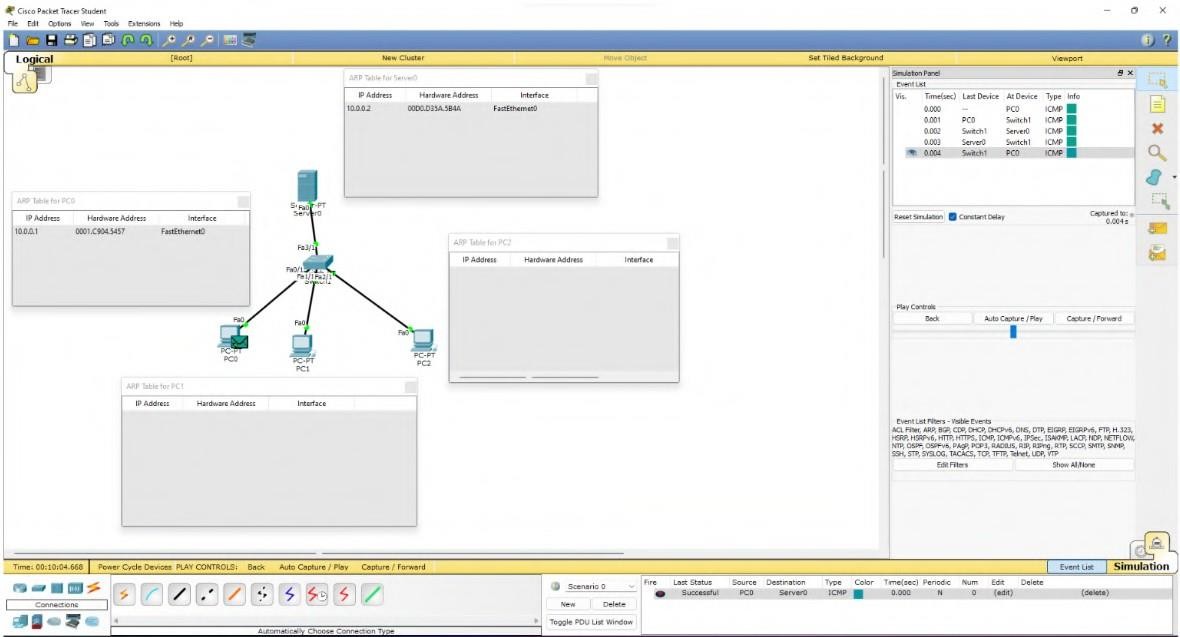


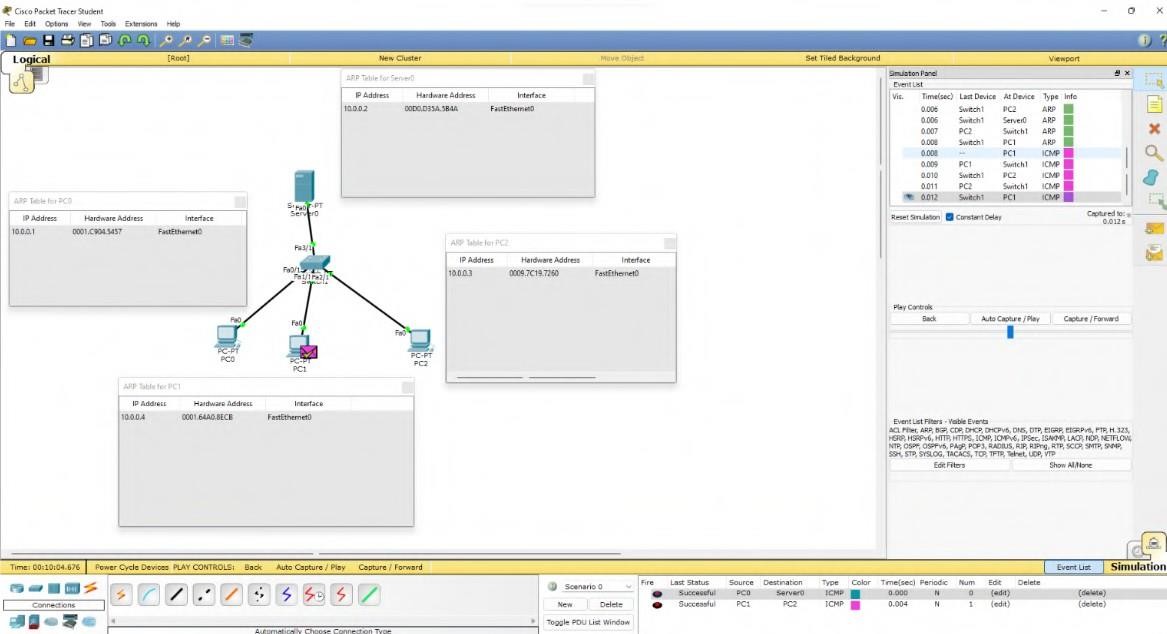
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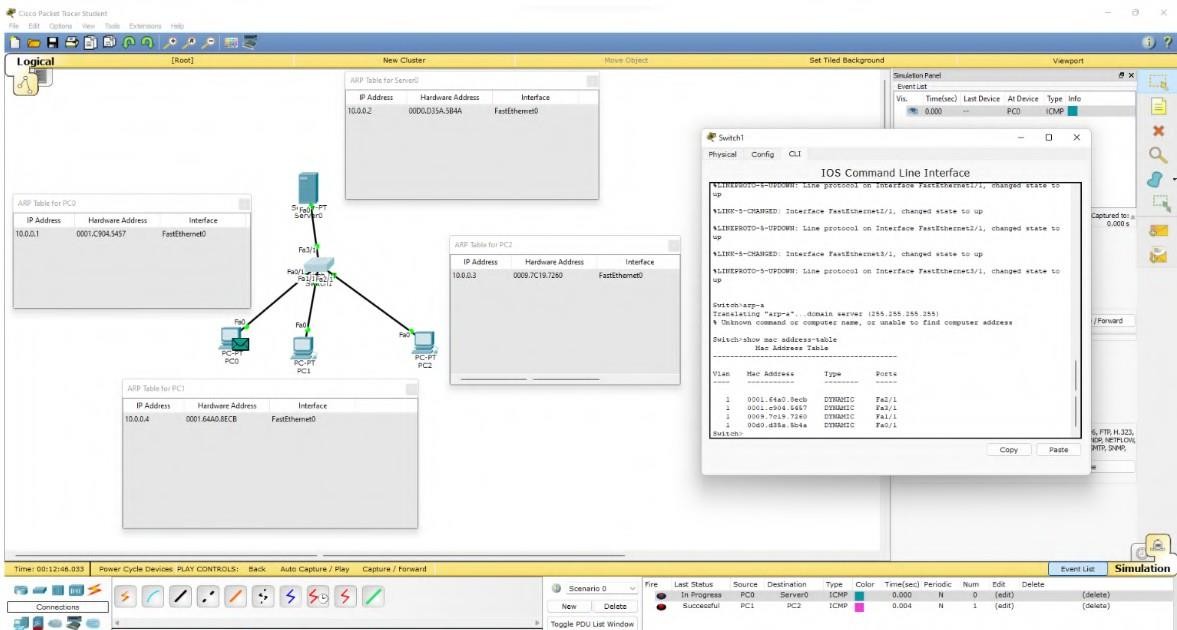


# WEEK 8

To construct a simple LAN and understand the concept and operation of Address Resolution Protocol (ARP).

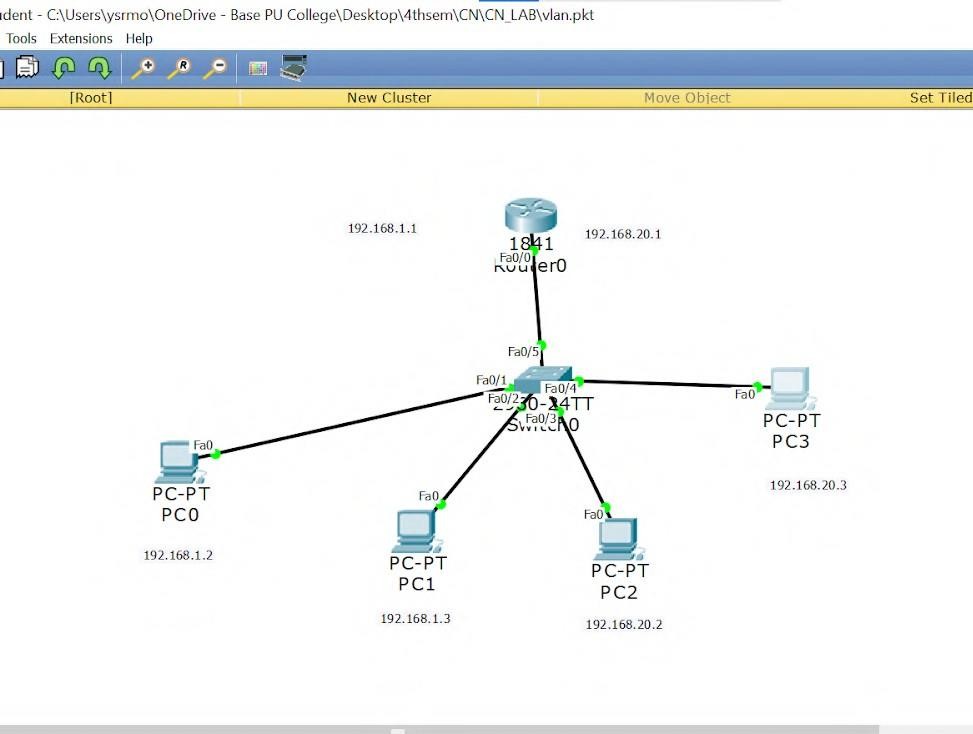
TOPOLOGY:

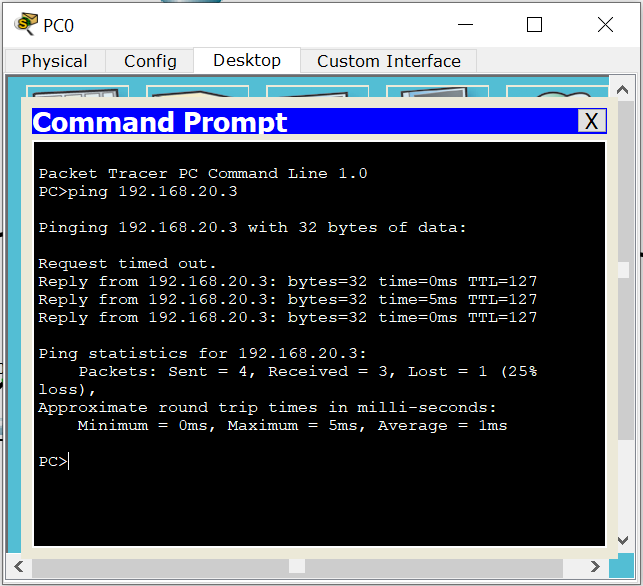
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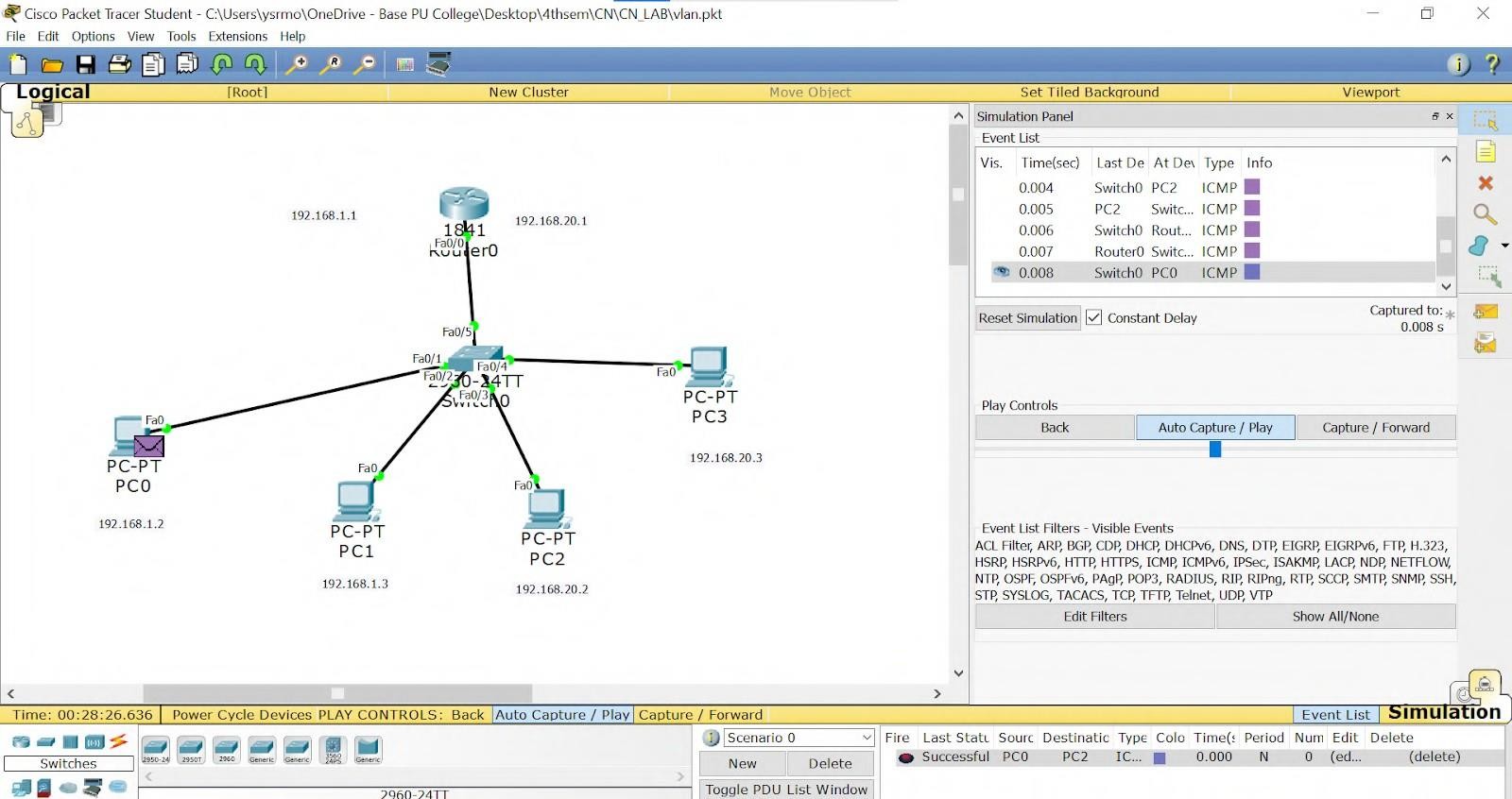


# WEEK 9

To construct a VLAN and make a pc communicate among VLAN.

TOPOLOGY:

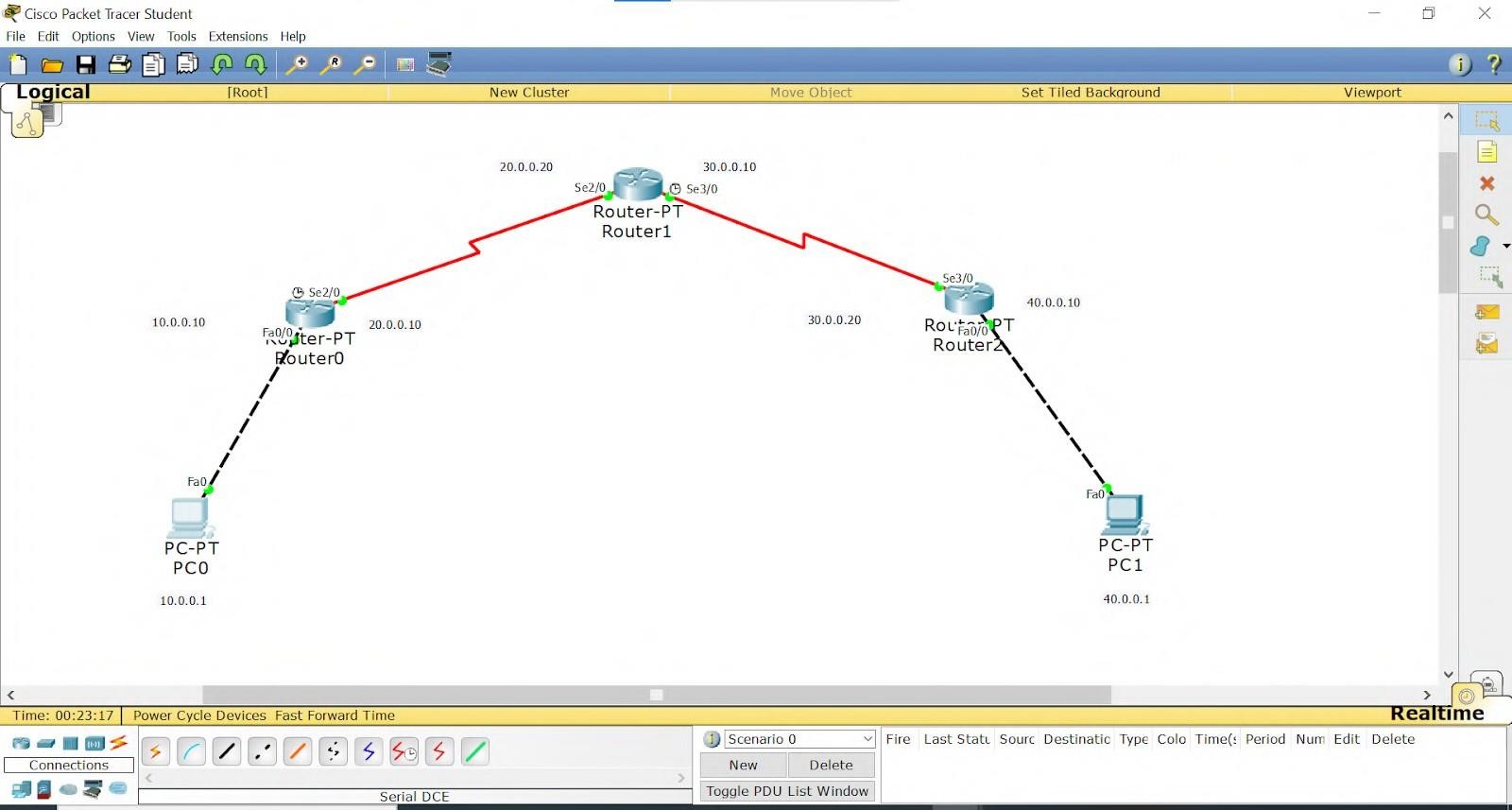
OUTPUT:



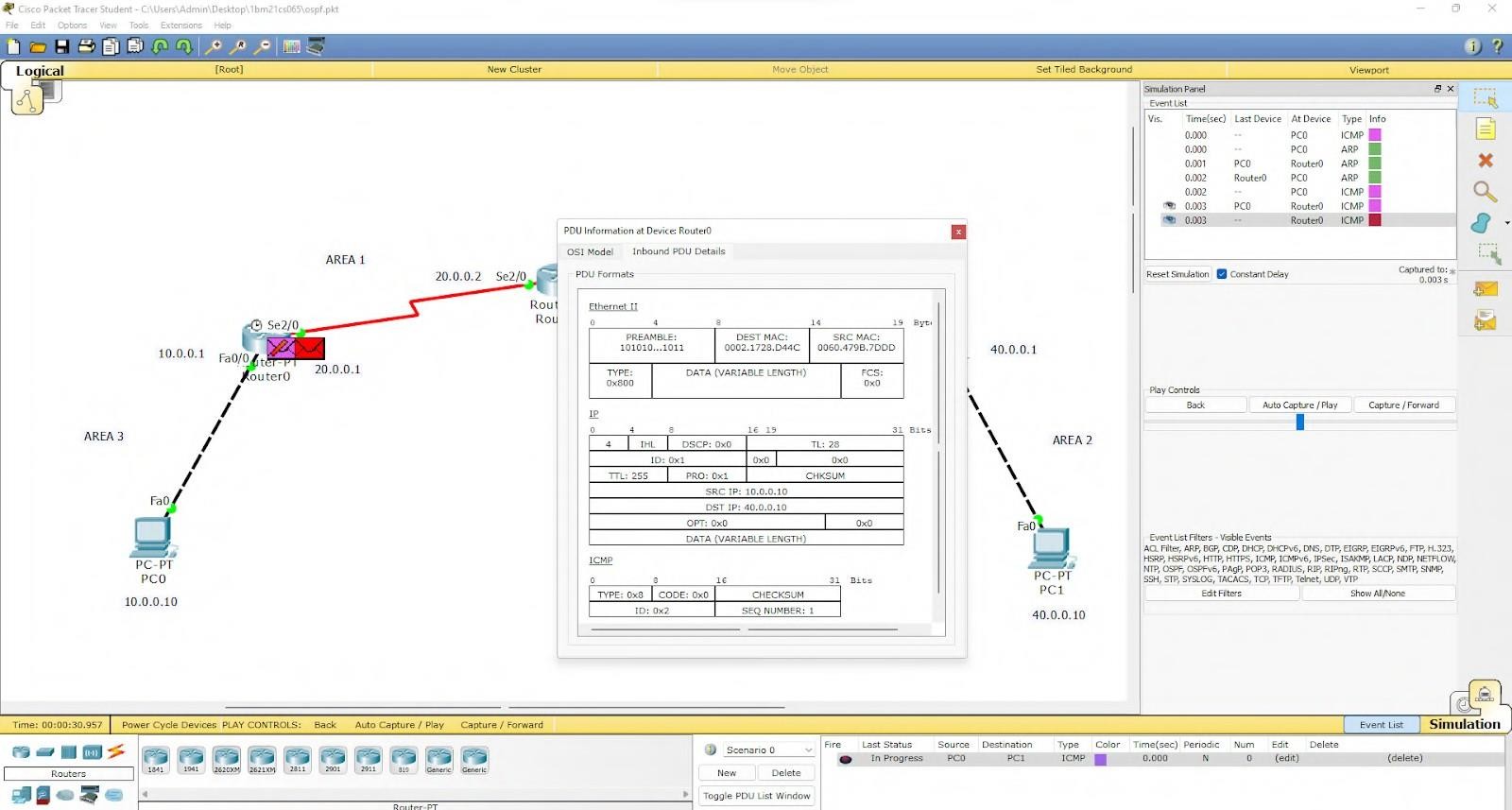
# WEEK 10

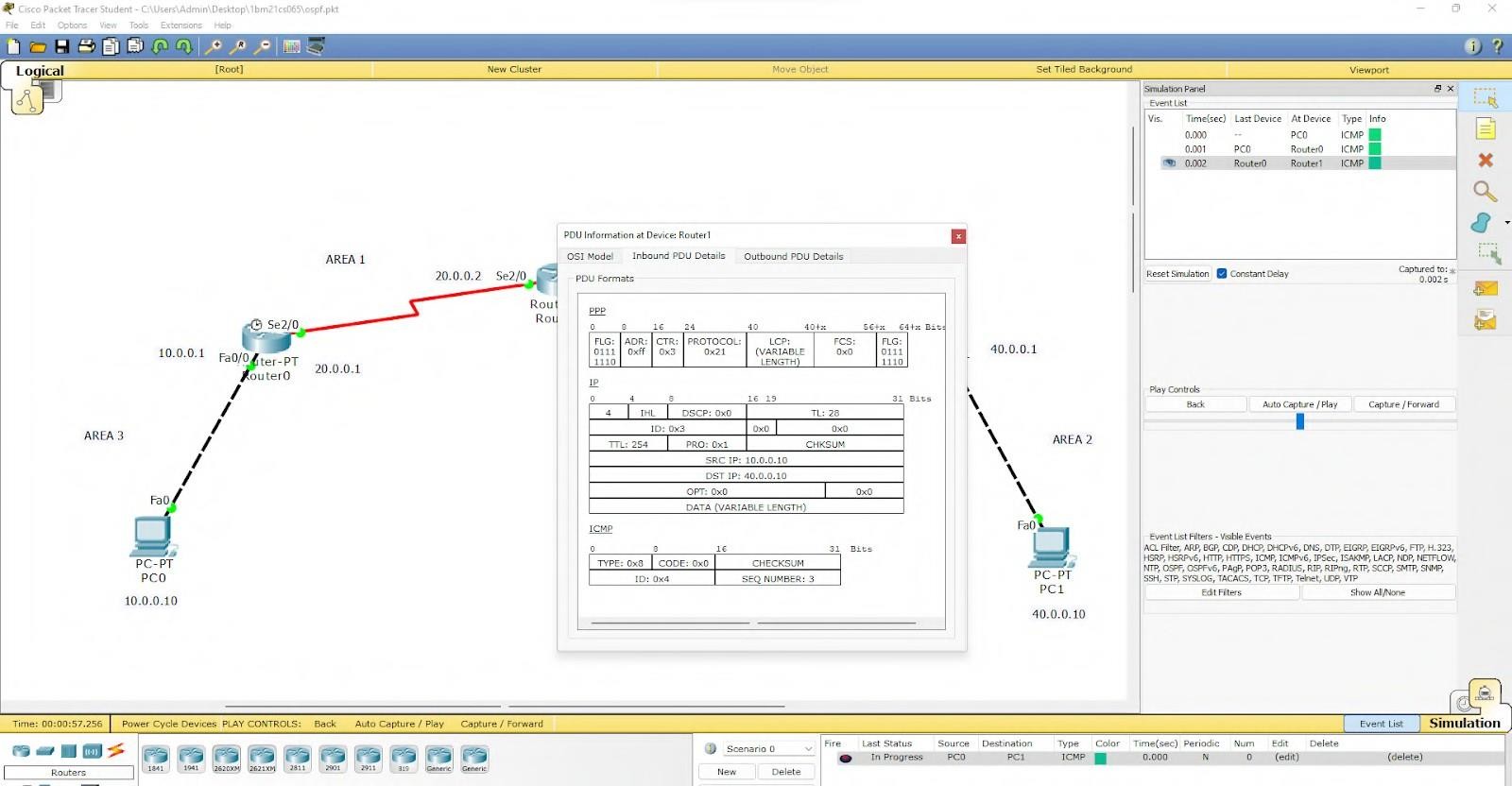
Demonstrate the TTL/ Life of a Packet.

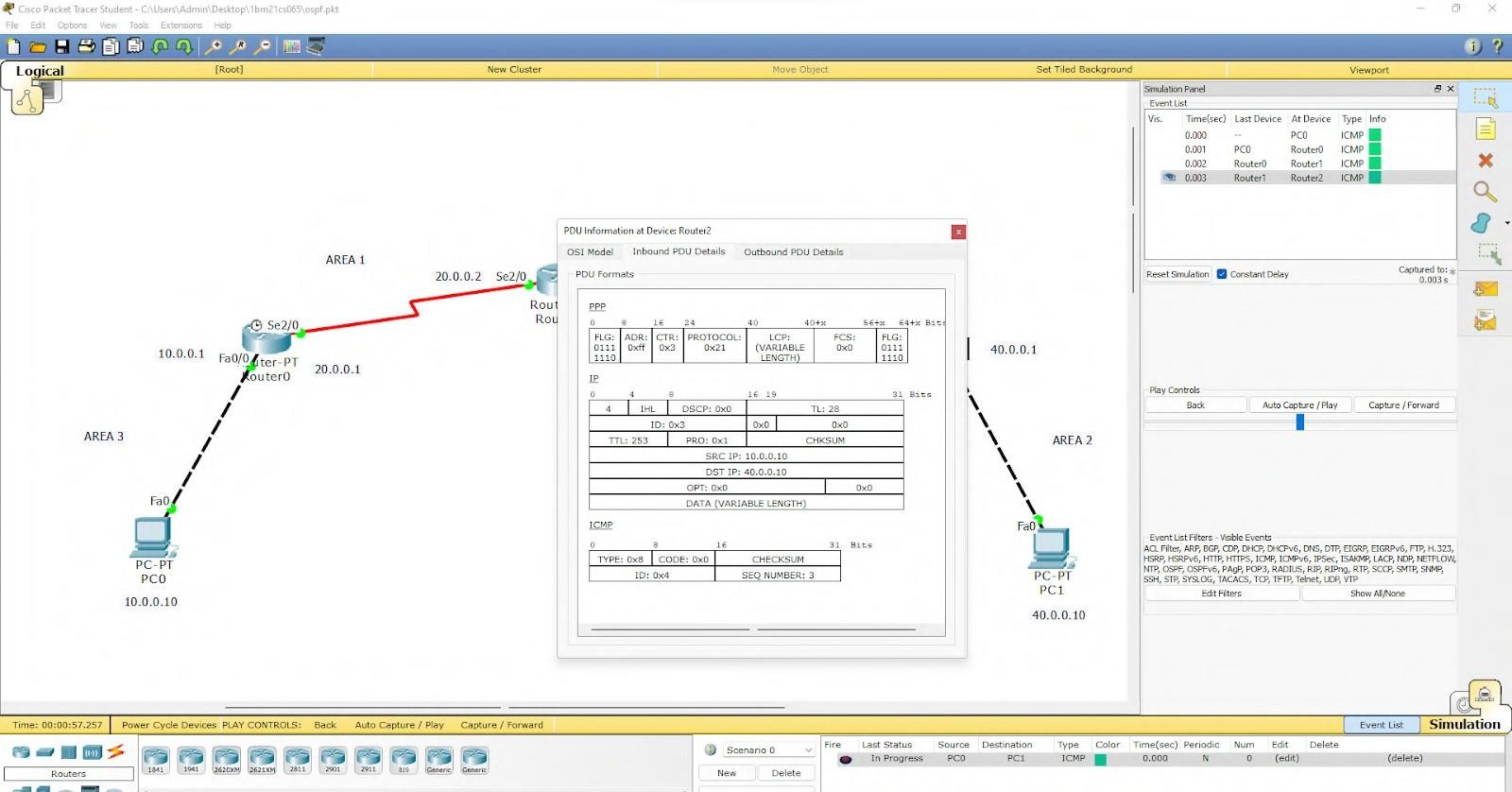
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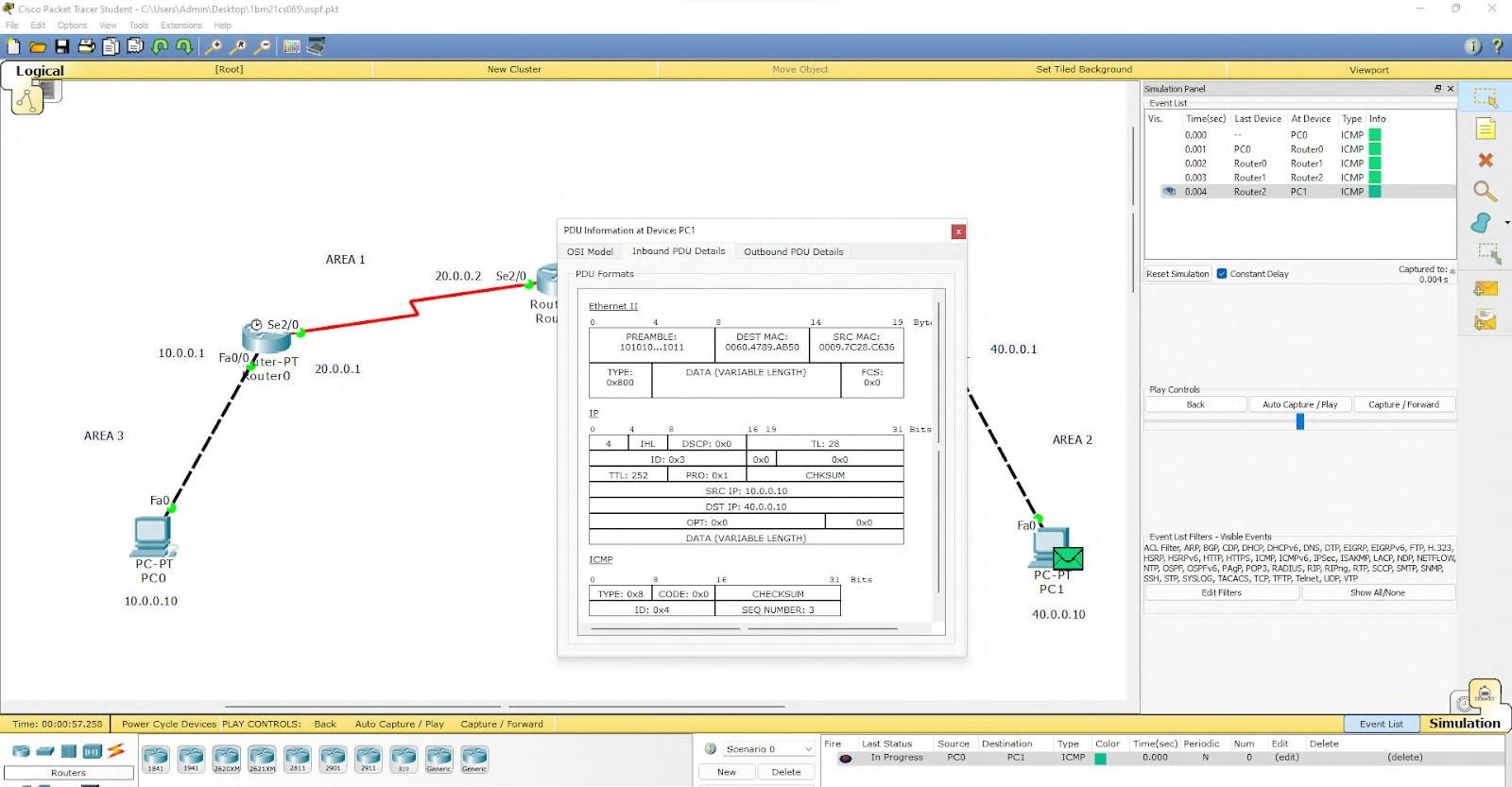


OUTPUT:





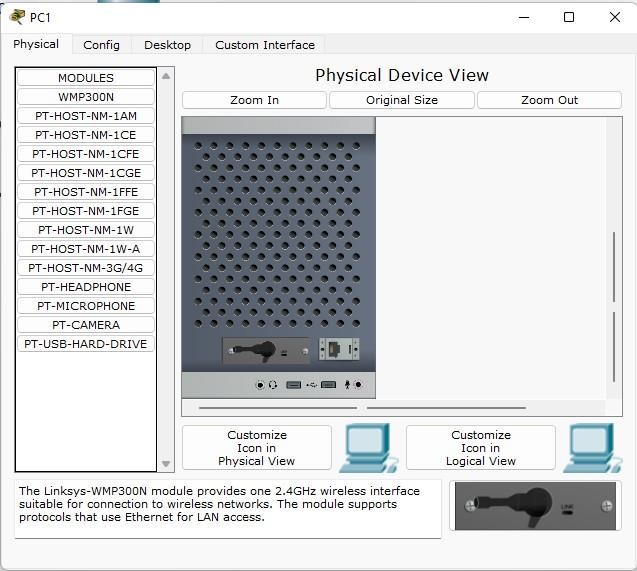
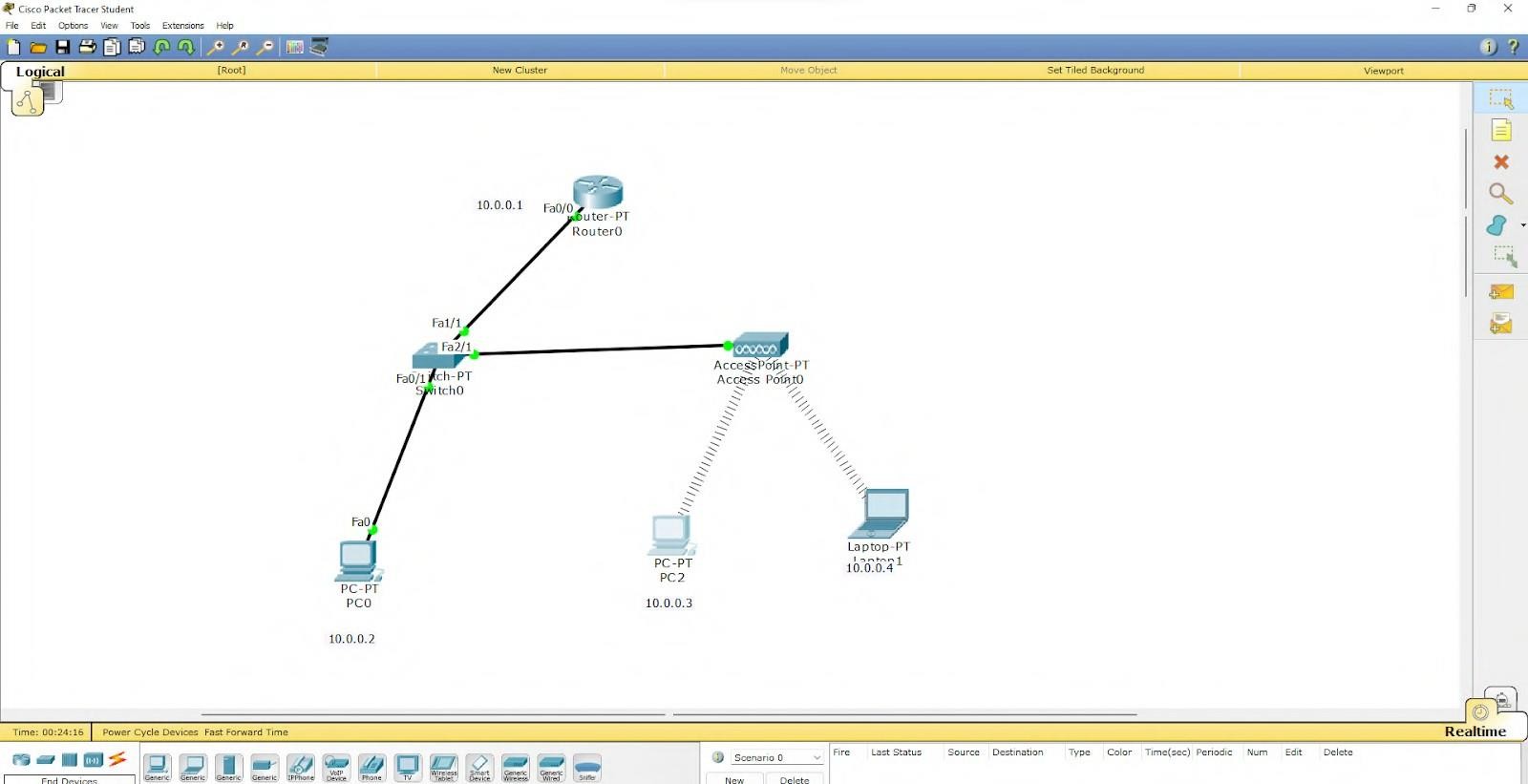




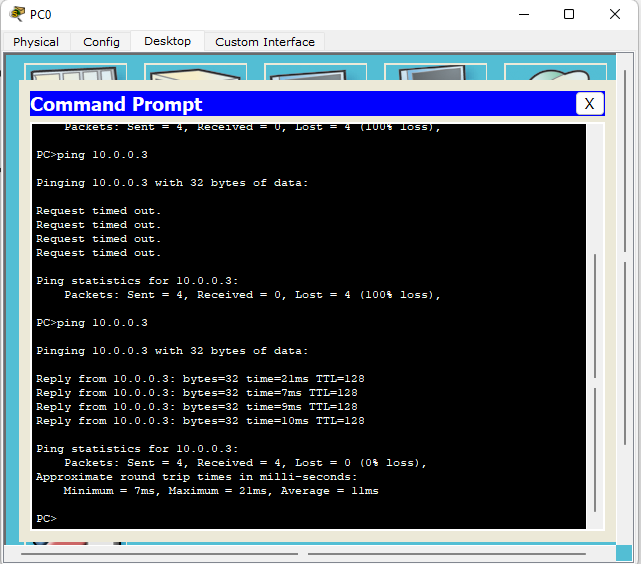
# WEEK 11

To construct a WLAN and make the nodes communicate wirelessly

TOPOLOGY:



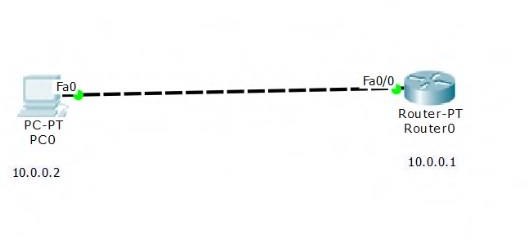


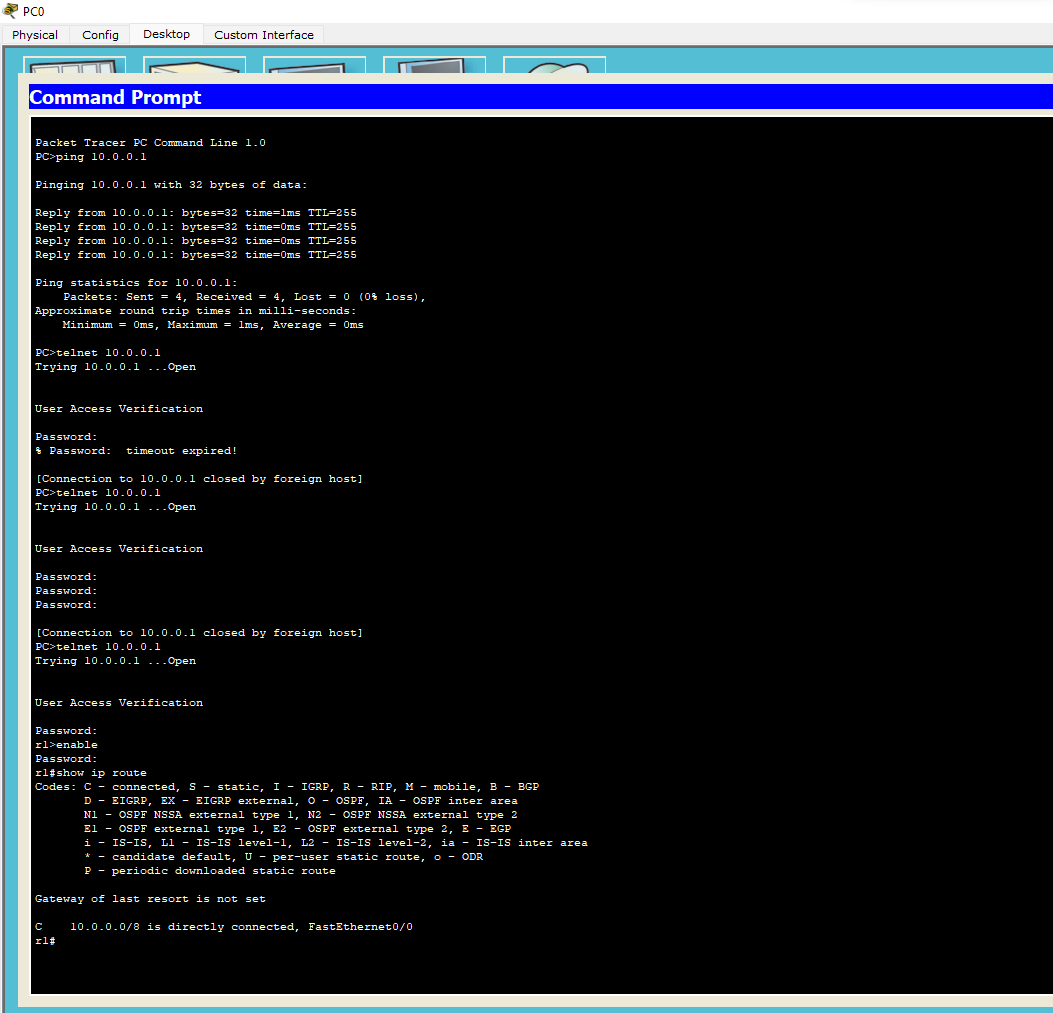
OUTPUT:

# WEEK 12

To understand the operation of TELNET by accessing the router in server room from a PC in IT office.

TOPOLOGY:

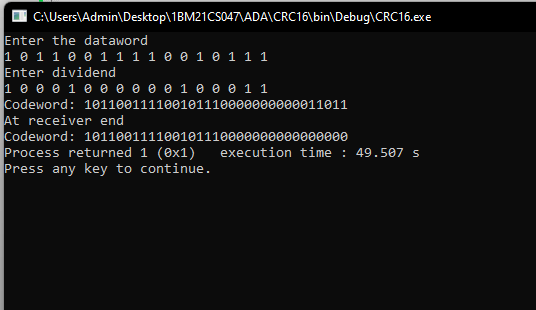


OUTPUT:

# WEEK 13

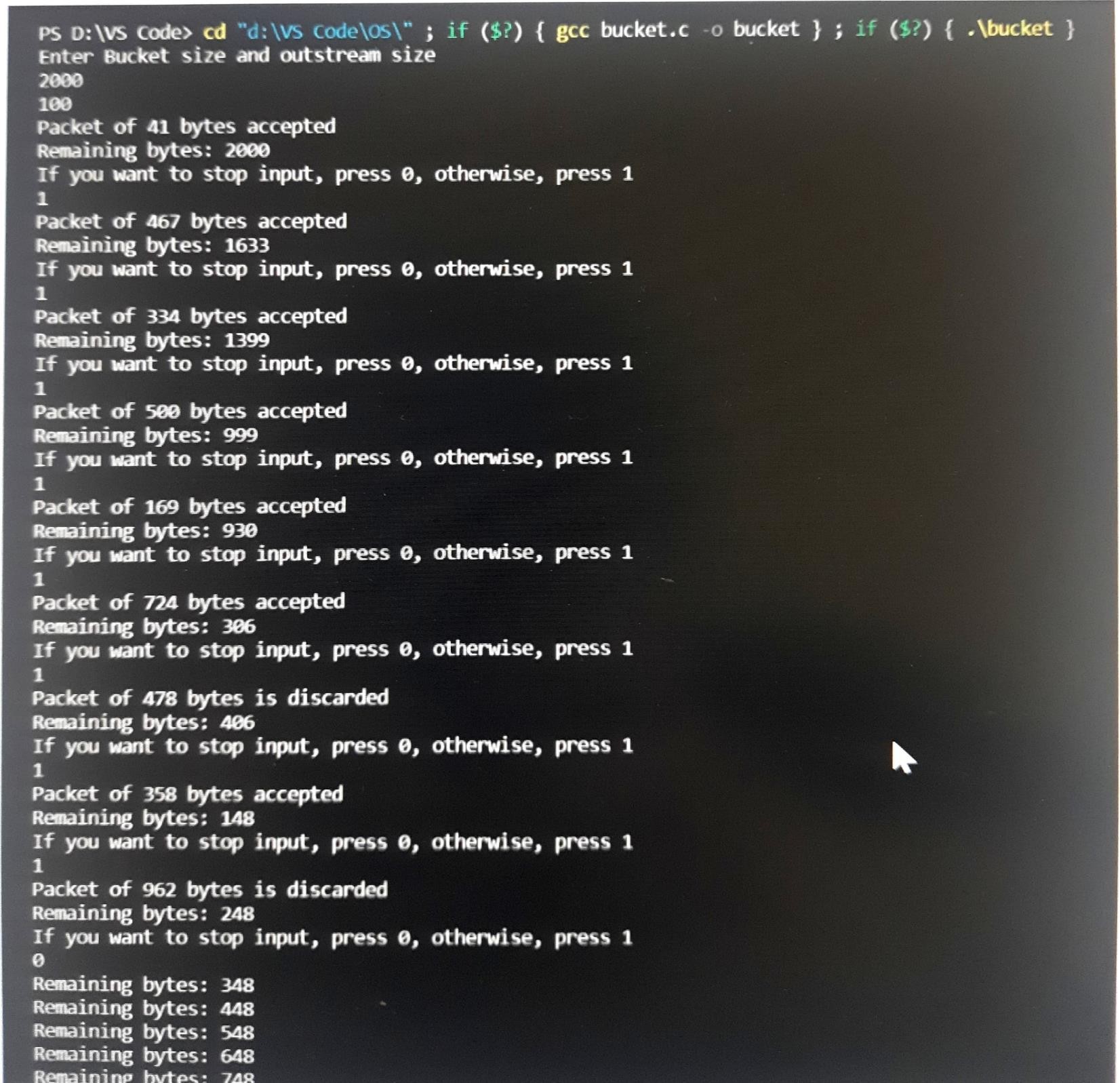
Write a program for error detecting code using CRC- CCITT (16-bits).

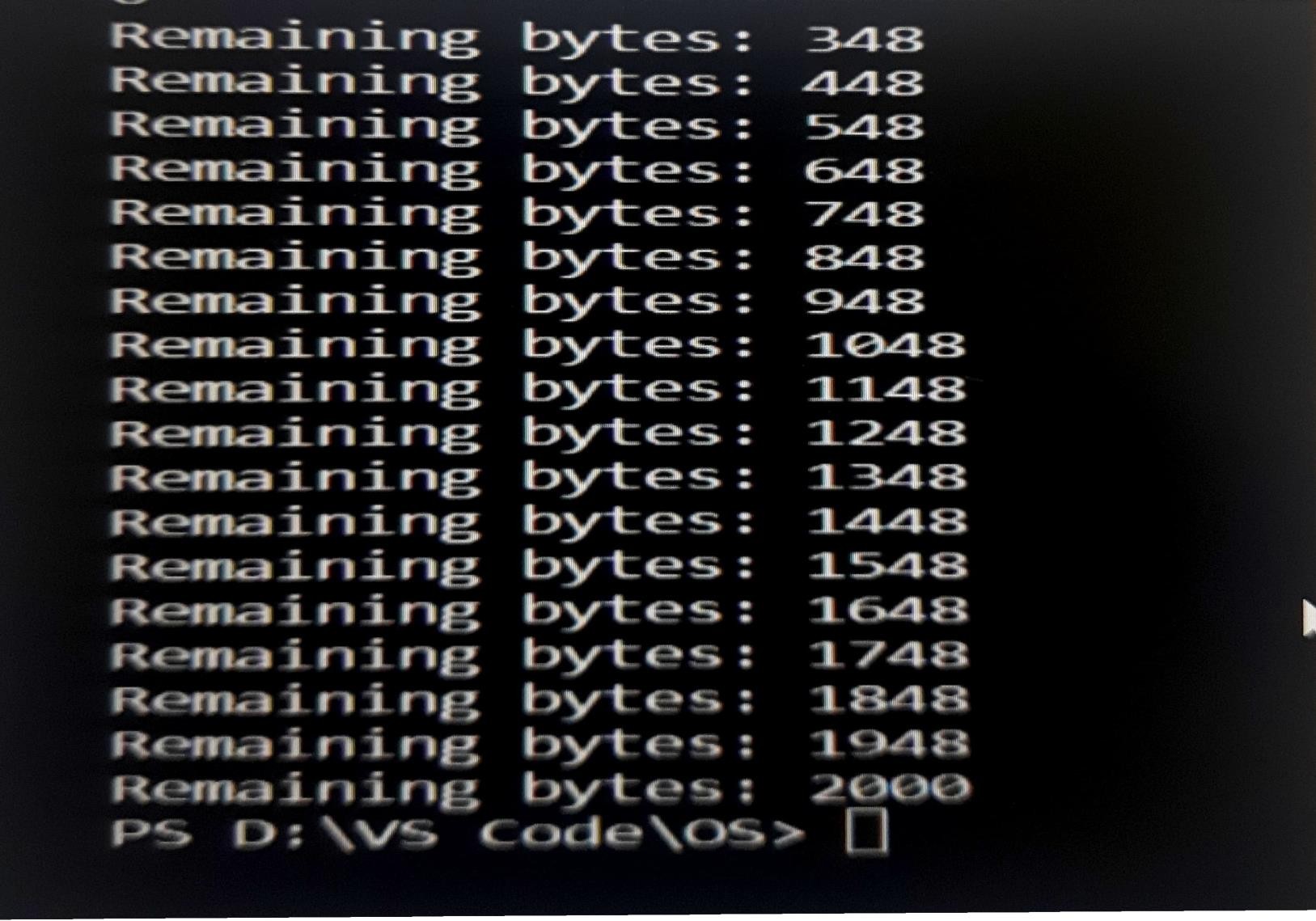
OUTPUT:



# WEEK 14

Write a program for congestion control using leaky bucket algorithm CODE:

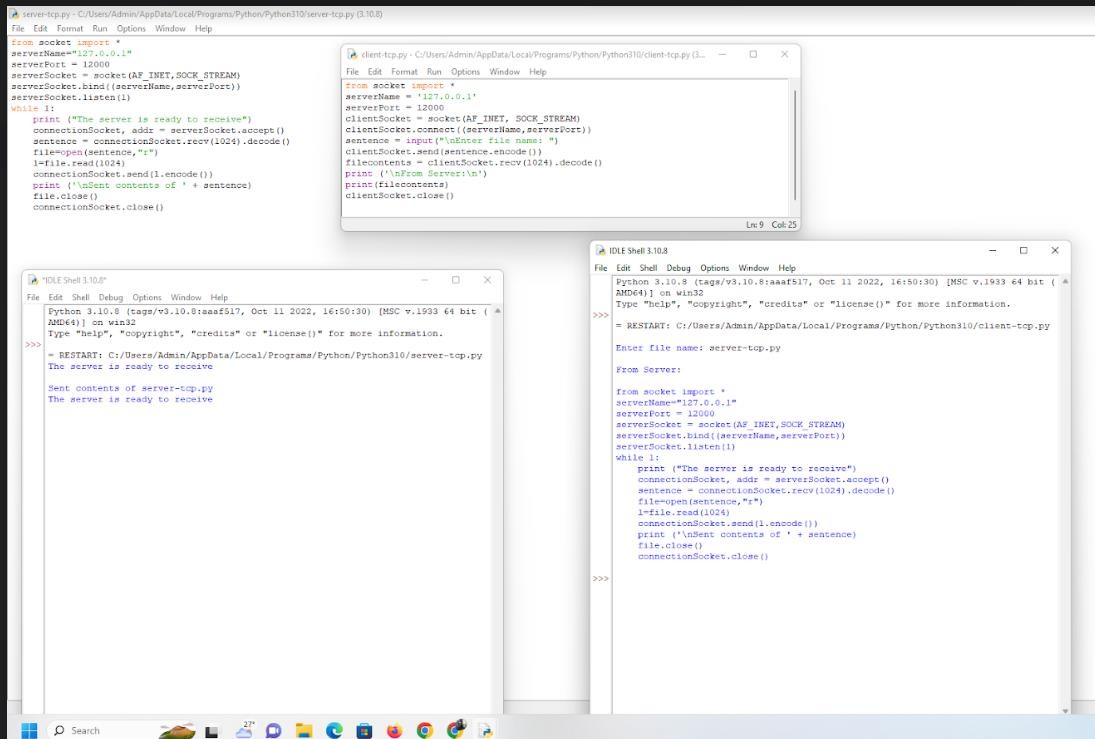




# WEEK 15

Using TCP/IP sockets, write a client-server program to make client sending the filename and the server to send back the contents of the requested file if present.

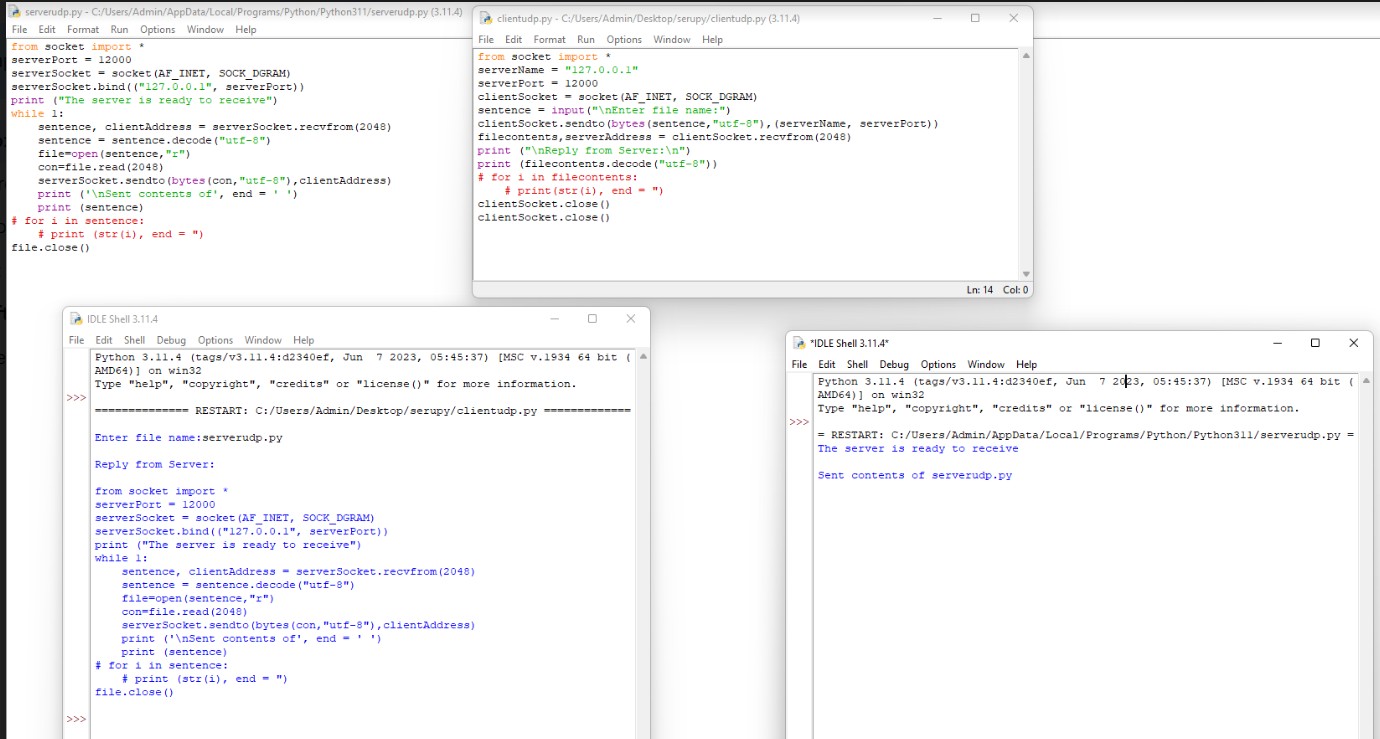
OUTPUT:



# WEEK 16

Using UDP sockets, write a client-server program to make the client send the file name and the server to send back the contents of the requested file if present.

# OUTPUT:



**WEEK 17**

Tool Exploration -Wireshark