**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

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

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**LAB RECORD**

**Computer Network Lab (23CS5PCCON)**

***Submitted by***

**Sidhvin Vidyadhar Burli(1BM21CS211)**

***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**

**Academic Year 2024-25 (odd)**

**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 Network (23CS5PCCON)” carried out by **Sidhvin Vidyadhar Burli(1BM21CS211)** who is a bonafide student of **B.M.S. College of Engineering.** It is in partial fulfilment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum. The Lab report has been approved as it satisfies the academic requirements of the above-mentioned subject and the work prescribed for the said degree.

|  |  |
| --- | --- |
| Srushti C S  Assistant Professor  Department of CSE, BMSCE | Dr. Kavitha Sooda  Professor & HOD  Department of CSE, BMSCE |

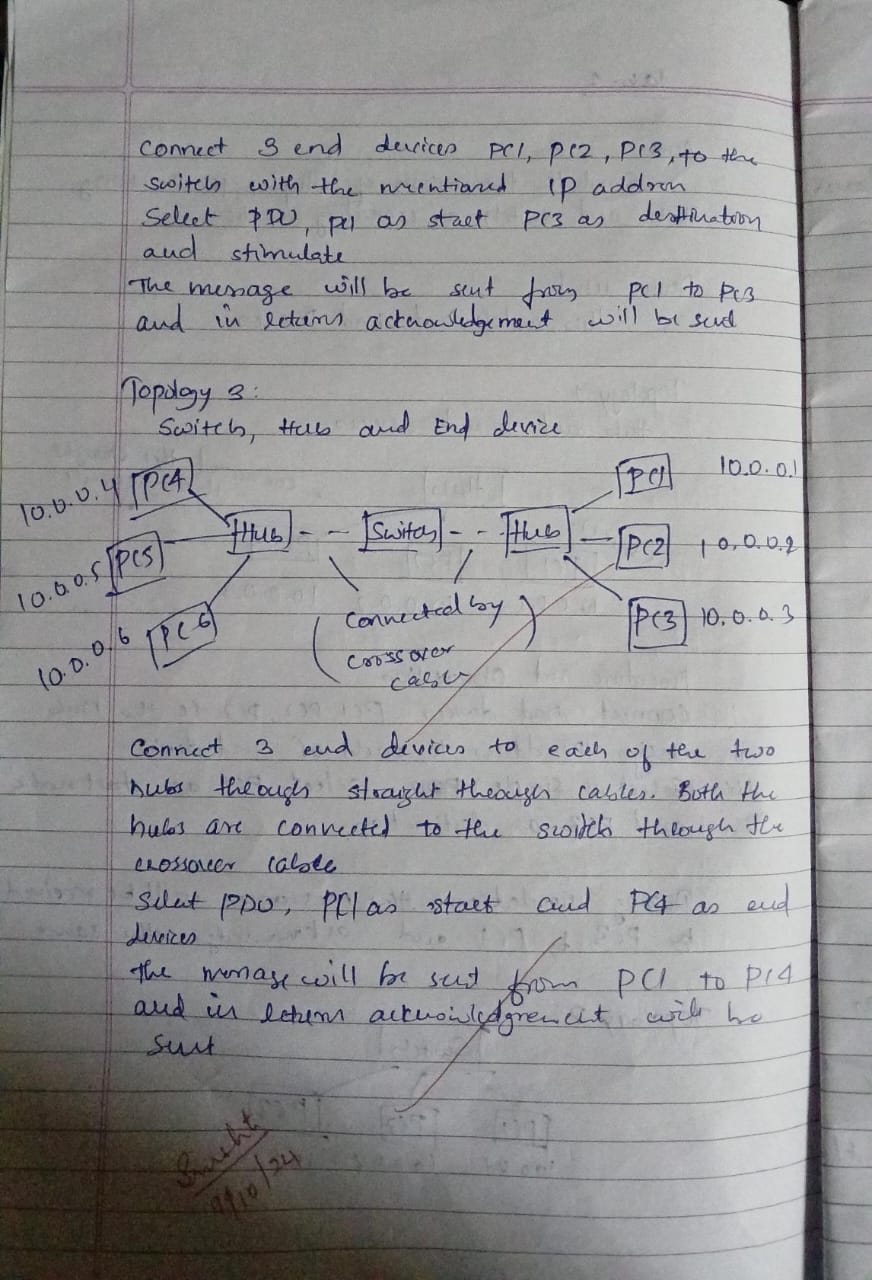
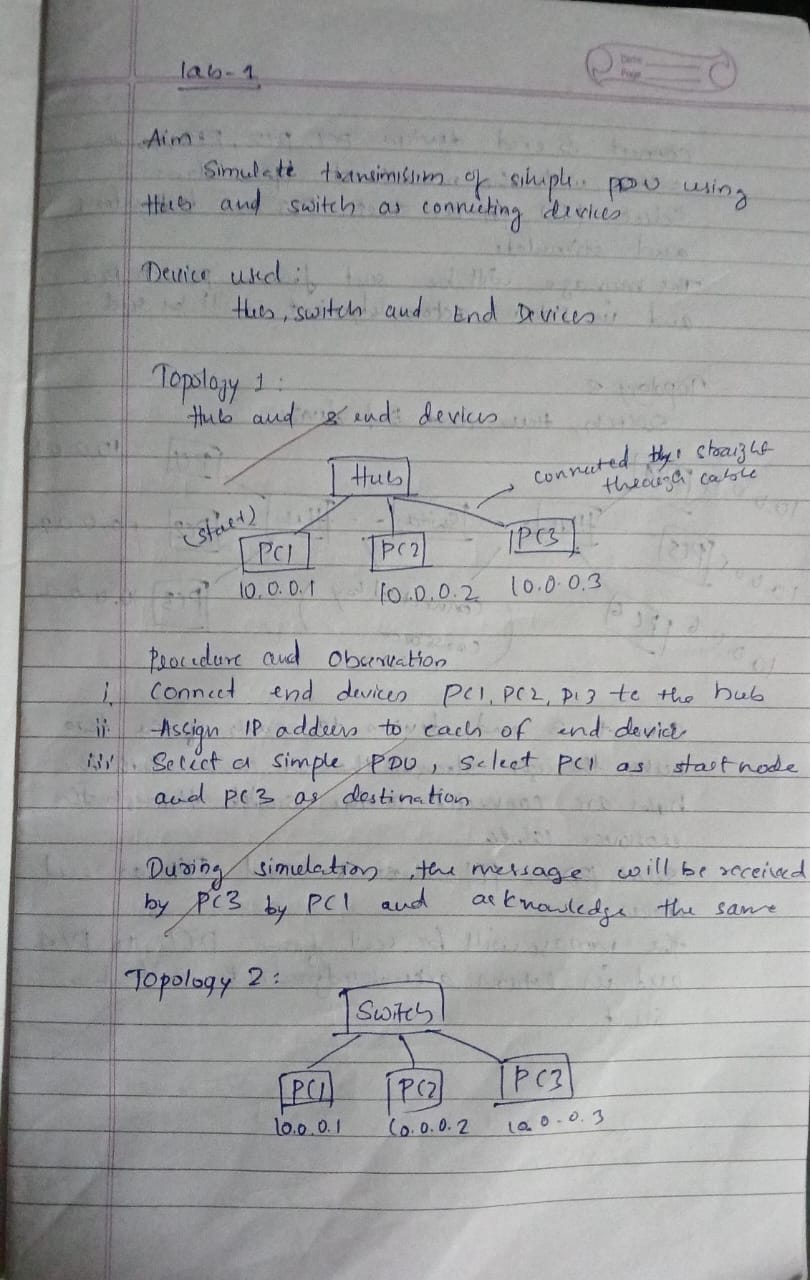
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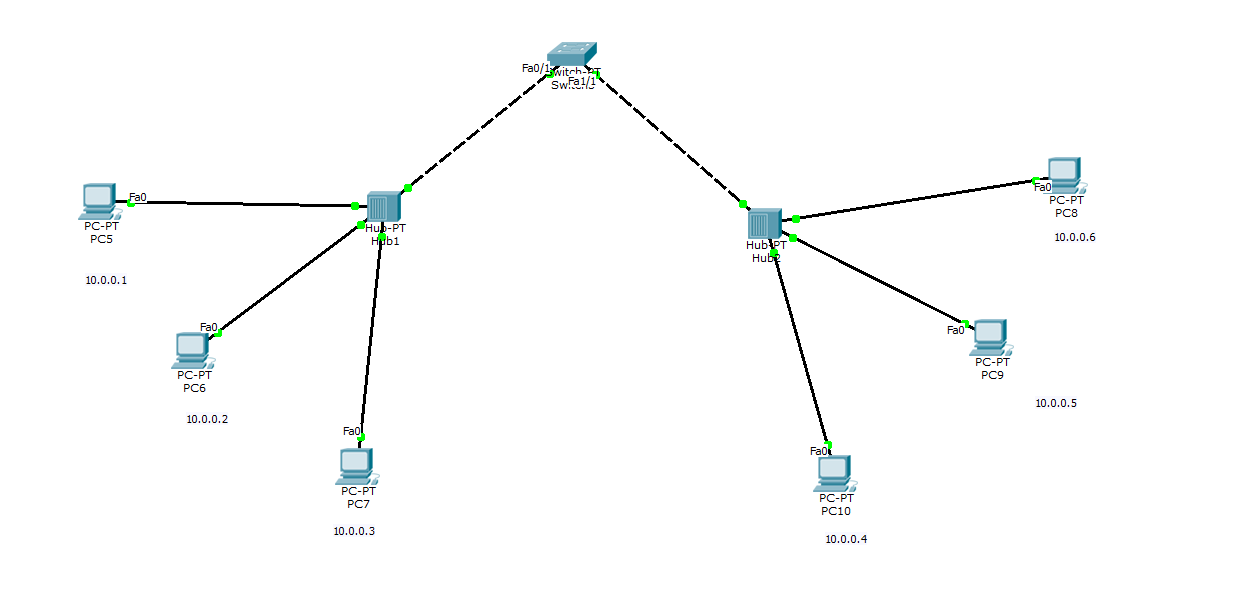
Github Link: https://github.com/SidhvinBurli/CNLAB5TH

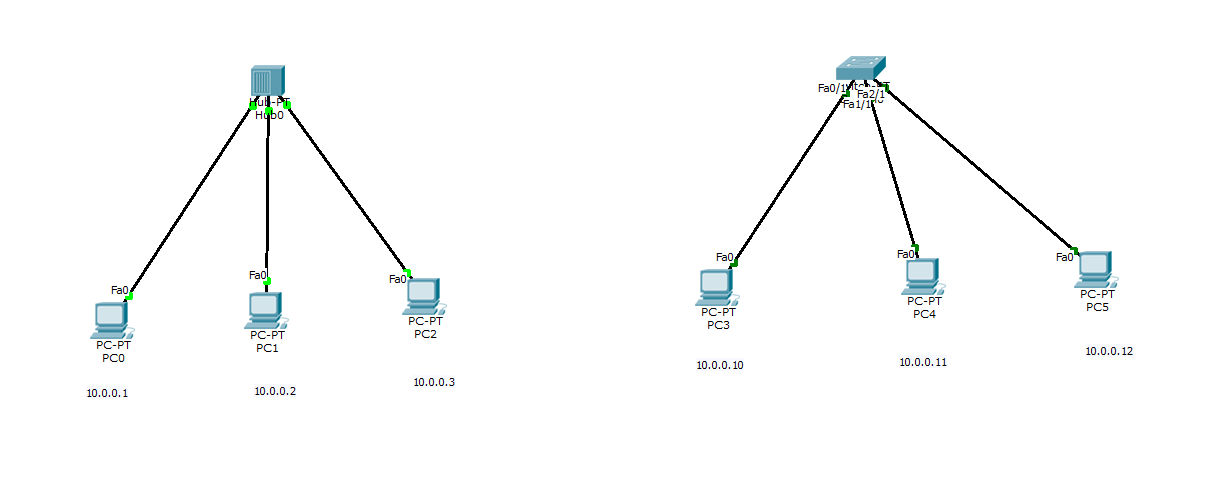
**Program 1**

**Aim:** 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 , Procedure and Observation:** 

**Screen Shots:**

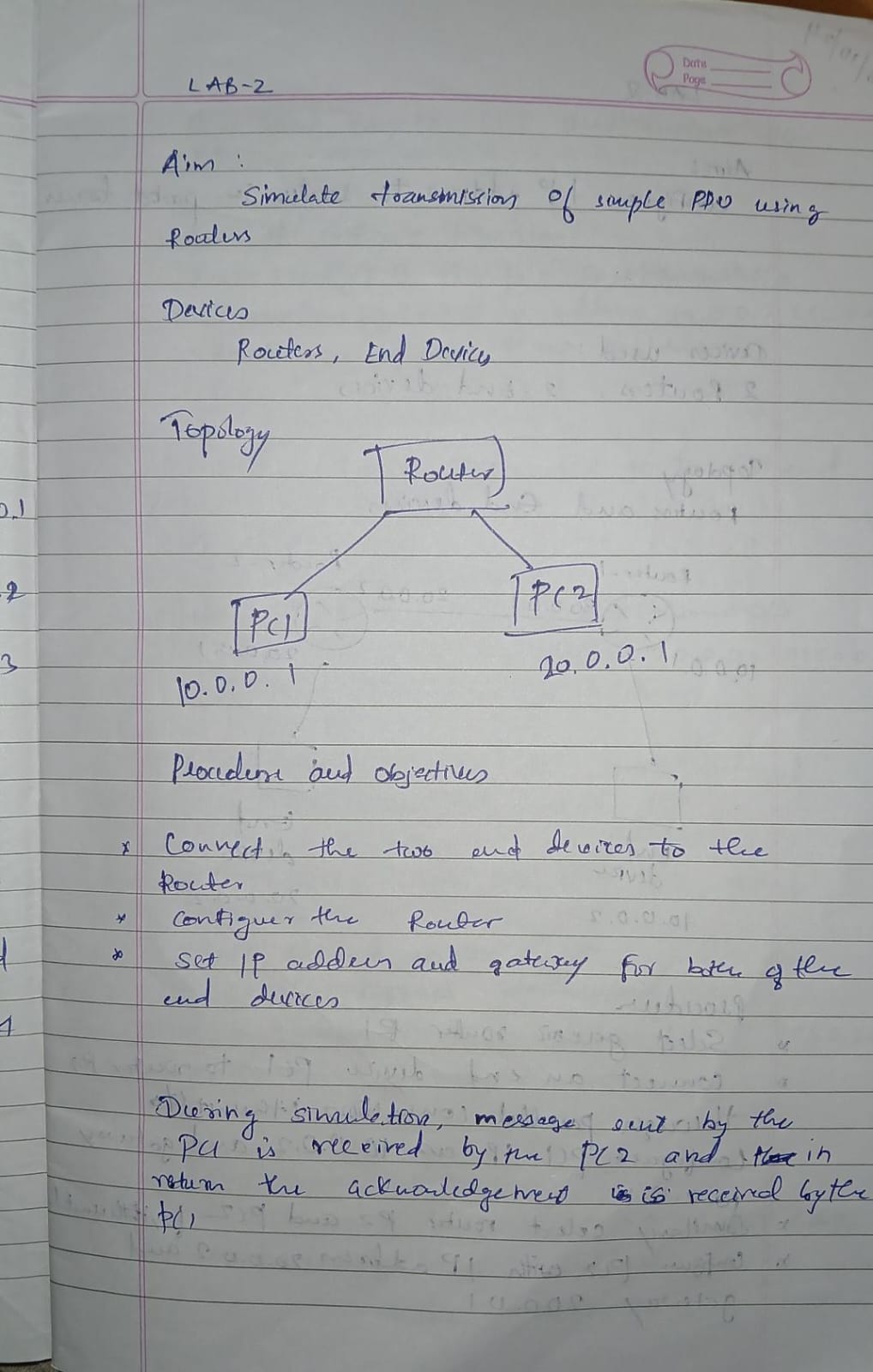
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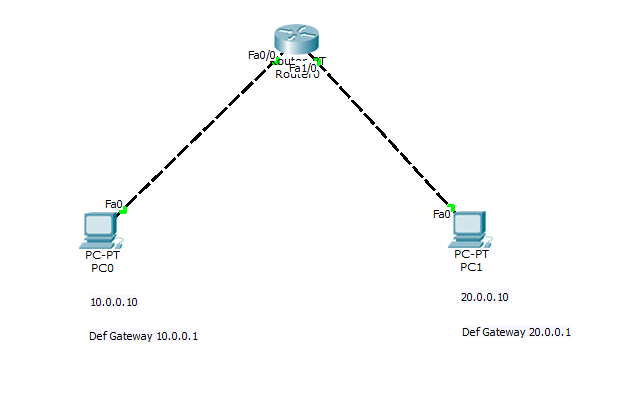
**Program 2**

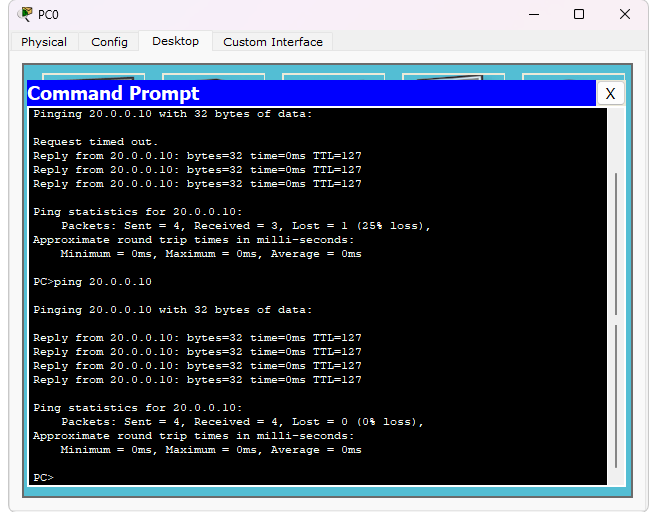
**Aim:**Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

**Topology , Procedure and Observation:**



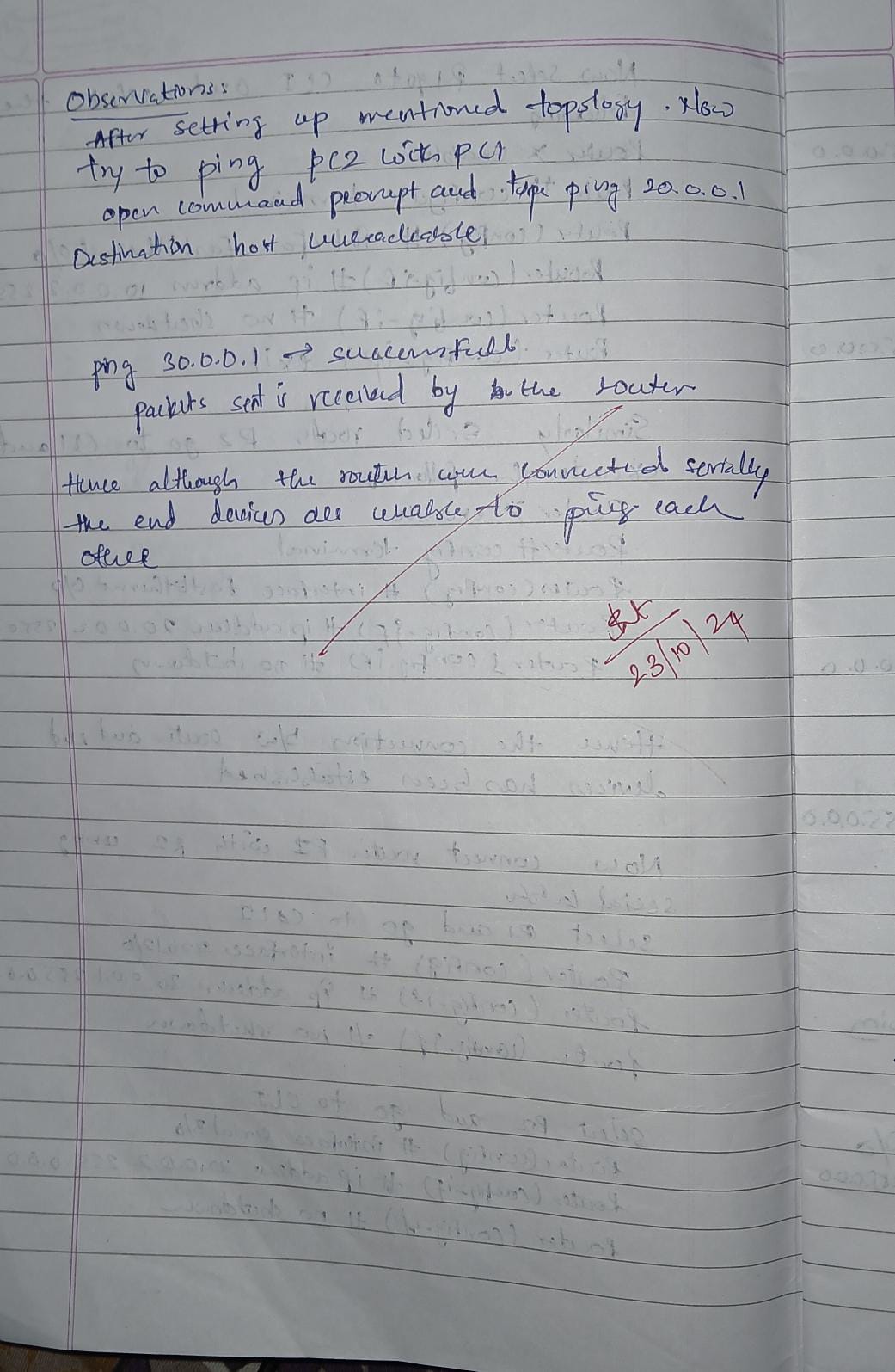
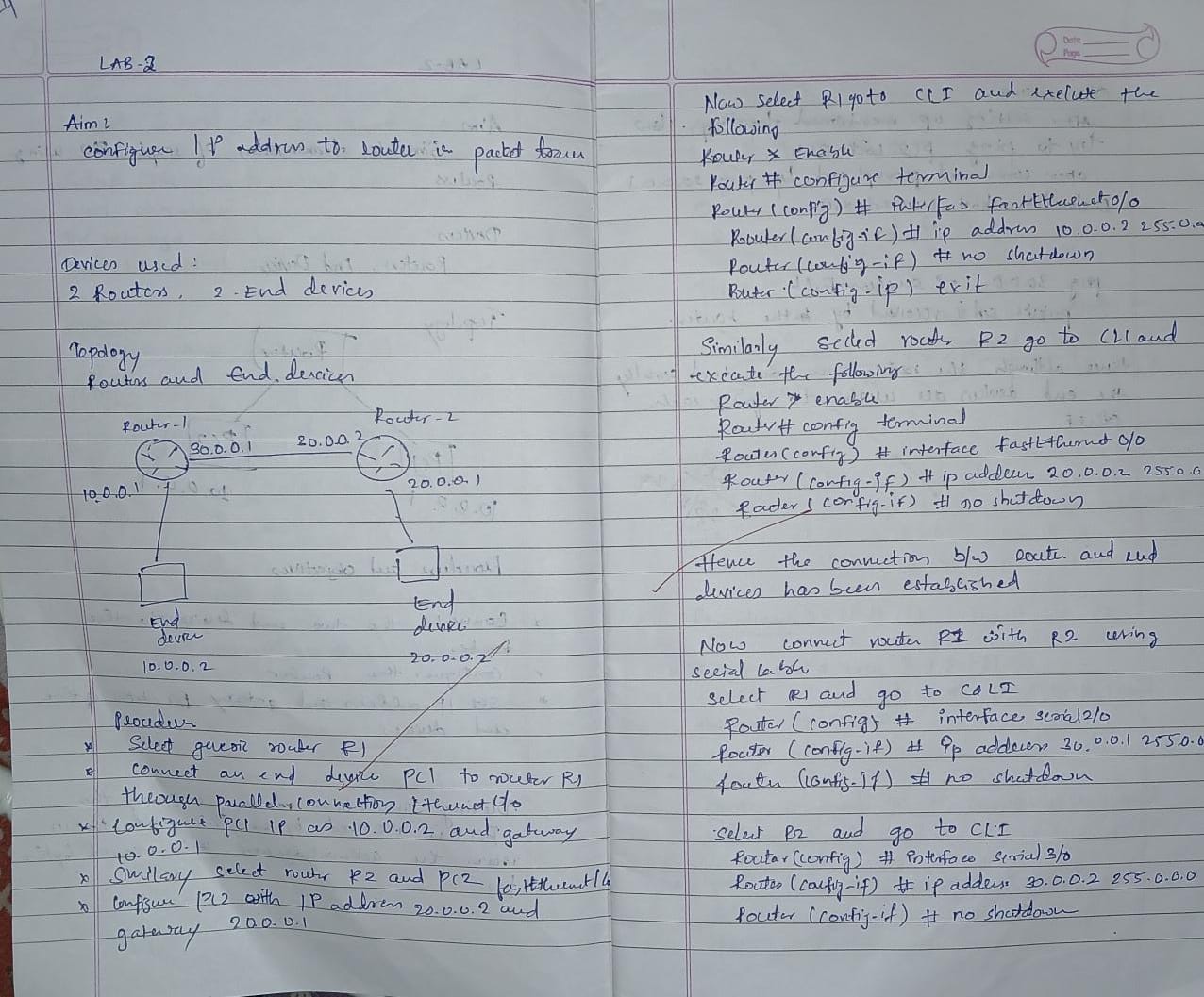
**Screen Shots:**

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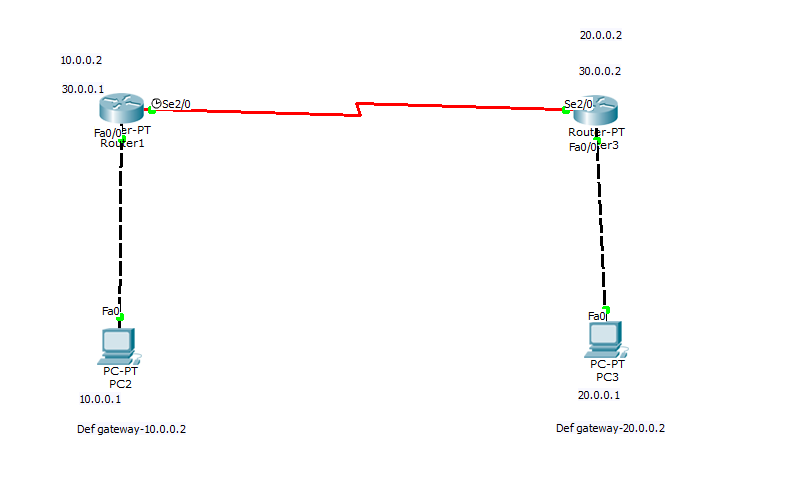
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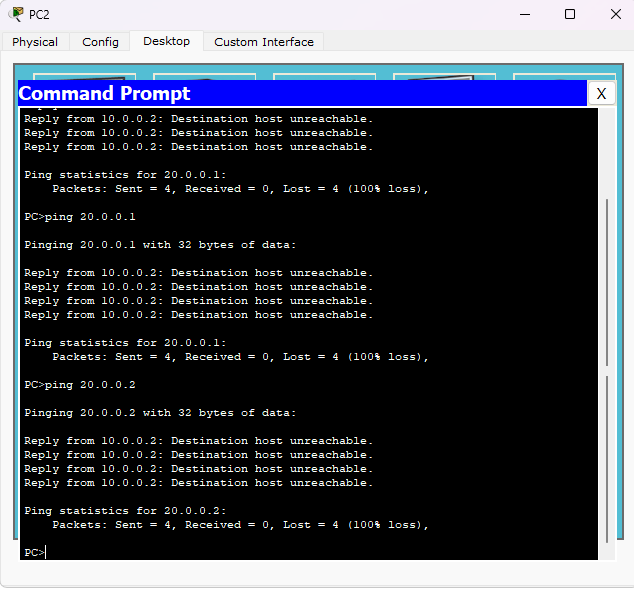
**Program 3**

**Aim:**Configure default route, static route to the Router(Part 1).

**Topology , Procedure and Observation:** 

**Screen Shots:**

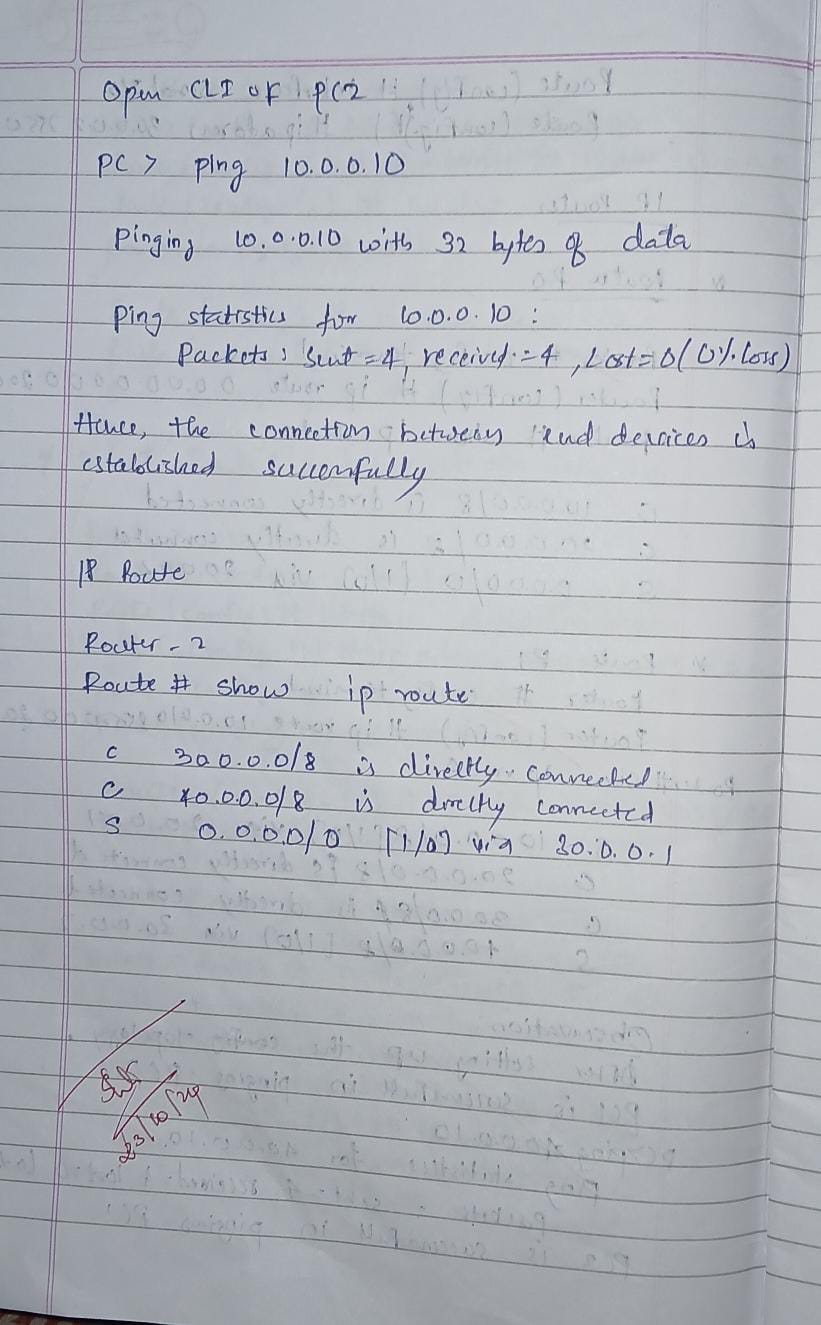
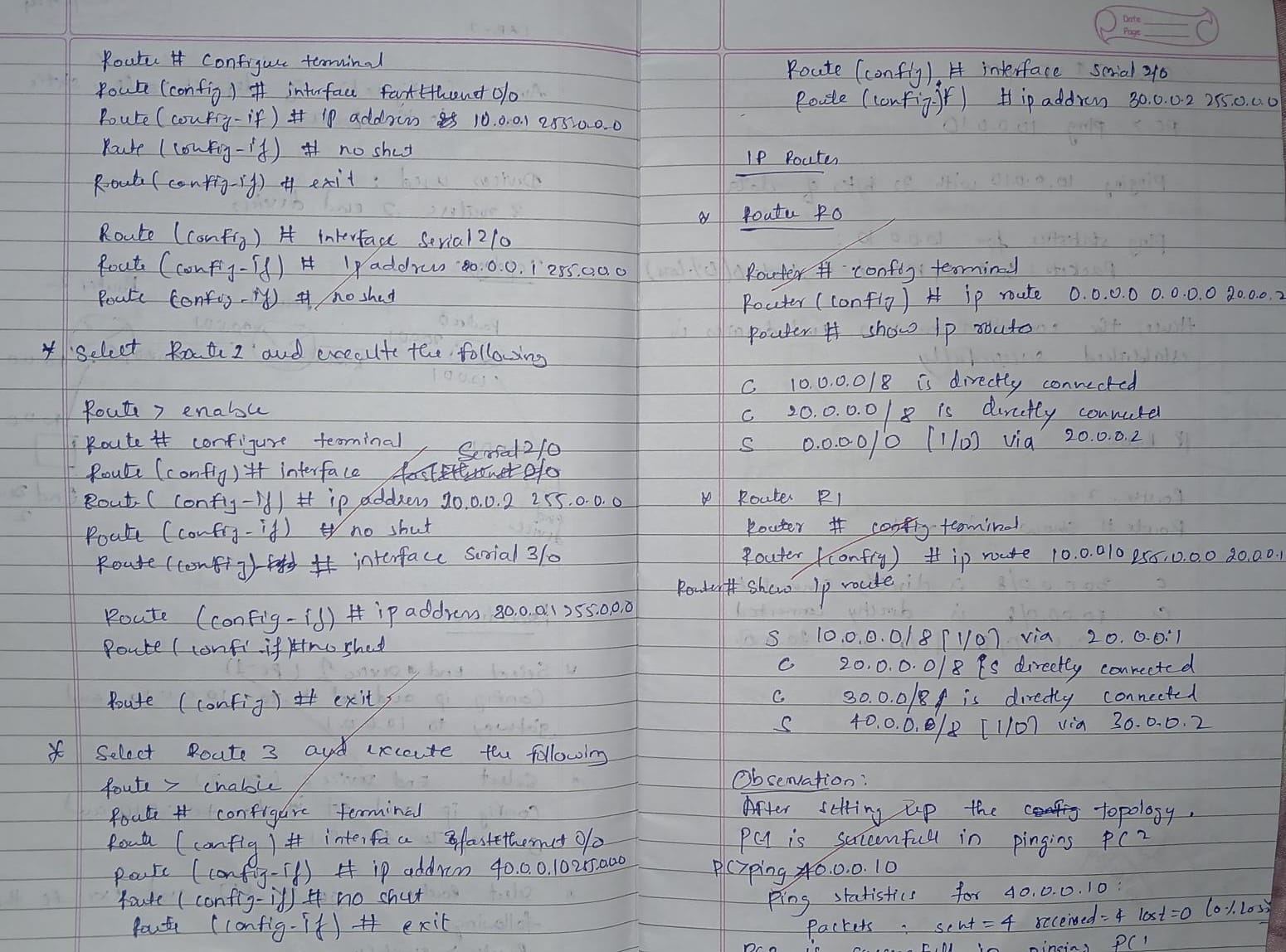
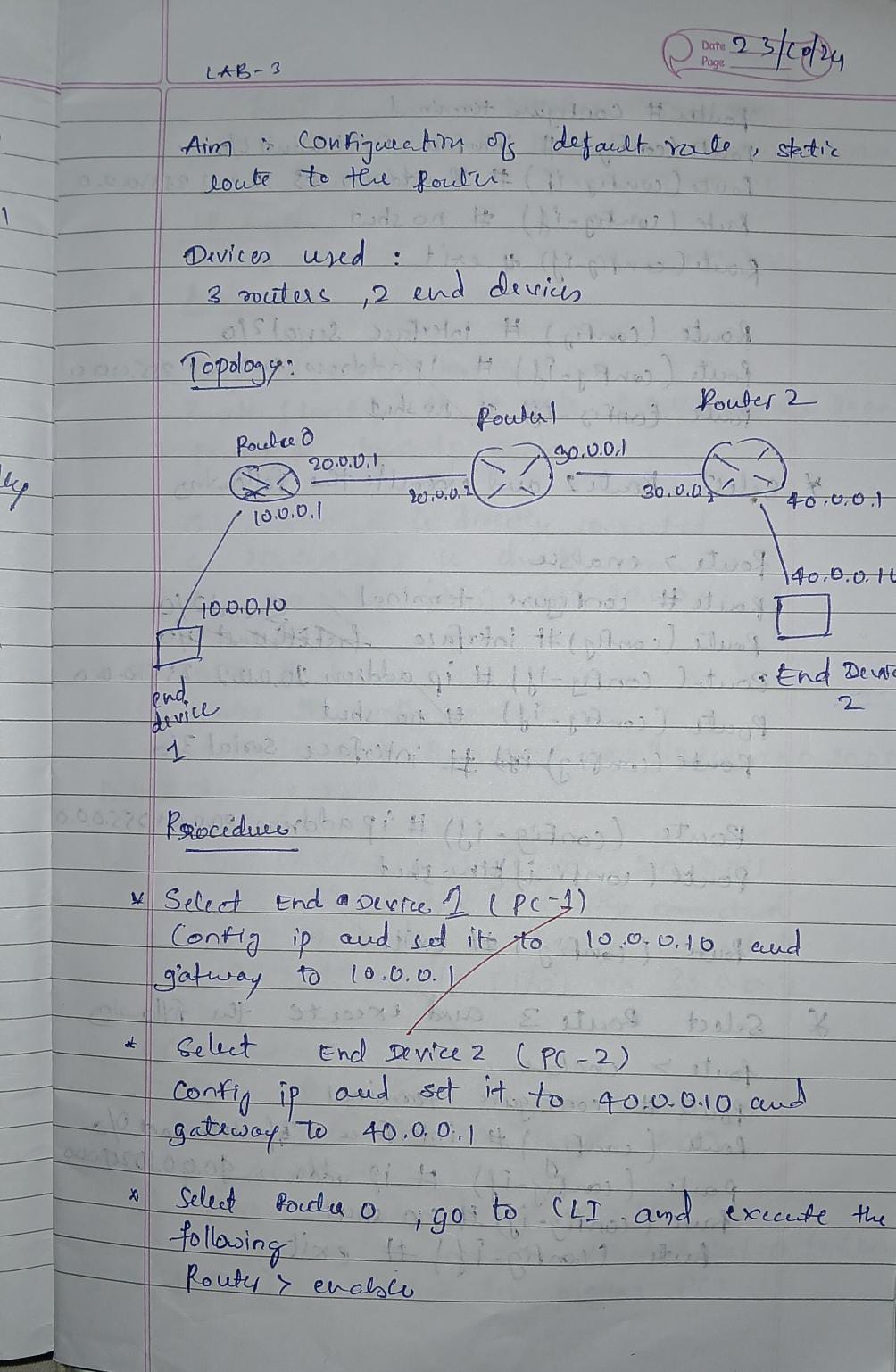
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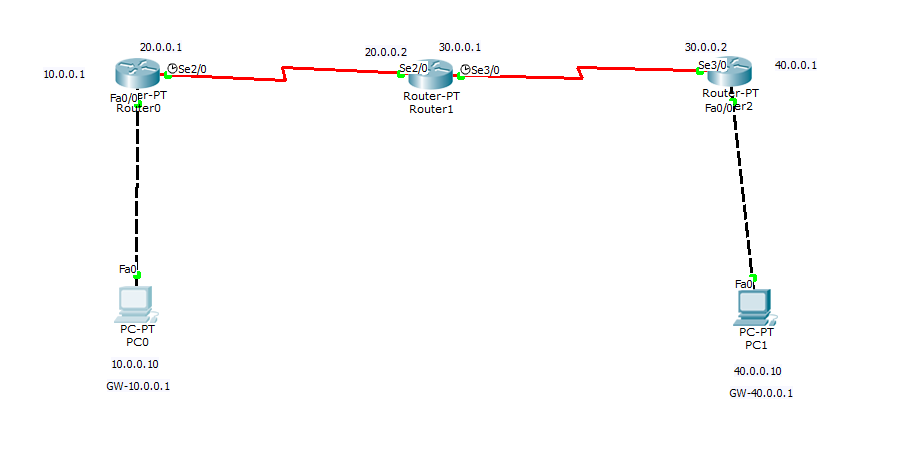
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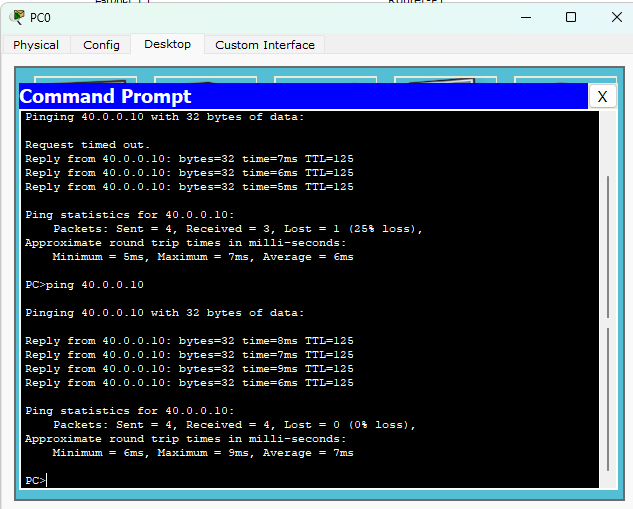
**Aim:**Configure default route, static route to the Router(Part 2).

**Topology , Procedure and Observation:**



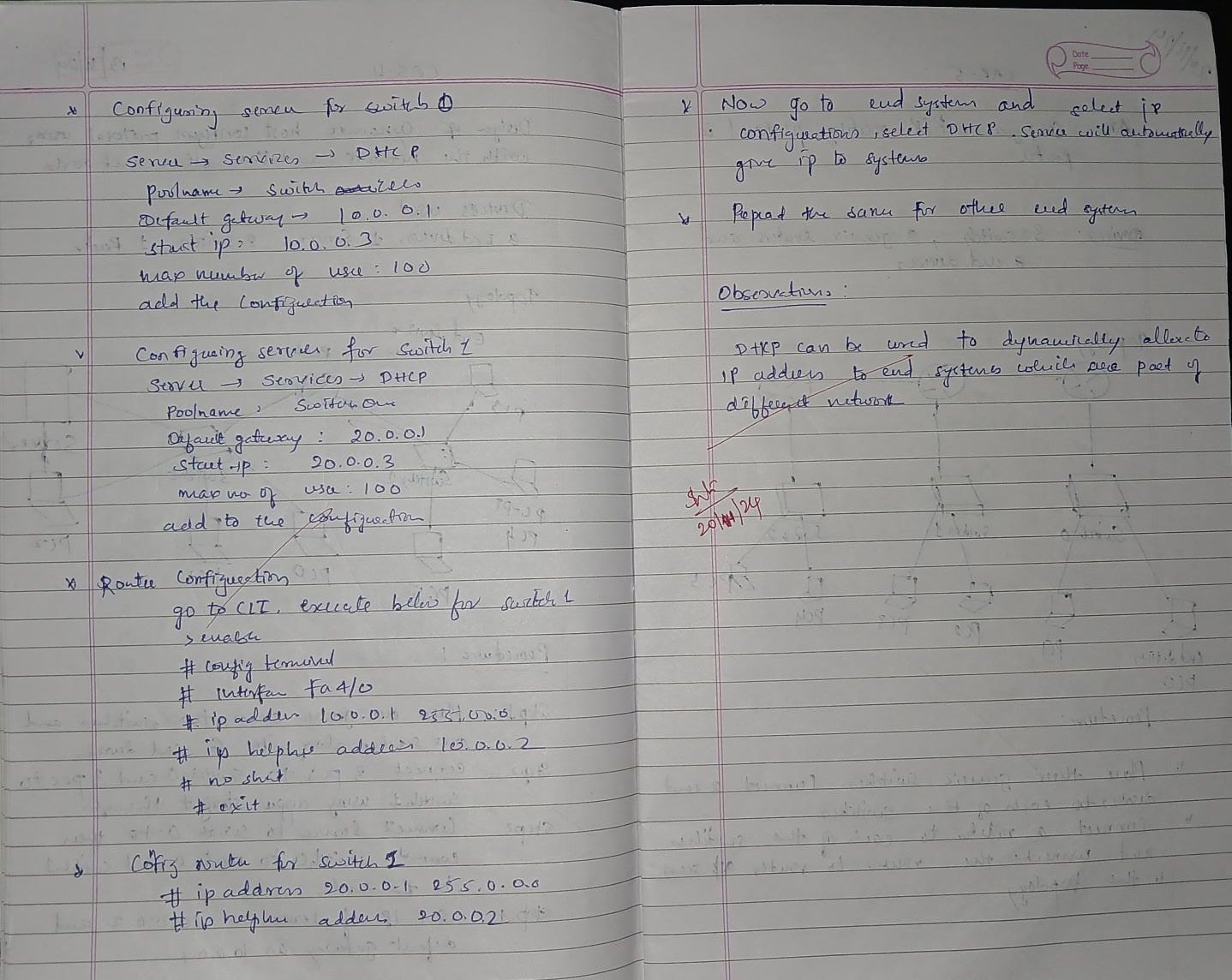
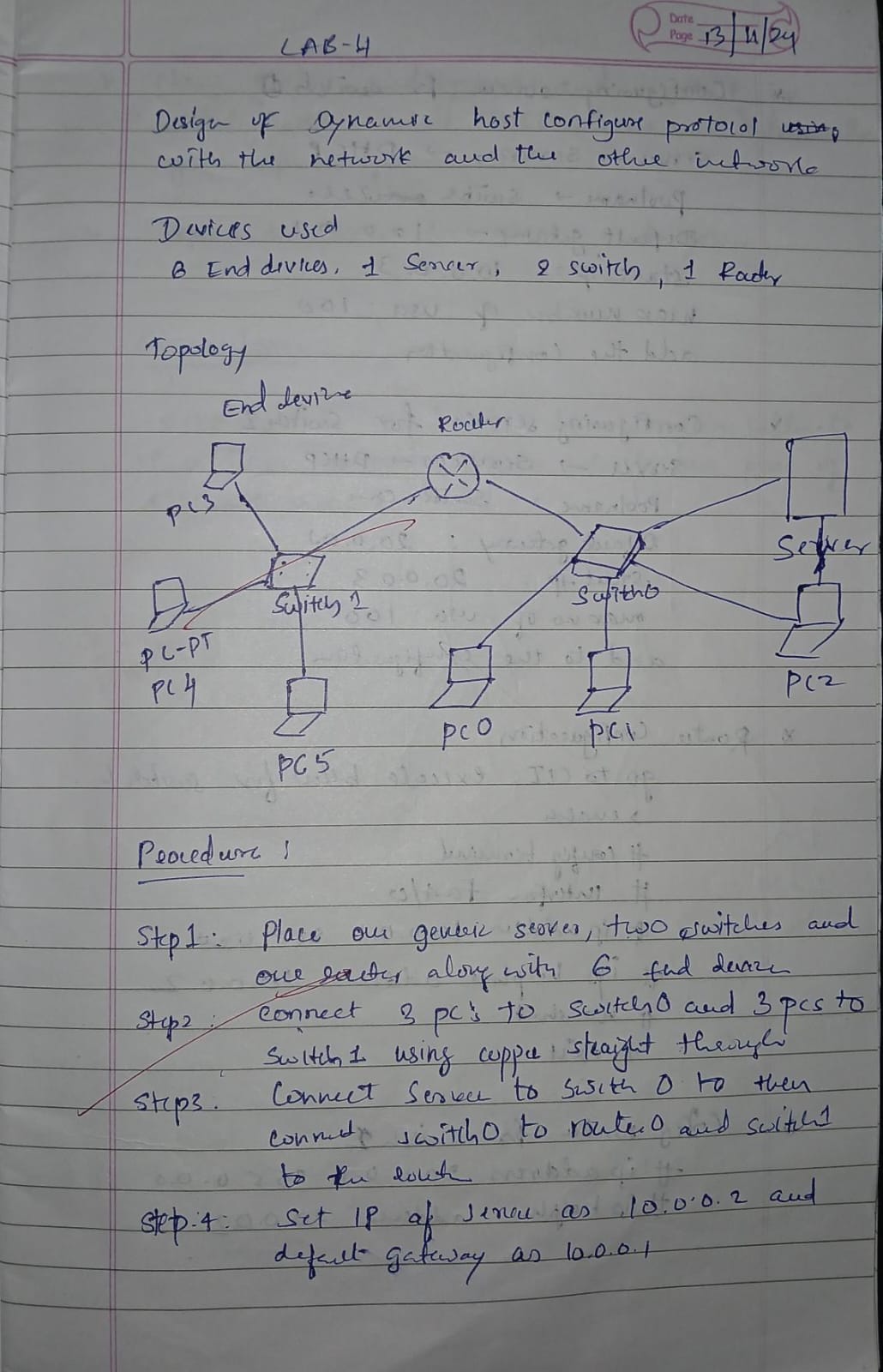
**Screen Shots:**

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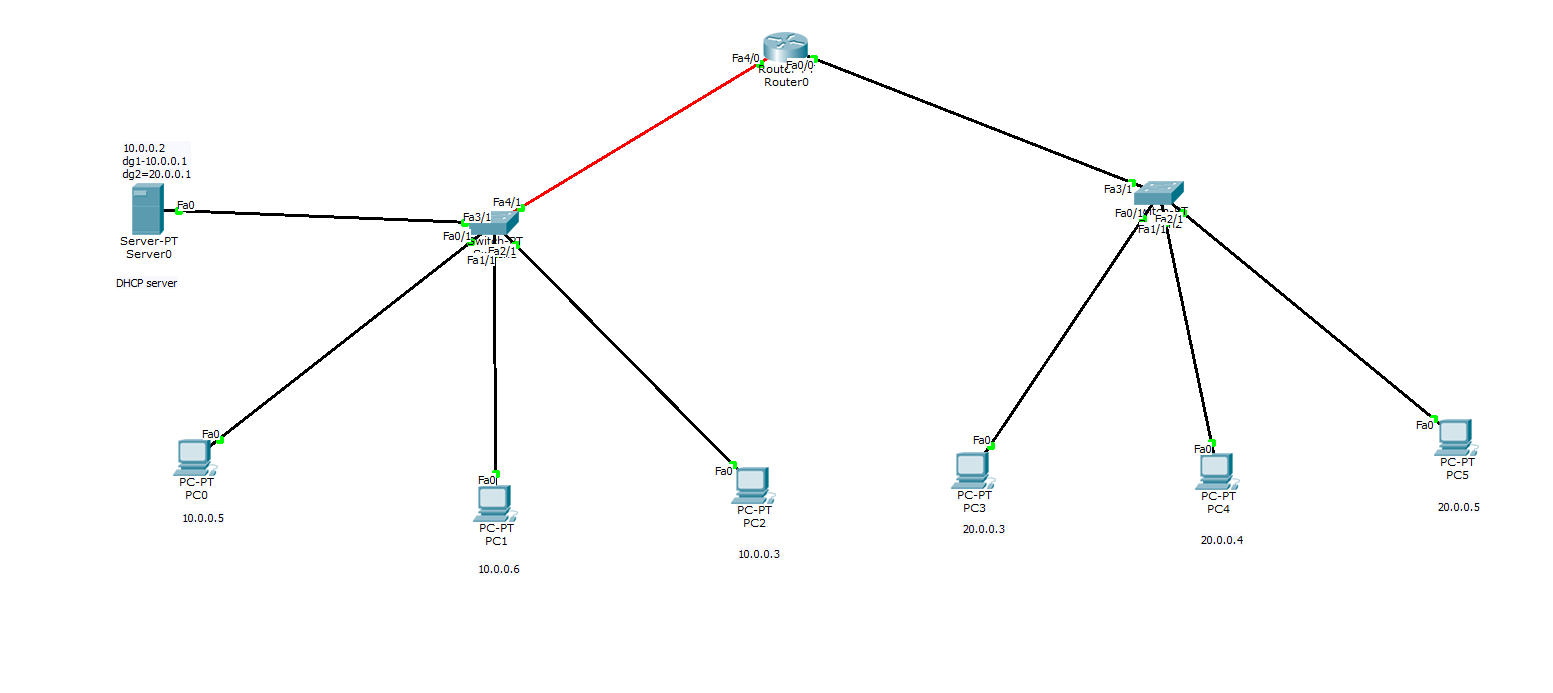
**Program 5**

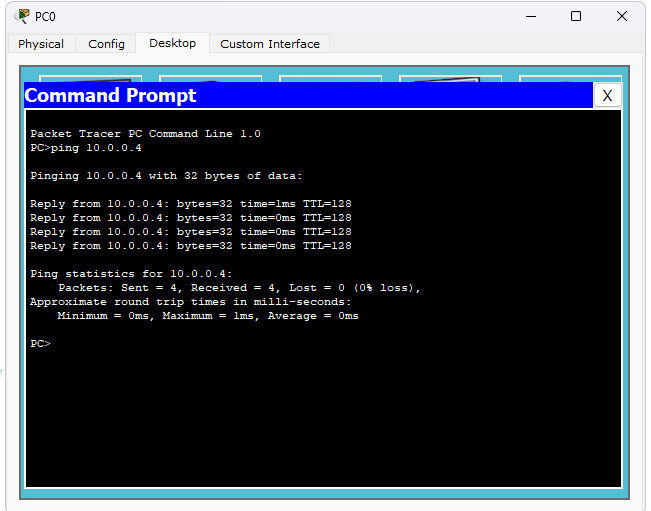
**Aim:** Configure DHCP within a LAN and outside LAN.

**Topology , Procedure and Observation:** 

**Screen Shots:**

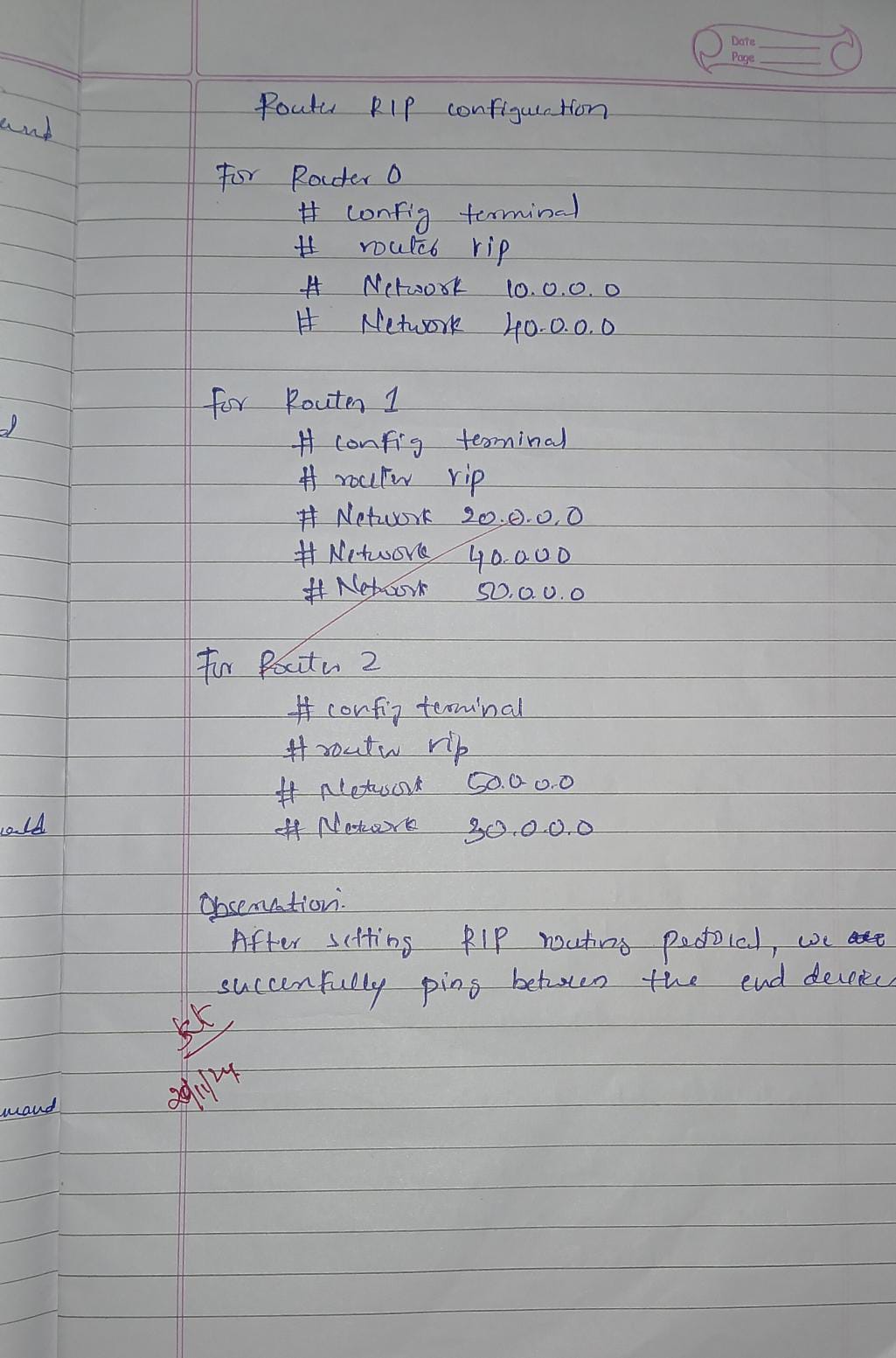
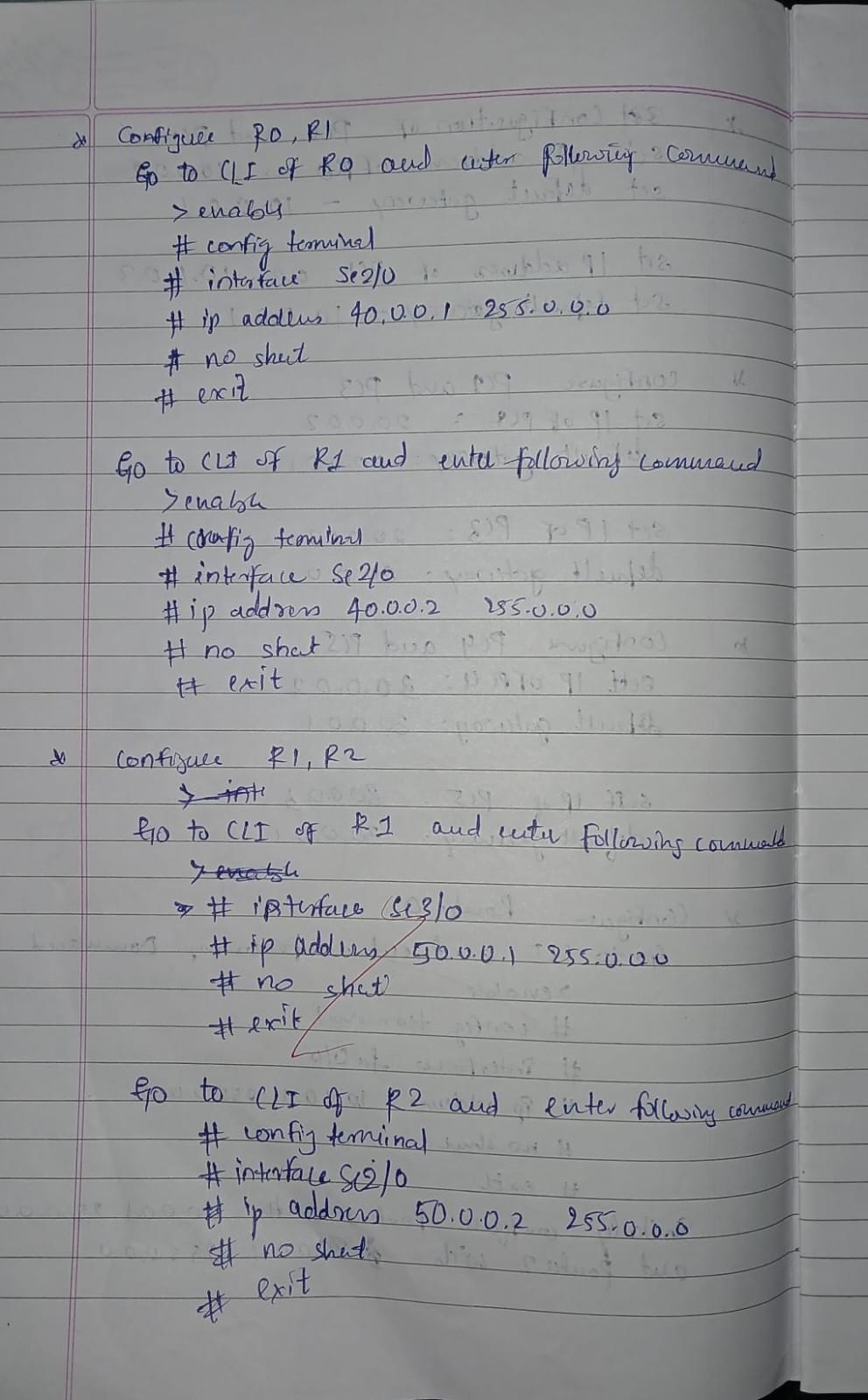
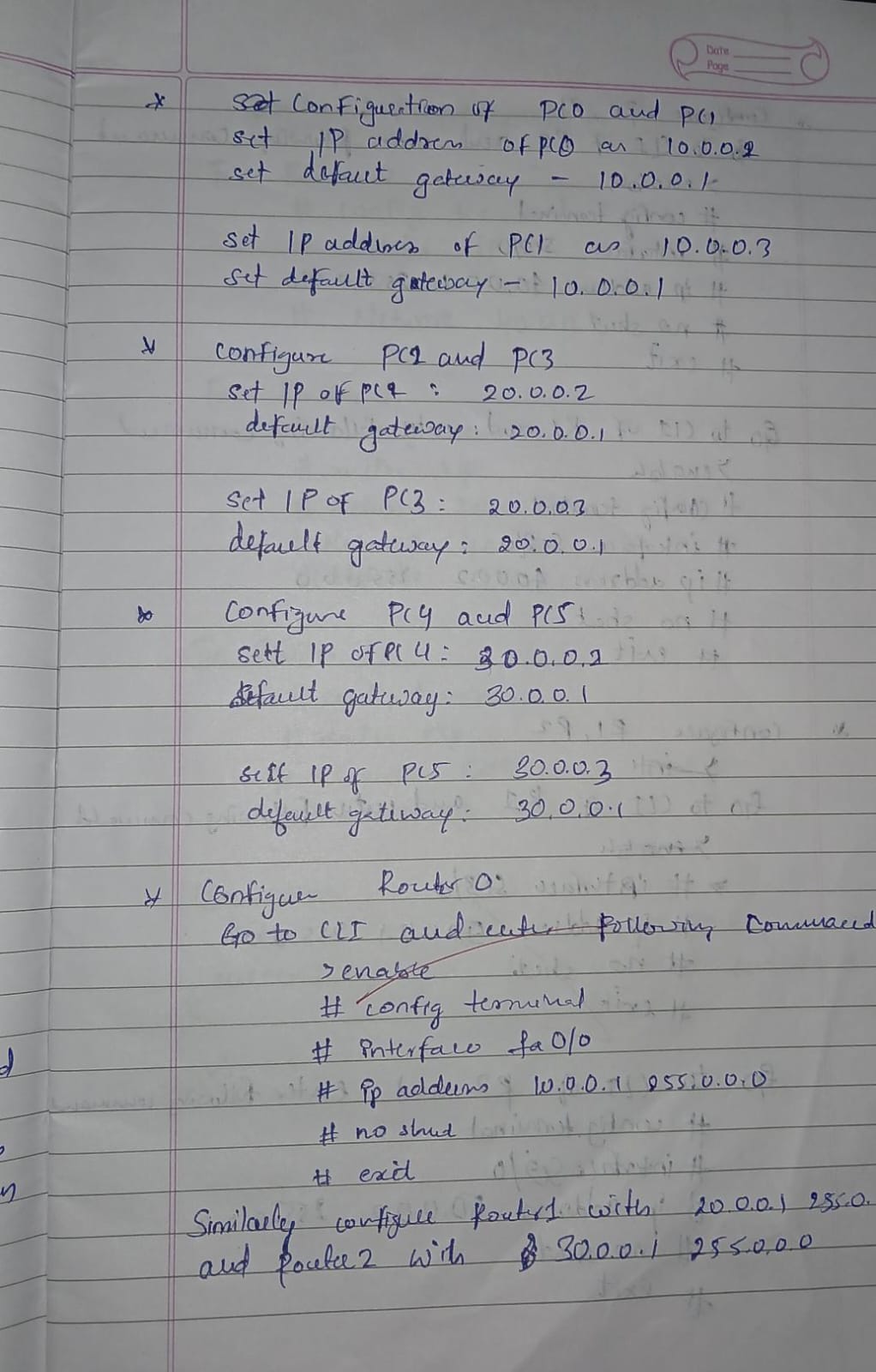
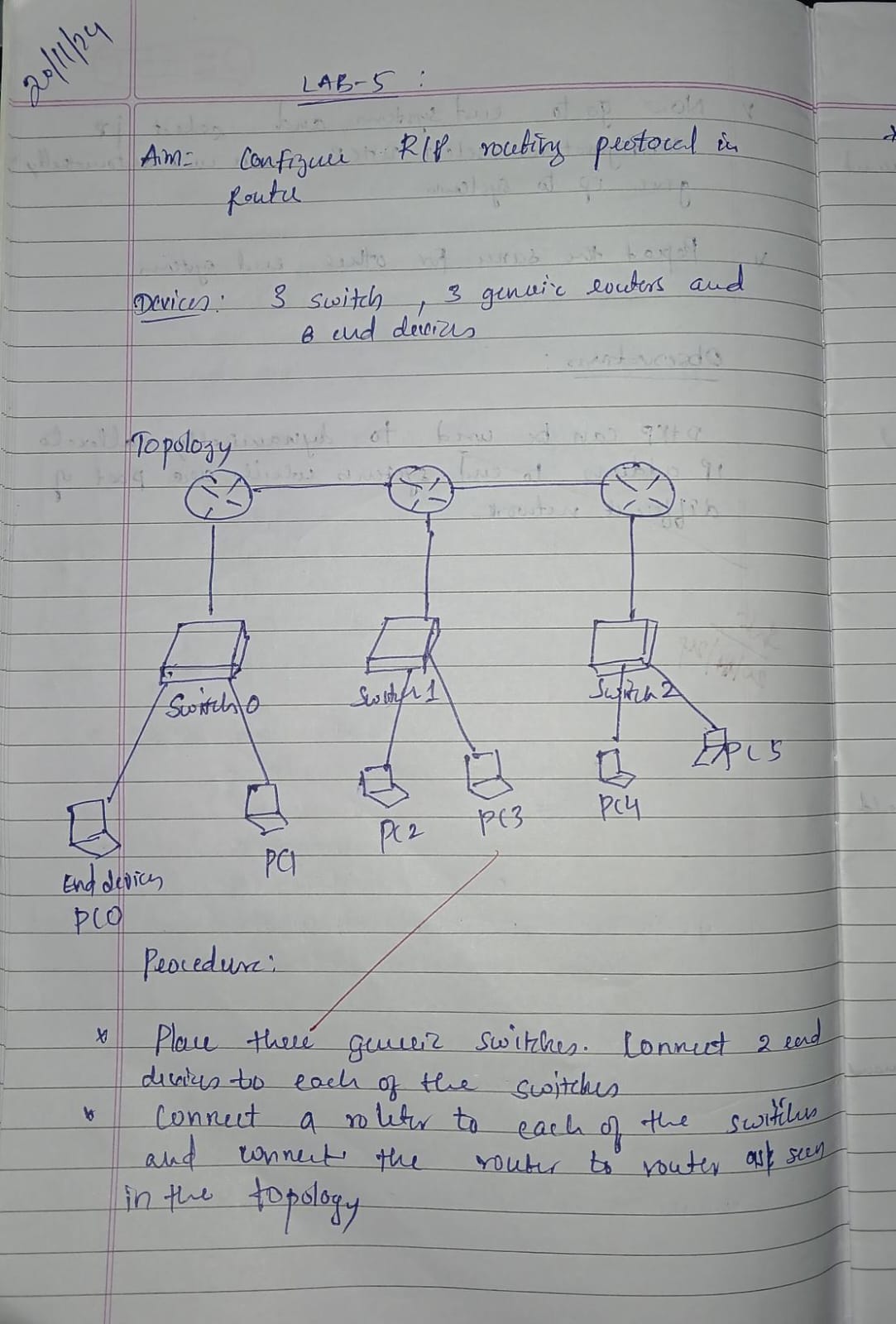
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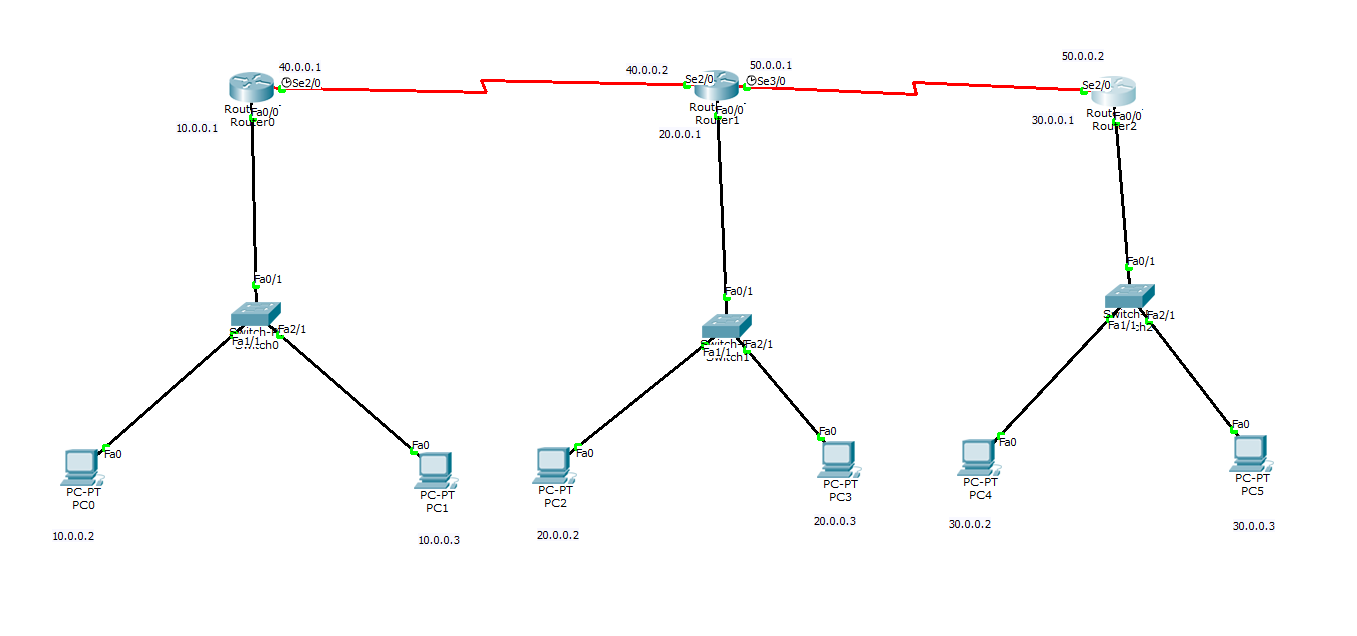
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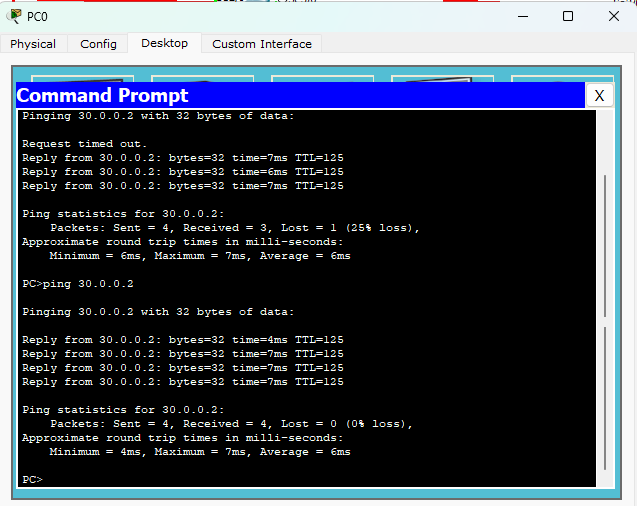
**Program 6**

**Aim:**Configure RIP routing Protocol in Routers .

**Topology , Procedure and Observation:** 

**Screen Shots:**

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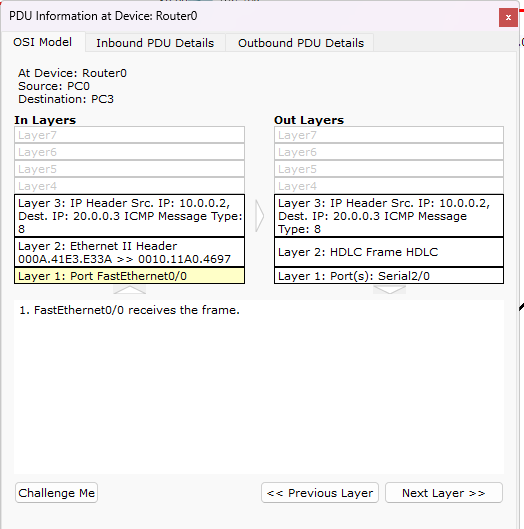
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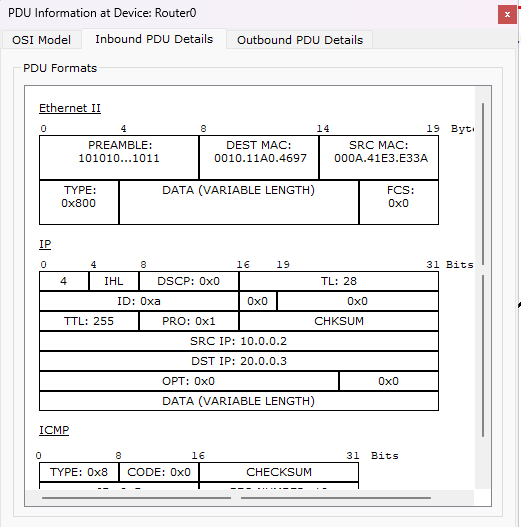
**Program 7**

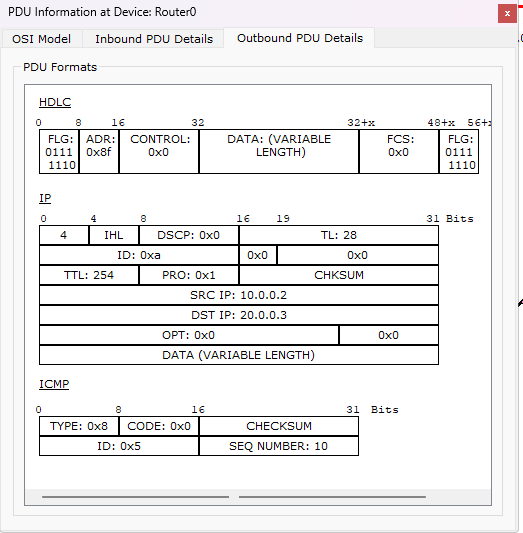
**Aim:**Demonstrate the TTL/ Life of a Packet .

**Topology , Procedure and Observation:**

**Screen Shots:**

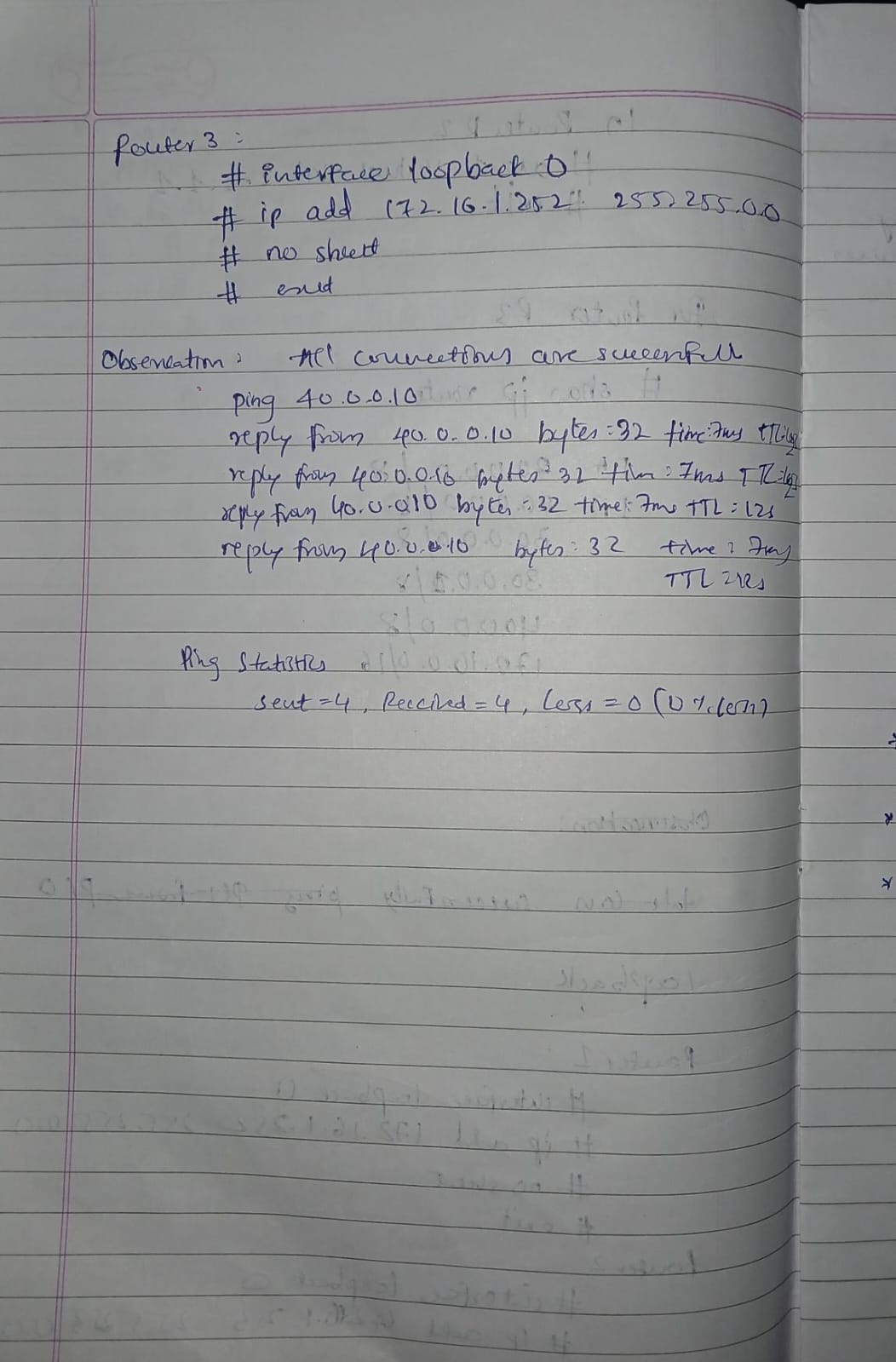
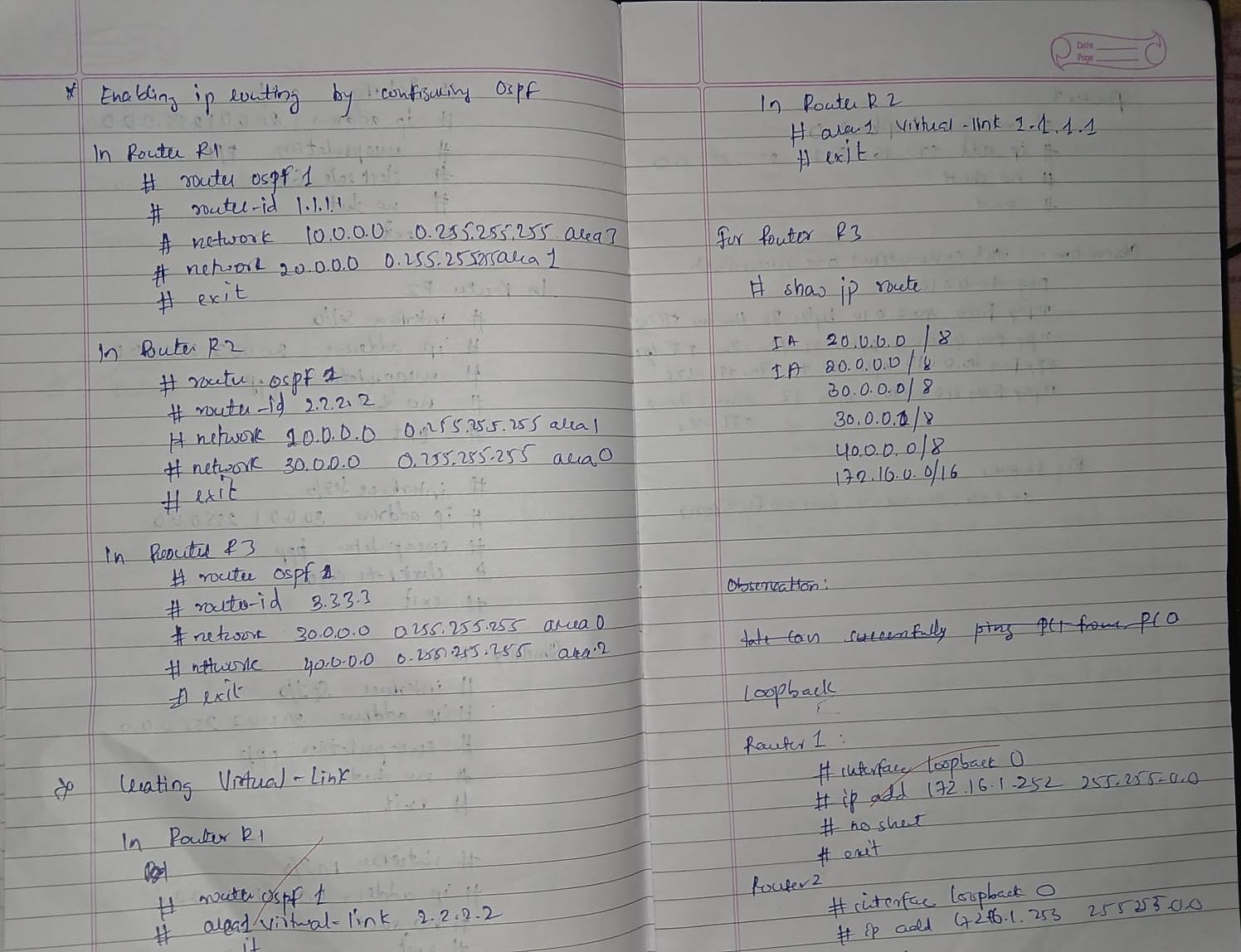
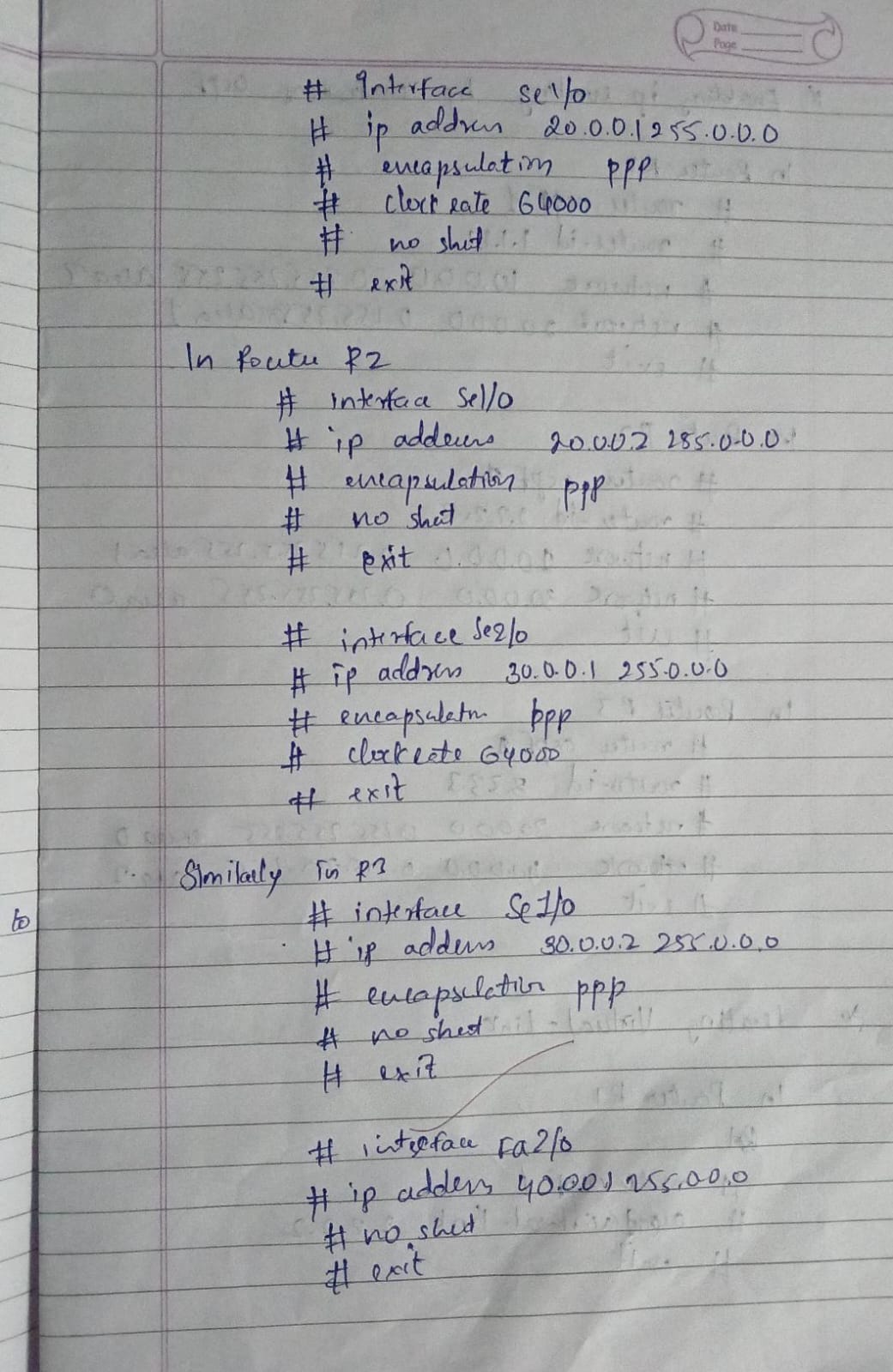
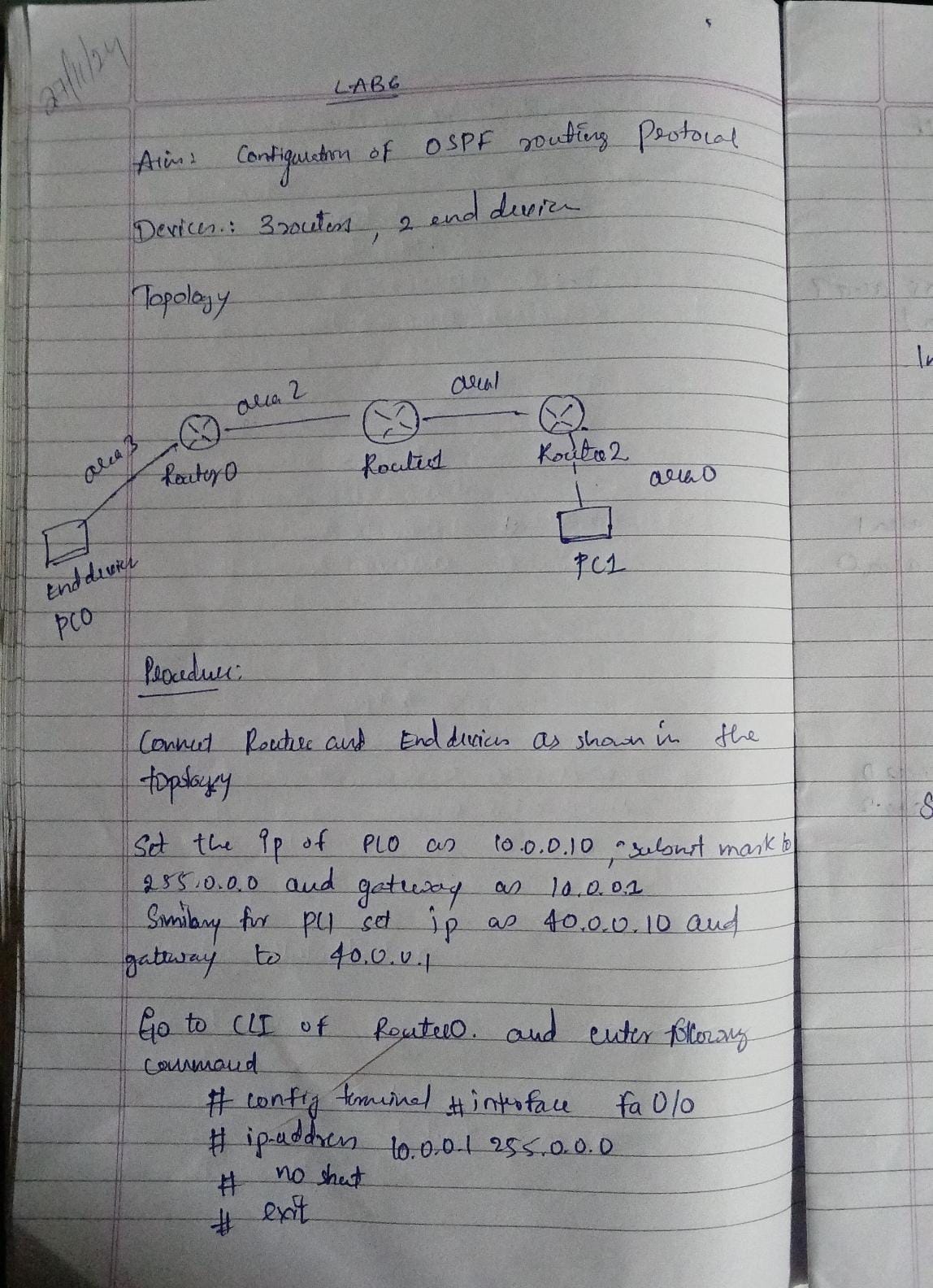
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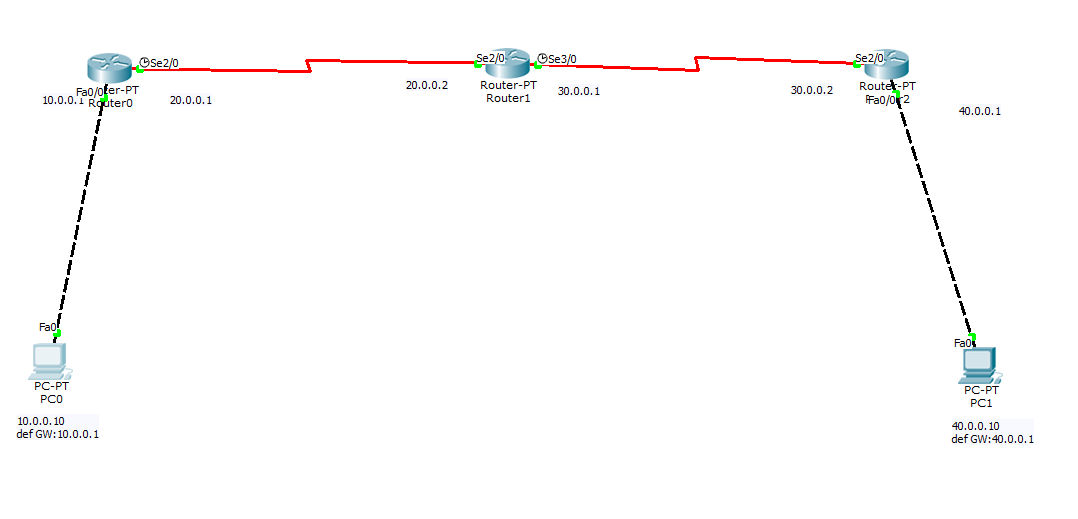
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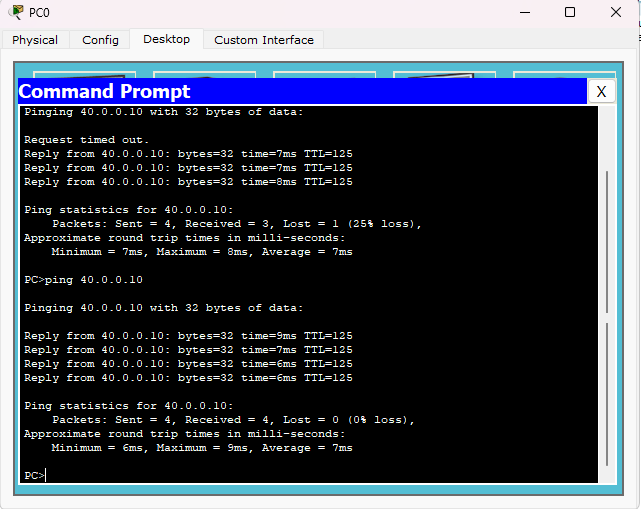
**Program 8**

**Aim:**Configure OSPF routing protocol .

**Topology , Procedure and Observation:** 

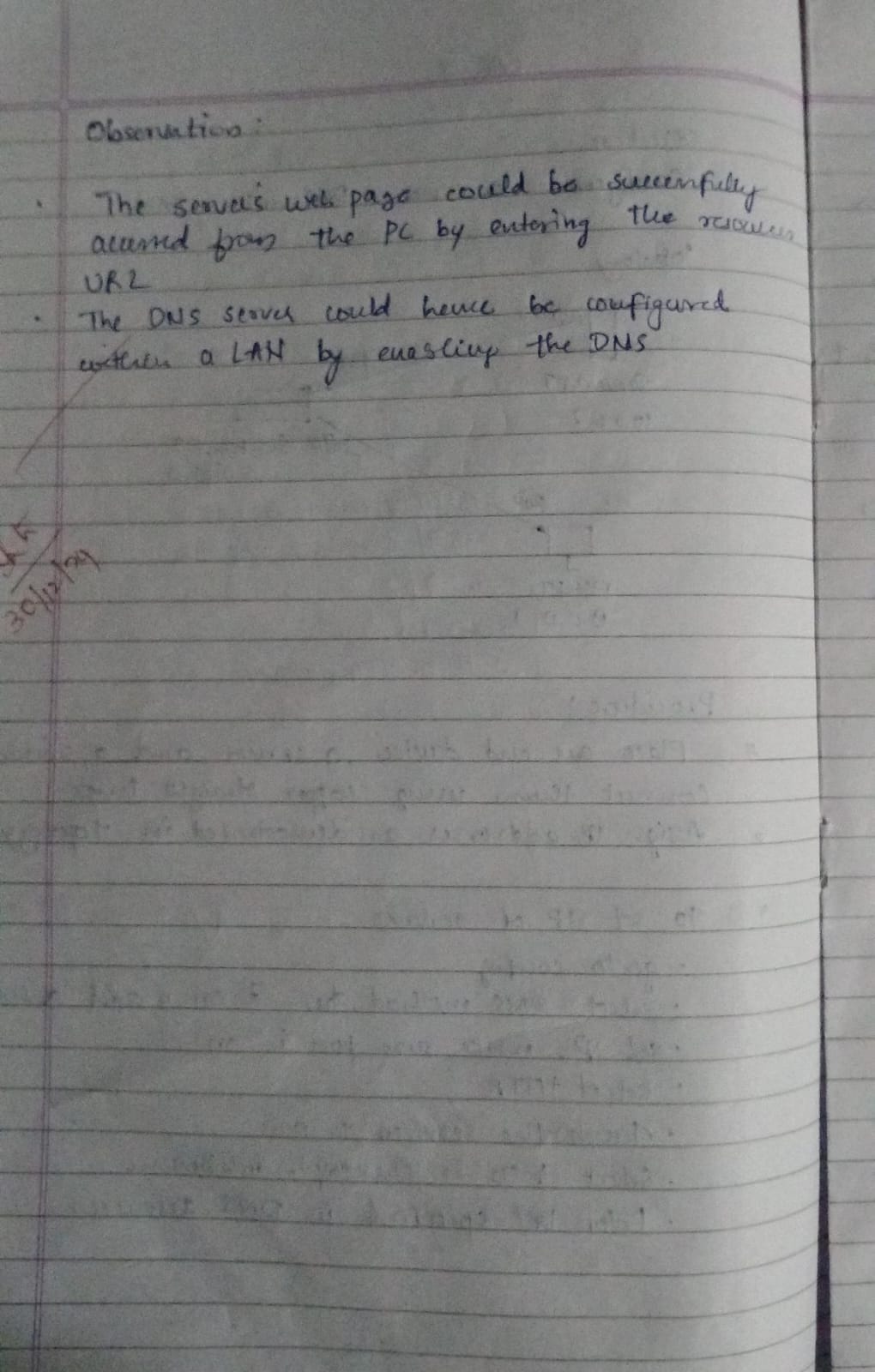
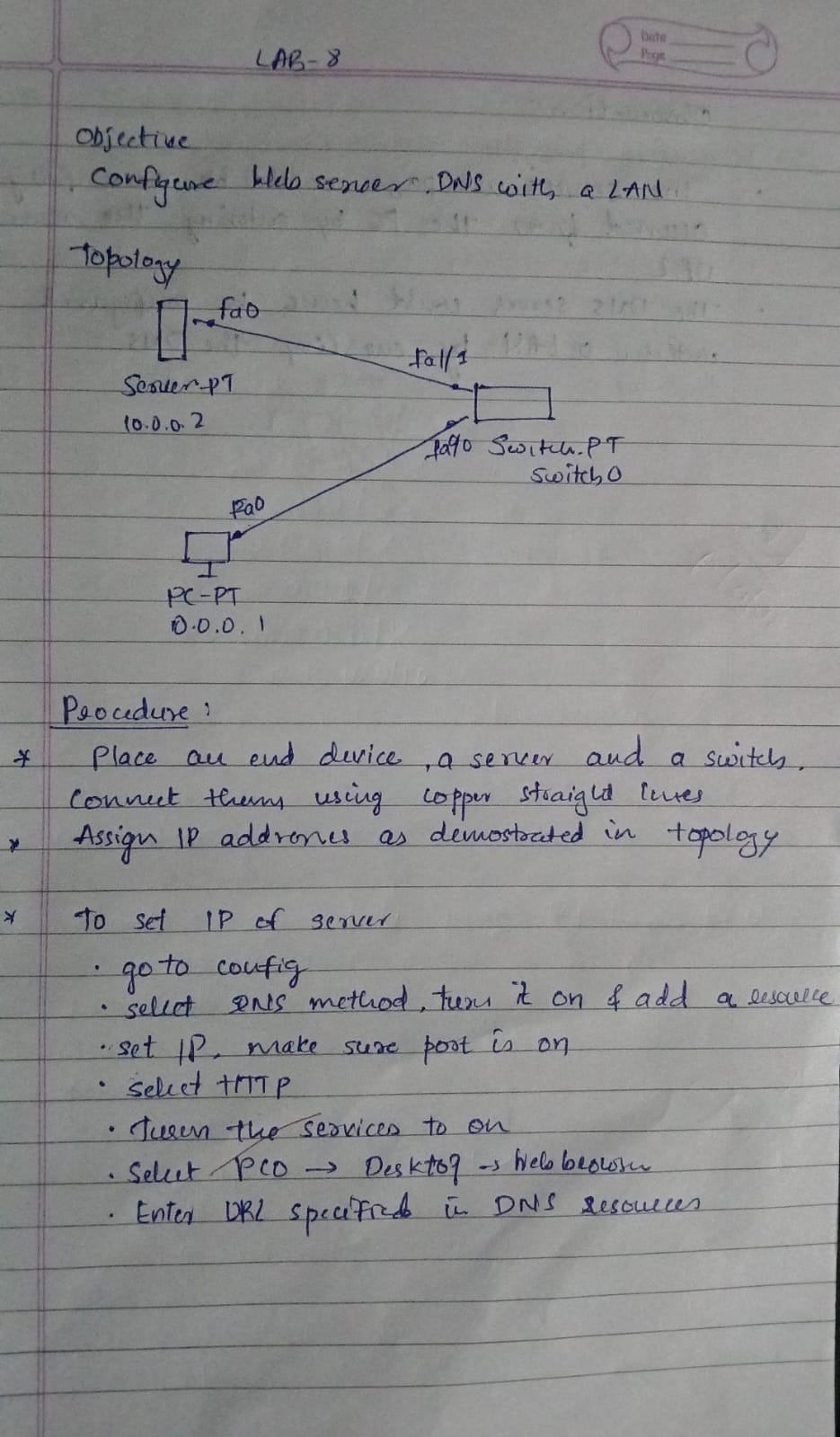
**Screen Shots:**

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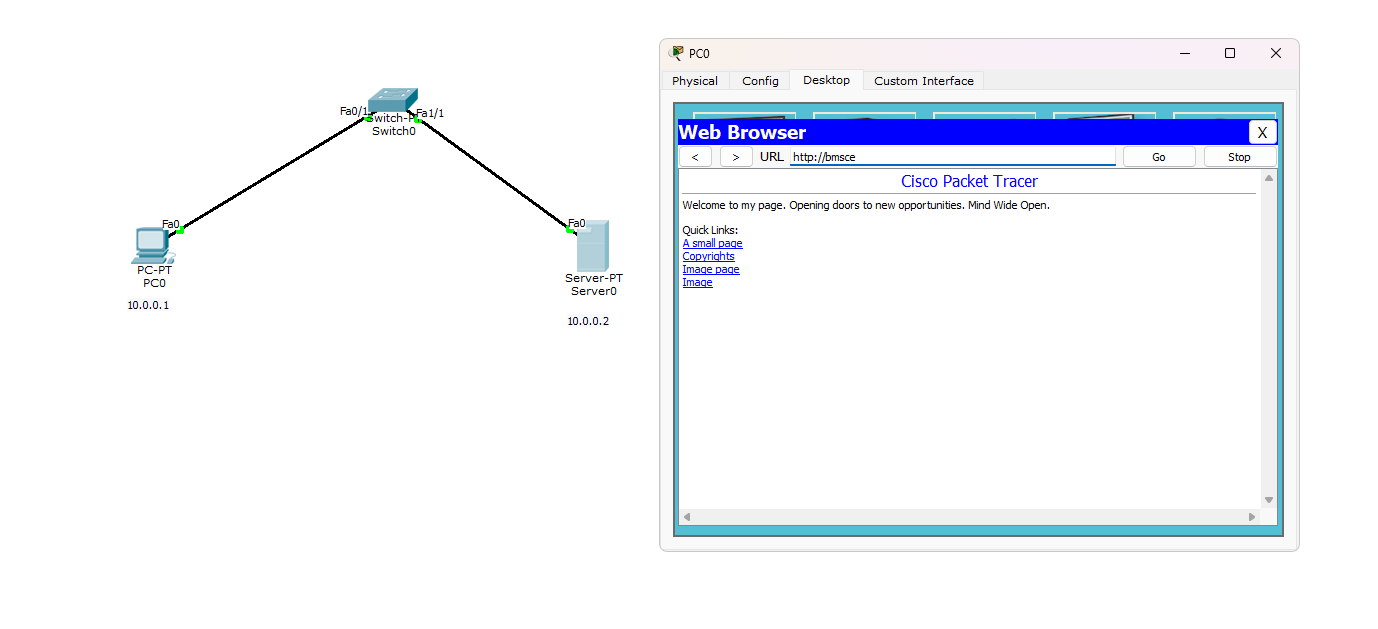
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**Program 9**

**Aim:**Configure Web Server, DNS within a LAN.

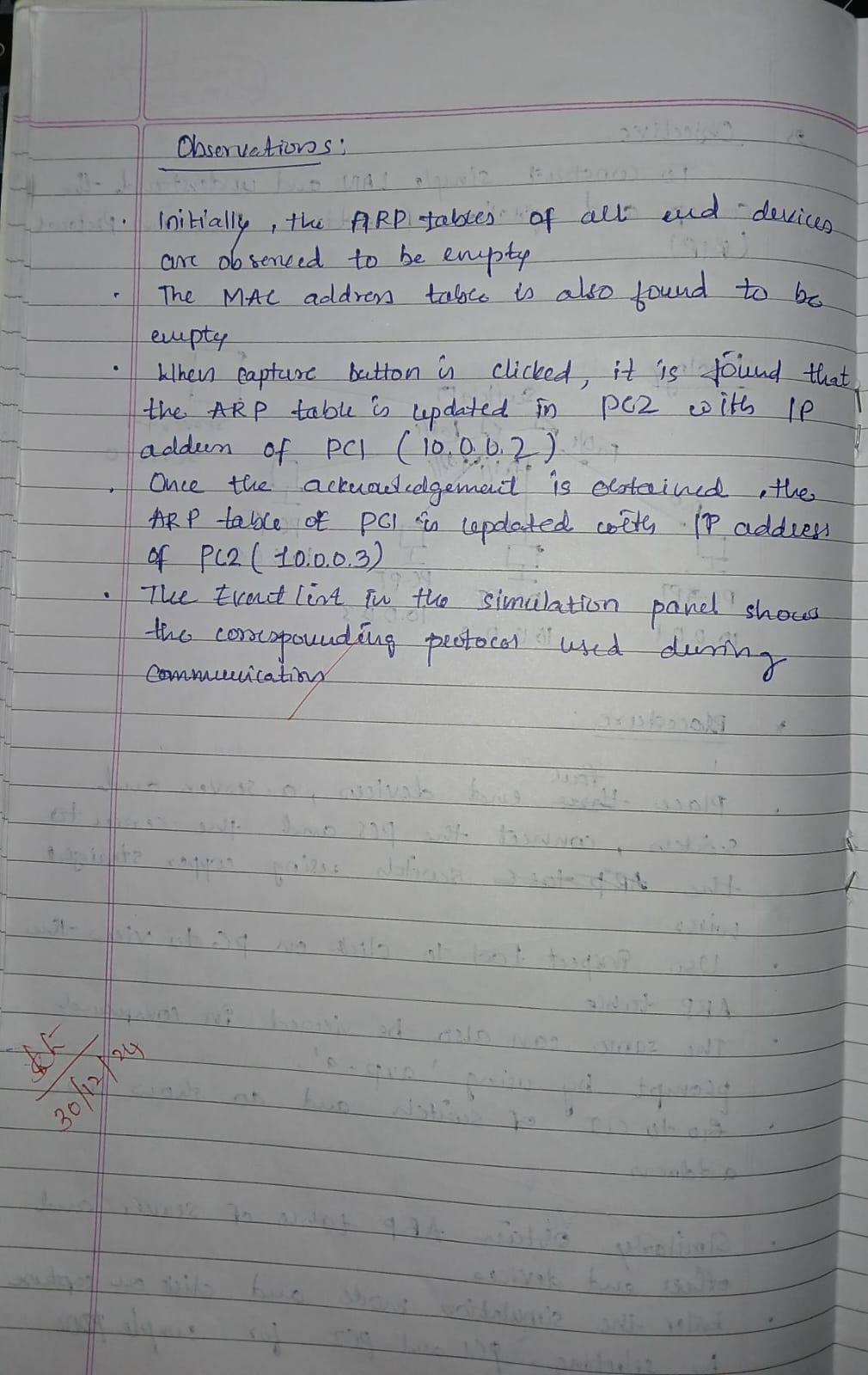
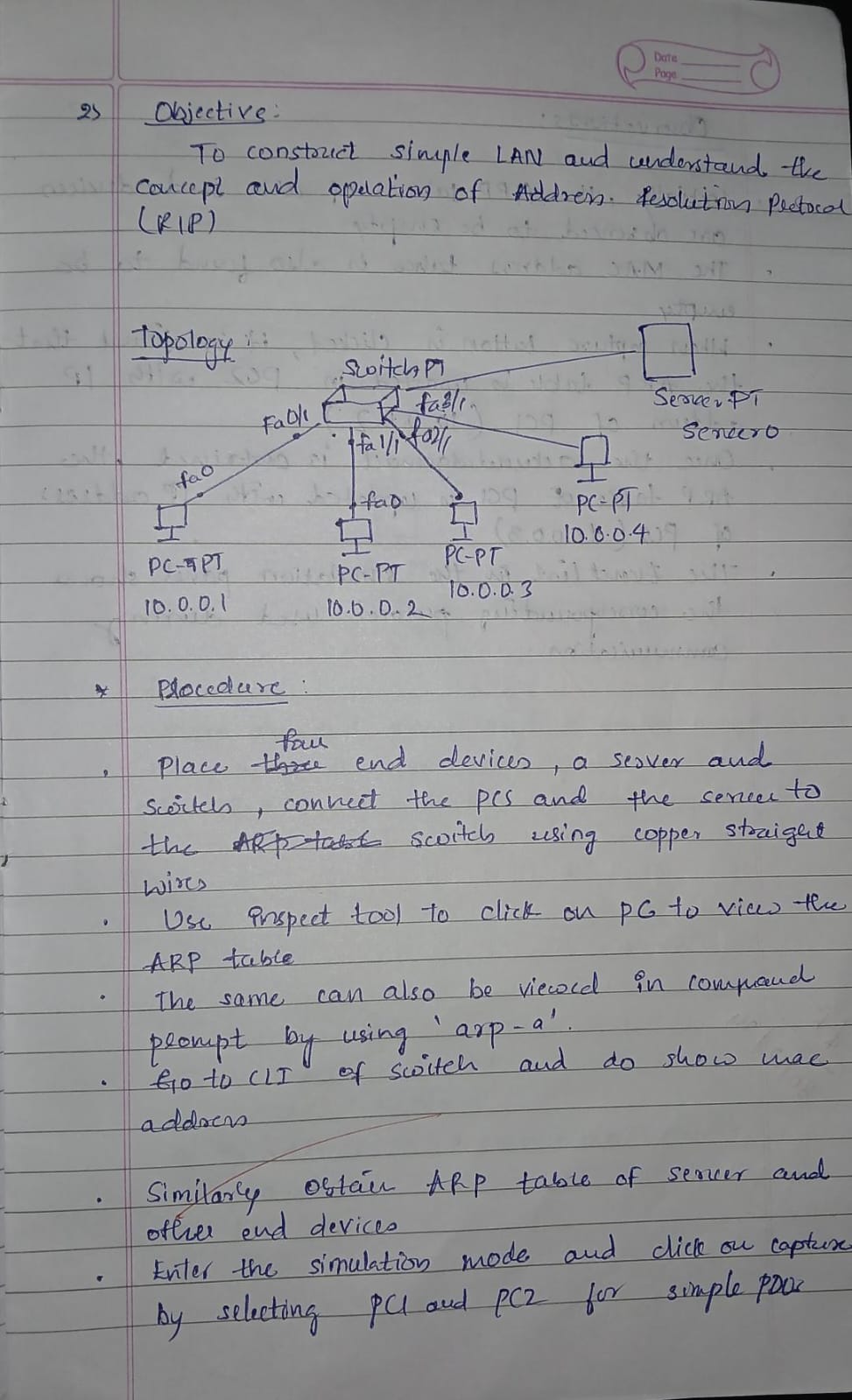
**Topology , Procedure and Observation:** 

**Screen Shots:**

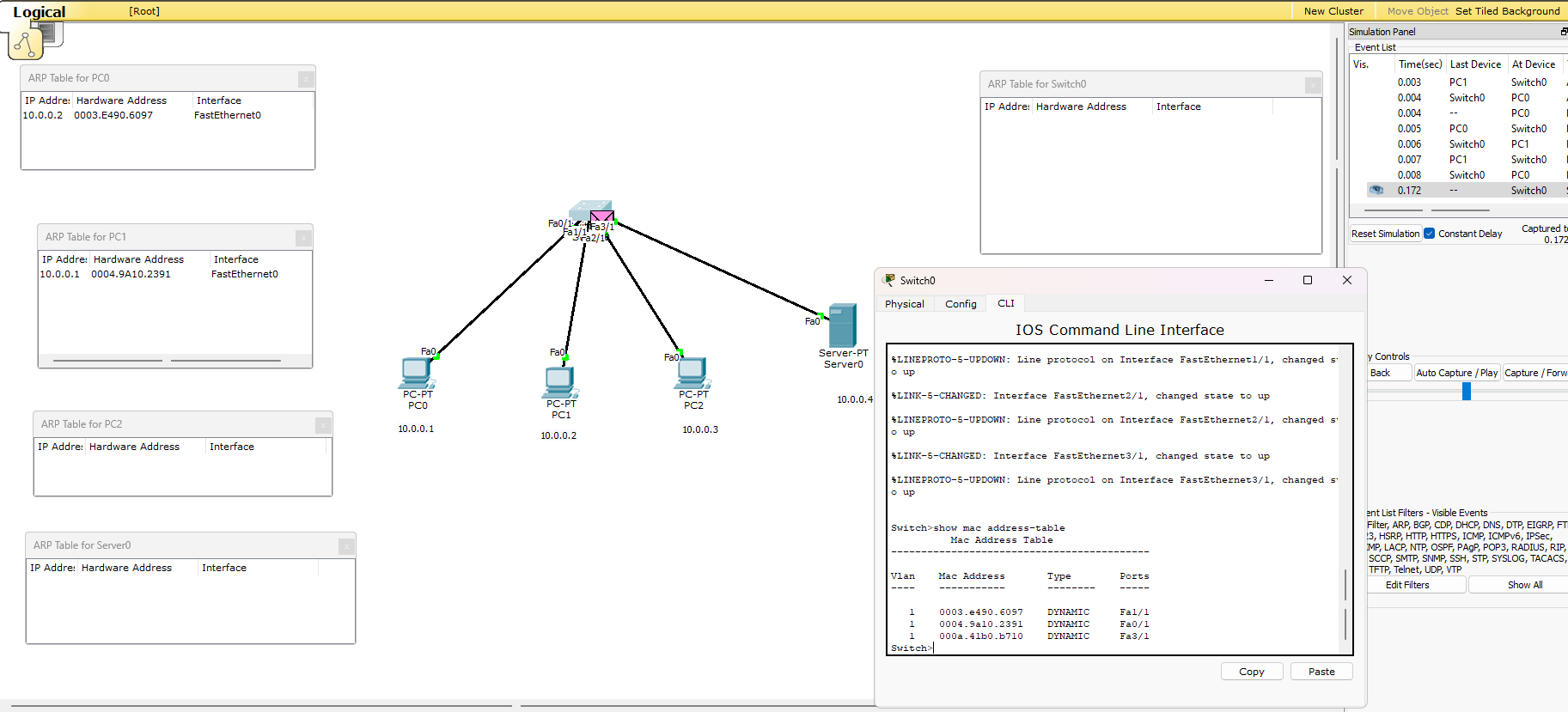
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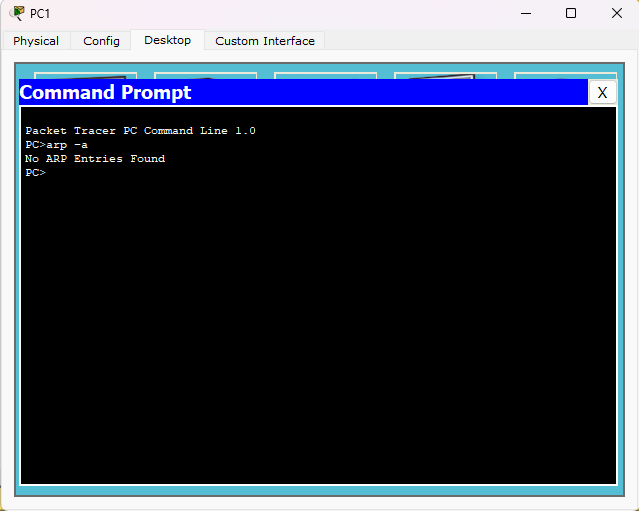
**Program 10**

**Aim:**To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)

**Topology , Procedure and Observation:** 

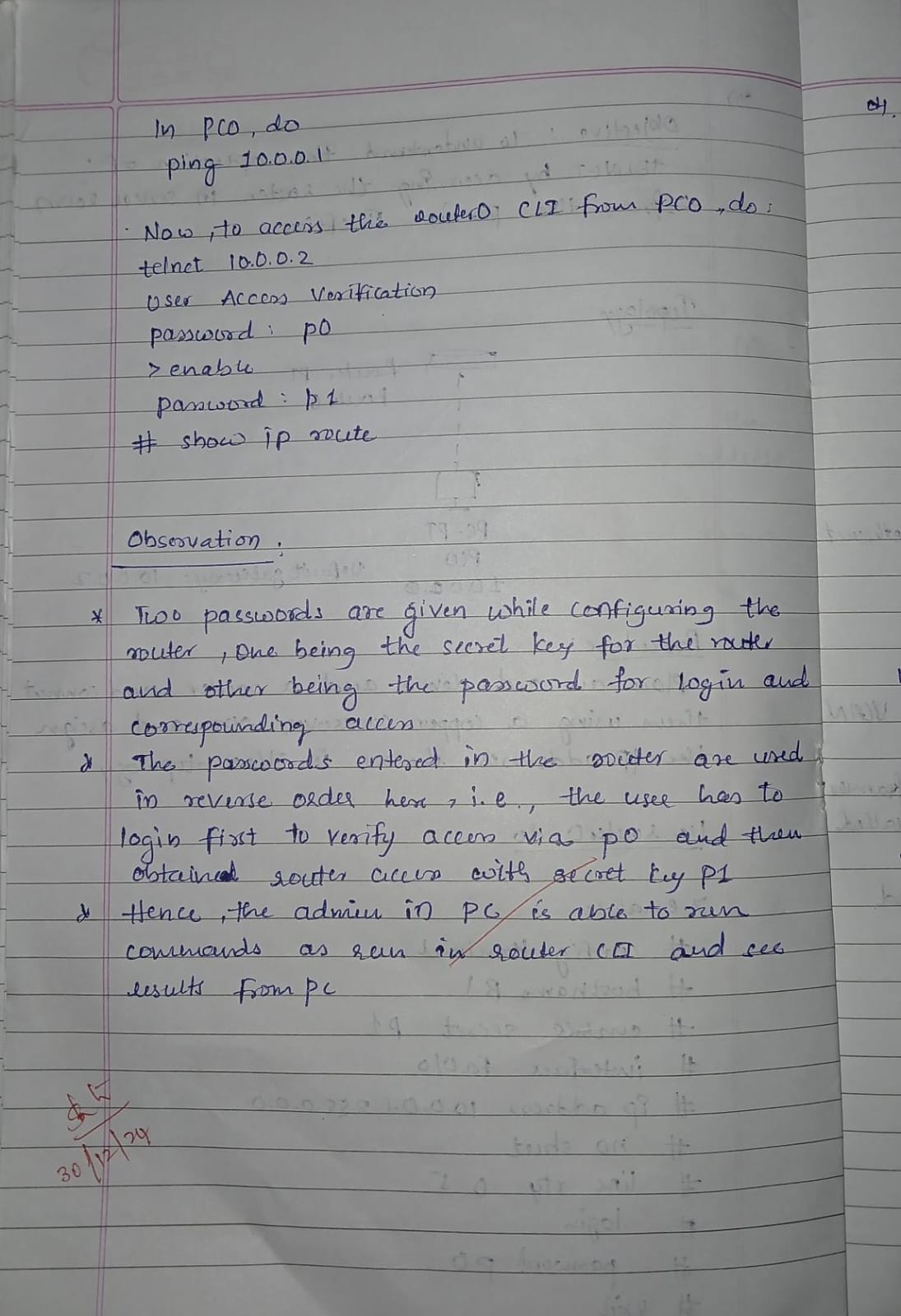
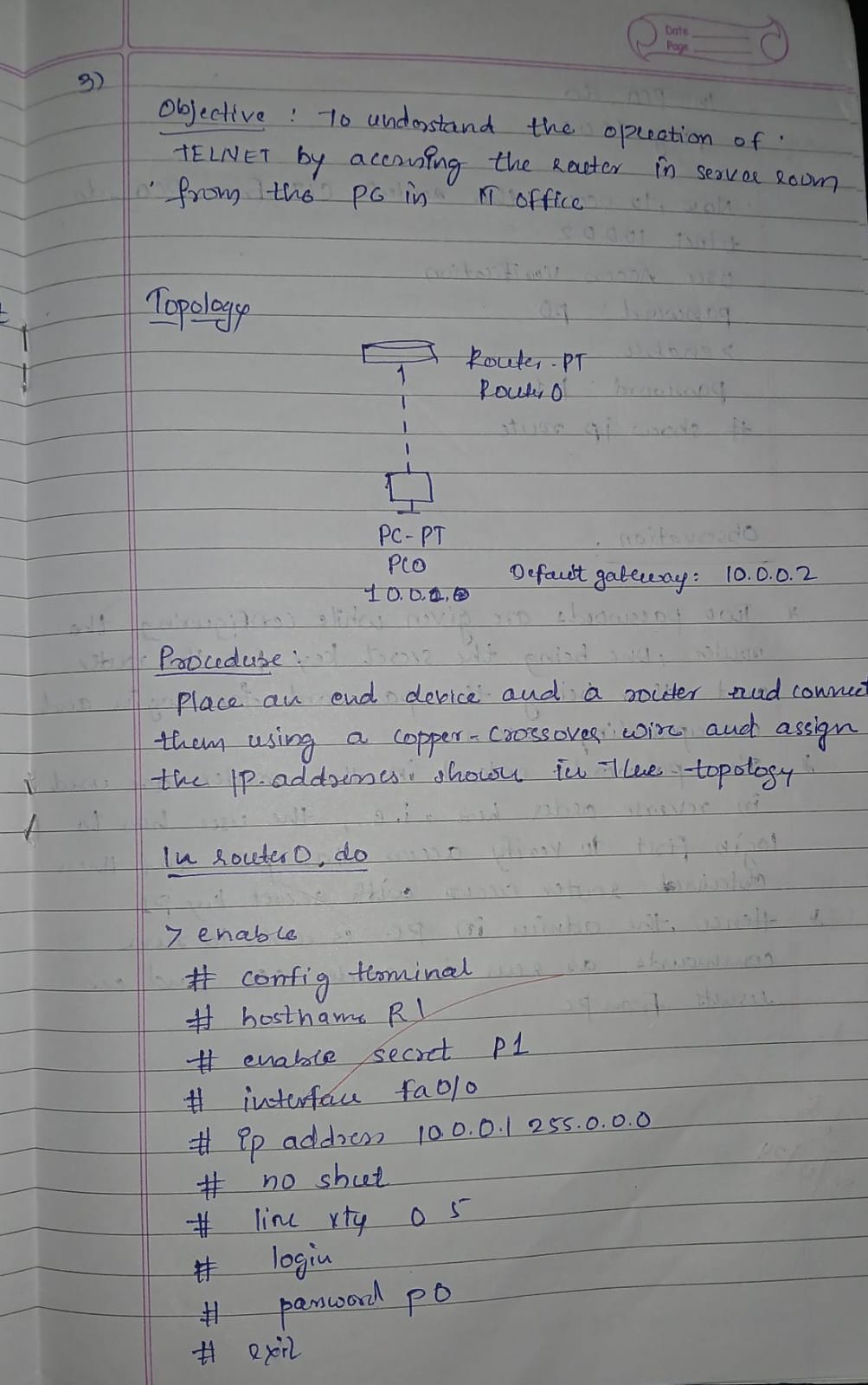
**Screen Shots:**

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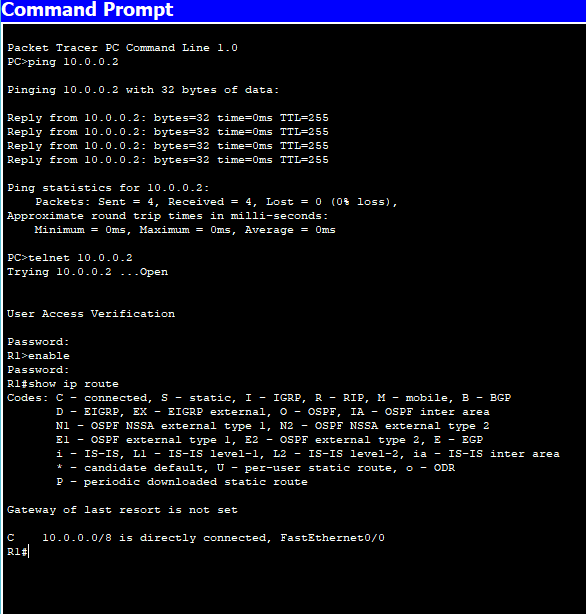
**Program 11**

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

**Topology , Procedure and Observation:** 

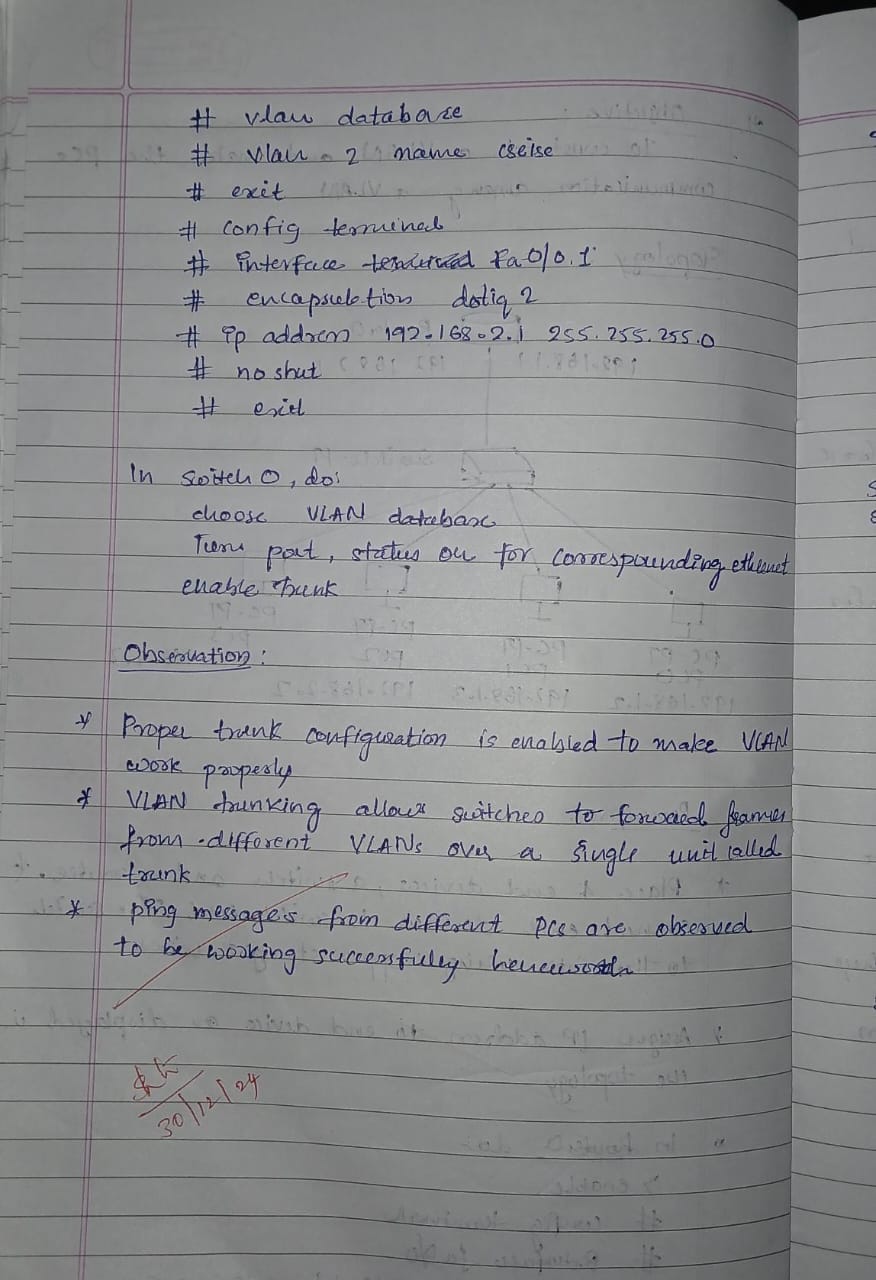
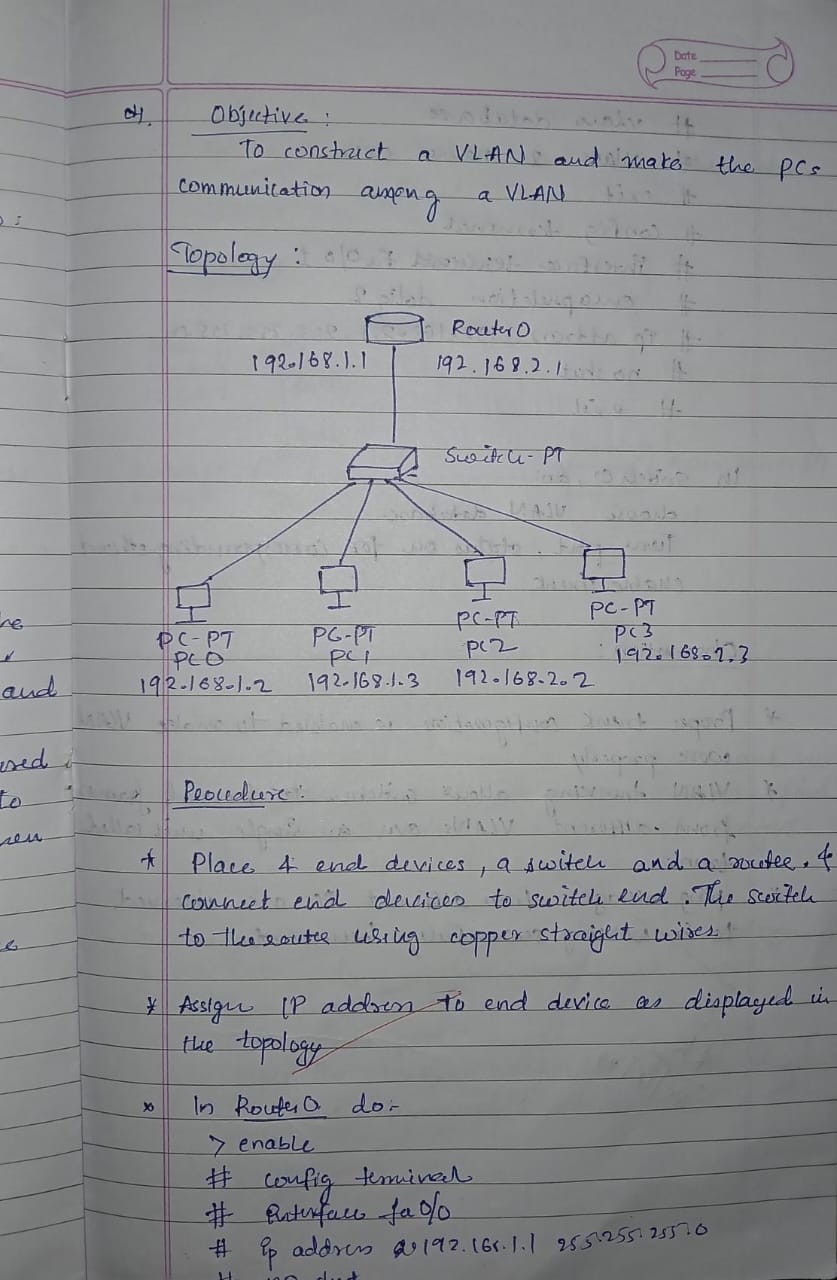
**Screen Shots:**

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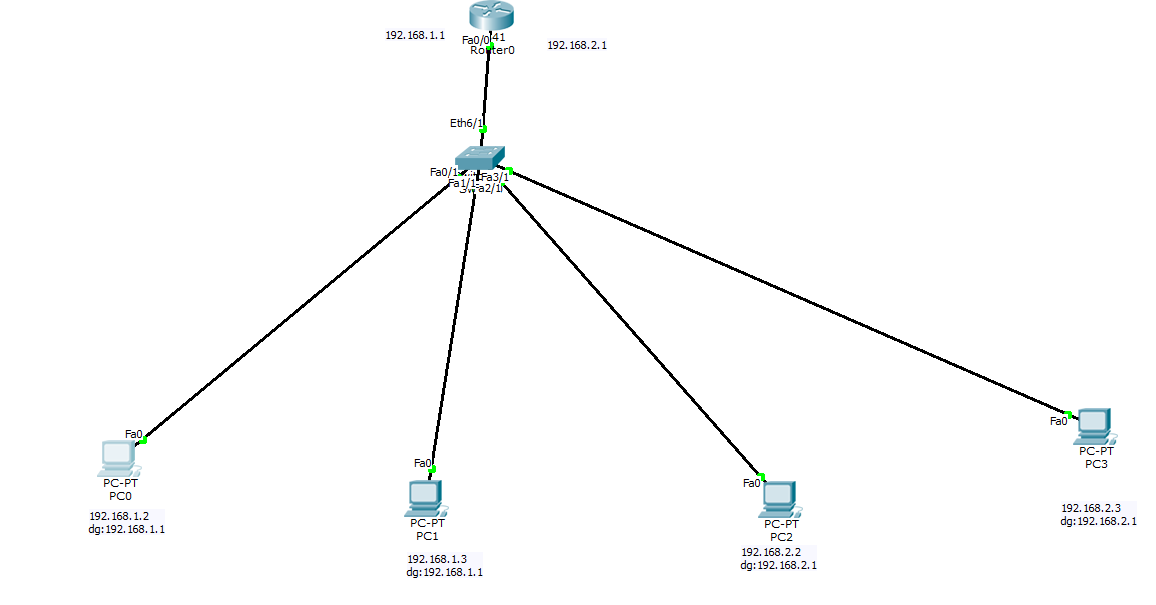
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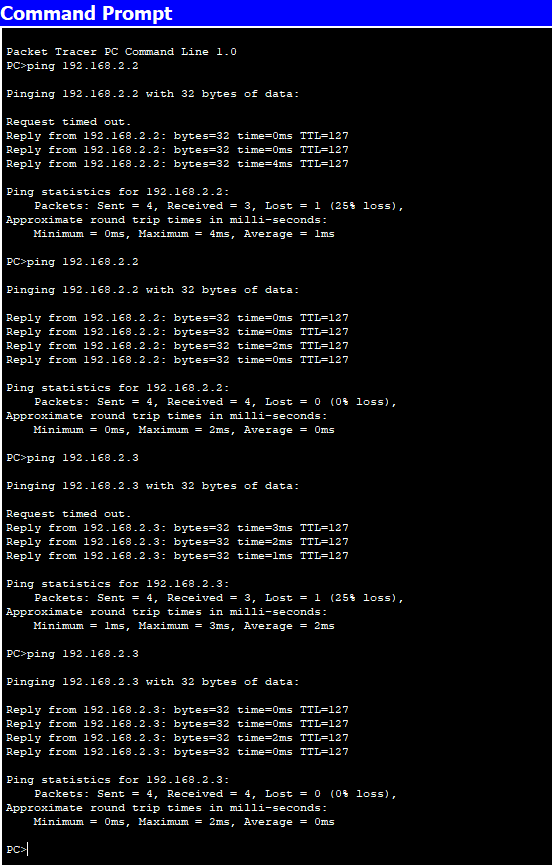
**Program 12**

**Aim:**To construct a VLAN and make the PC’s communicate among a VLAN .

**Topology , Procedure and Observation:** 

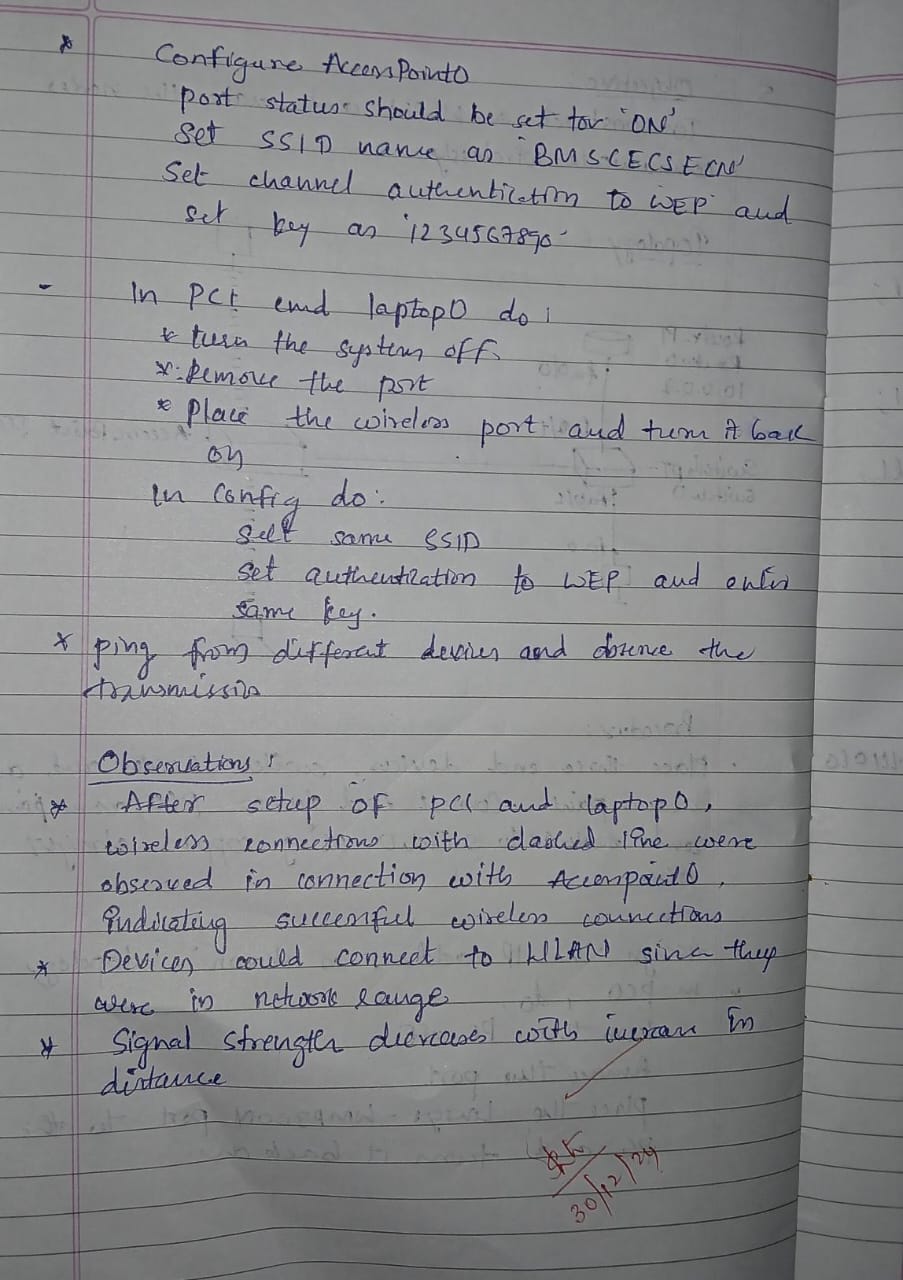
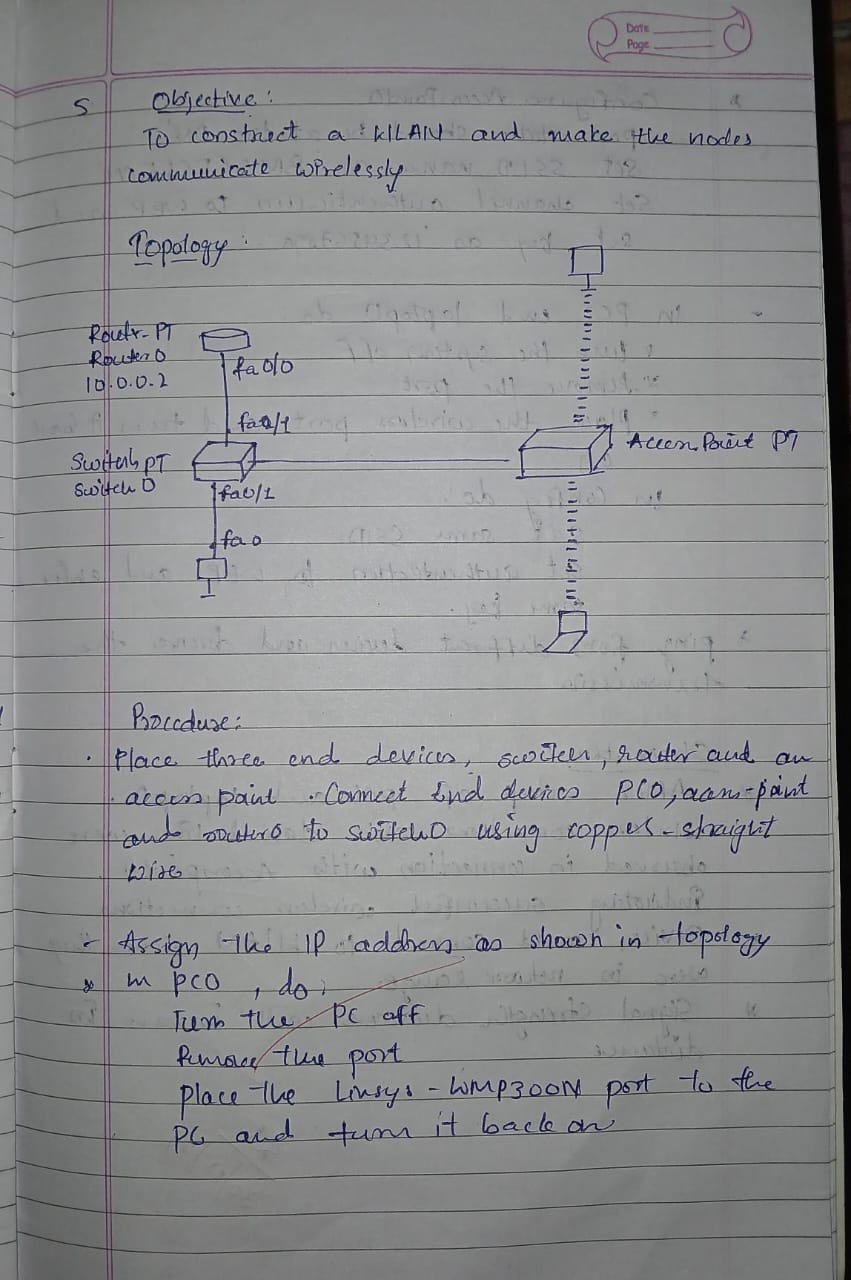
**Screen Shots:**

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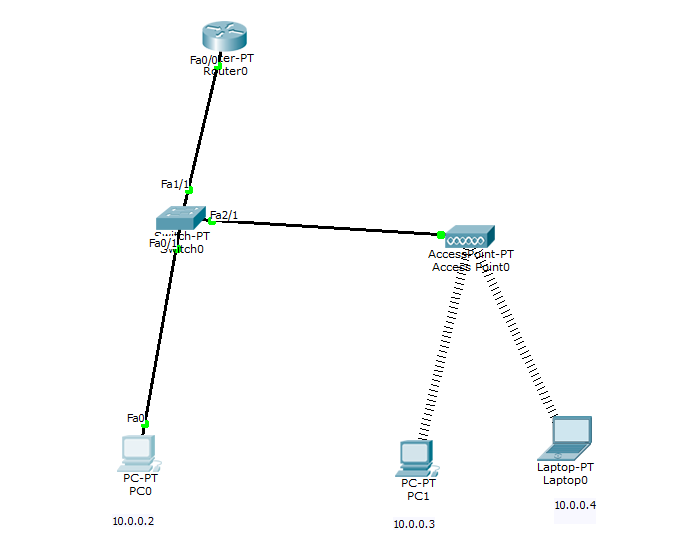
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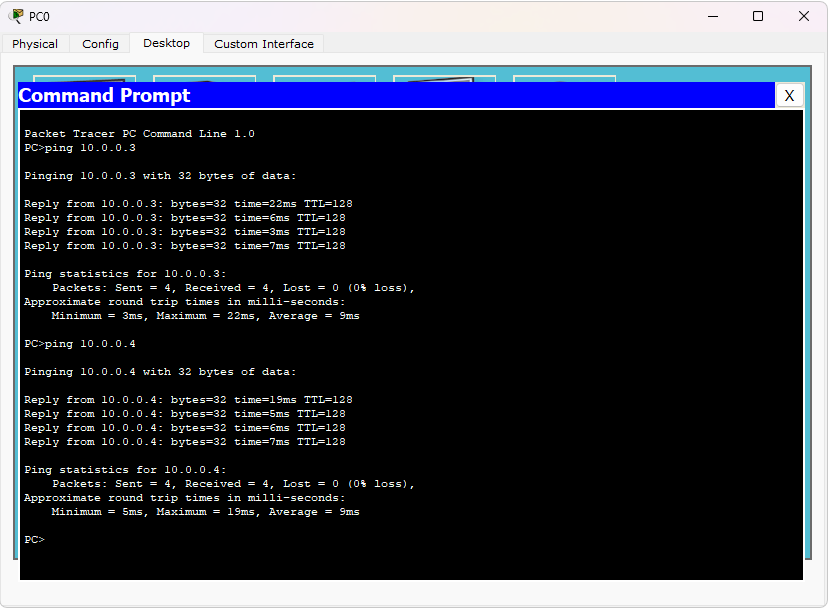
**Program 13**

**Aim:**To construct a WLAN and make the nodes communicate wirelessly.

**Topology , Procedure and Observation:** 

**Screen Shots:**

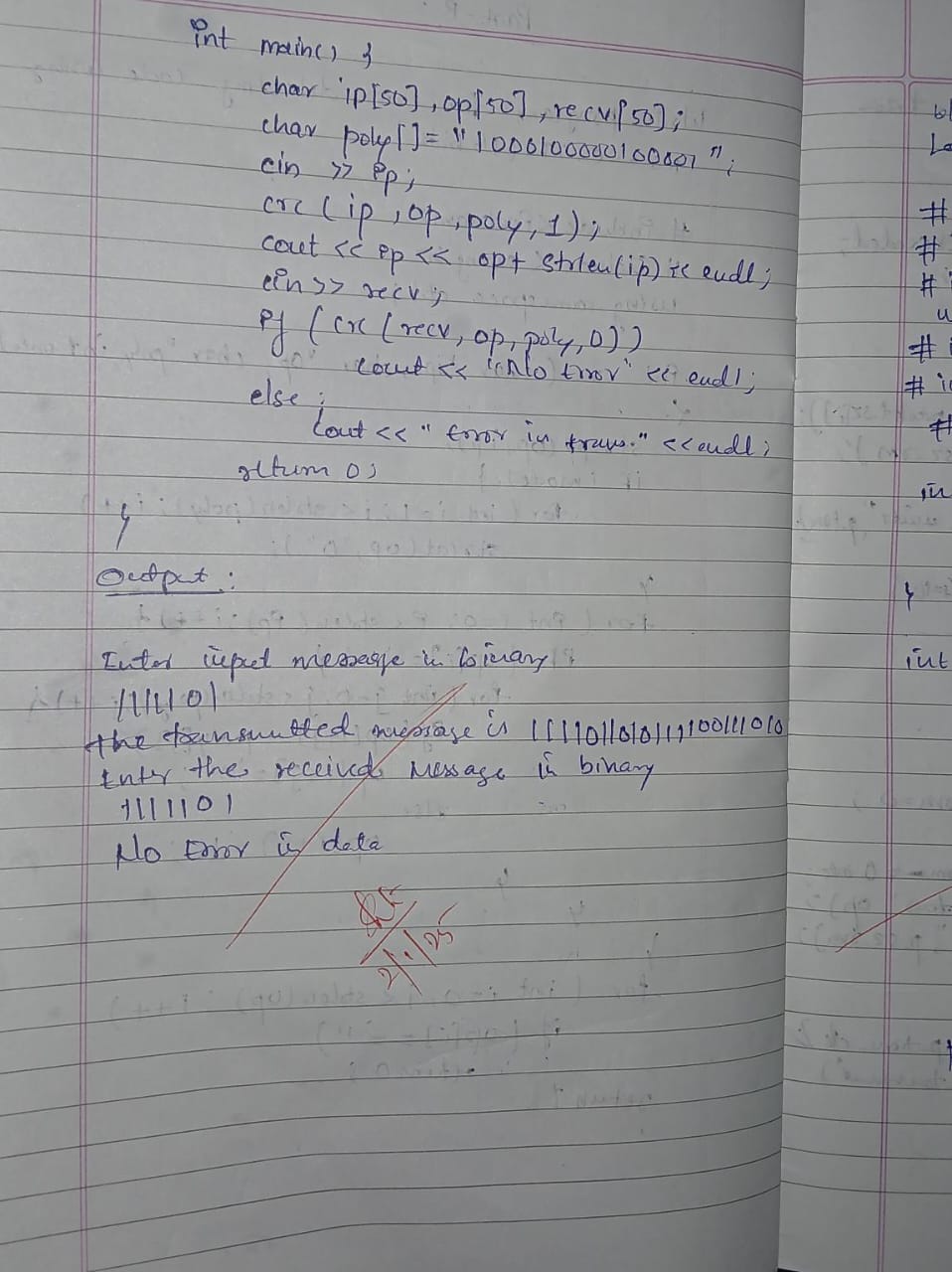
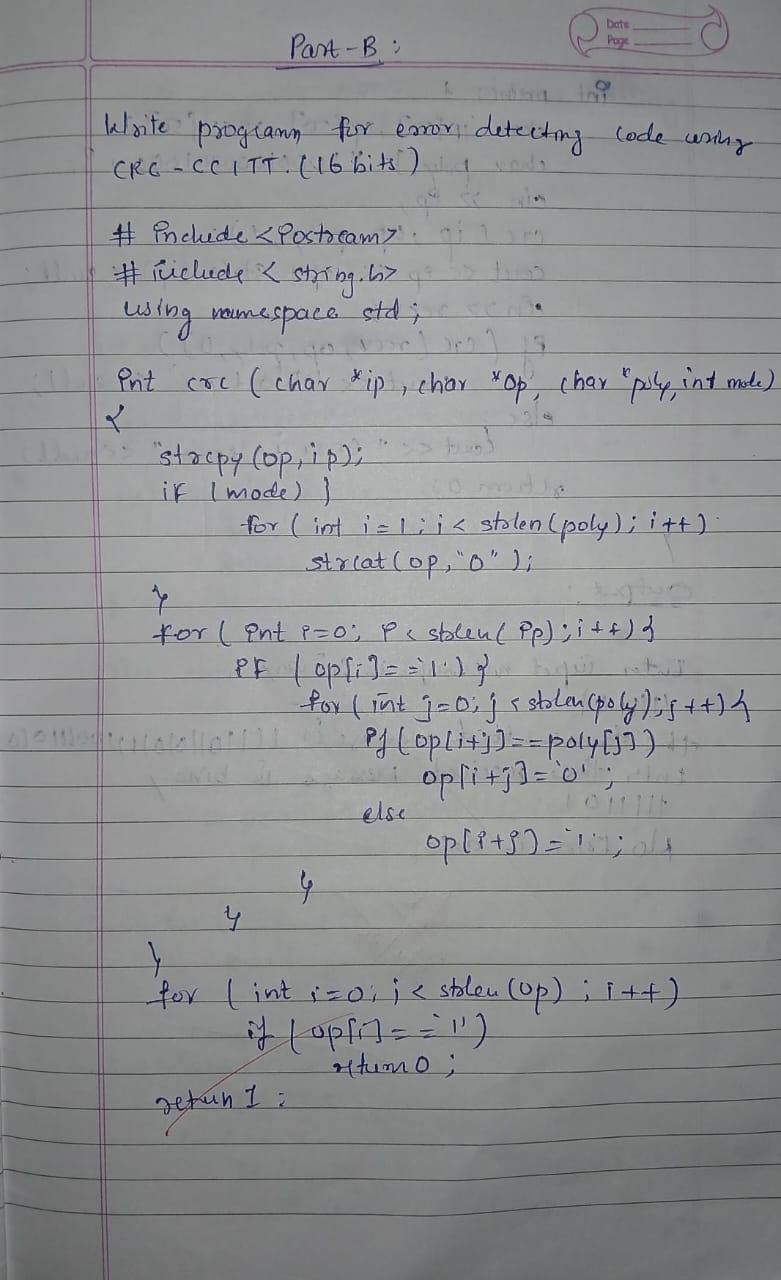
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**PART-B**

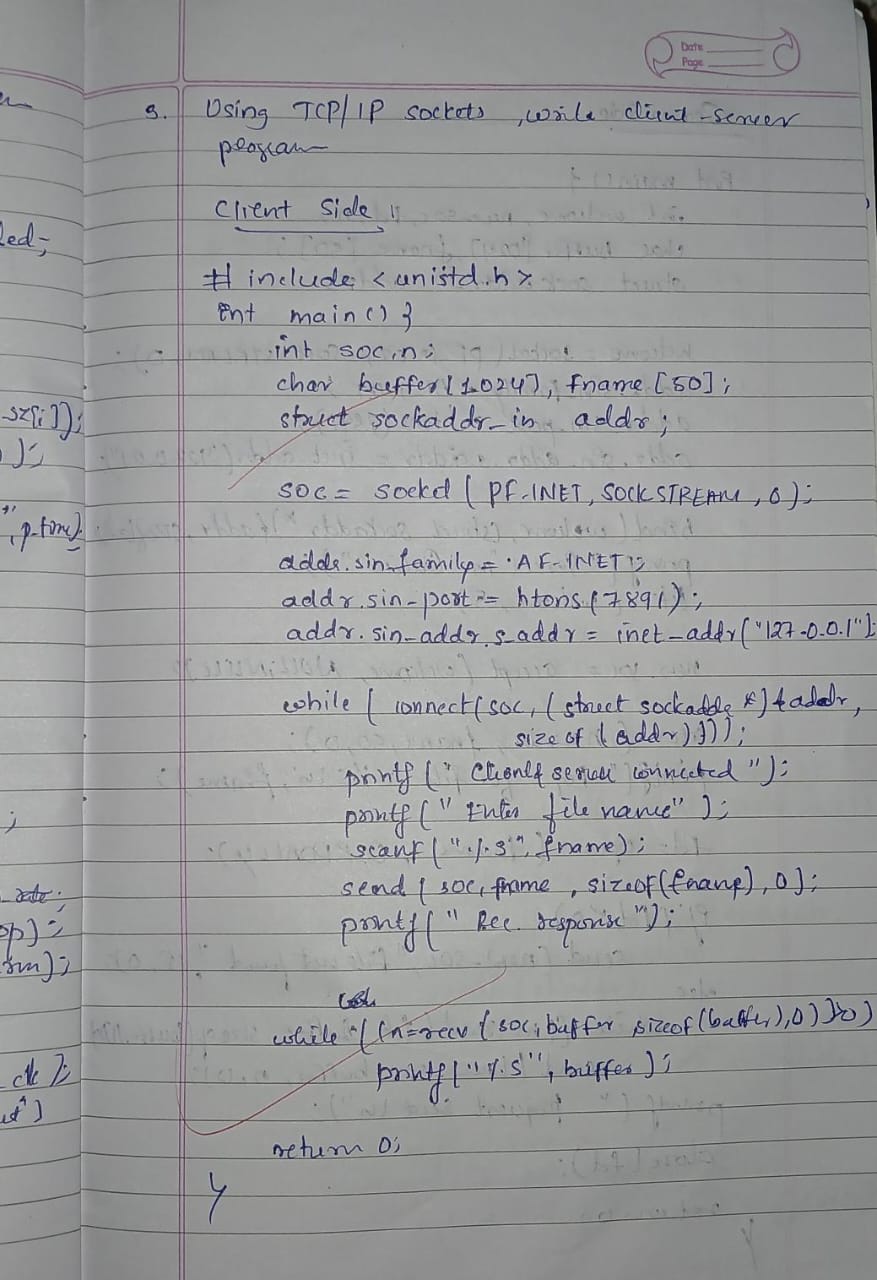
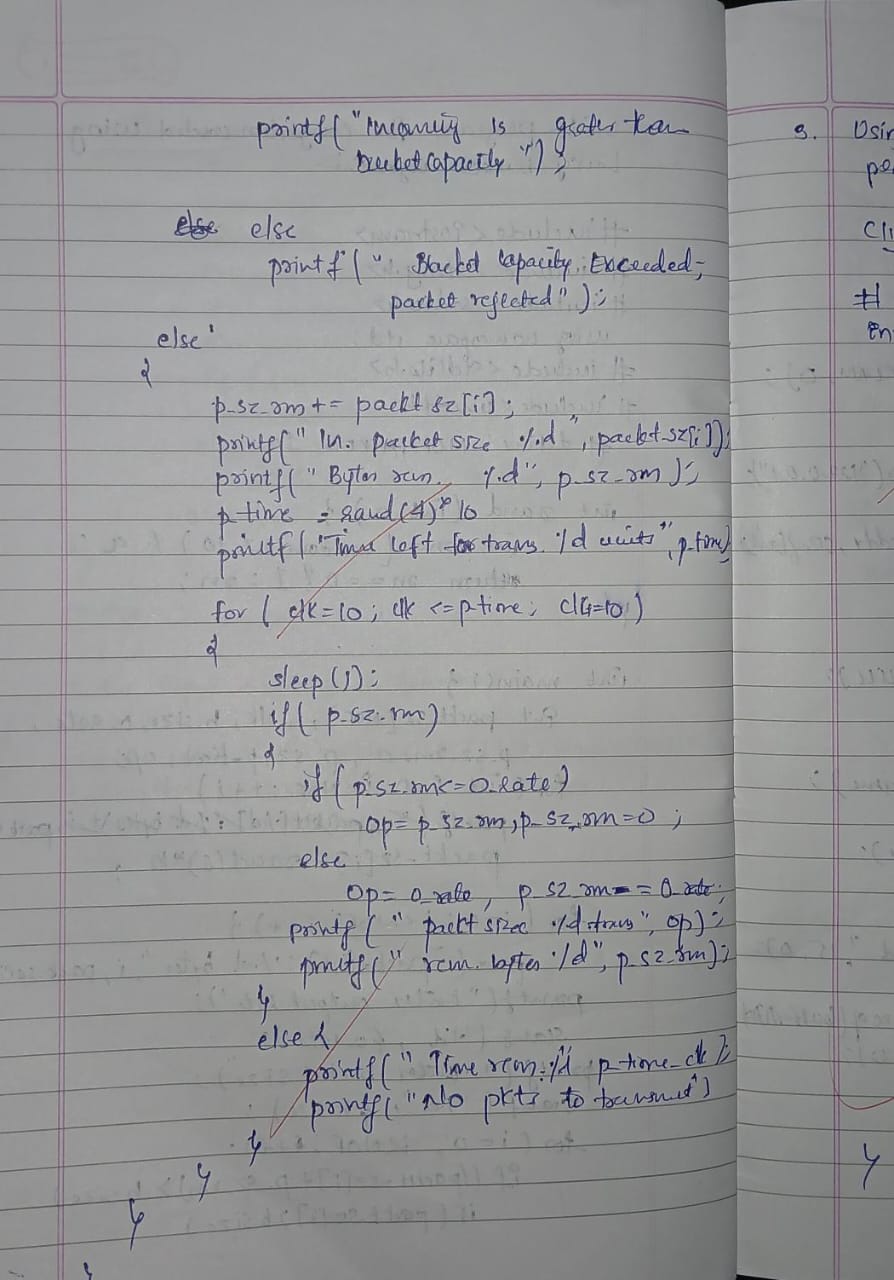
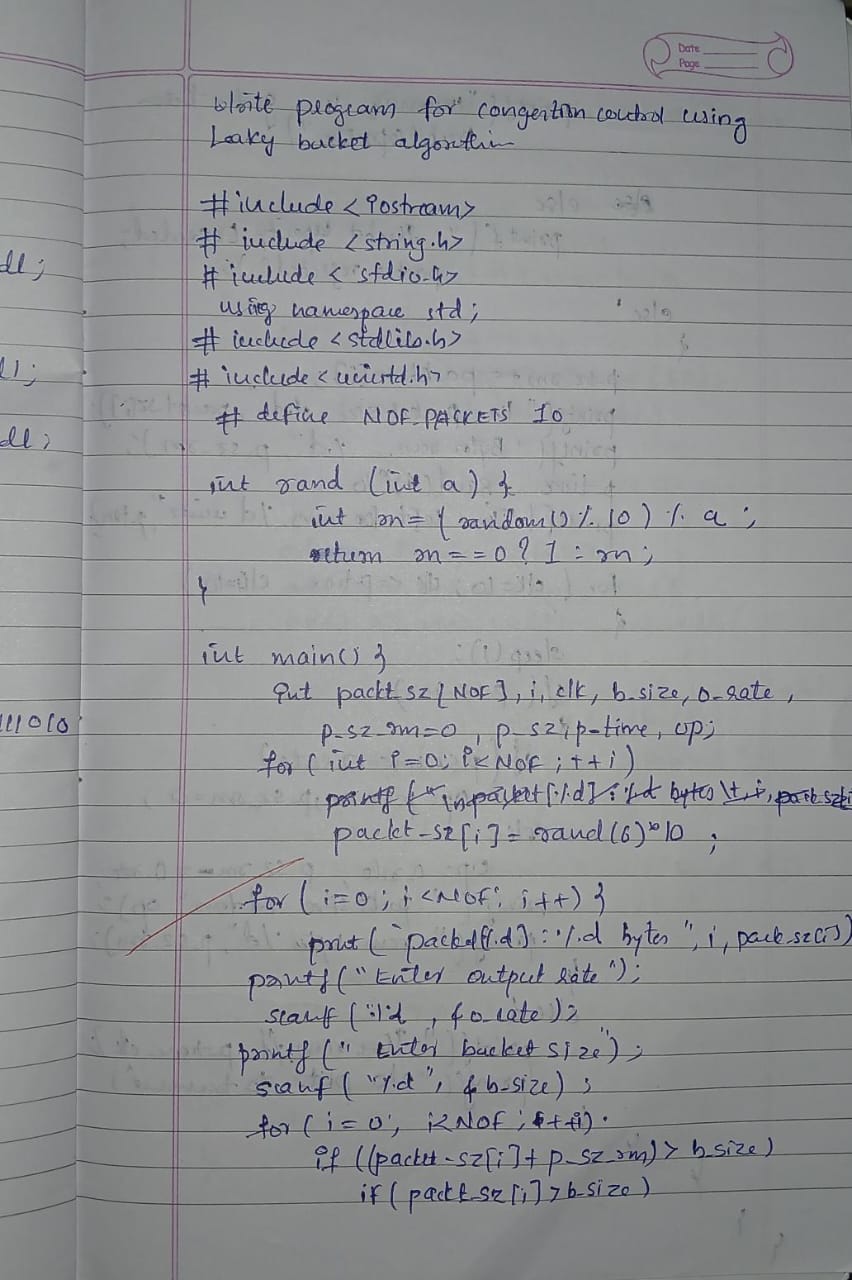
**Program 14**

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

**Code and Output:** 

**Program 15**

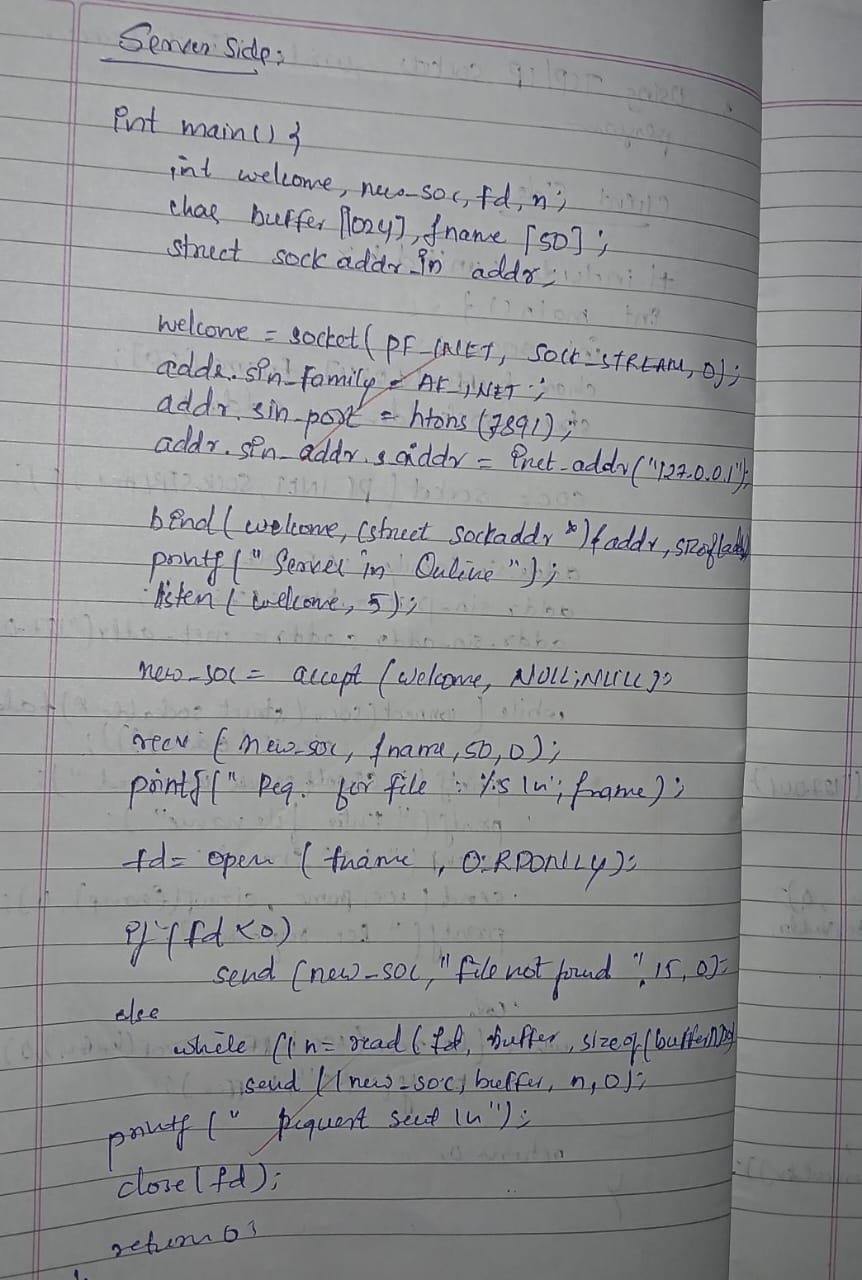
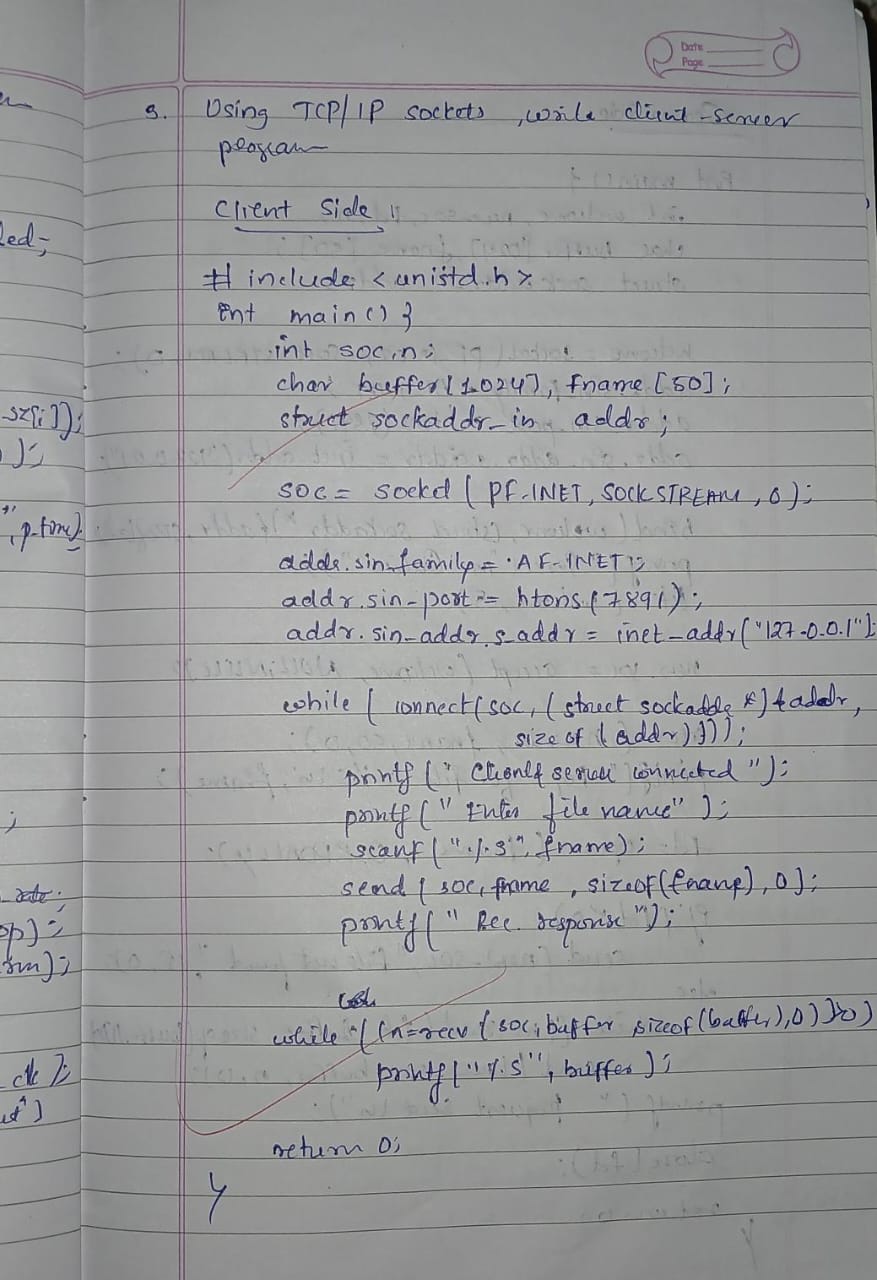
Write a program for congestion control using Leaky bucket algorithm.

**Code and Output:** 

**Program 16**

Using TCP/IP 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.

**Code and Output:**



**Output:**

Server is online

Requesting for file: test.txt

Request sent

Client is connected to server

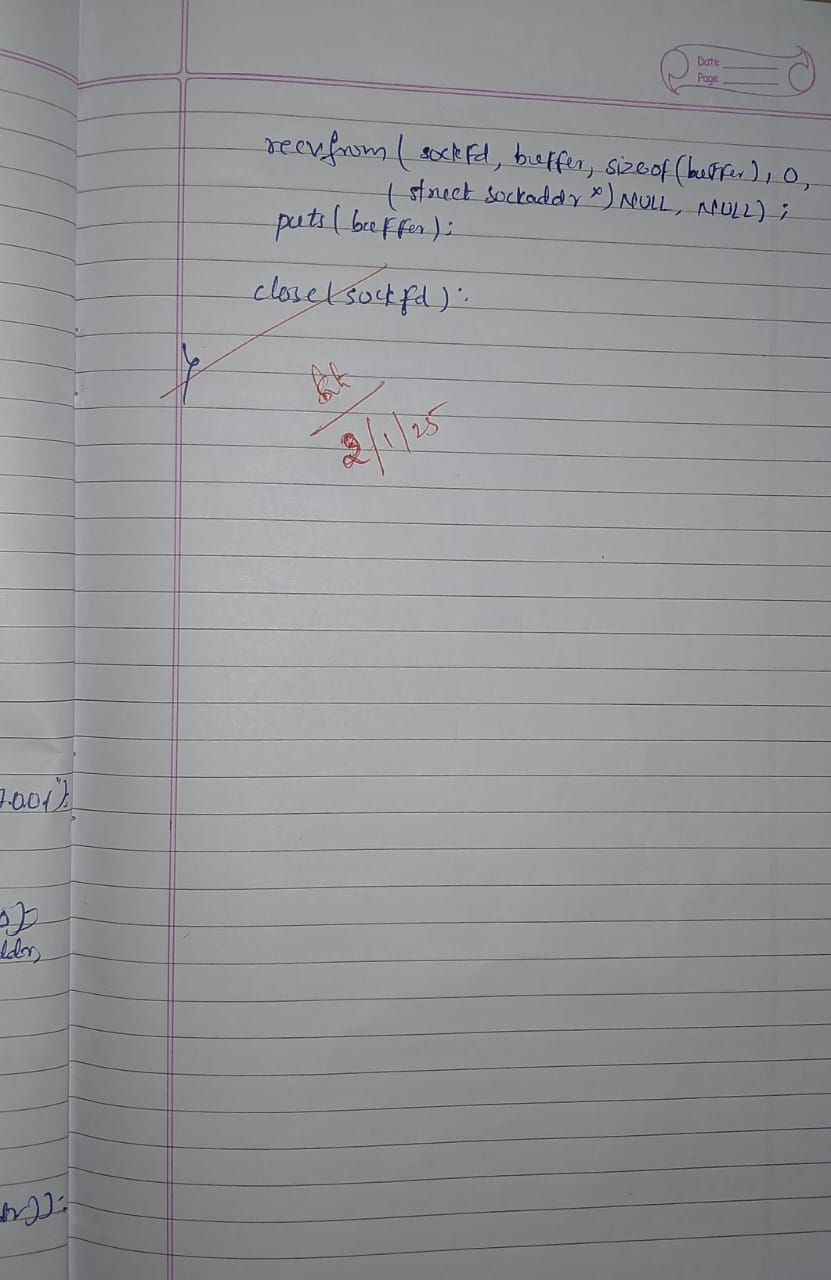
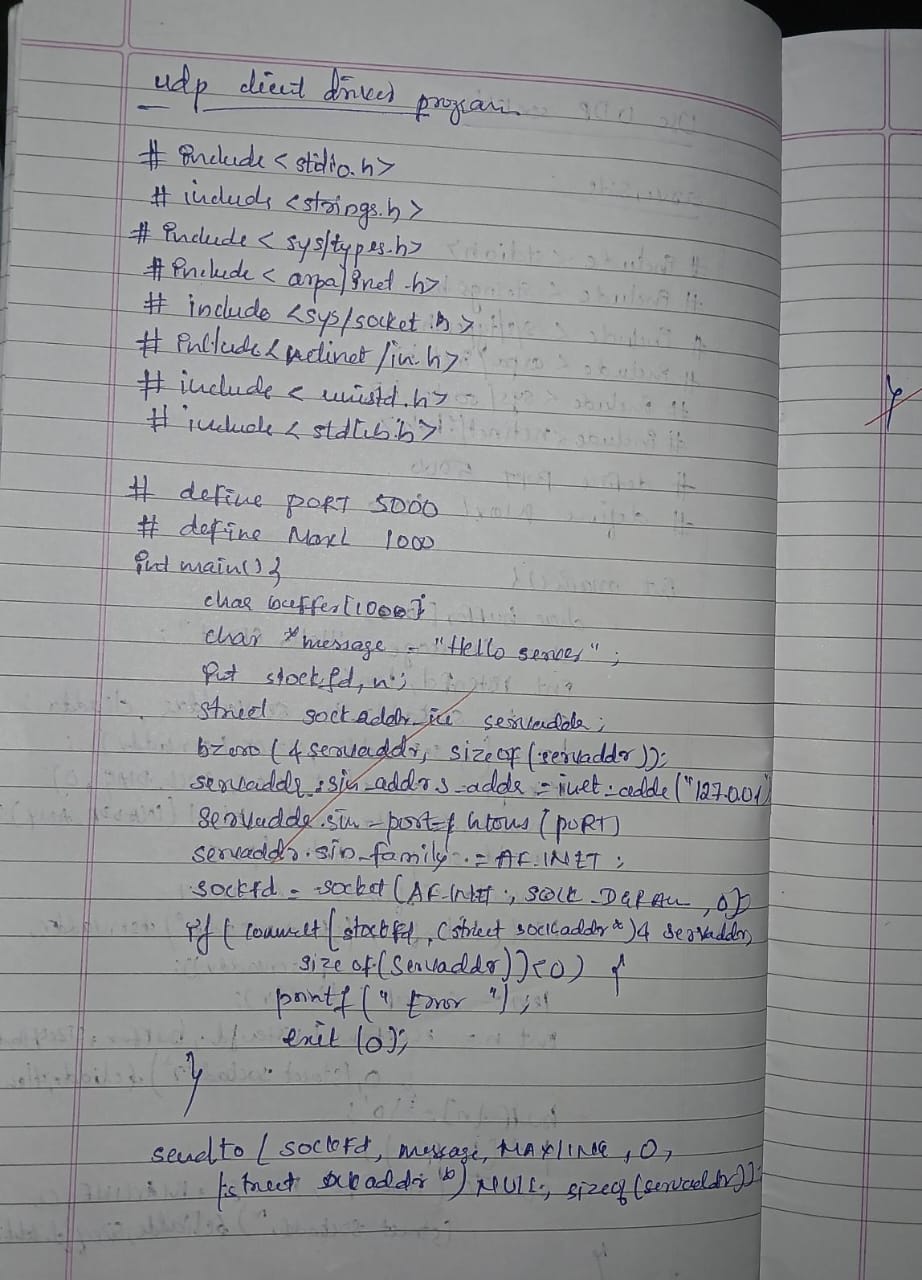
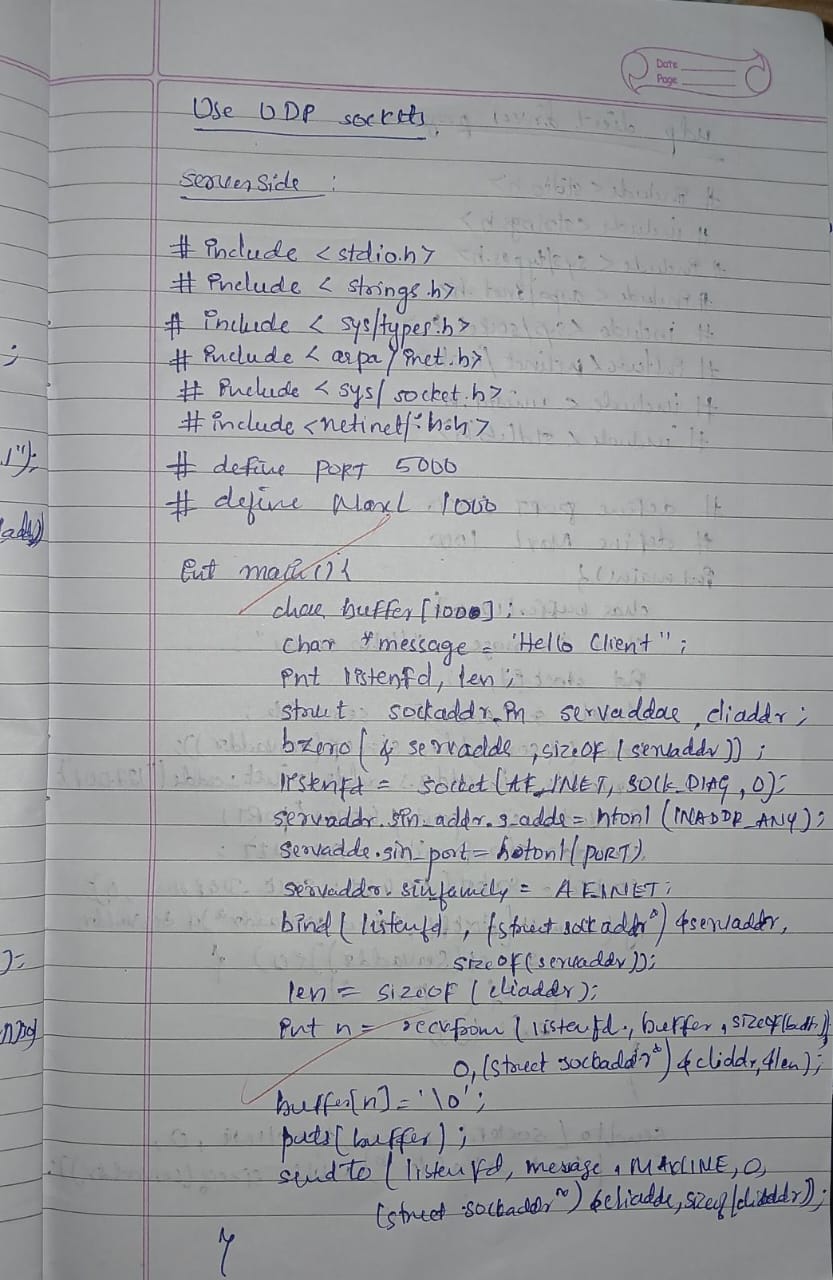
Enter file name: test.txt

Received response

Hello World

**Program 17**

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.

**Code and Output:** 

Server Output:  
Server is online

Hello Server

Client Output:  
Hello Client