**VISVESVARAYATECHNOLOGICALUNIVERSITY**

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



**LAB RECORD**

# Computer Network Lab (23CS5PCCON)

***Submitted by***

**Shubham Maloo (1BM22CS343)**

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

## BACHELOROFENGINEERING

***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 **Shubham Maloo (1BM22CS343)** 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.

|  |  |
| --- | --- |
| Sandhya A Kulkarni  Associate Professor  Department of CSE, BMSCE | Dr. Kavitha Sooda  Professor & HOD  Department of CSE, BMSCE |

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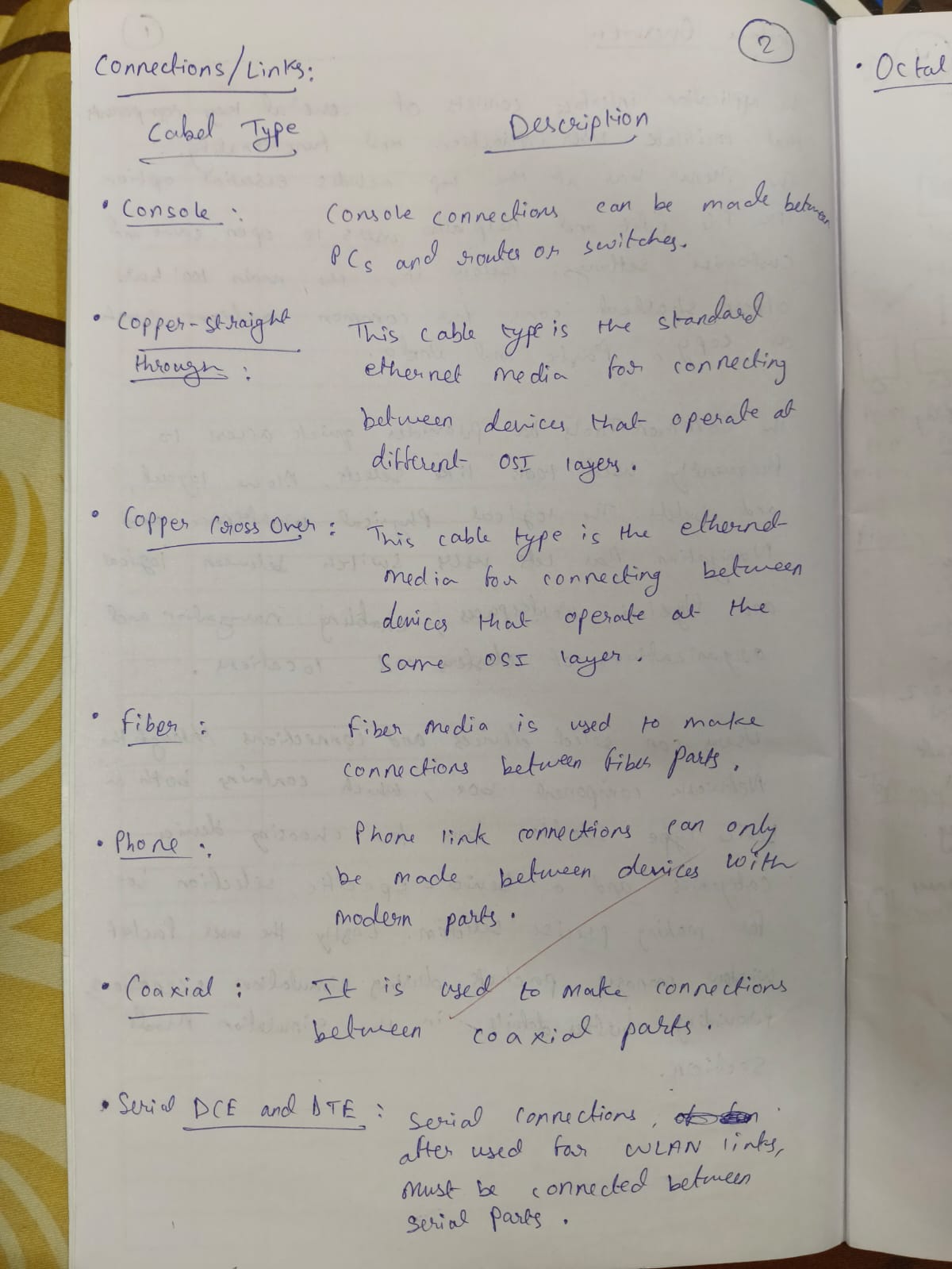
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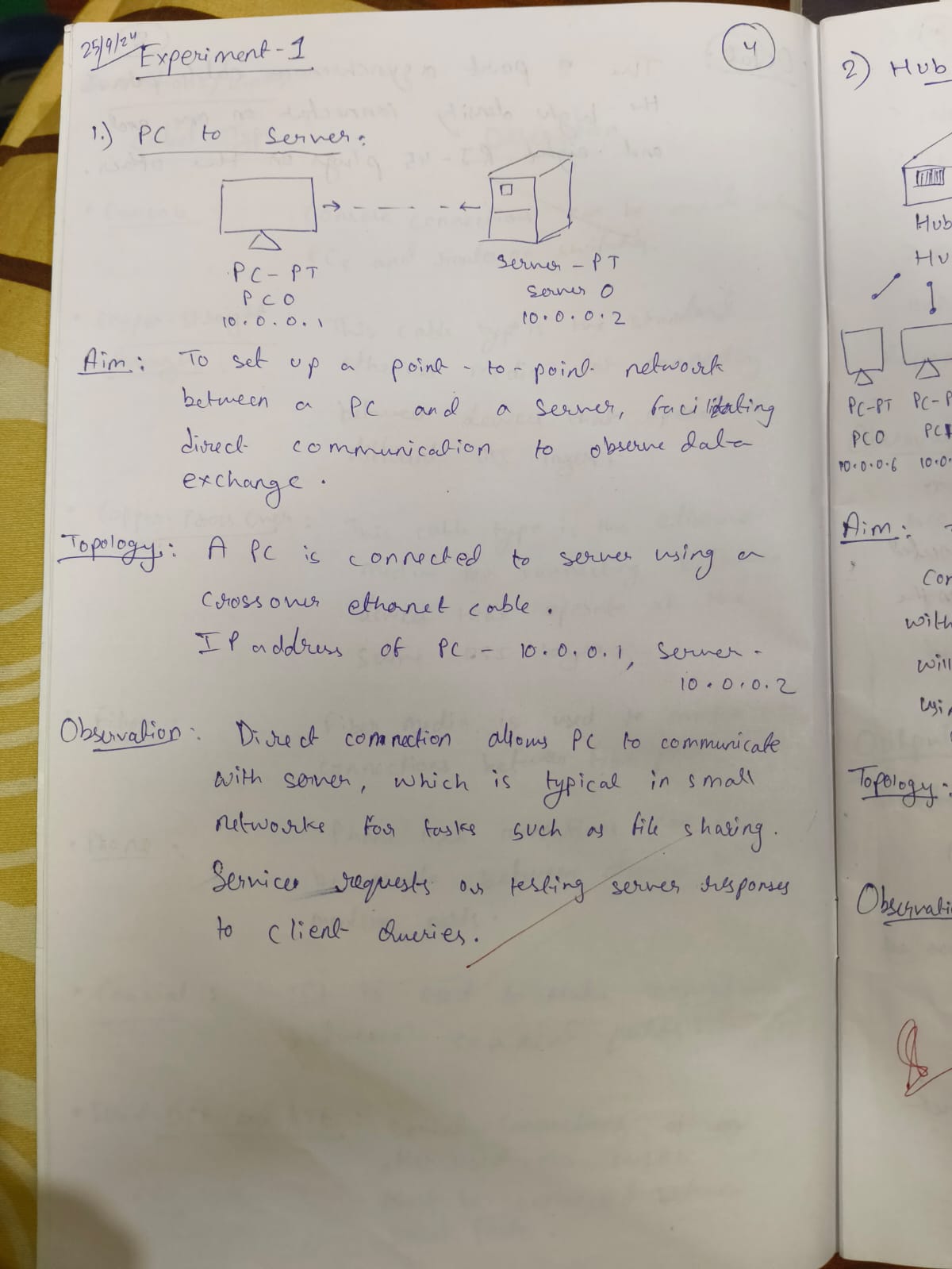
Github Link:  [LINK](https://github.com/dheemanthm04/CN-Lab)

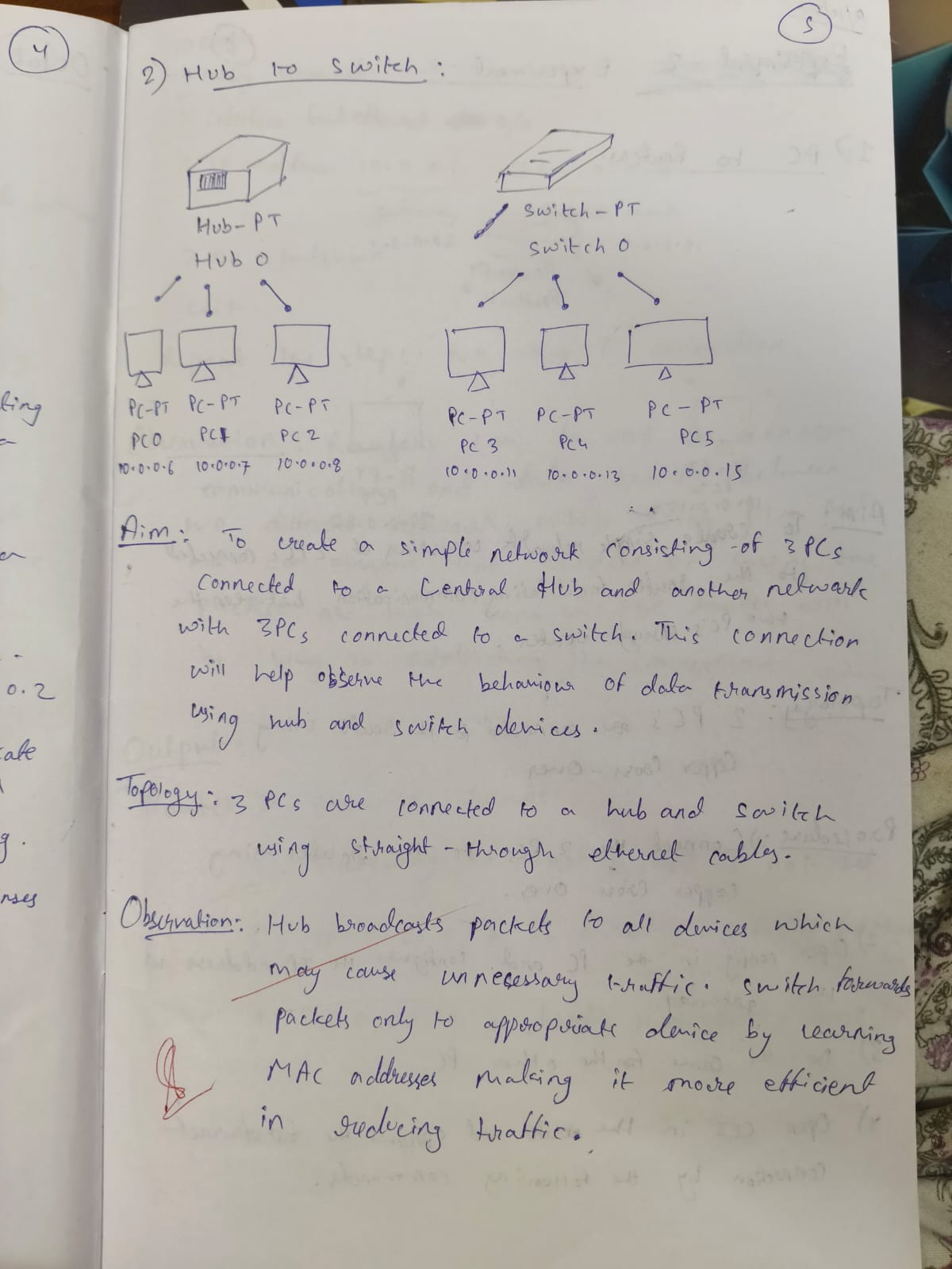
#### Program 1

**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.

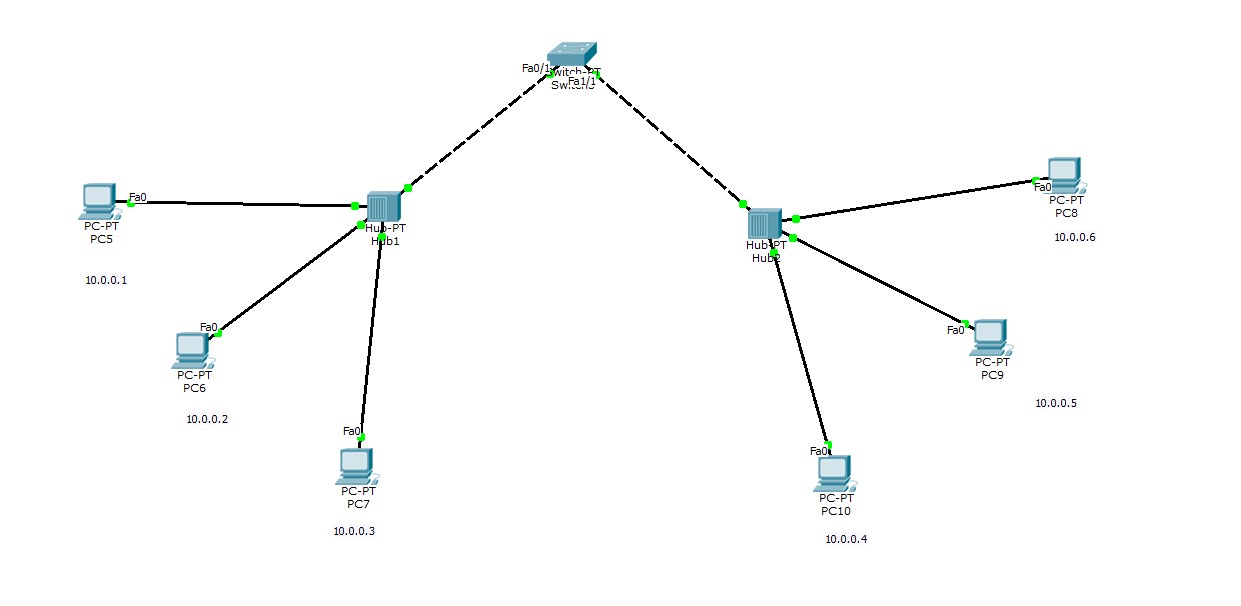
**Topology , Procedure and Observation:**

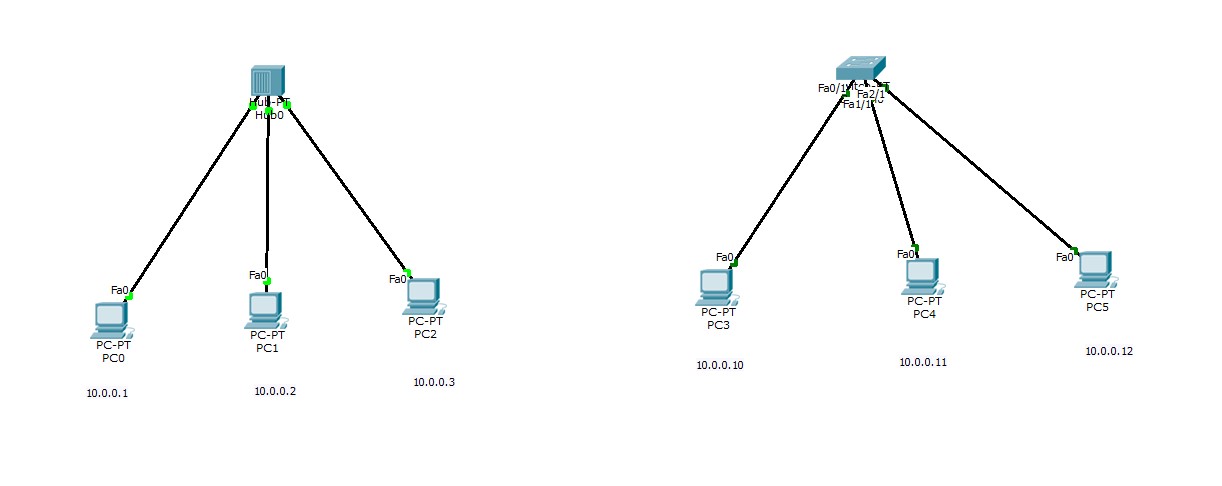






**Screen Shots:**

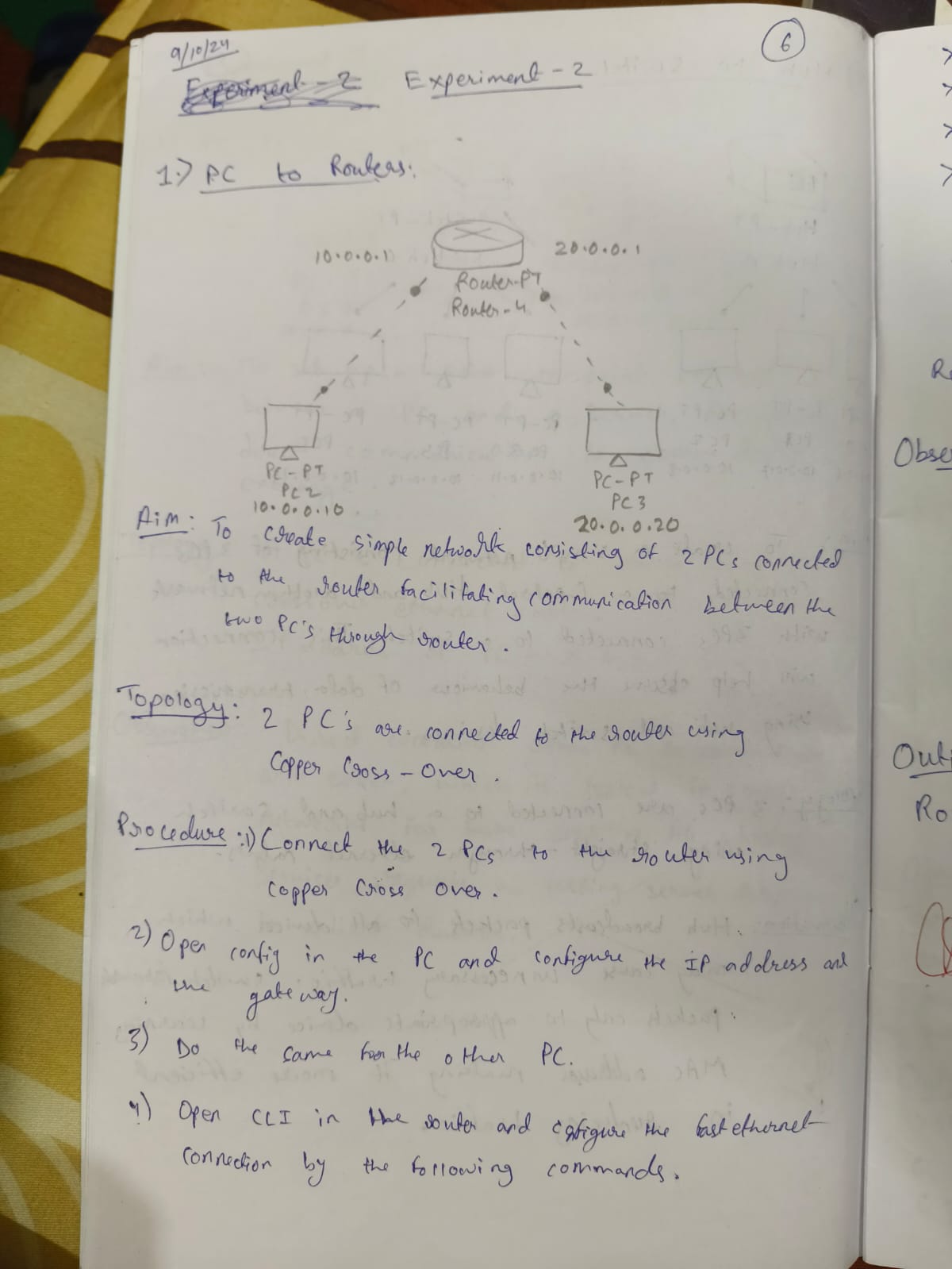


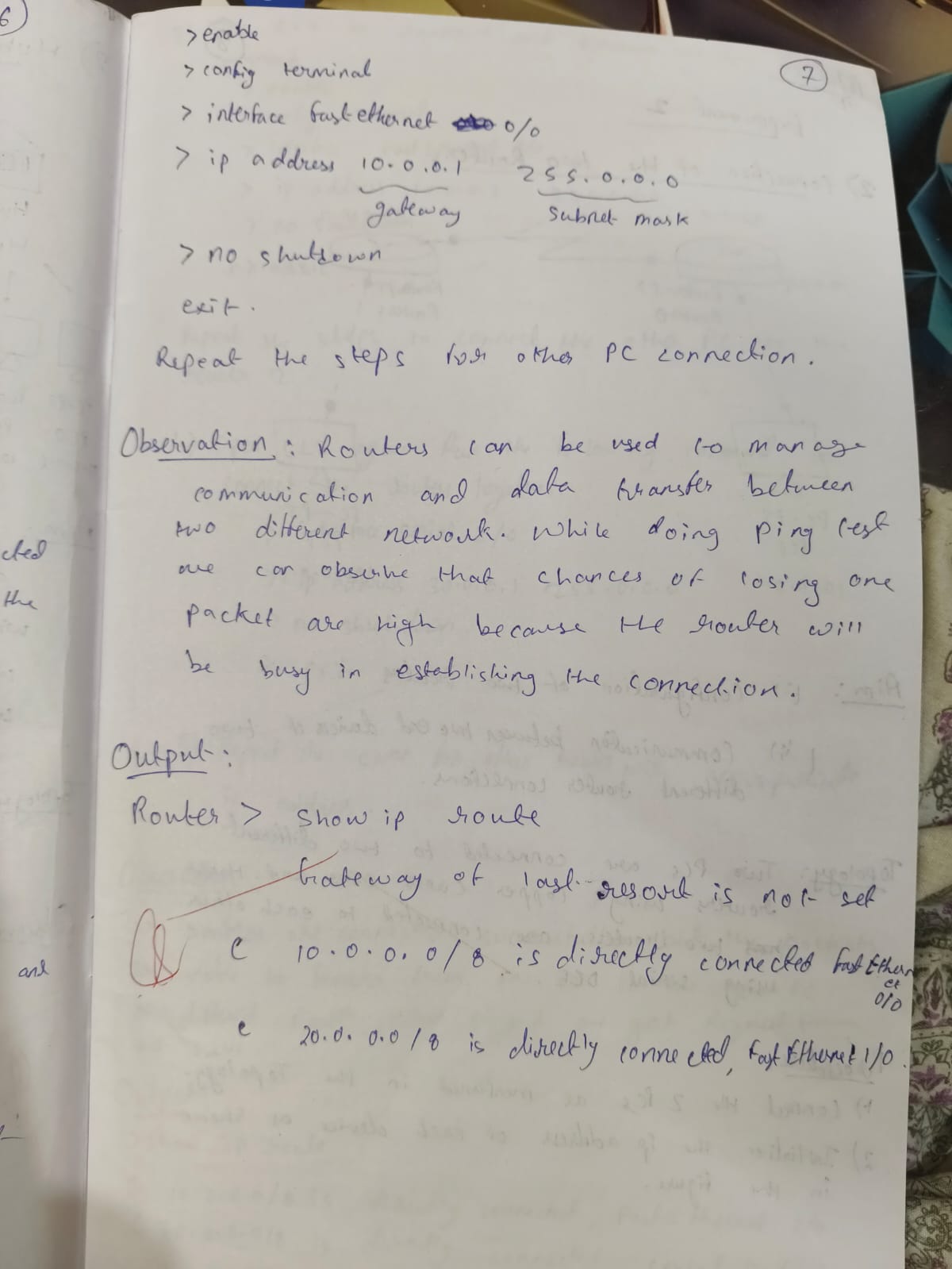


#### Program 2

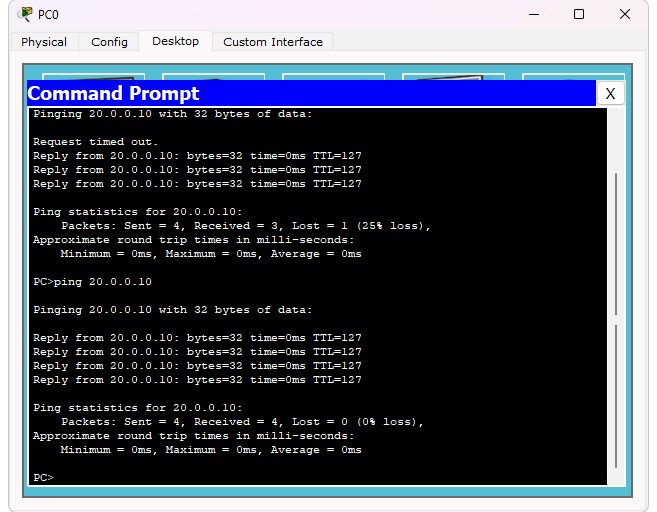
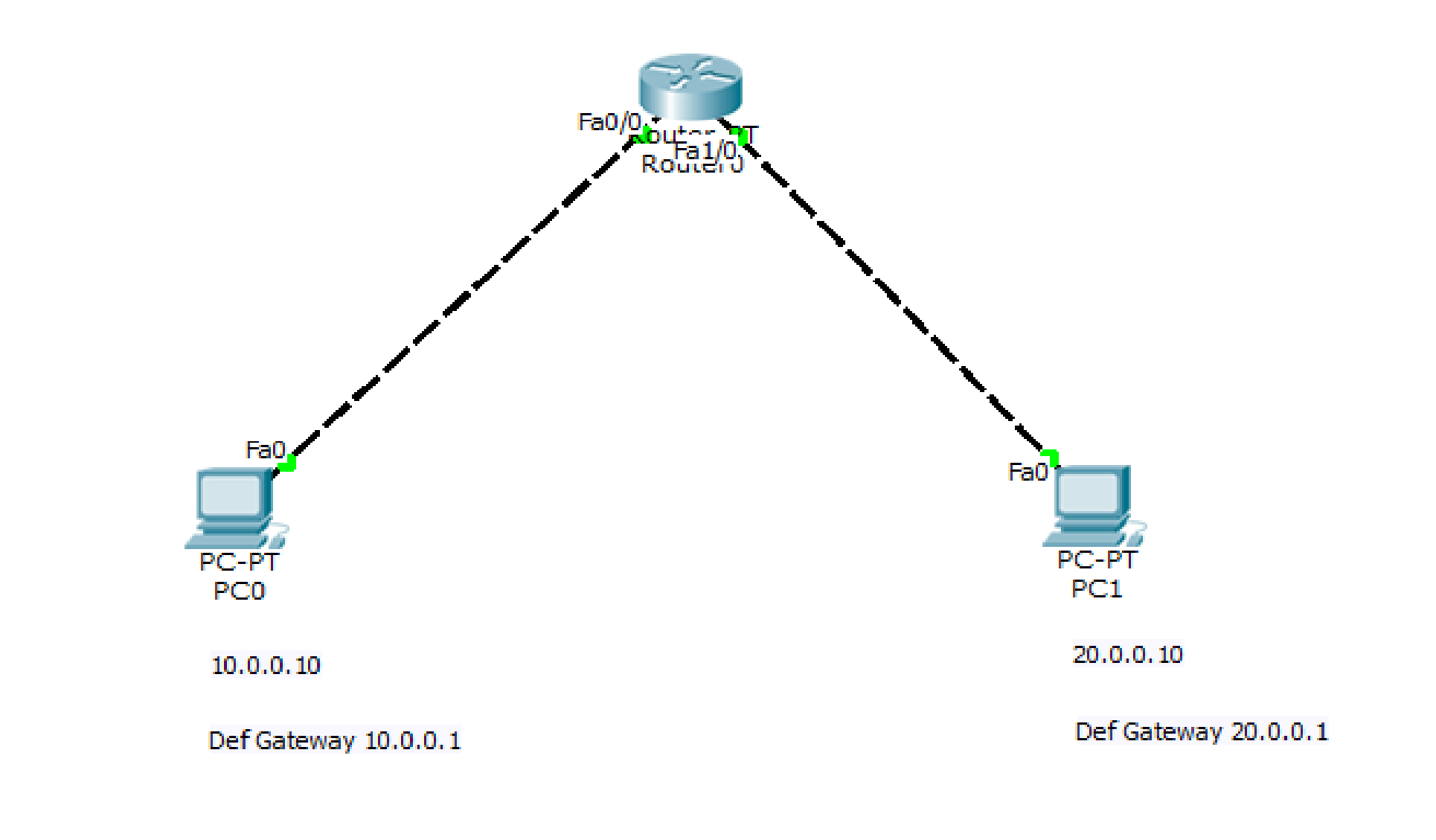
**Aim:**Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

**Topology , Procedure and Observation:**





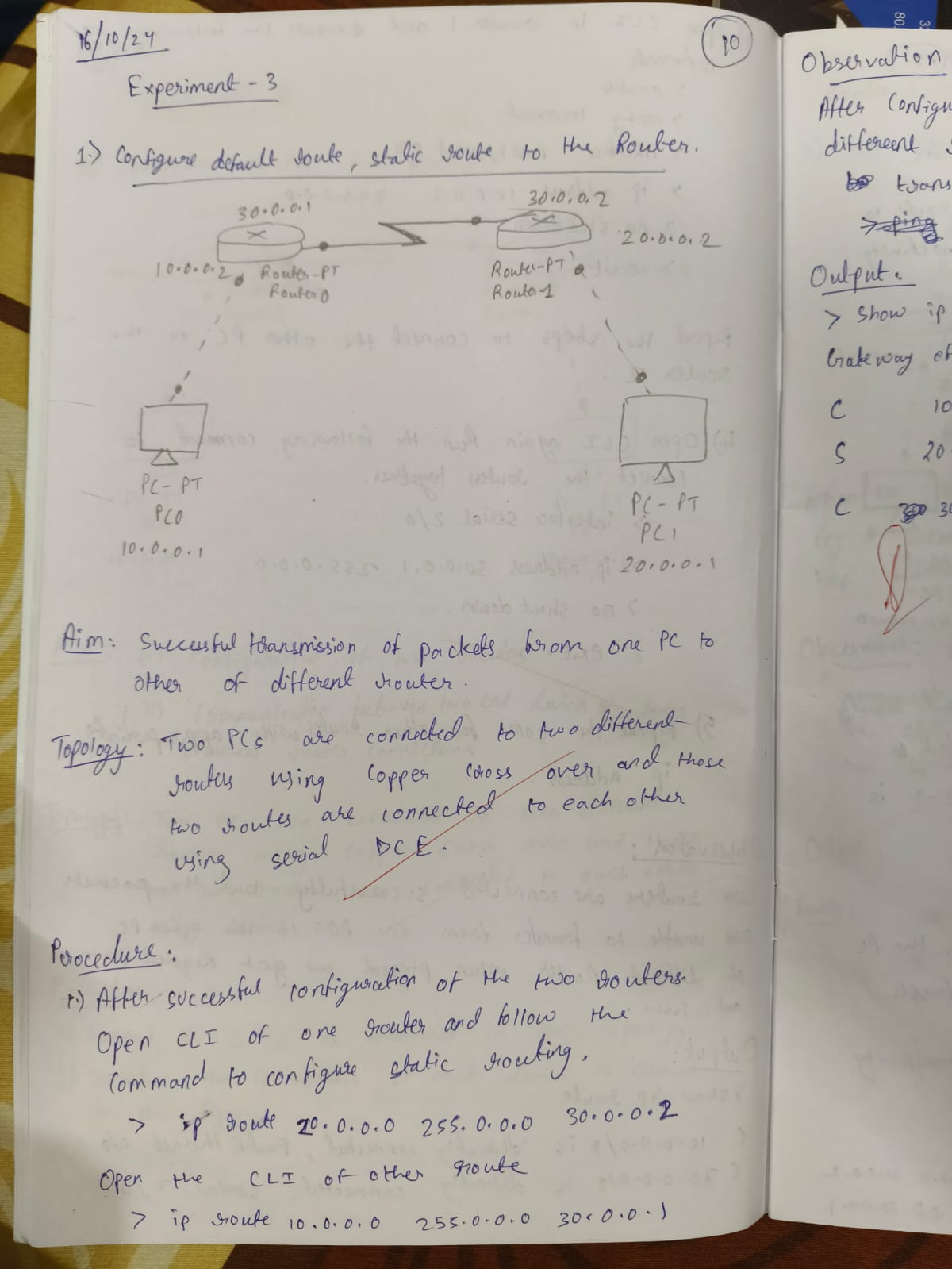
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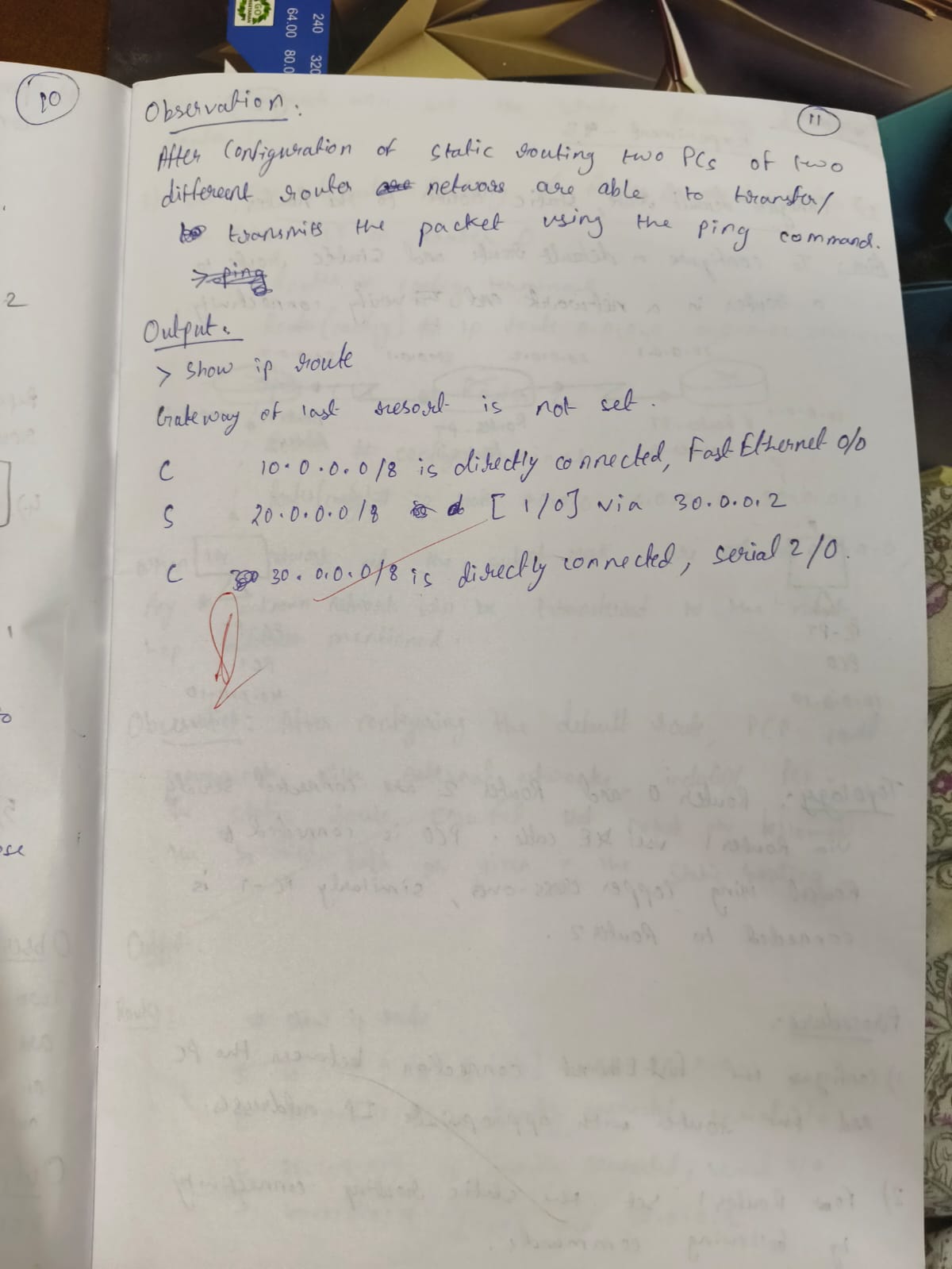


#### Program 3

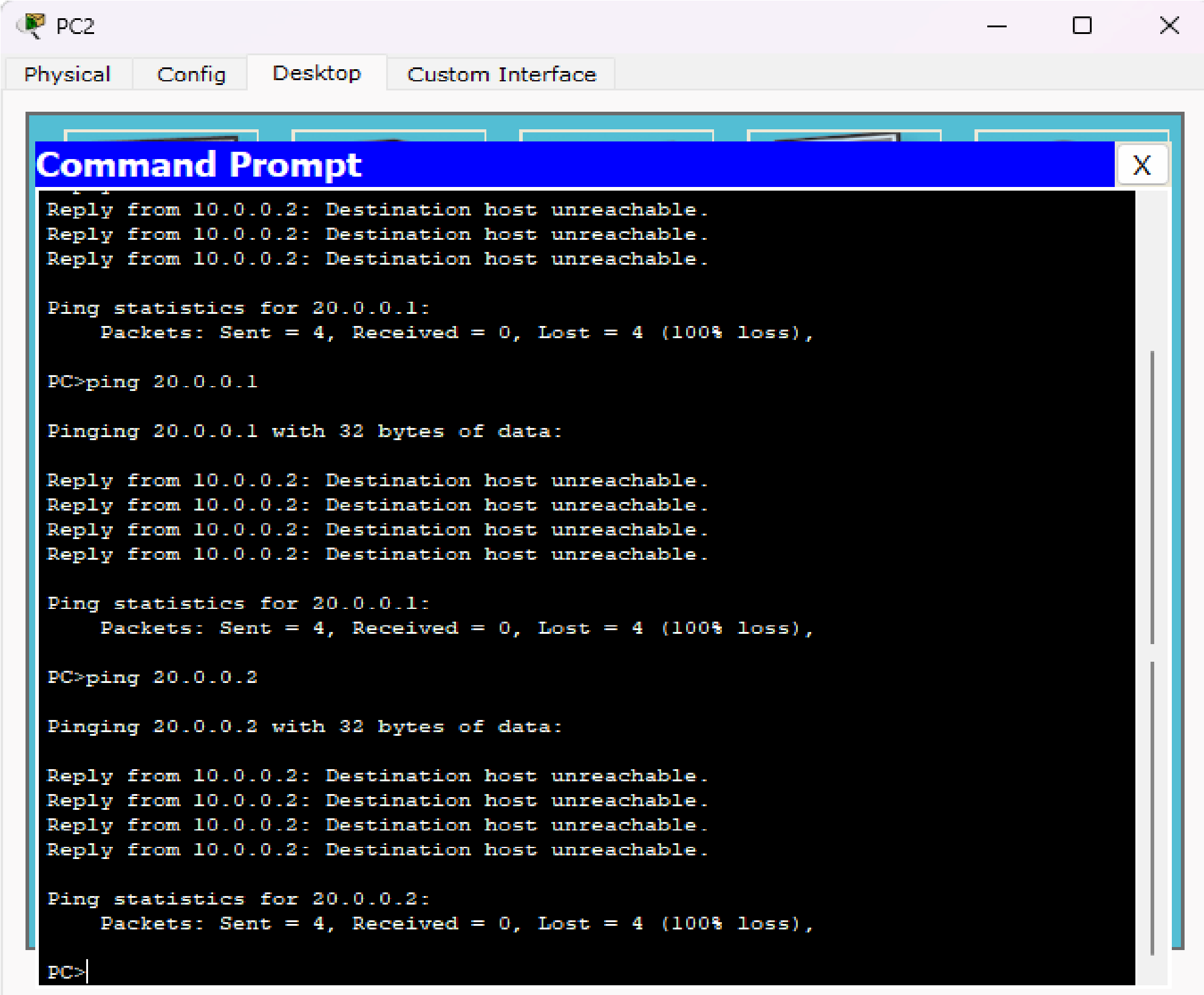
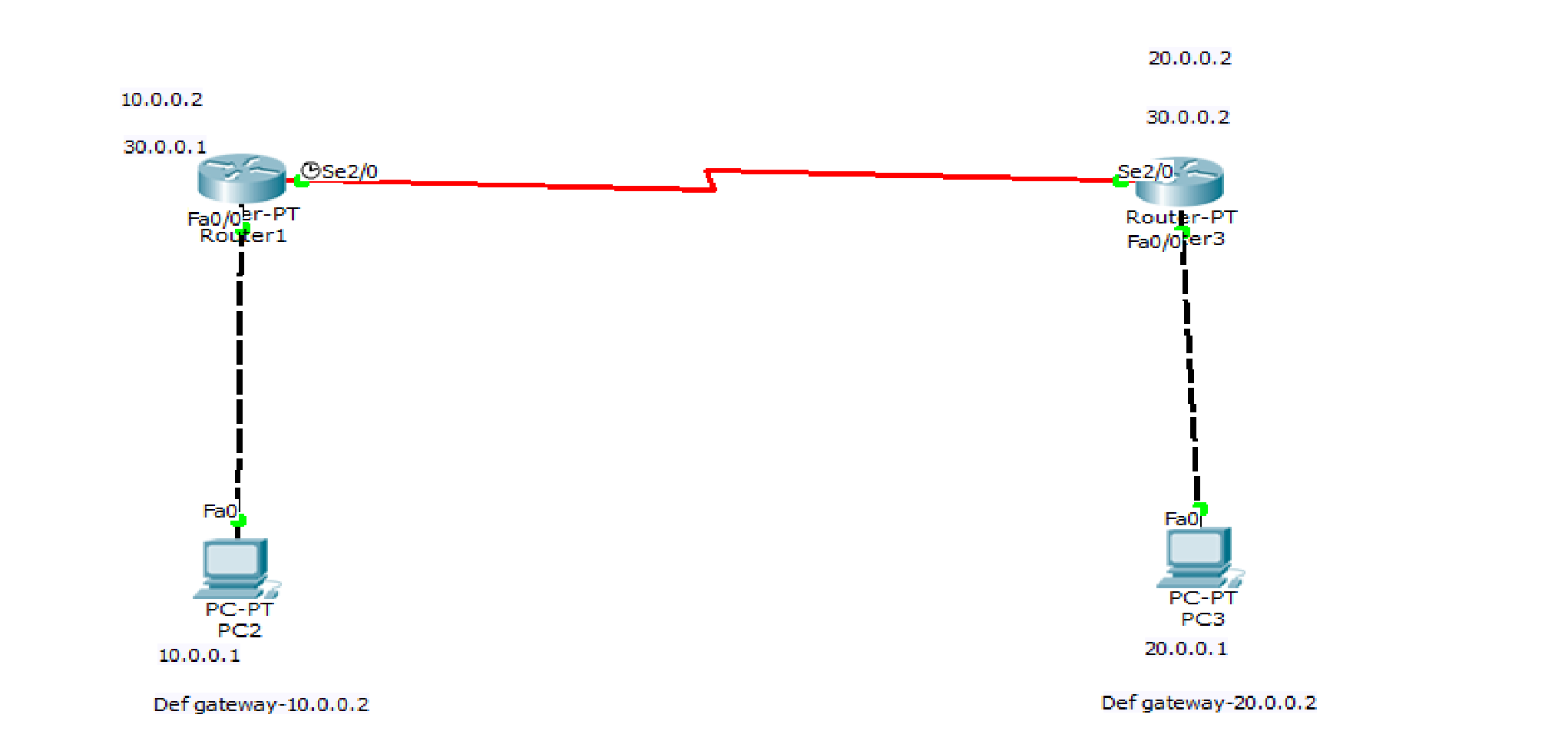
**Aim:**Configure default route, static route to the Router(Part 1).

**Topology , Procedure and Observation:**





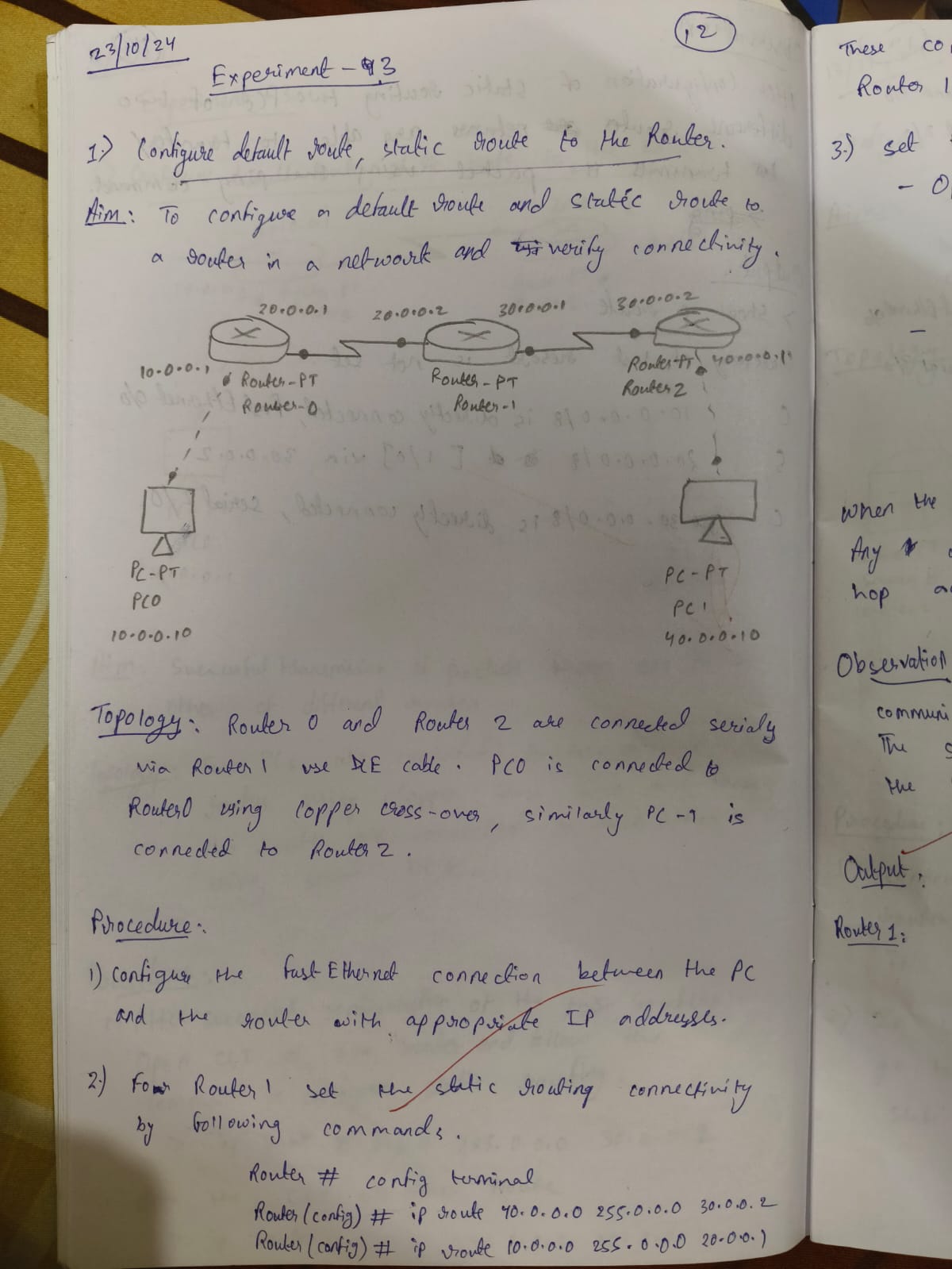
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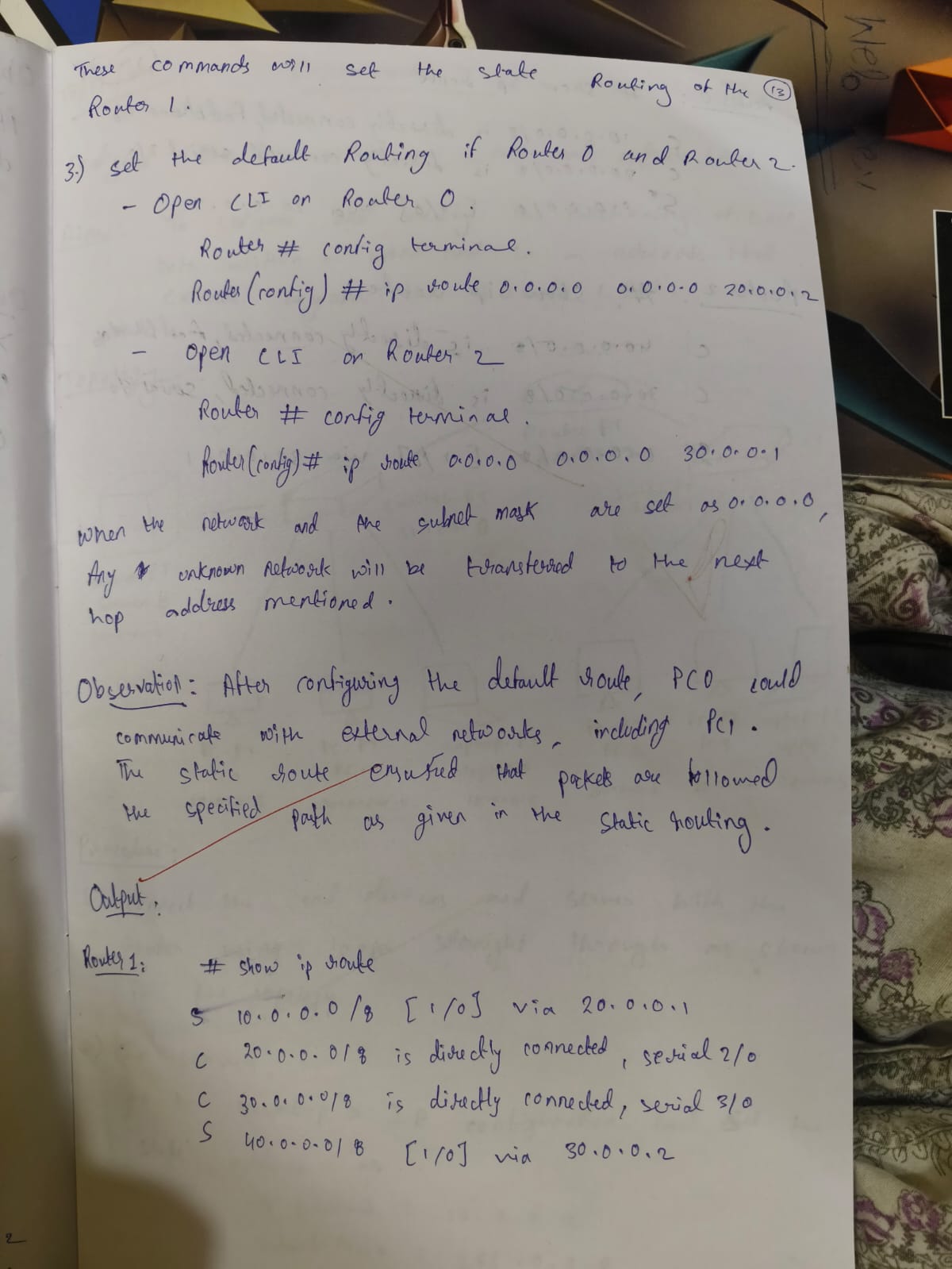


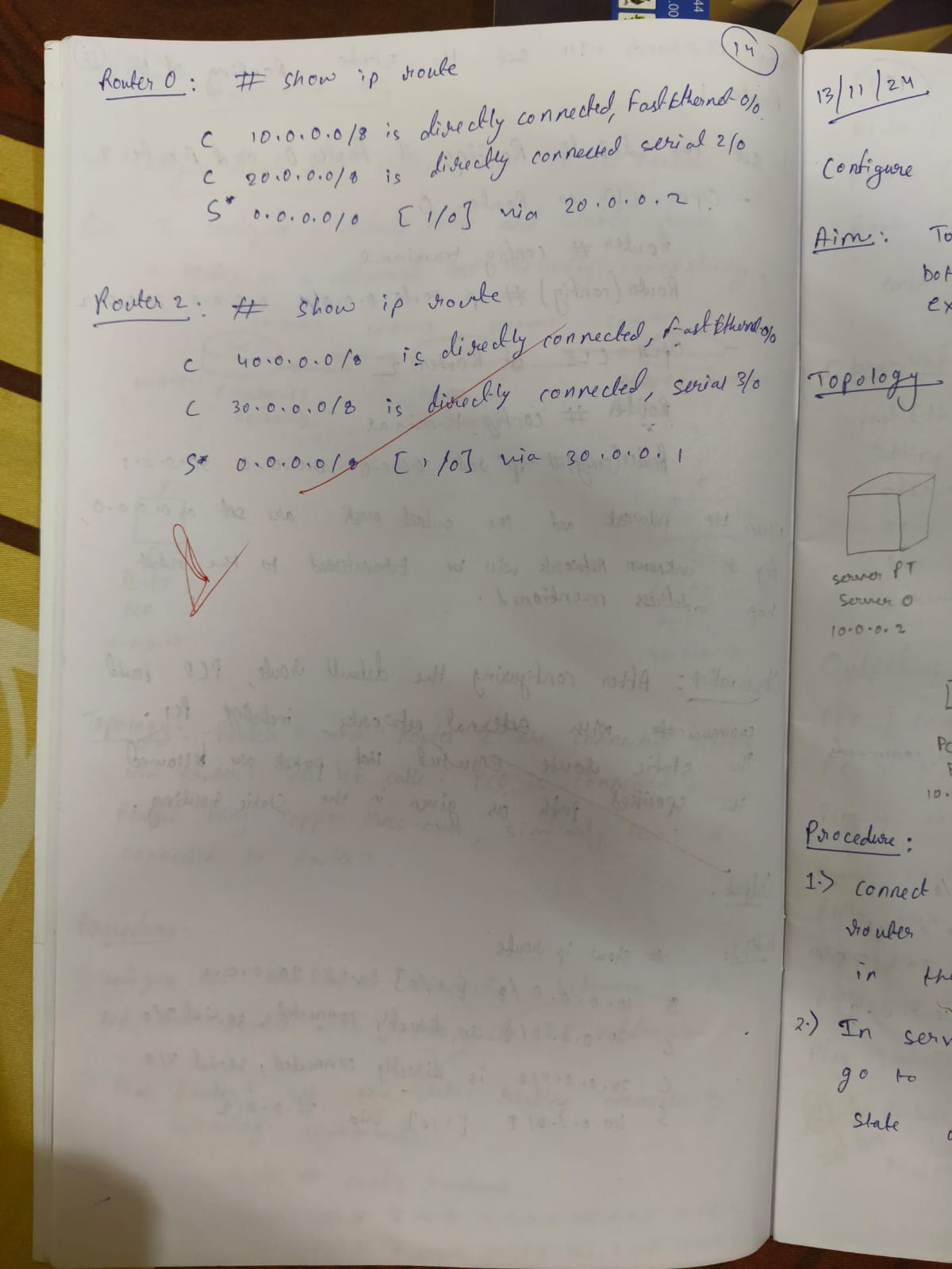
#### Program 4

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

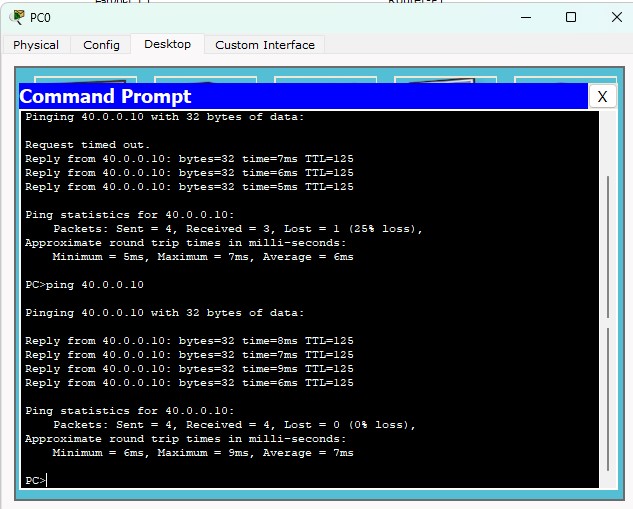
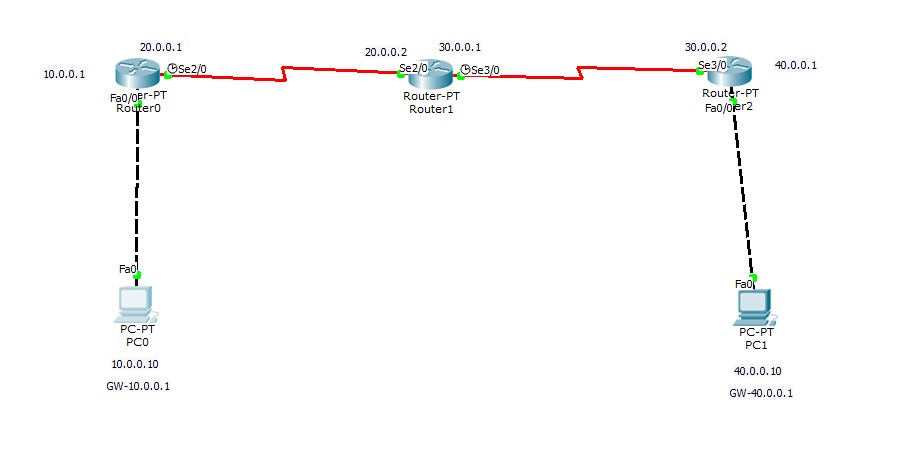
**Topology , Procedure and Observation:**







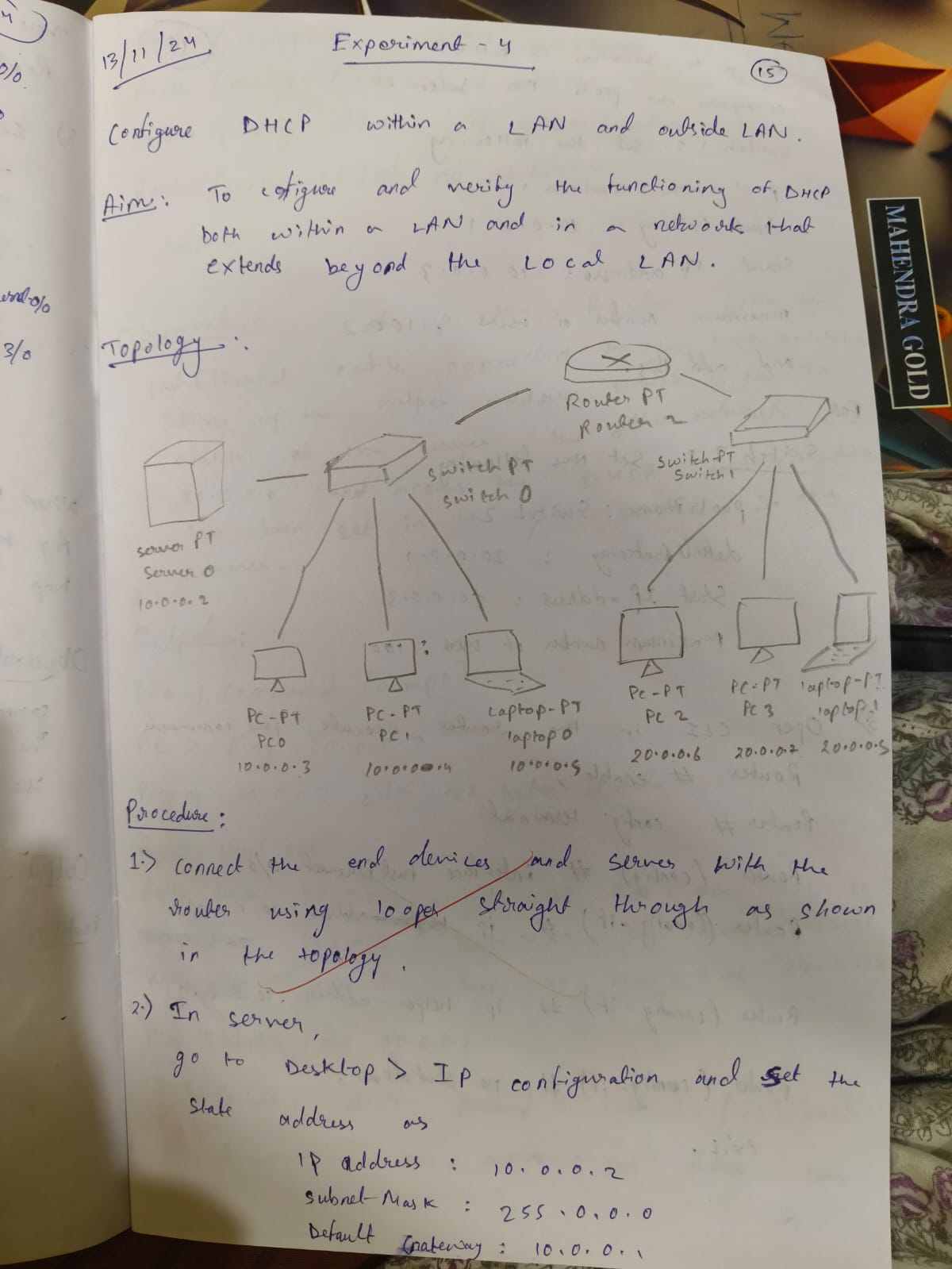
**Screen Shots:**

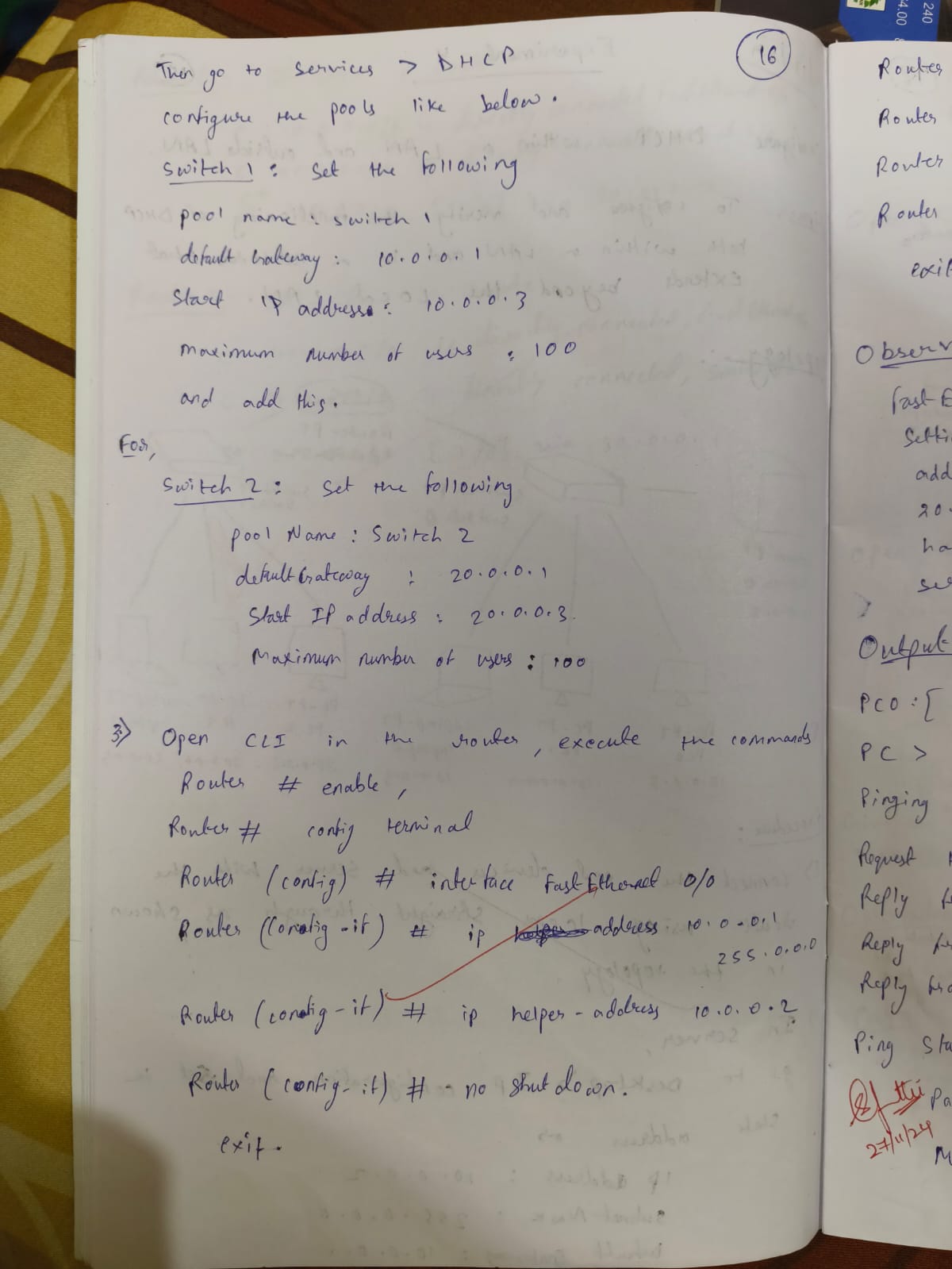


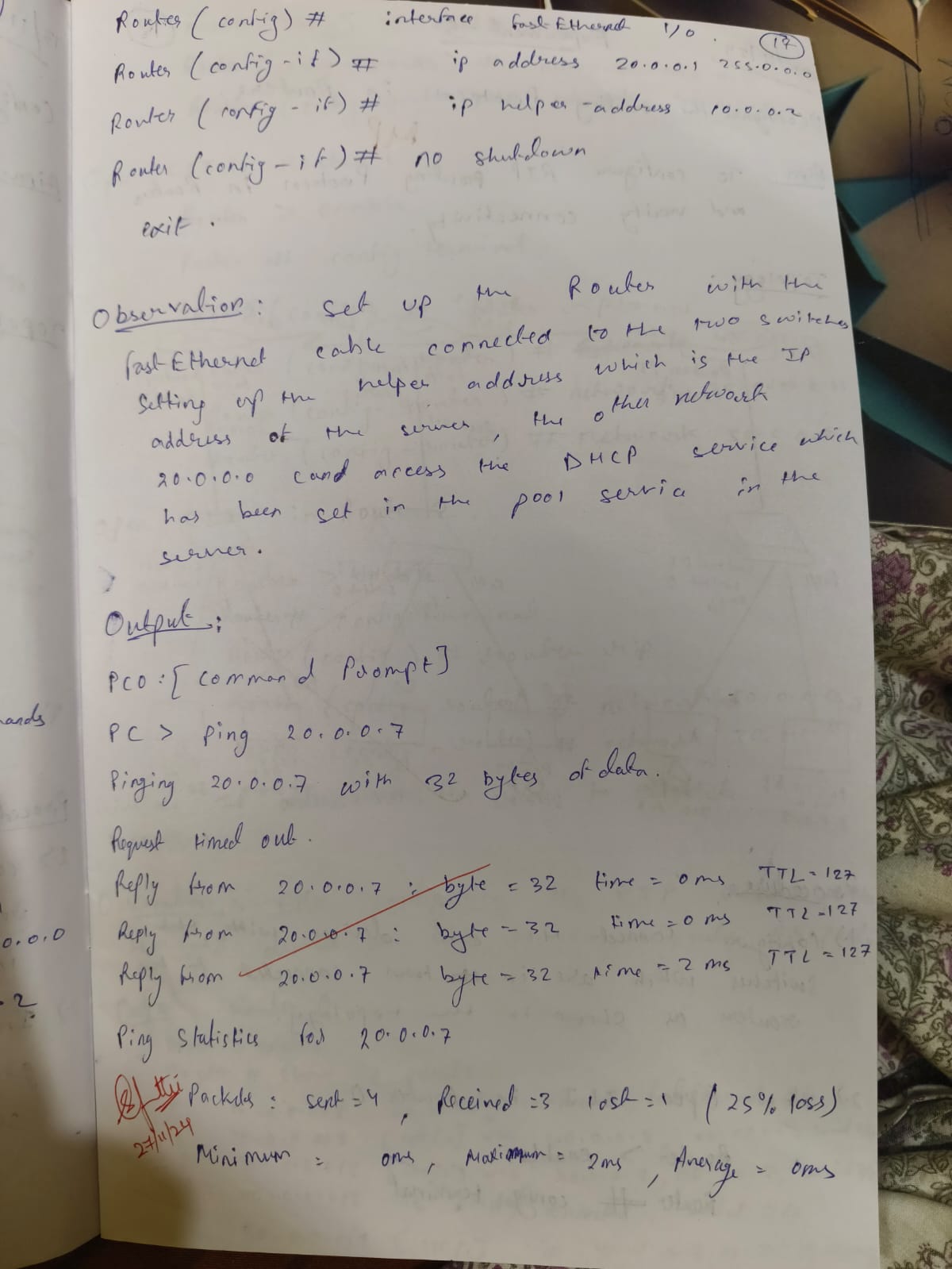
**Program 5**

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

**Topology , Procedure and Observation:**

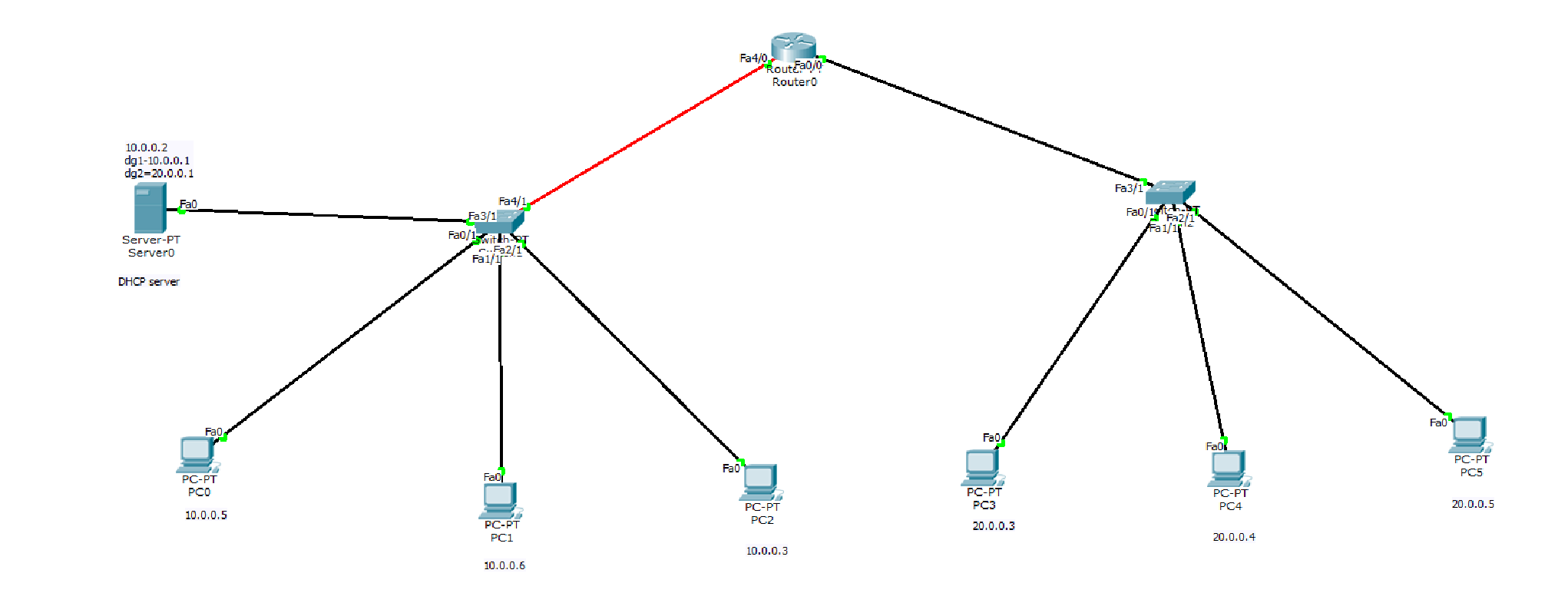


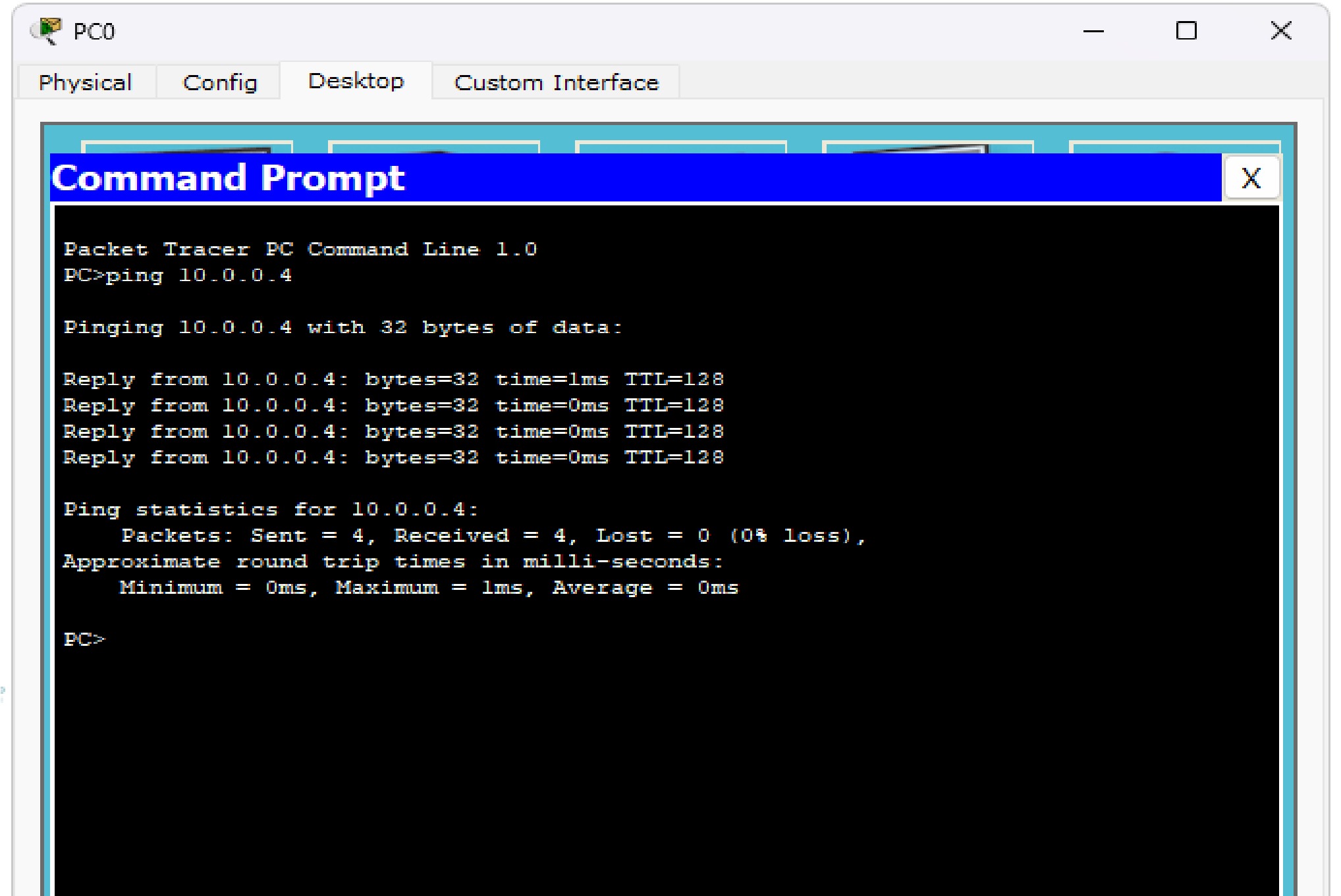




**Screen Shots:**



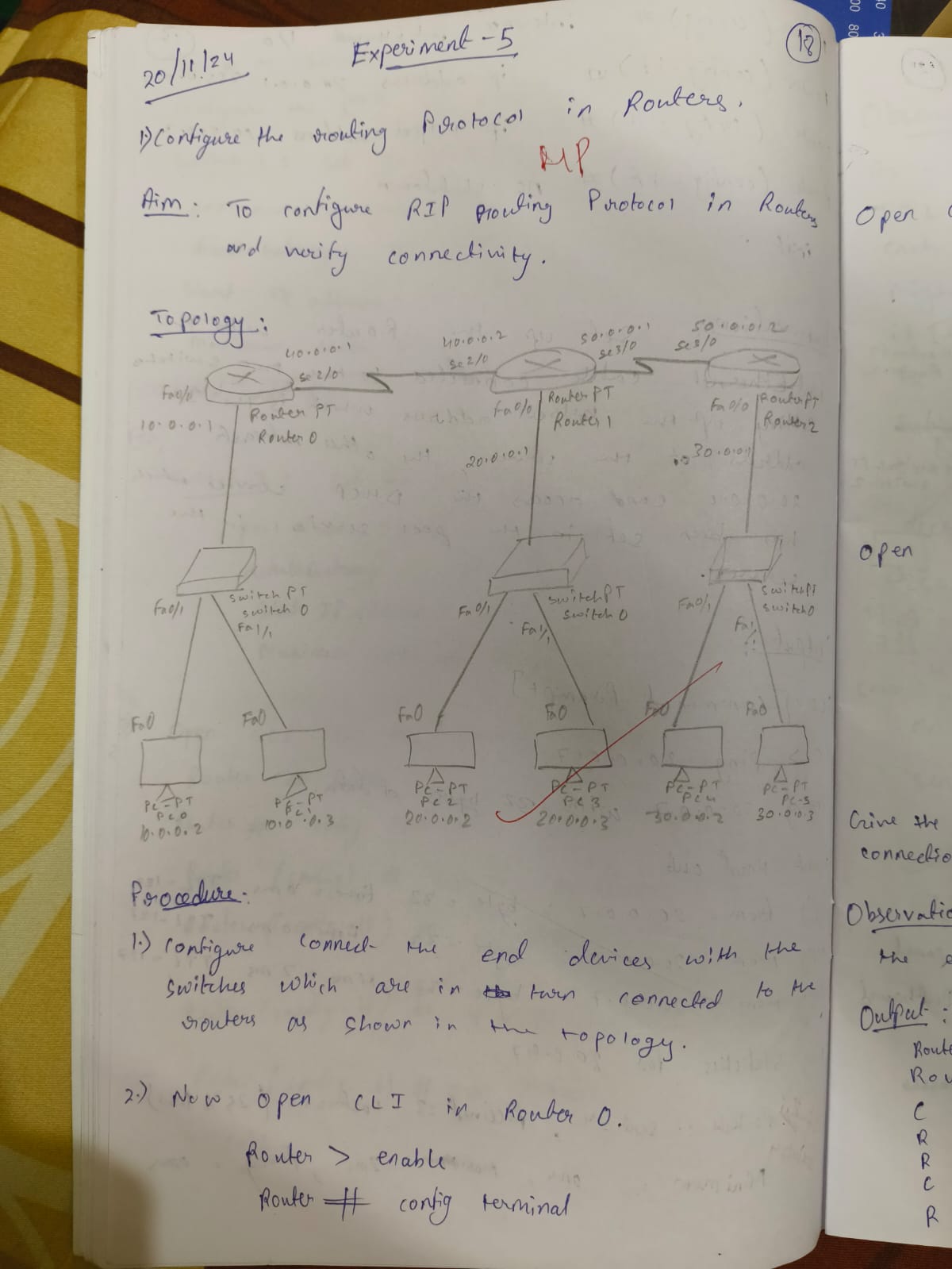


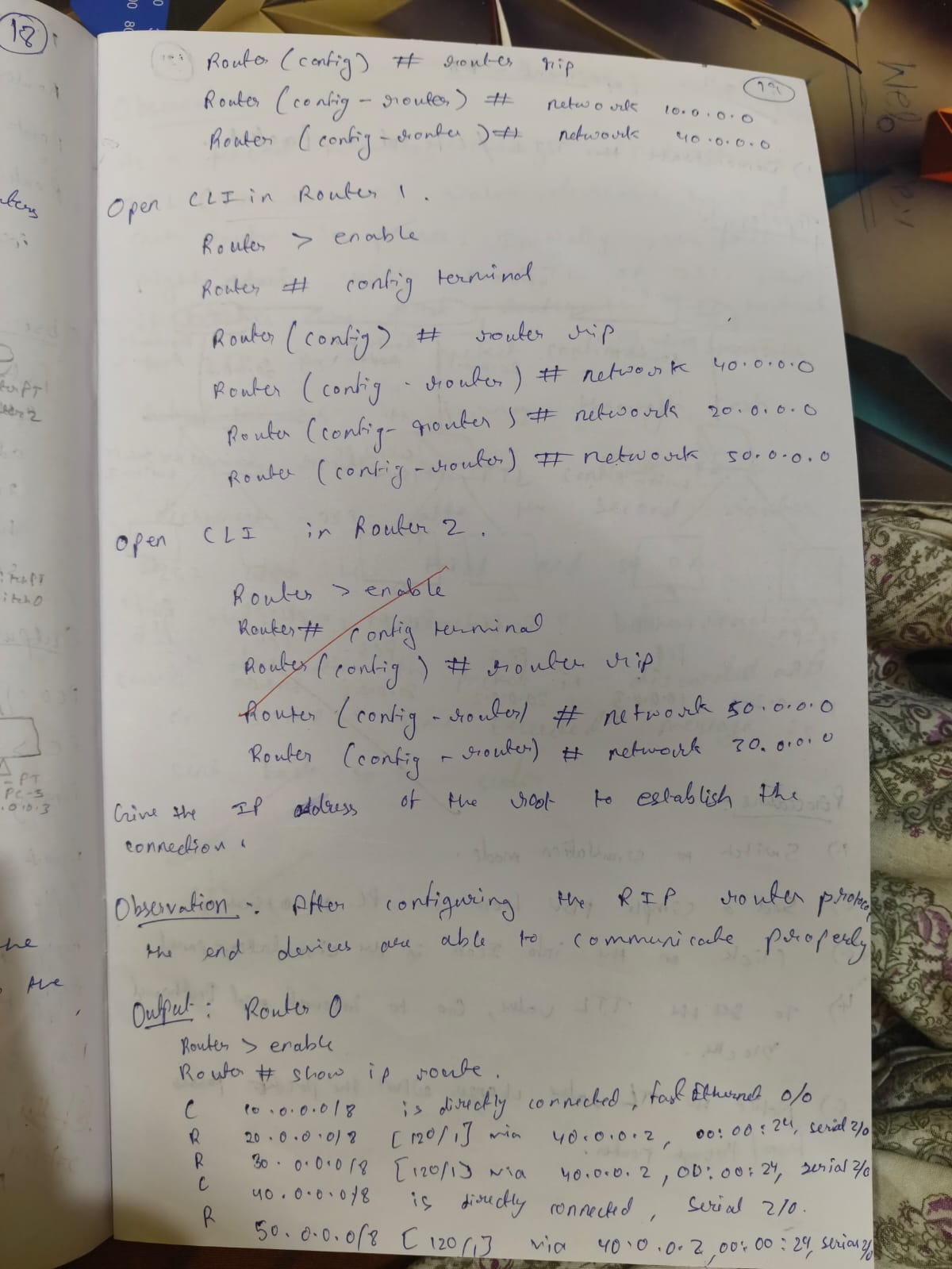


#### Program 6

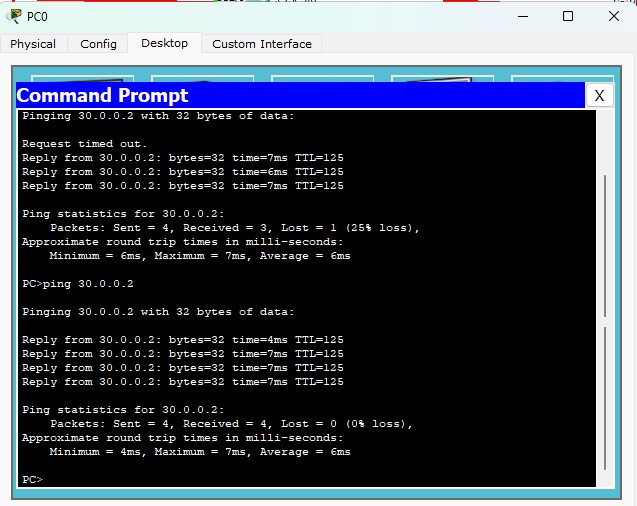
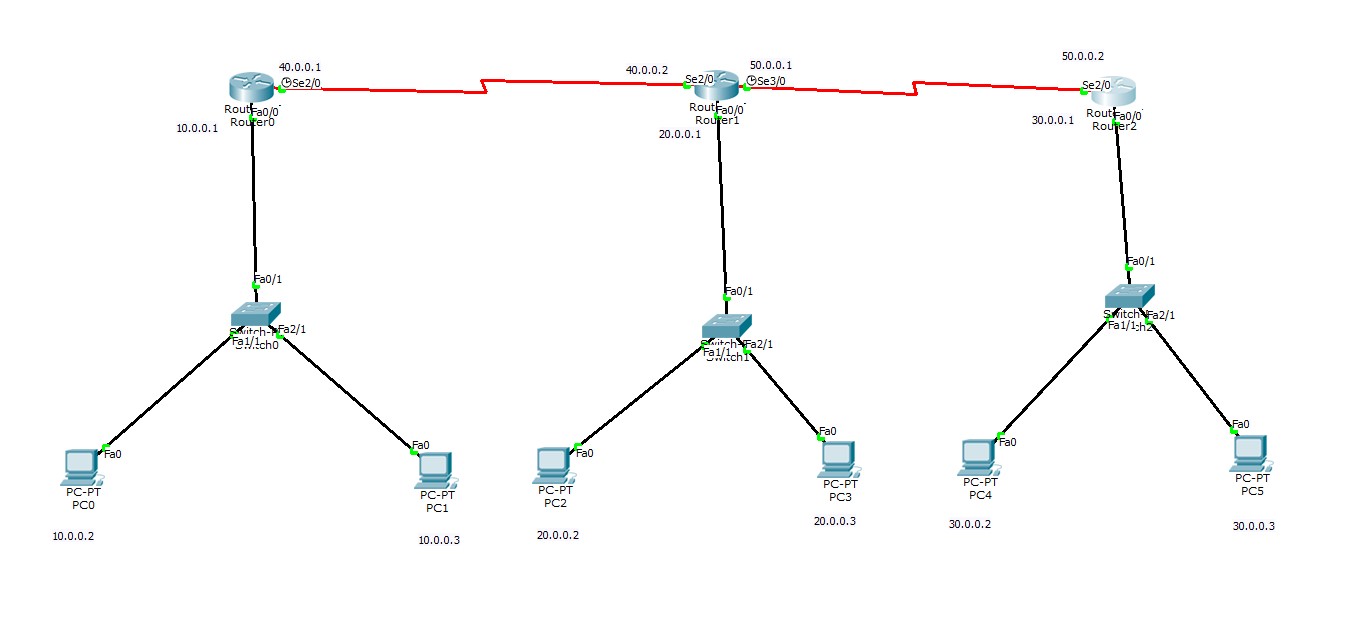
**Aim:**Configure RIP routing Protocol in Routers .

**Topology , Procedure and Observation:**





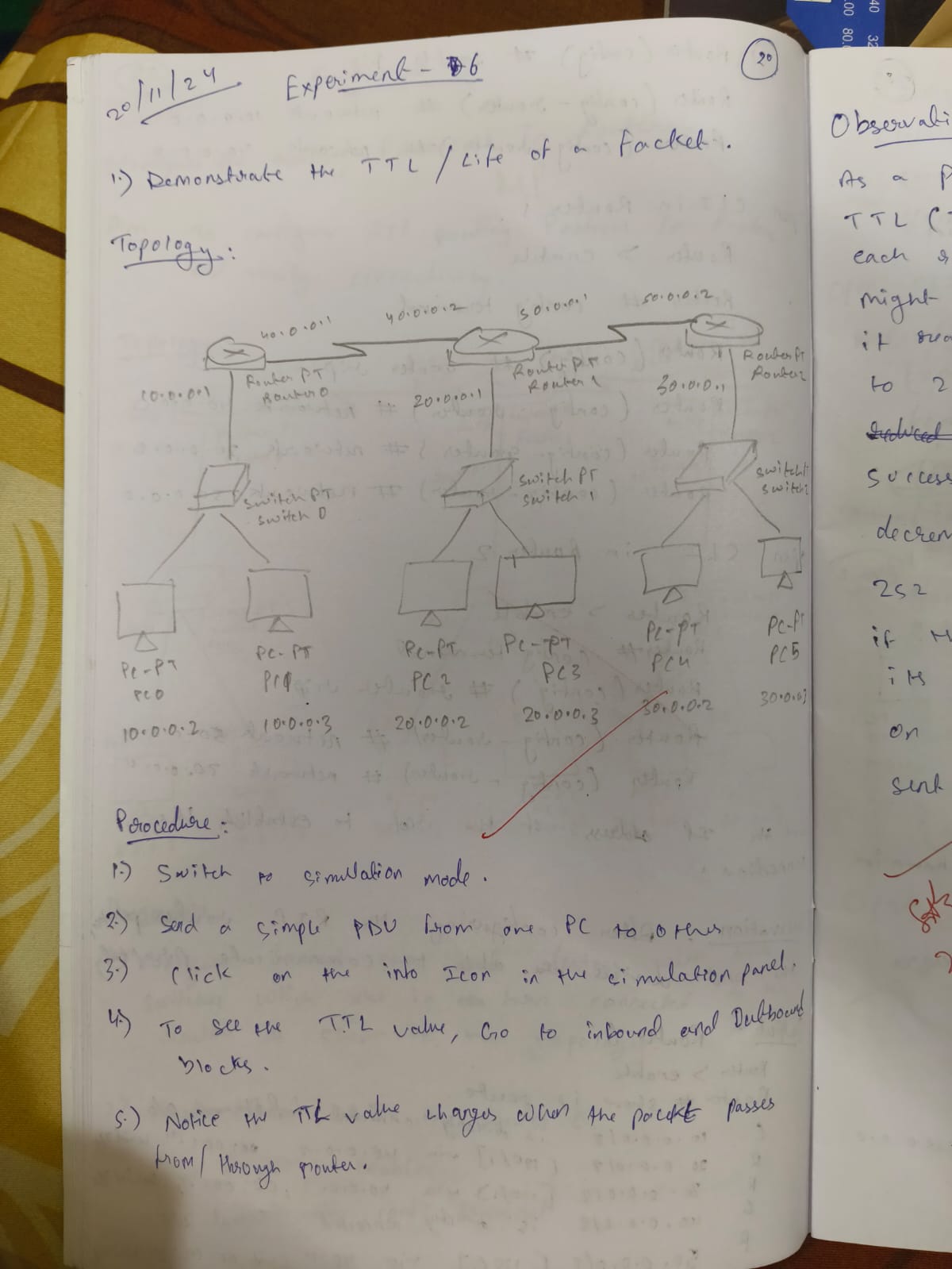
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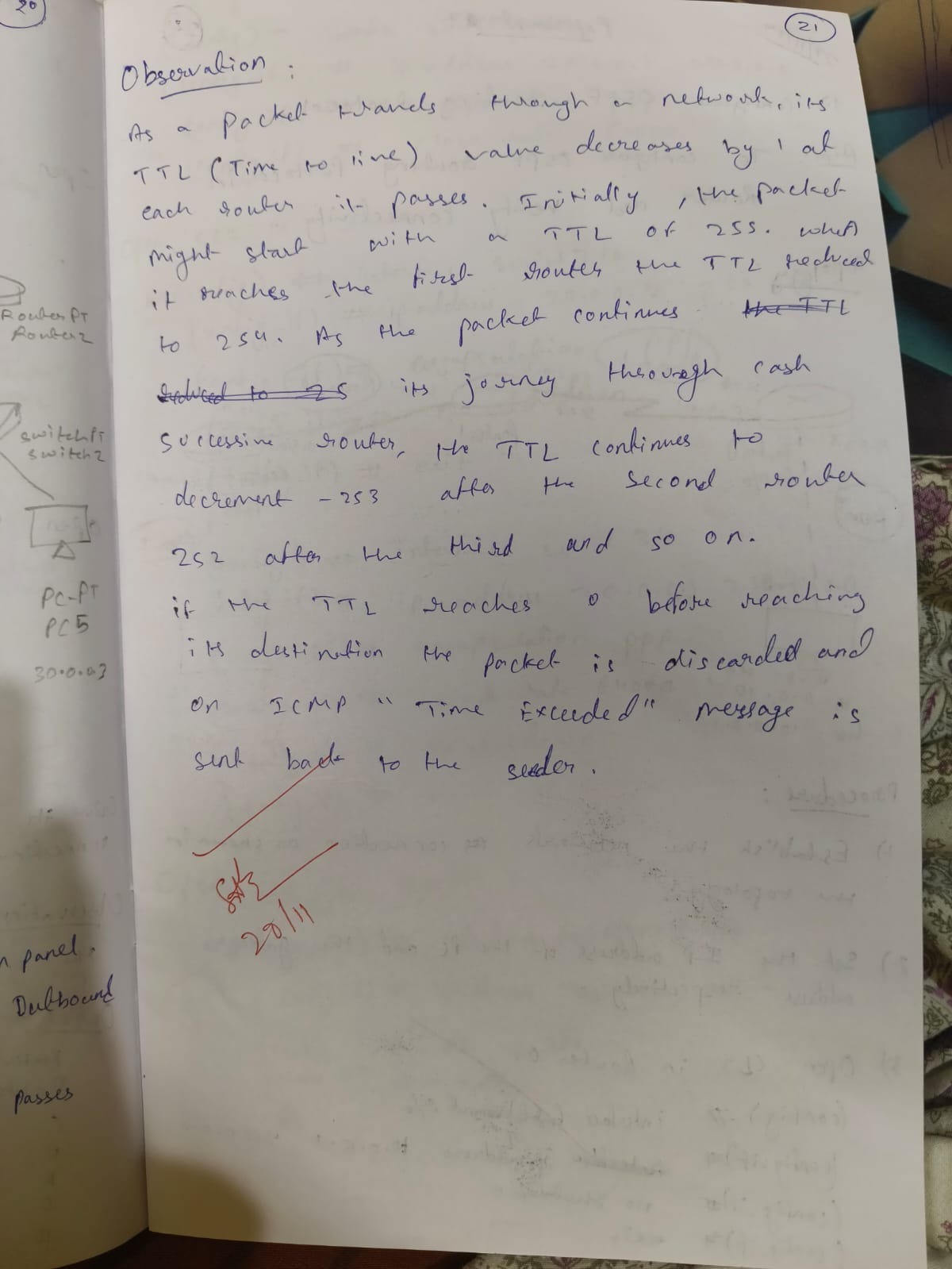


#### Program 7

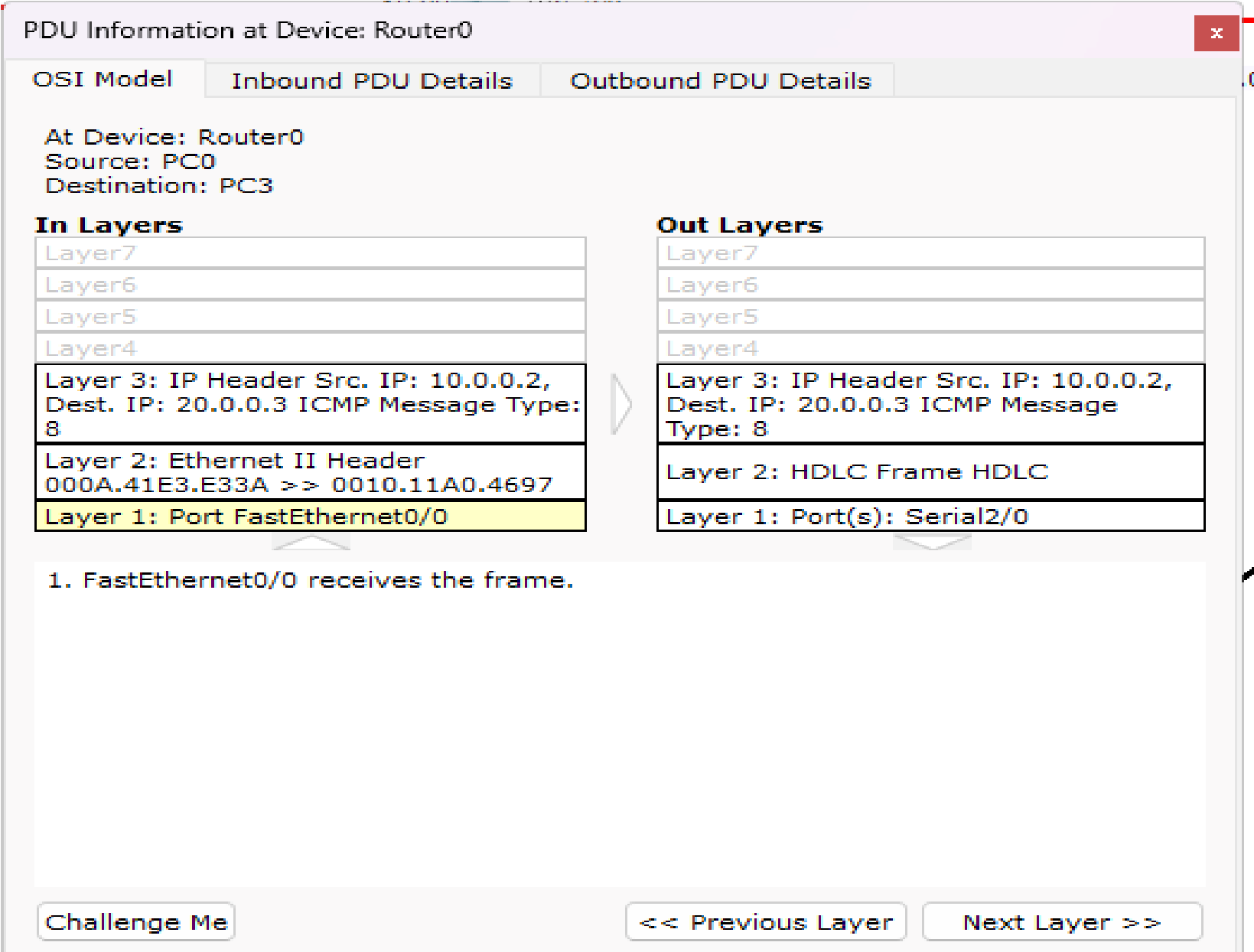
**Aim:**Demonstrate the TTL/ Life of a Packet .

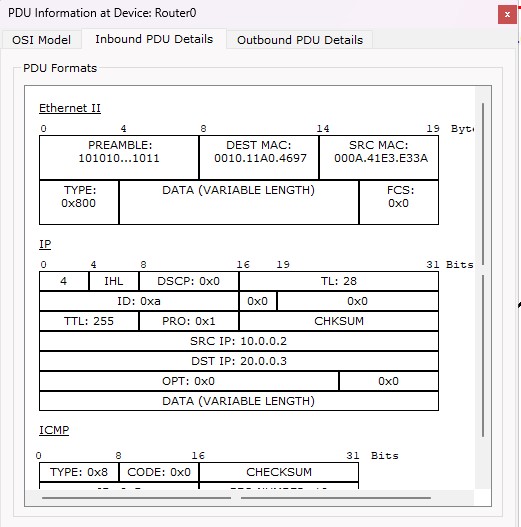
**Topology , Procedure and Observation:**

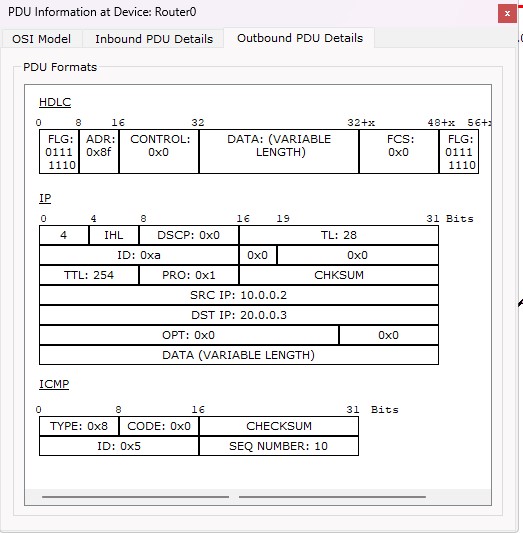




**Screen Shots:**



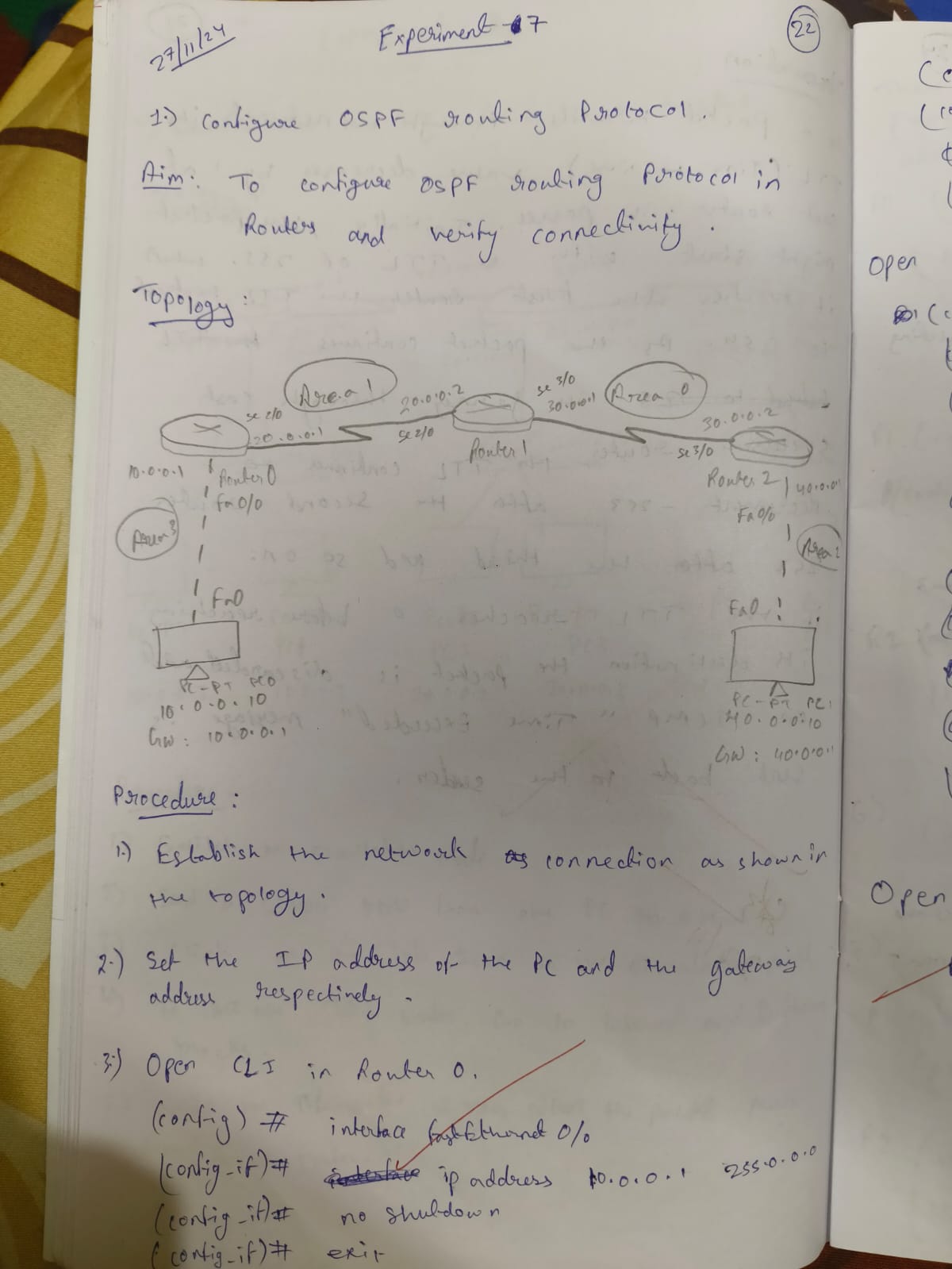


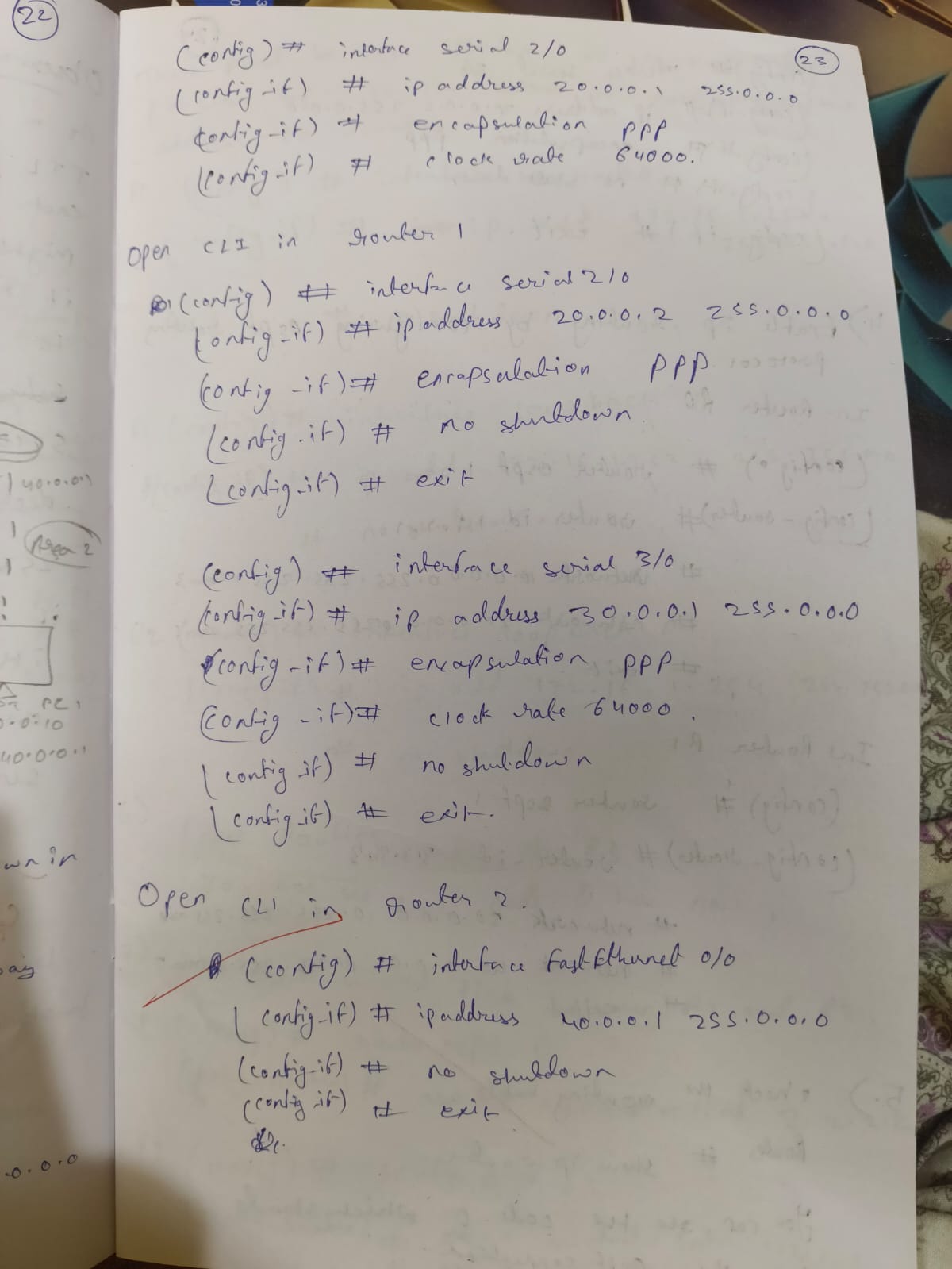


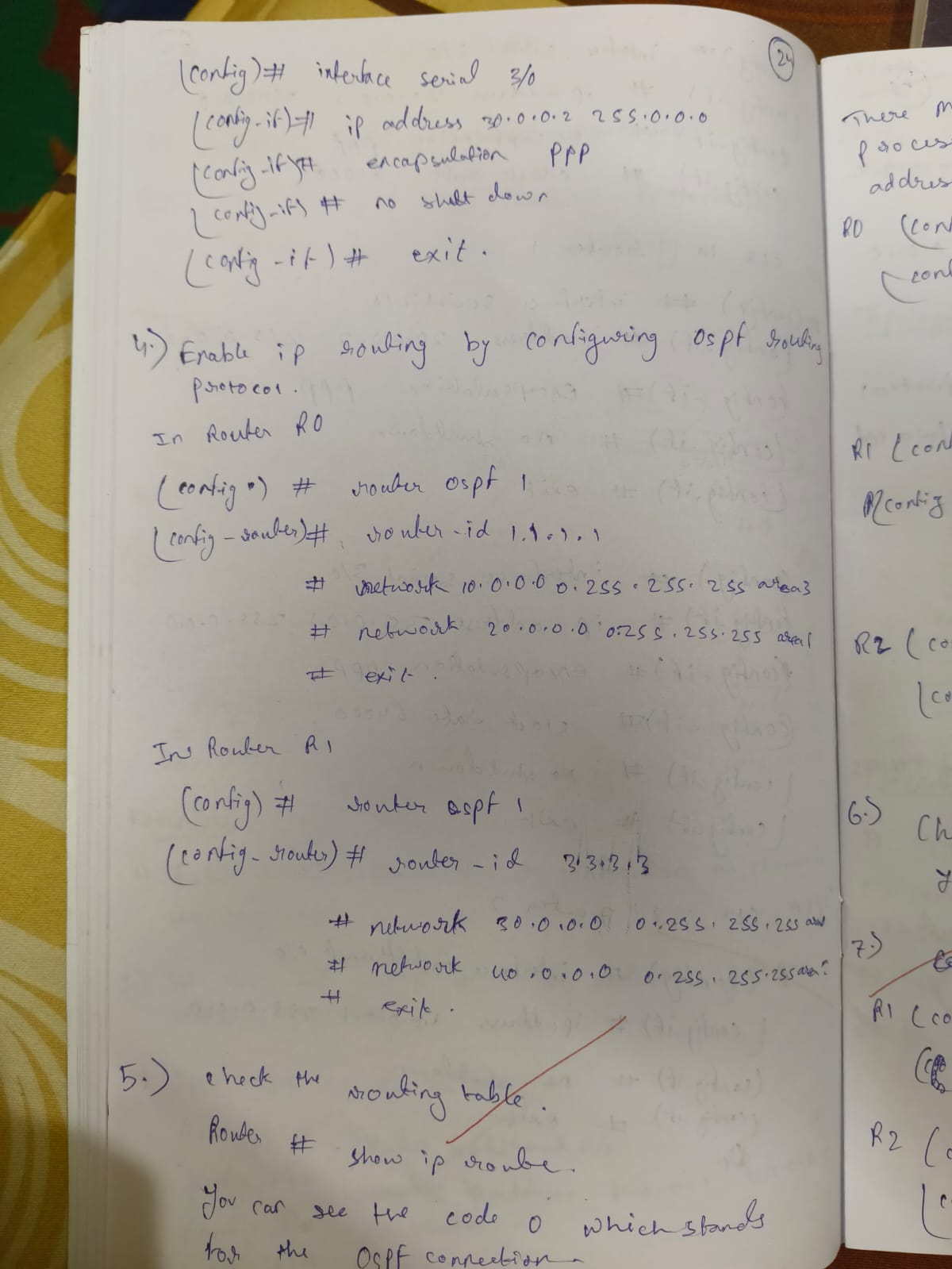
#### Program 8

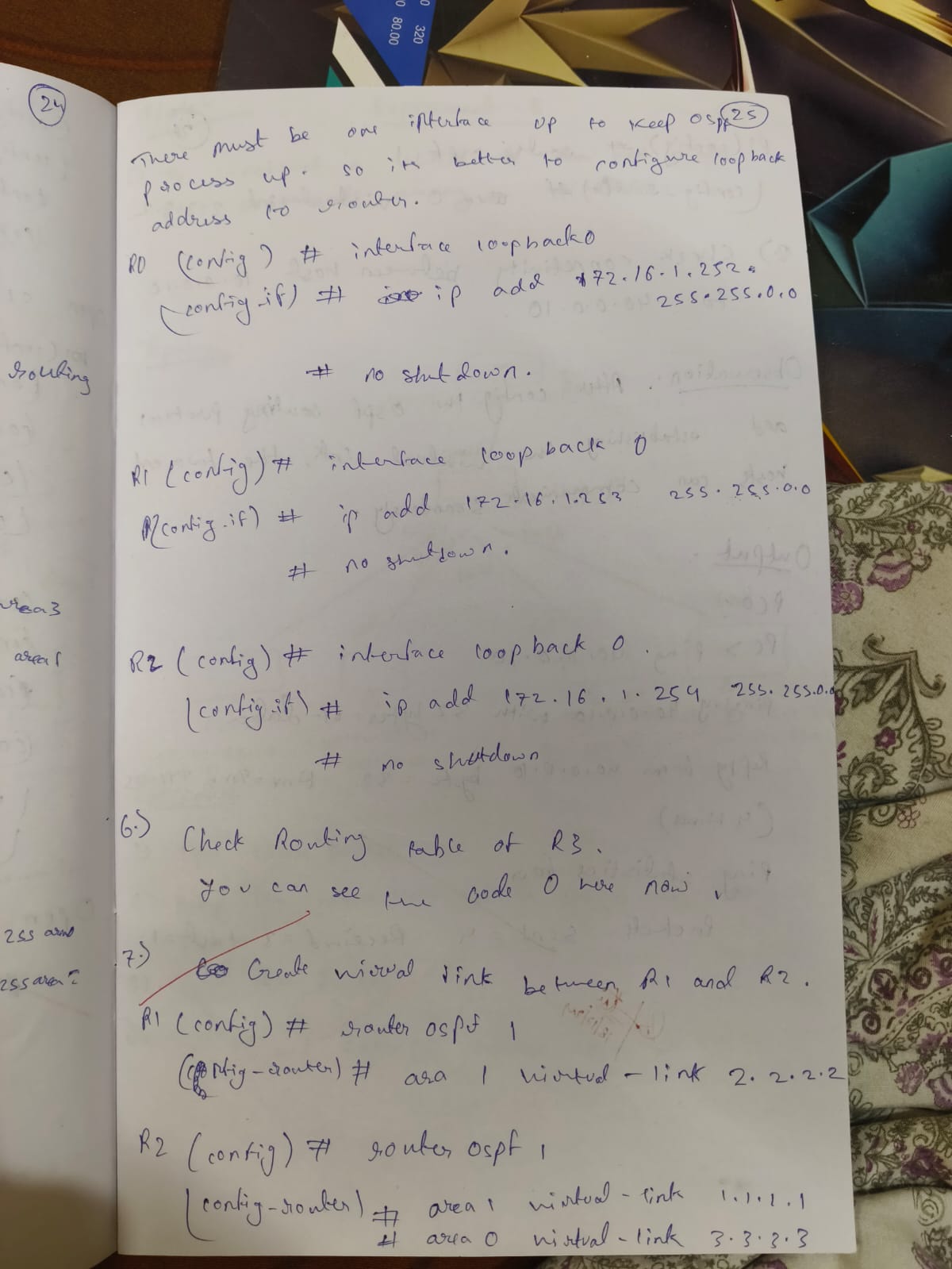
**Aim:**Configure OSPF routing protocol .

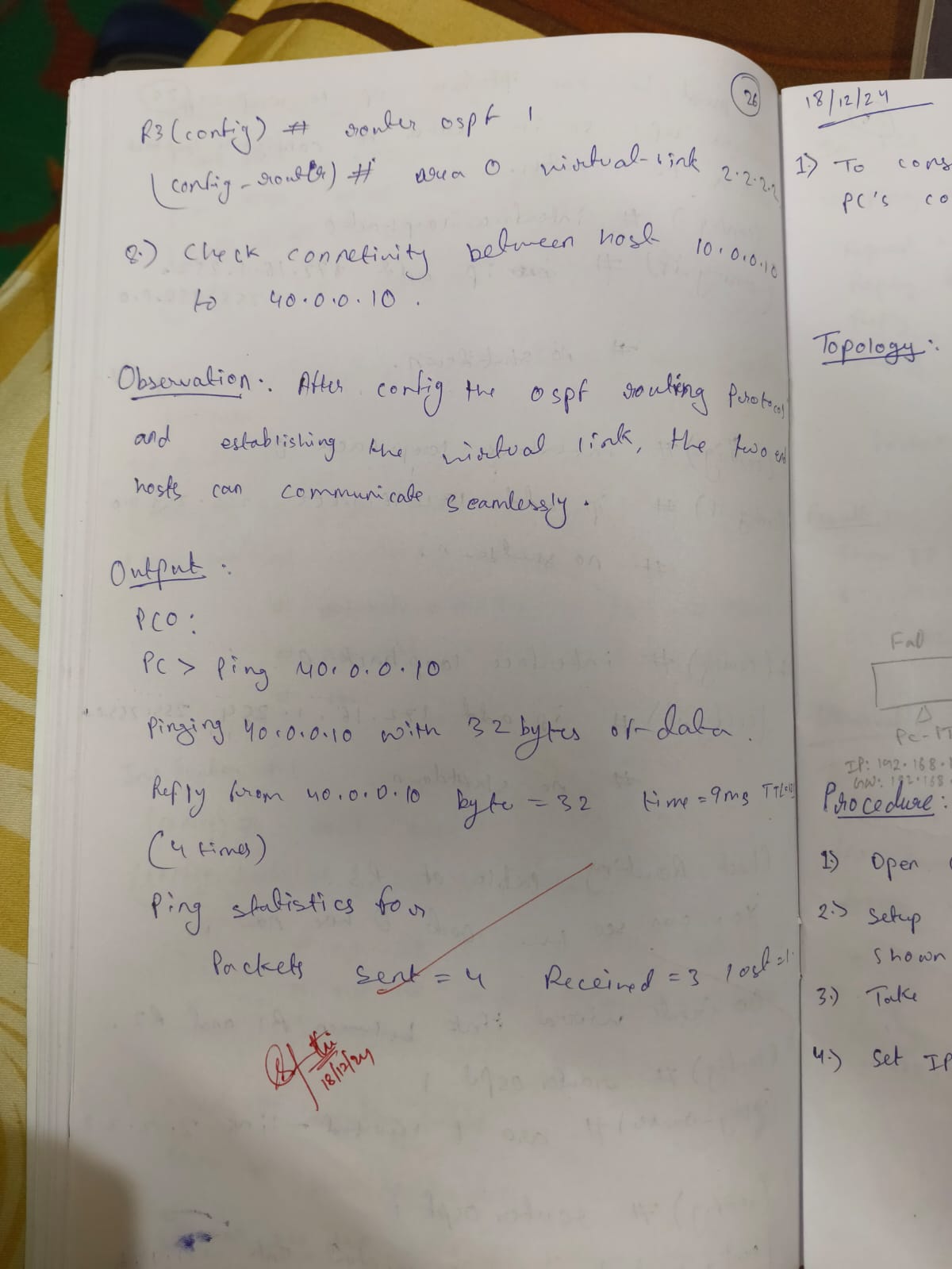
**Topology , Procedure and Observation:**



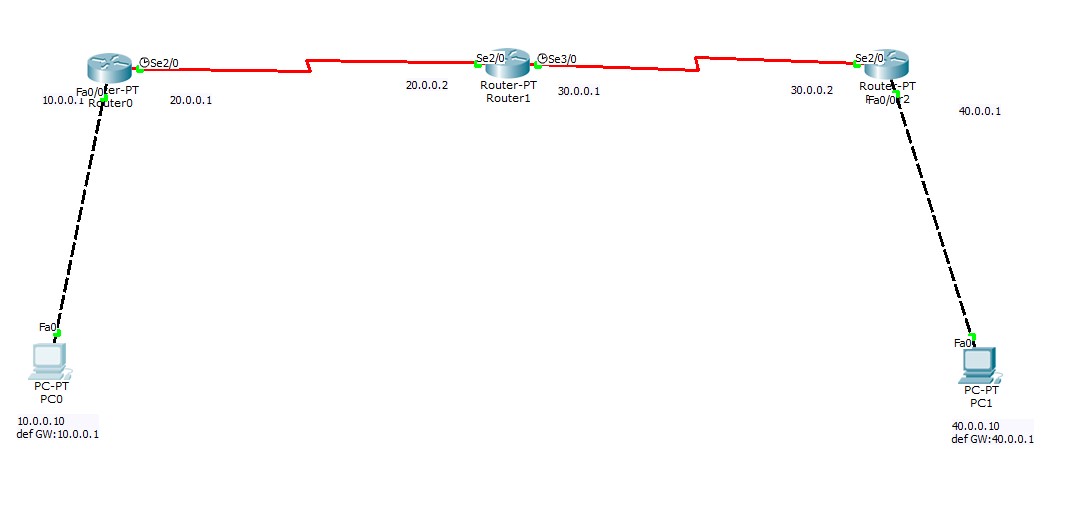








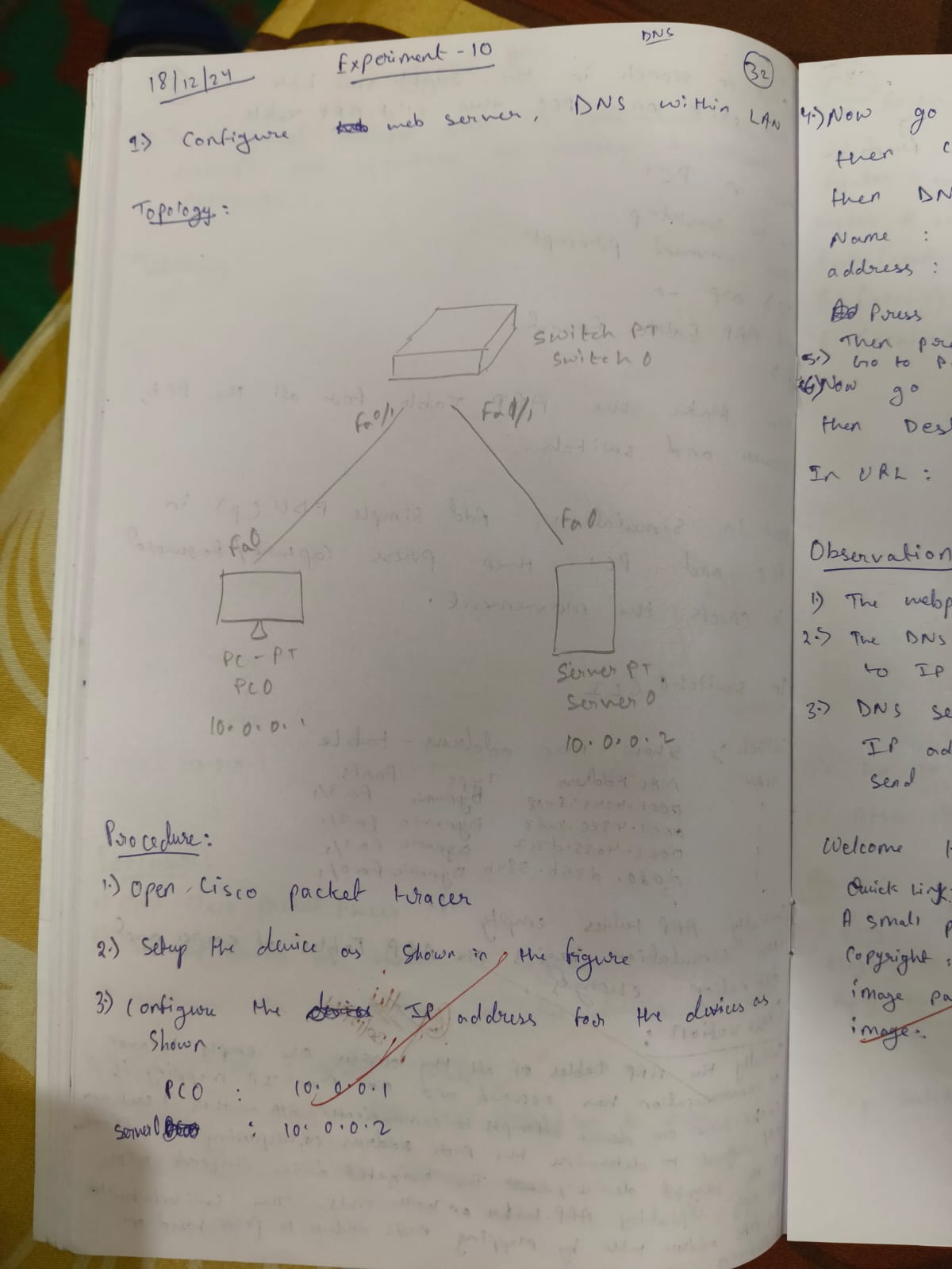
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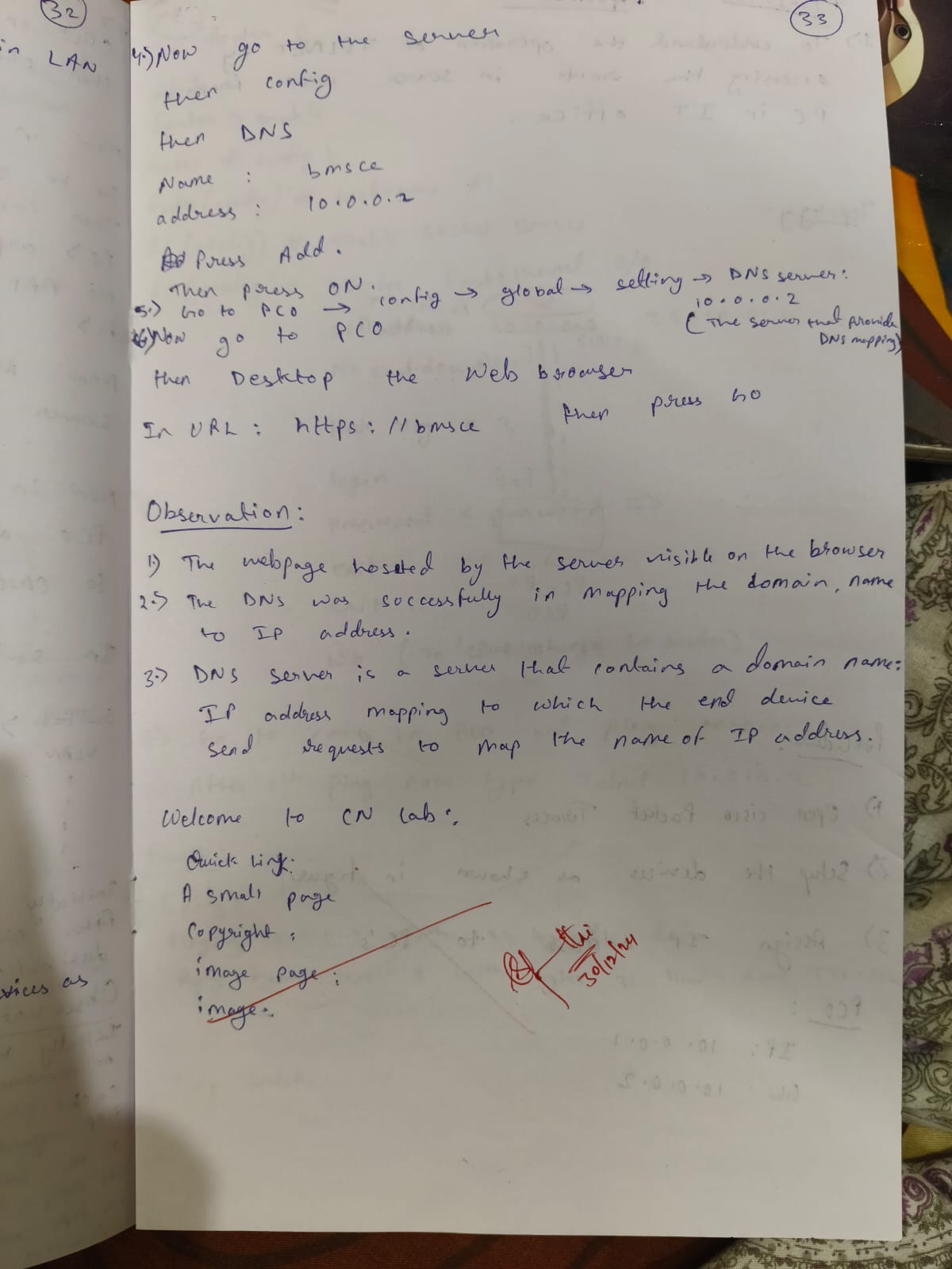


#### Program 9

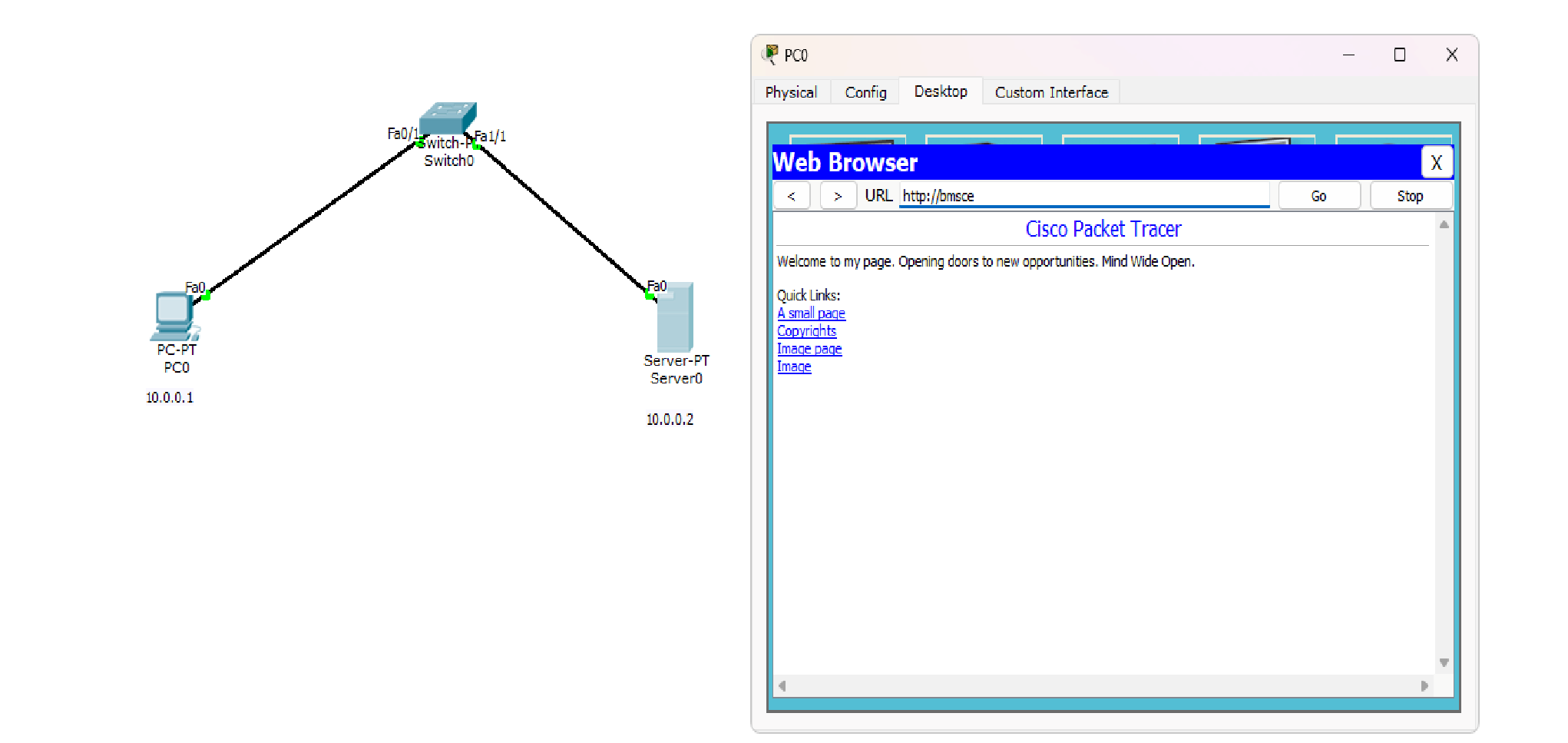
**Aim:**Configure Web Server, DNS within a LAN.

**Topology , Procedure and Observation:**





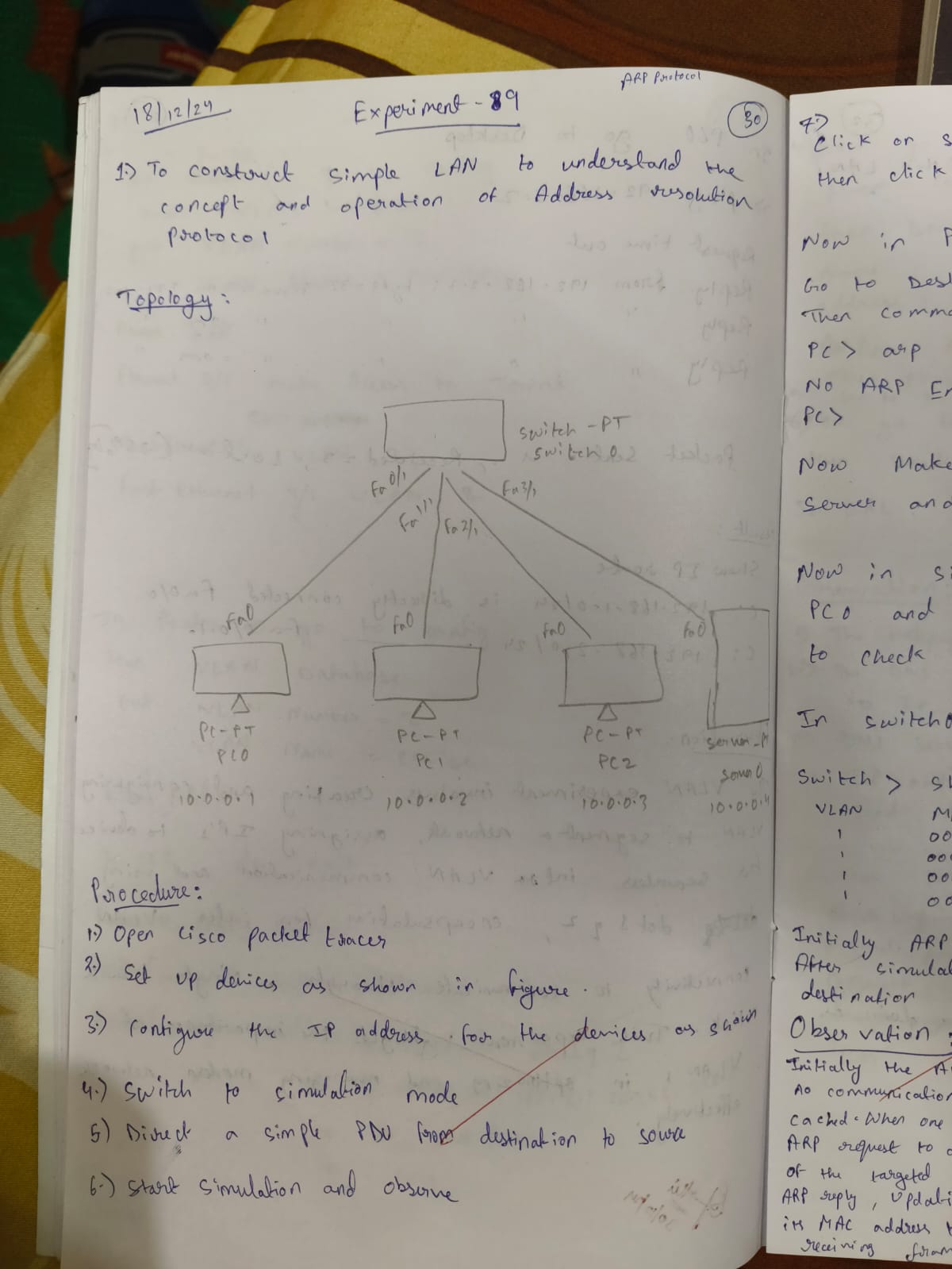
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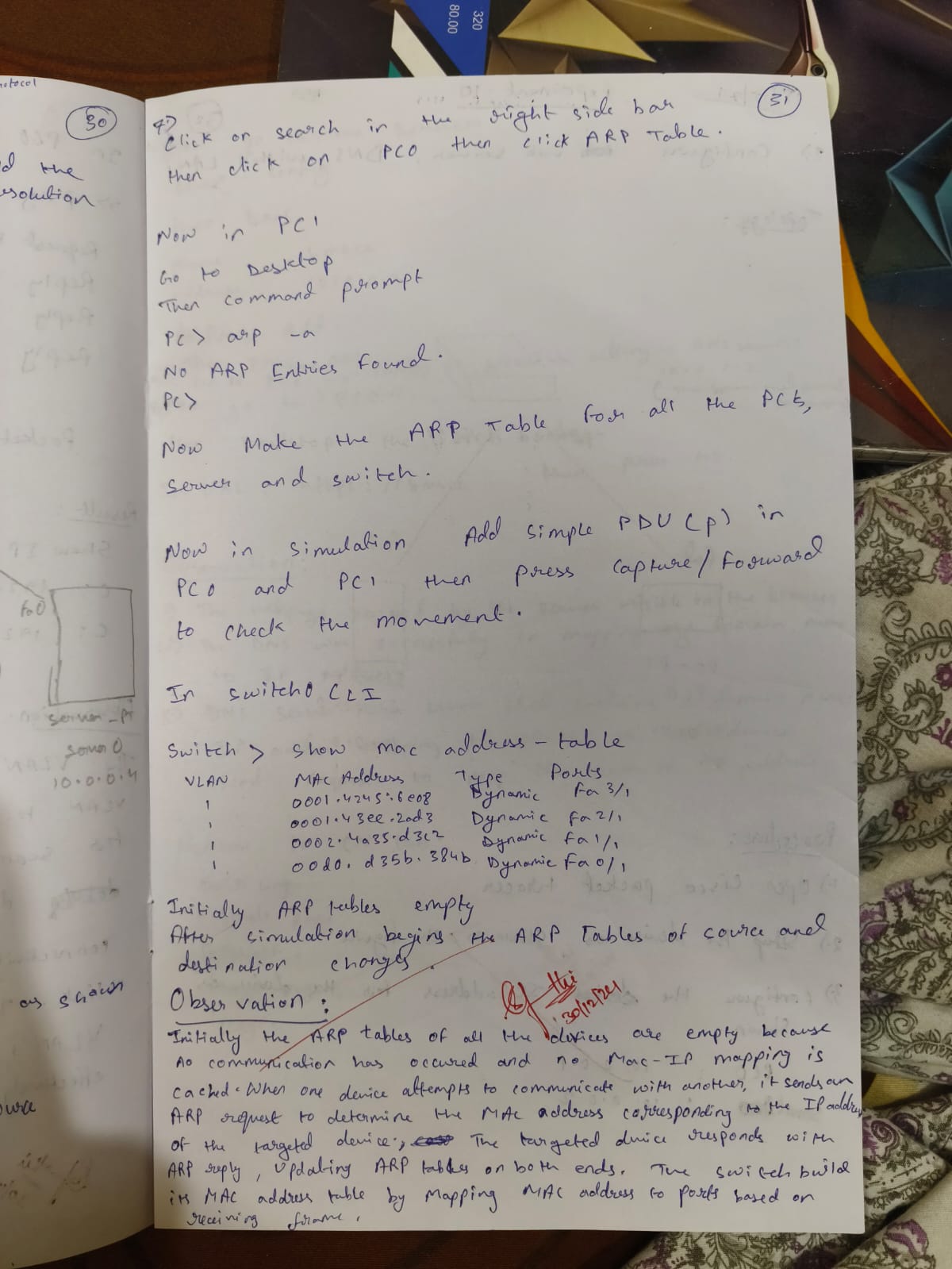


#### Program 10

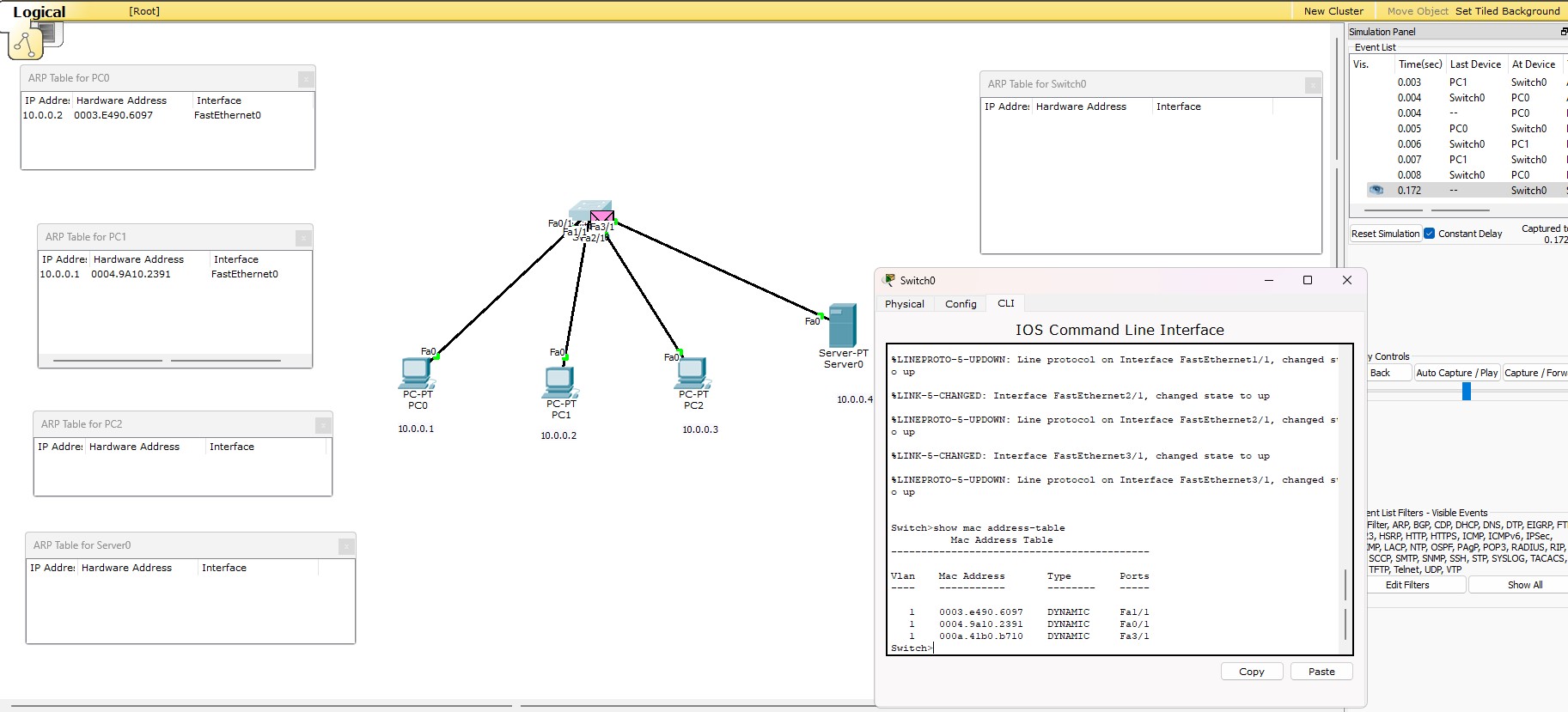
**Aim:**To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)

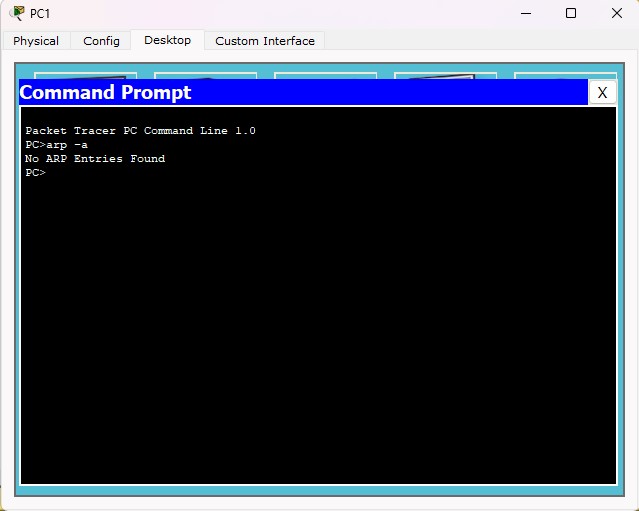
**Topology , Procedure and Observation:**





**Screen Shots:**

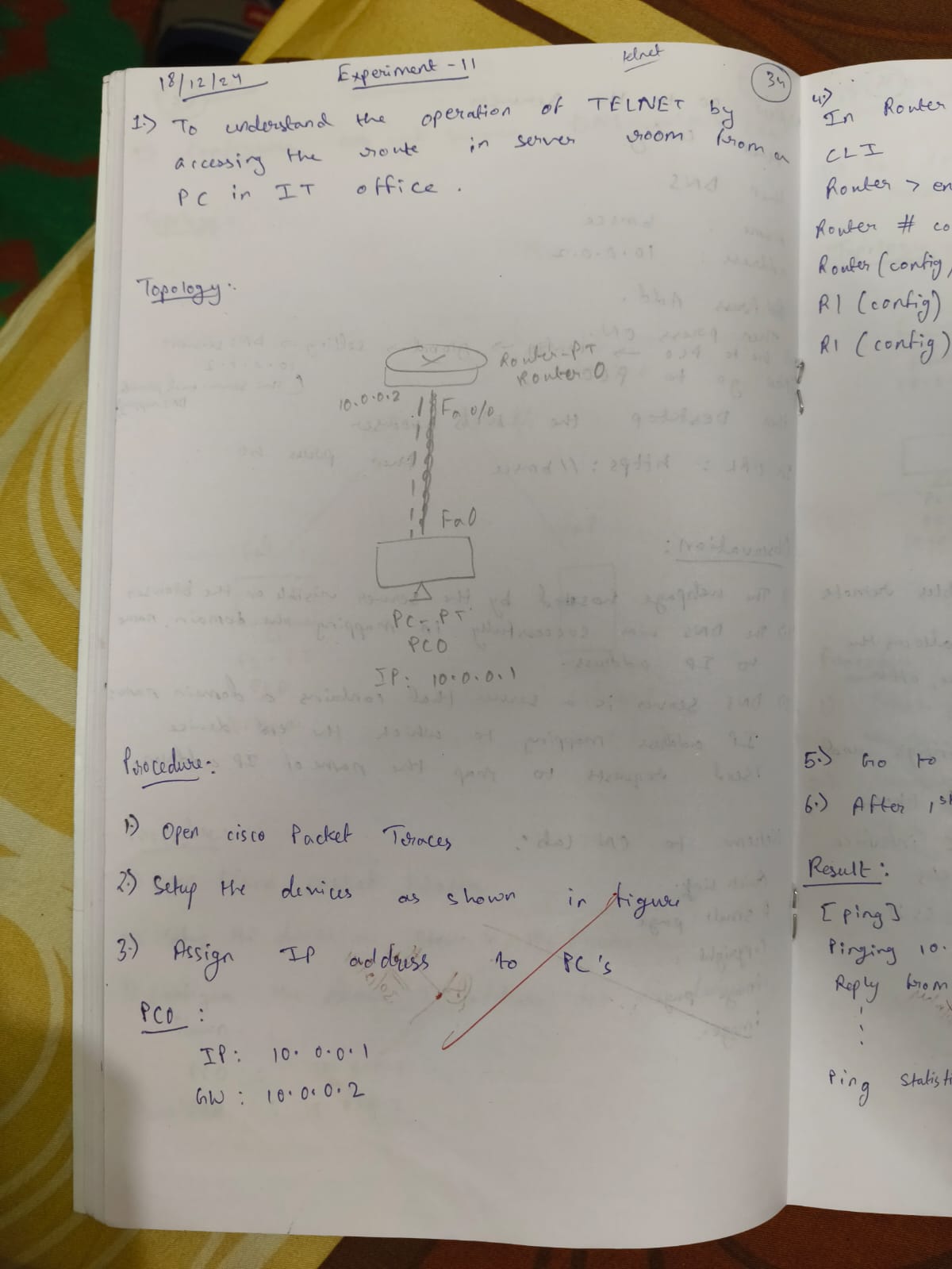


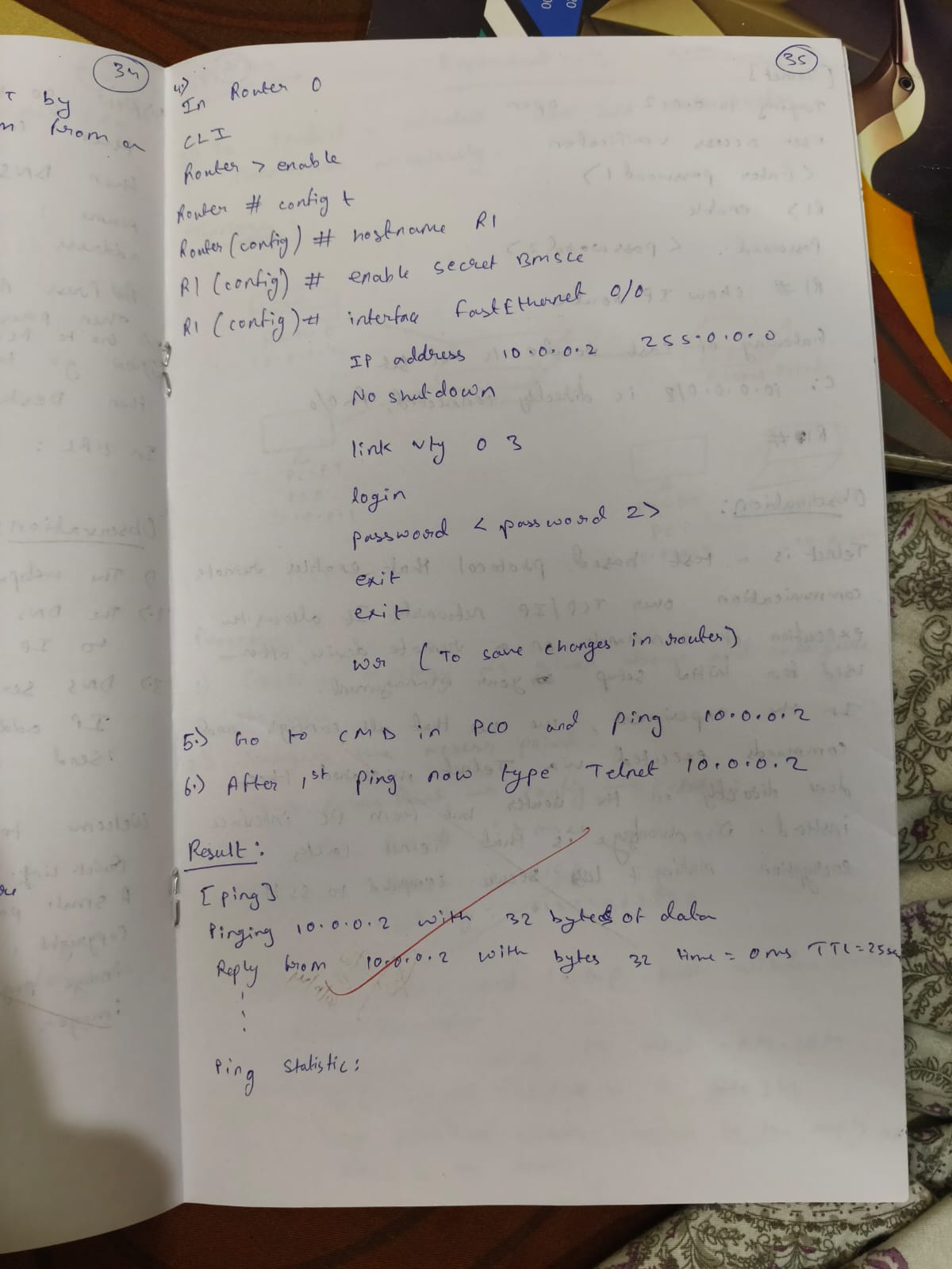


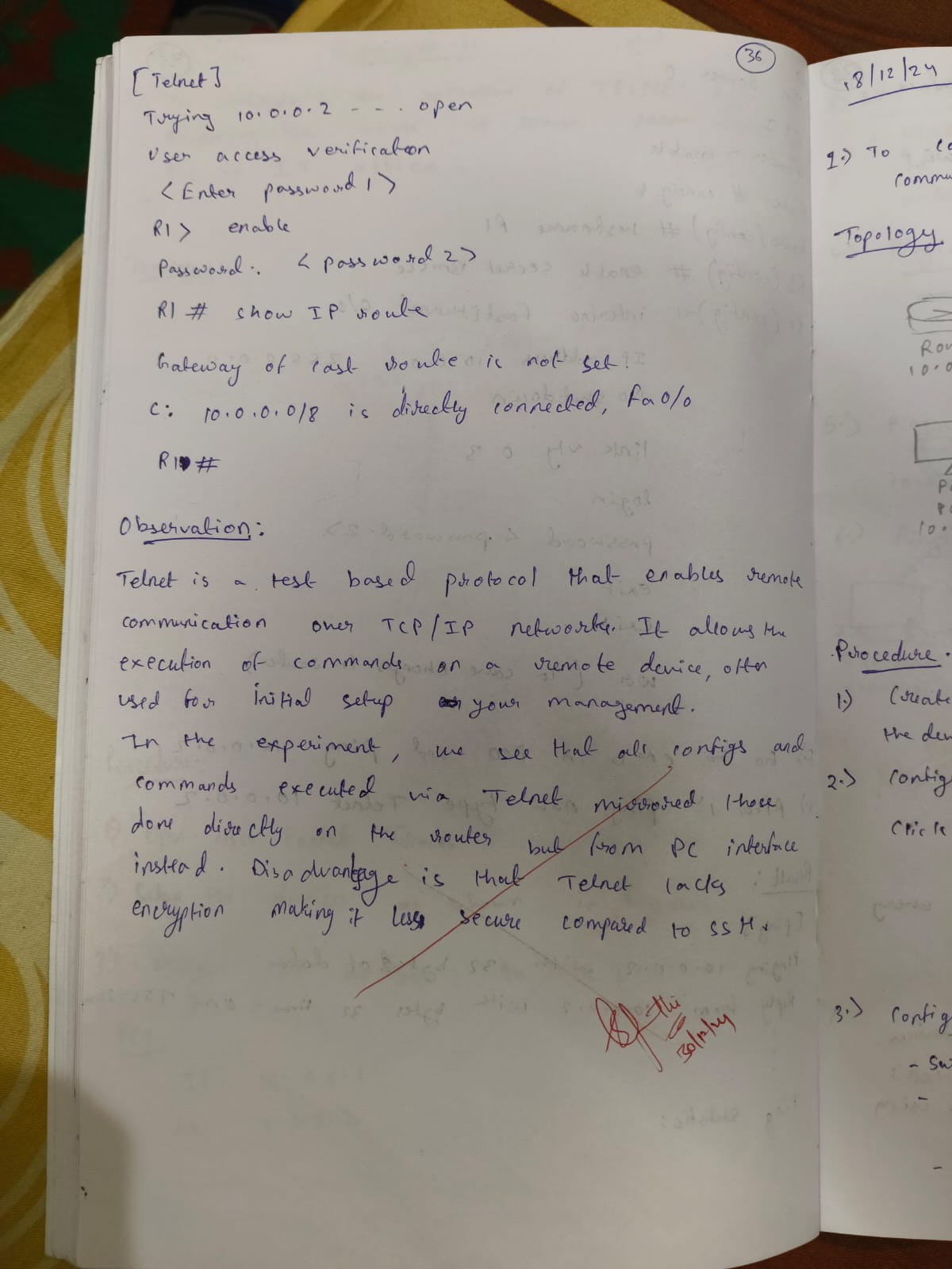
#### Program 11

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

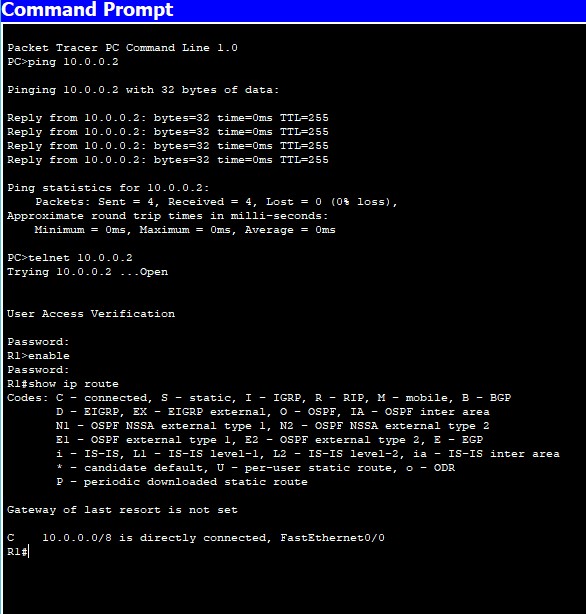
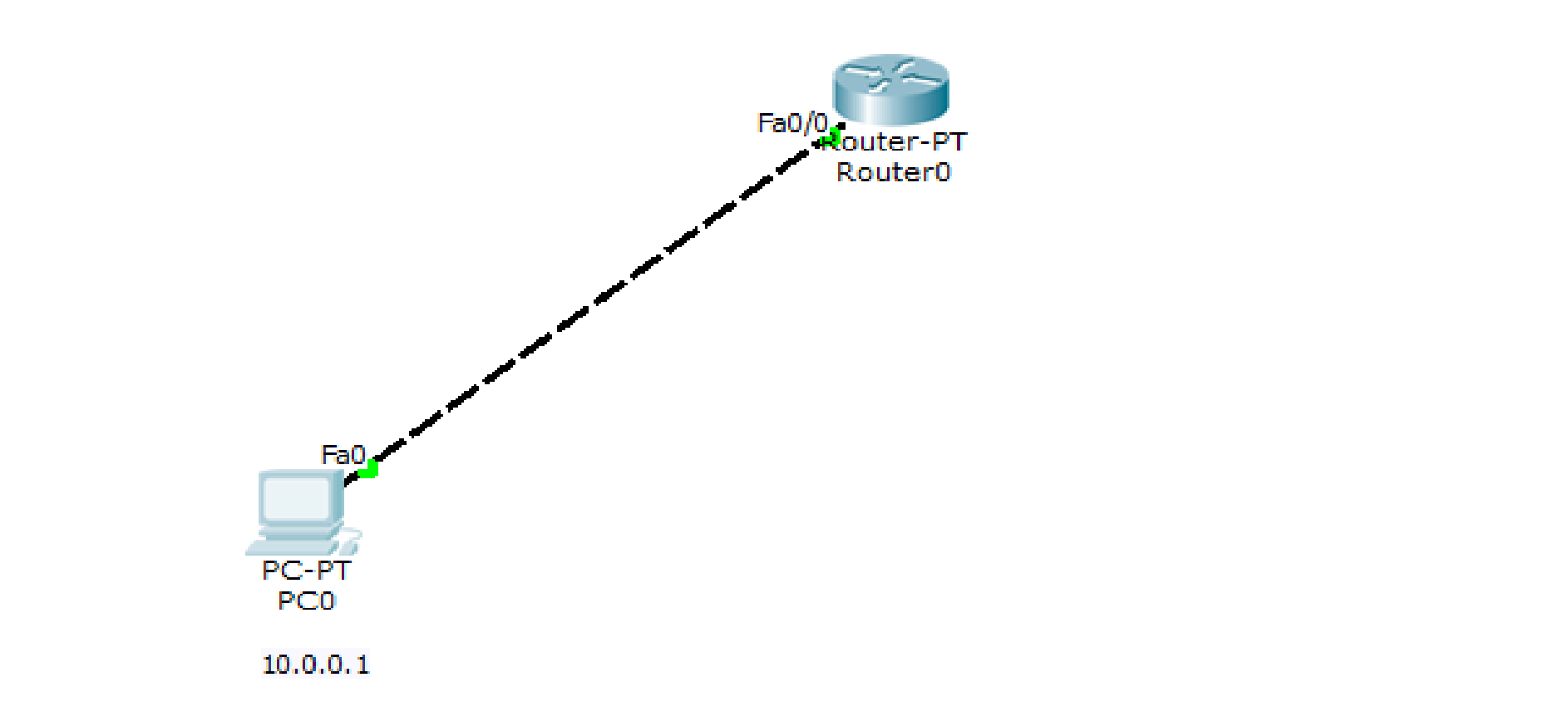
**Topology , Procedure and Observation:**







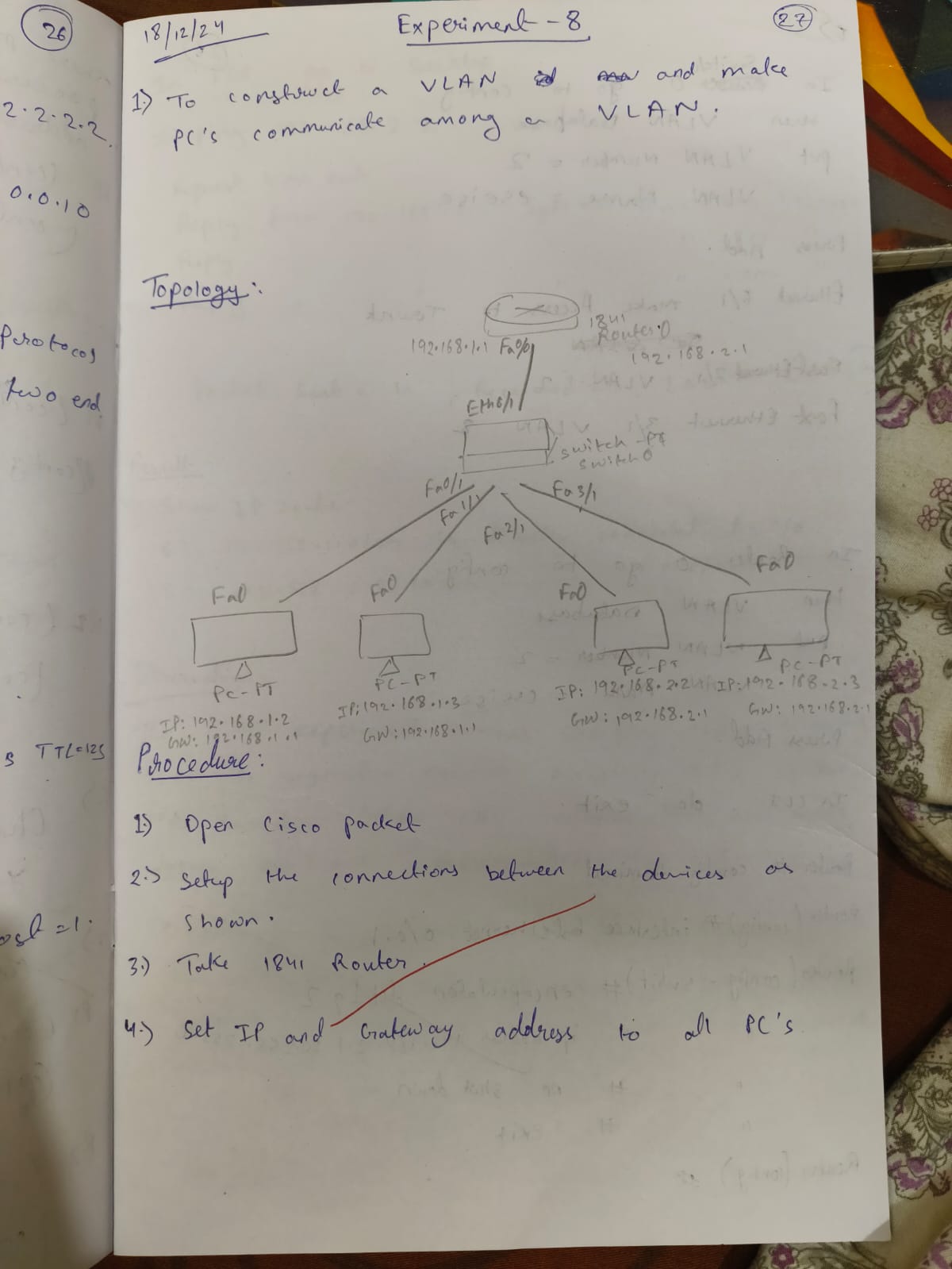
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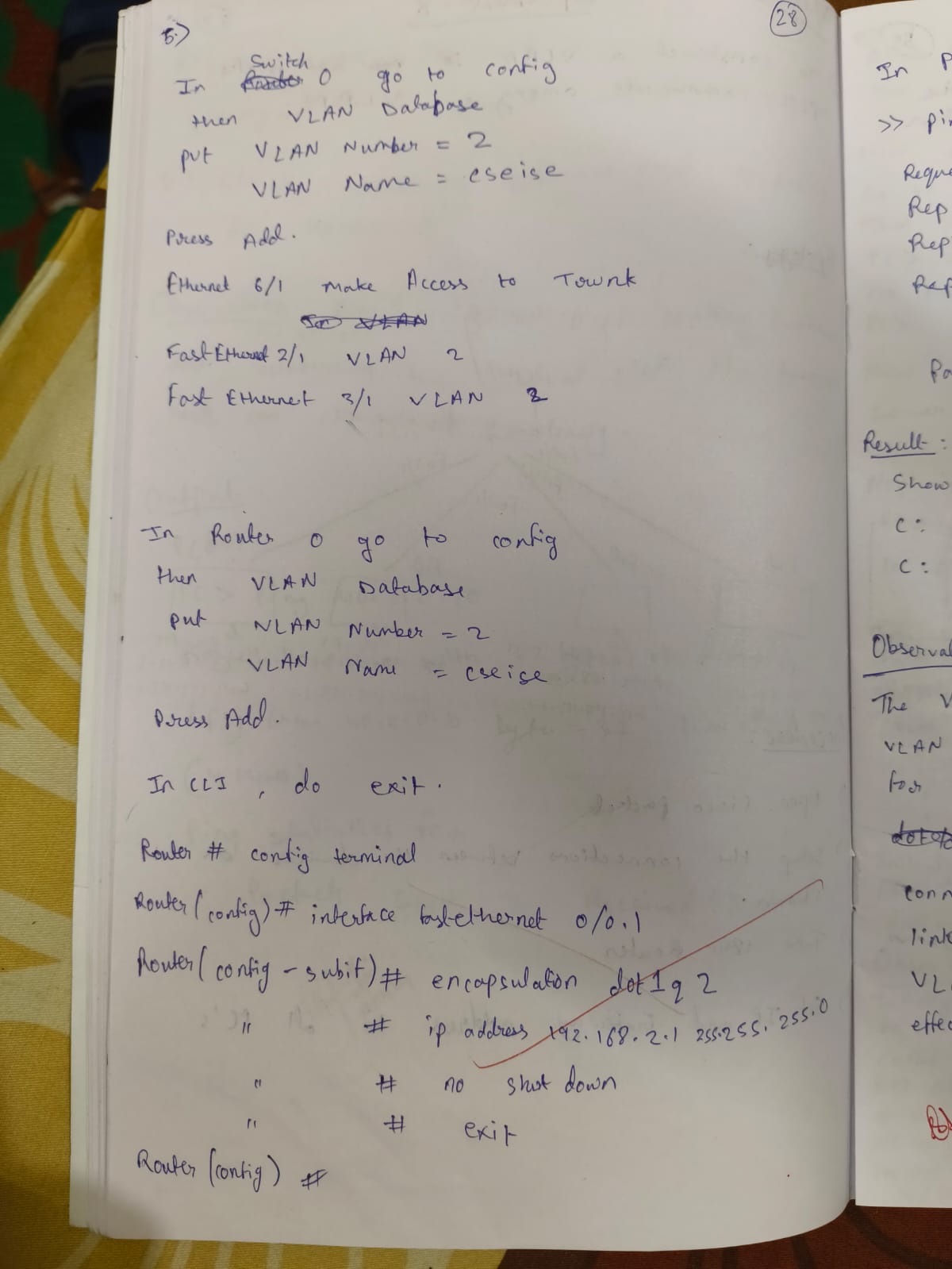


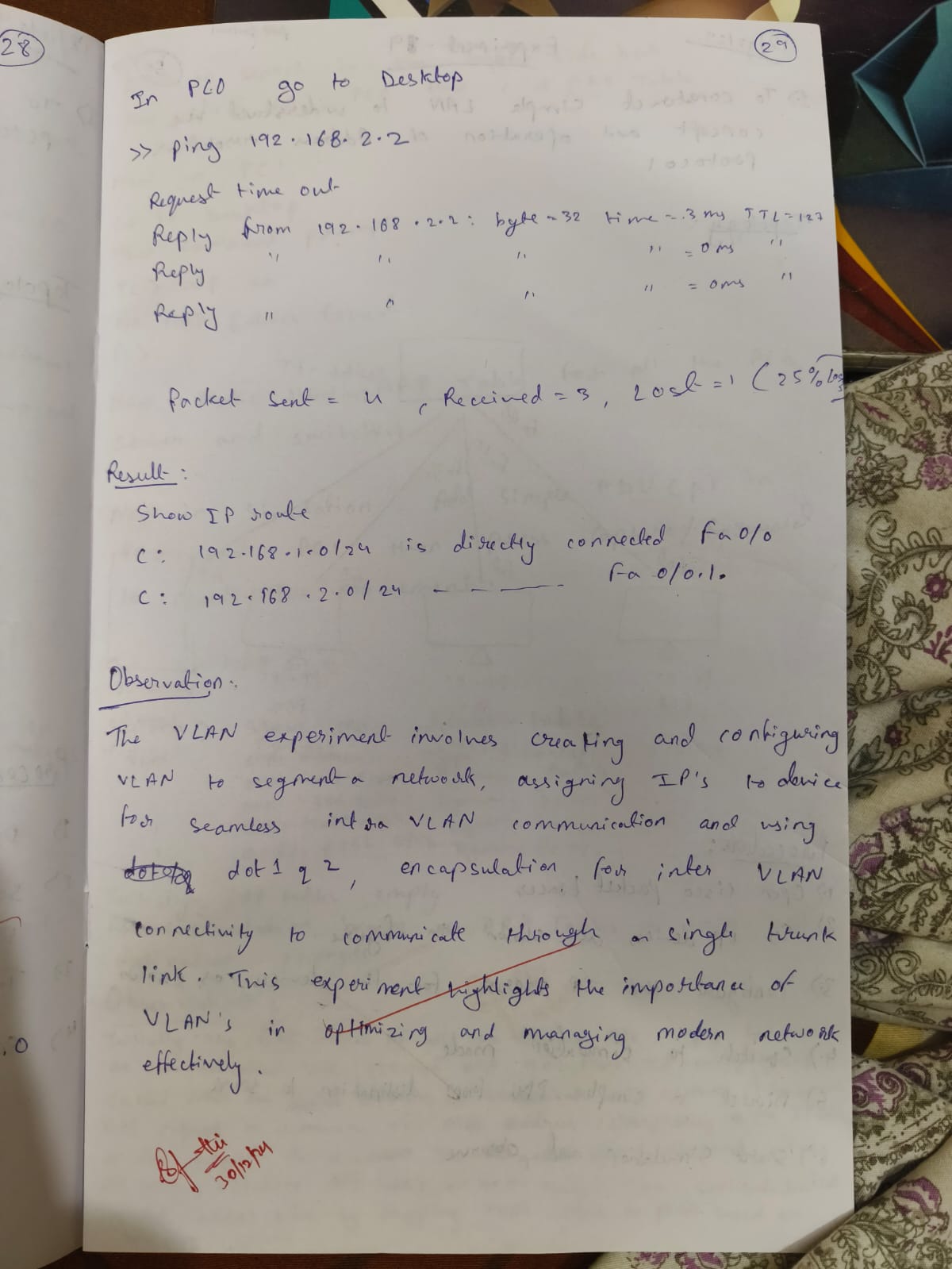
#### Program 12

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

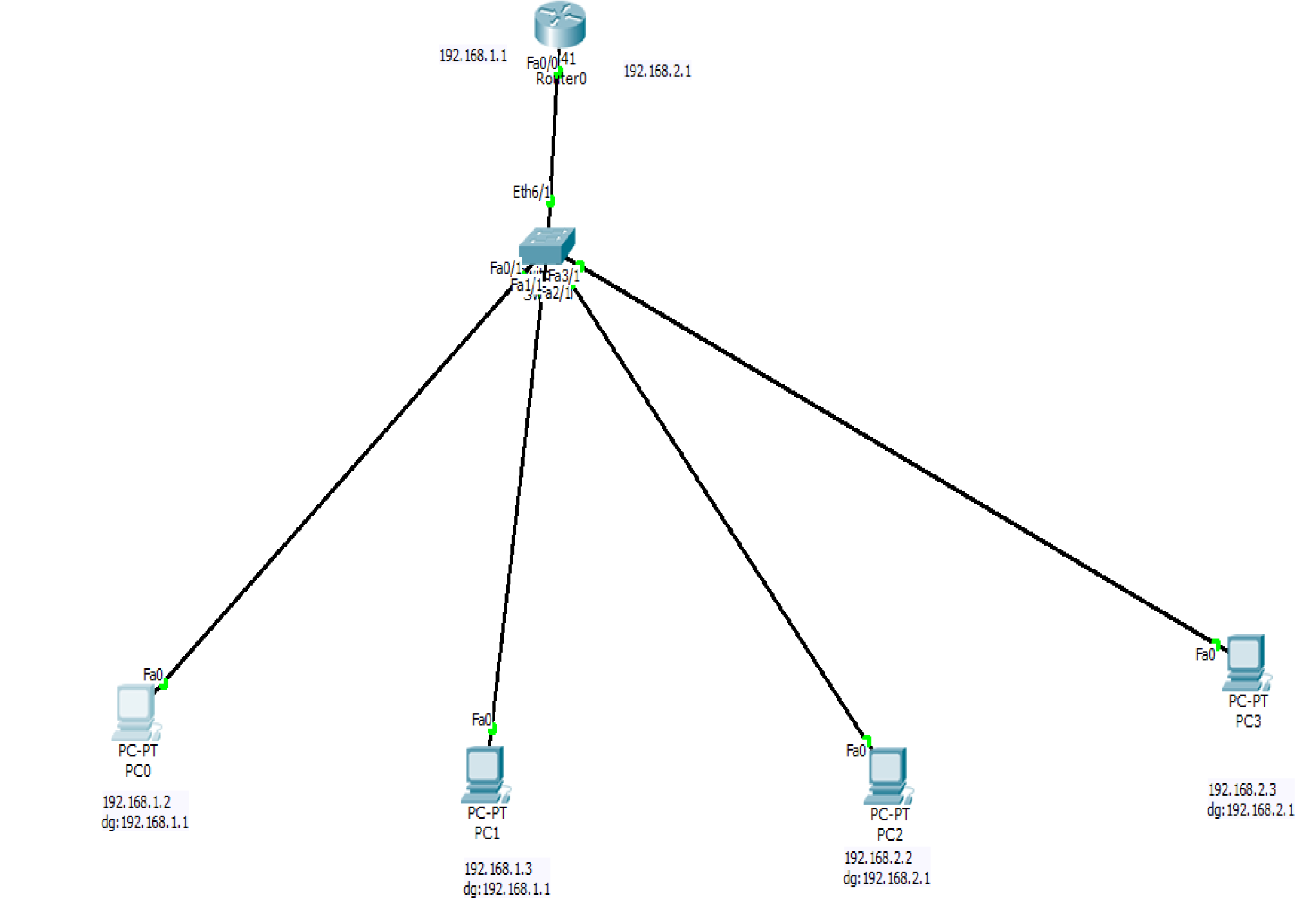
**Topology , Procedure and Observation:**

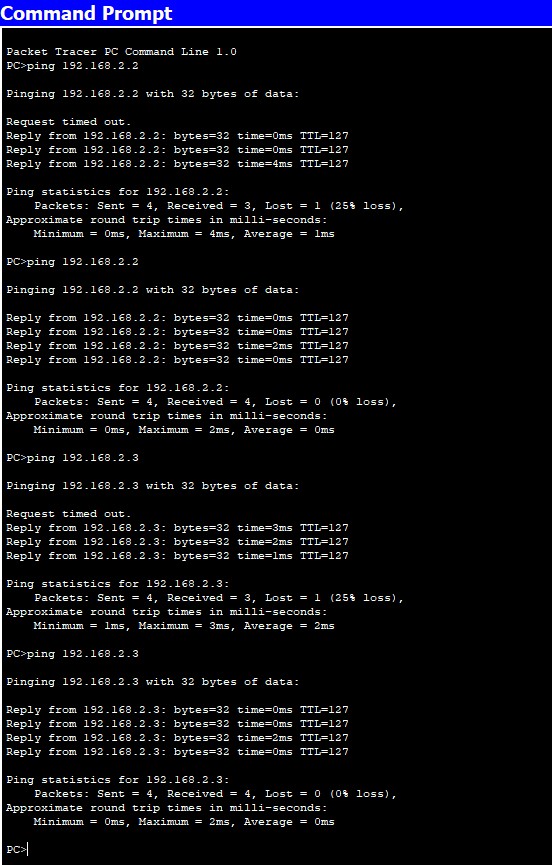






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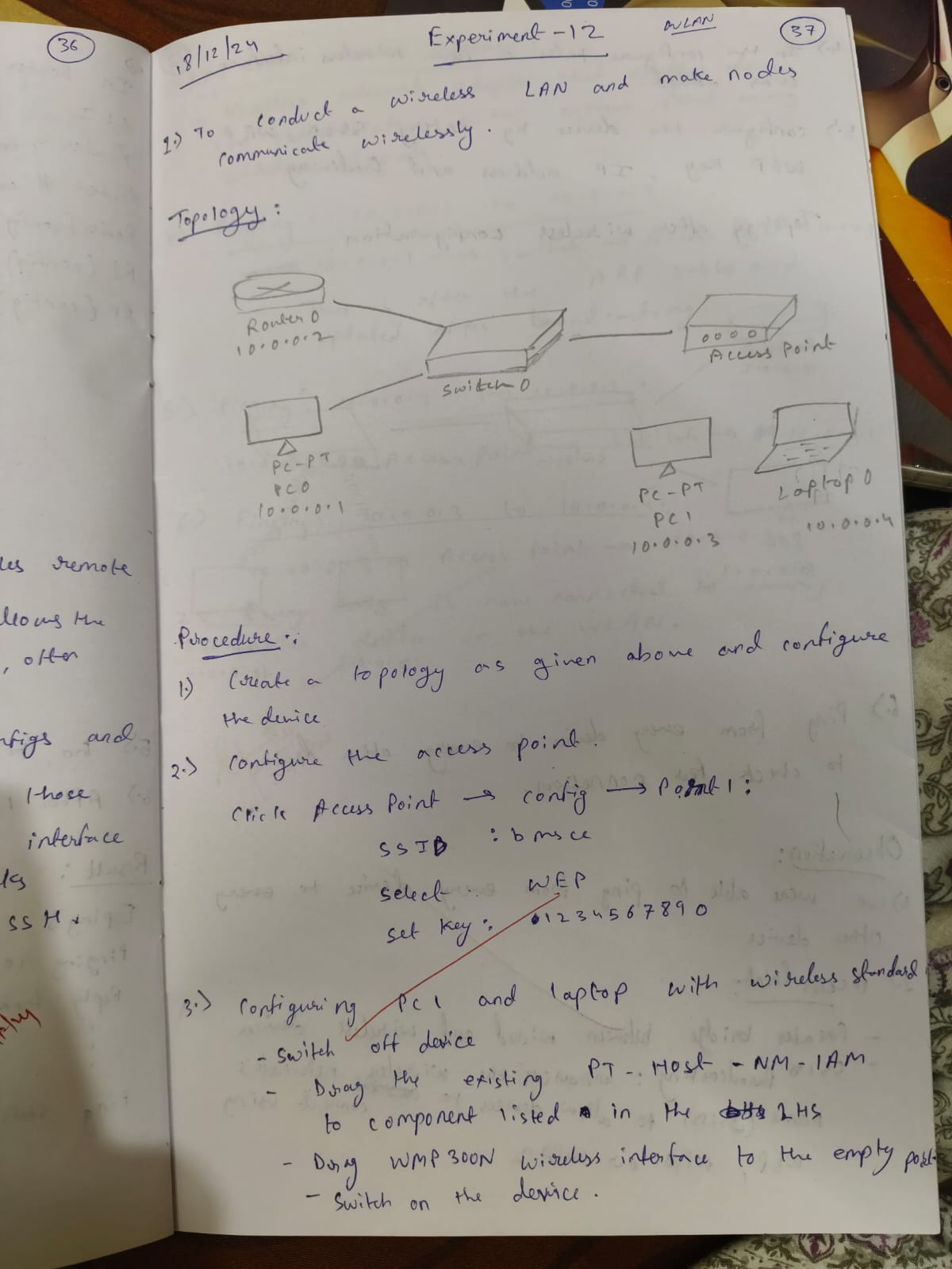




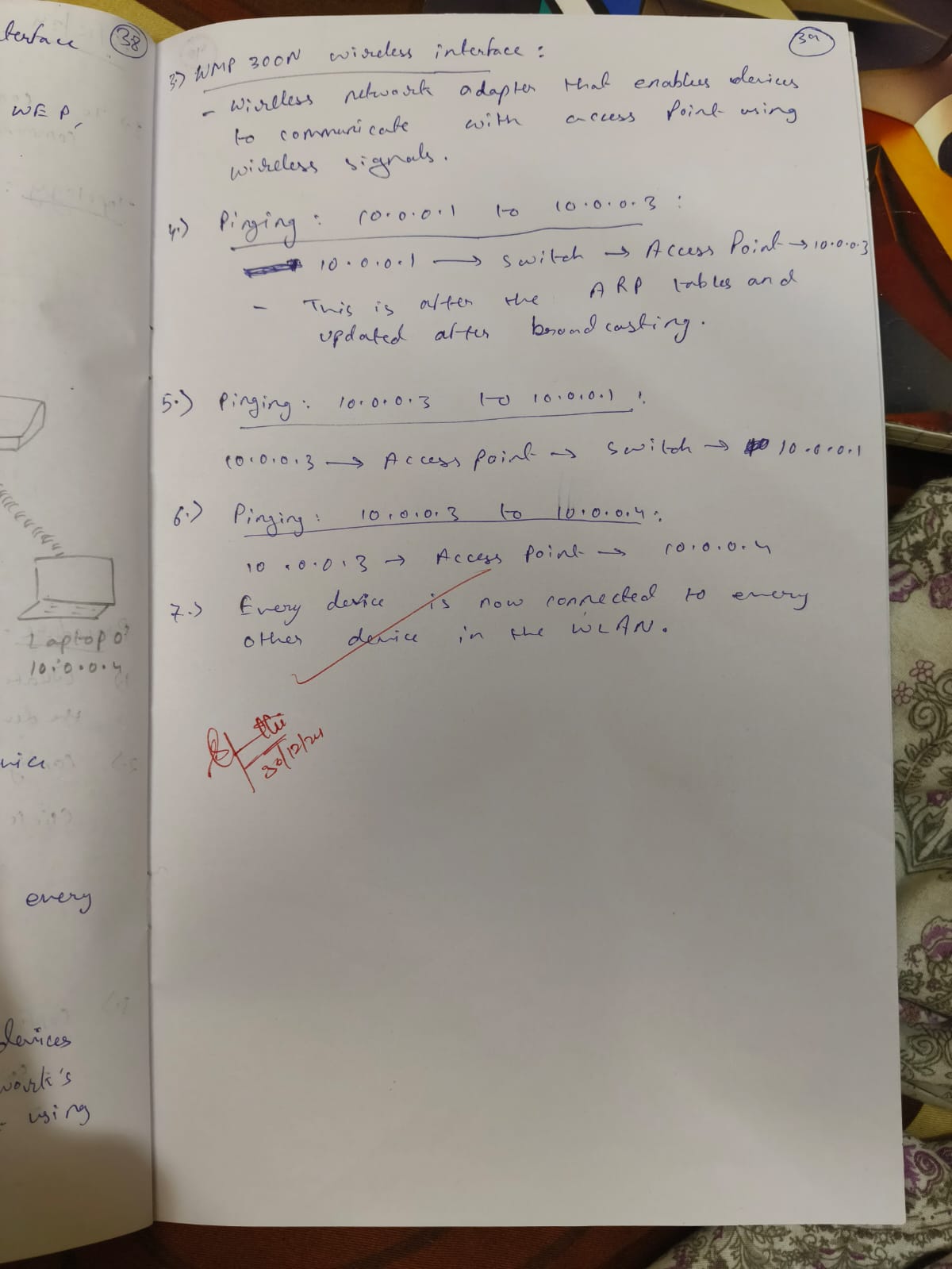
#### Program 13

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

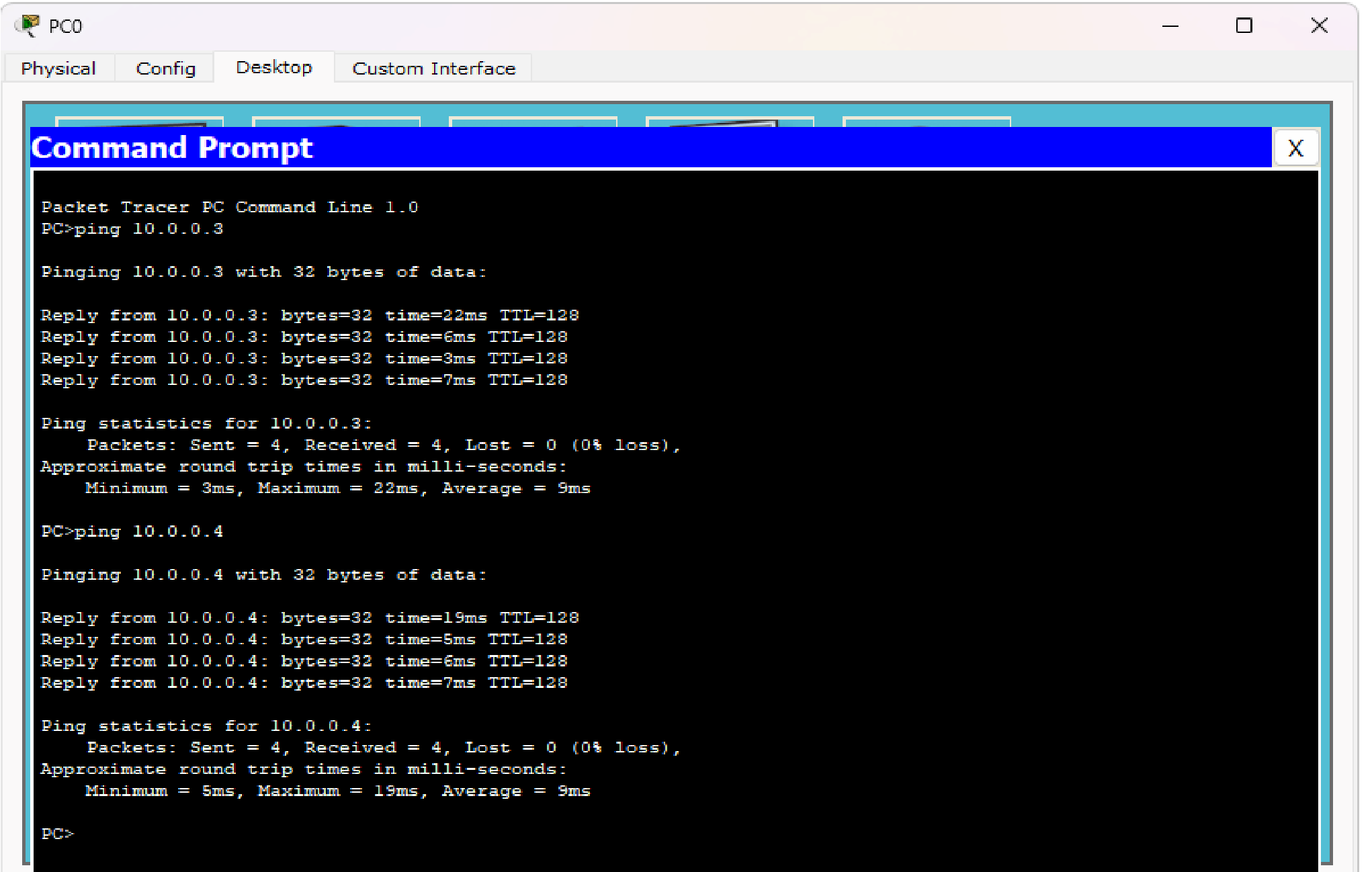
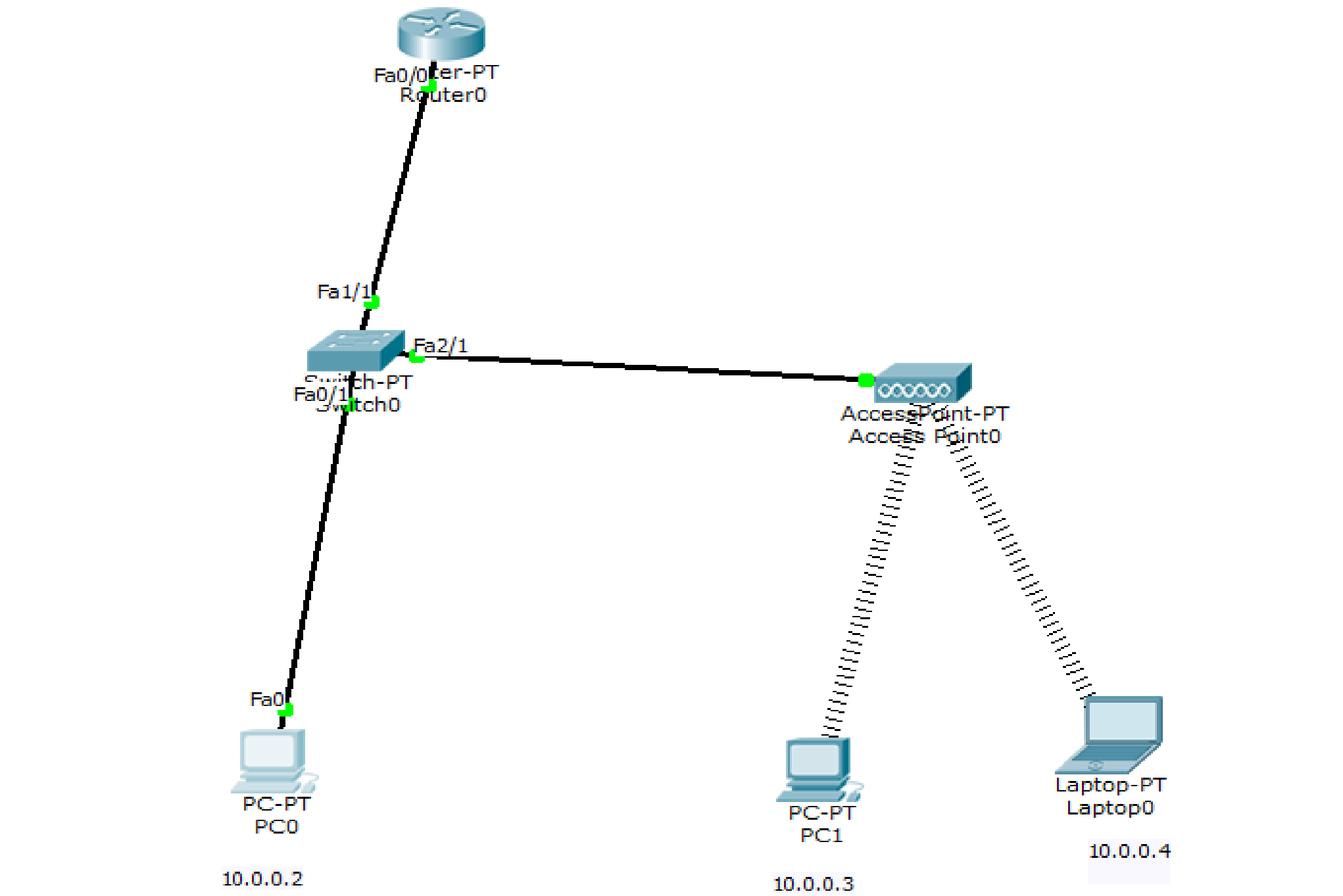
**Topology , Procedure and Observation:**







**Screen Shots:**

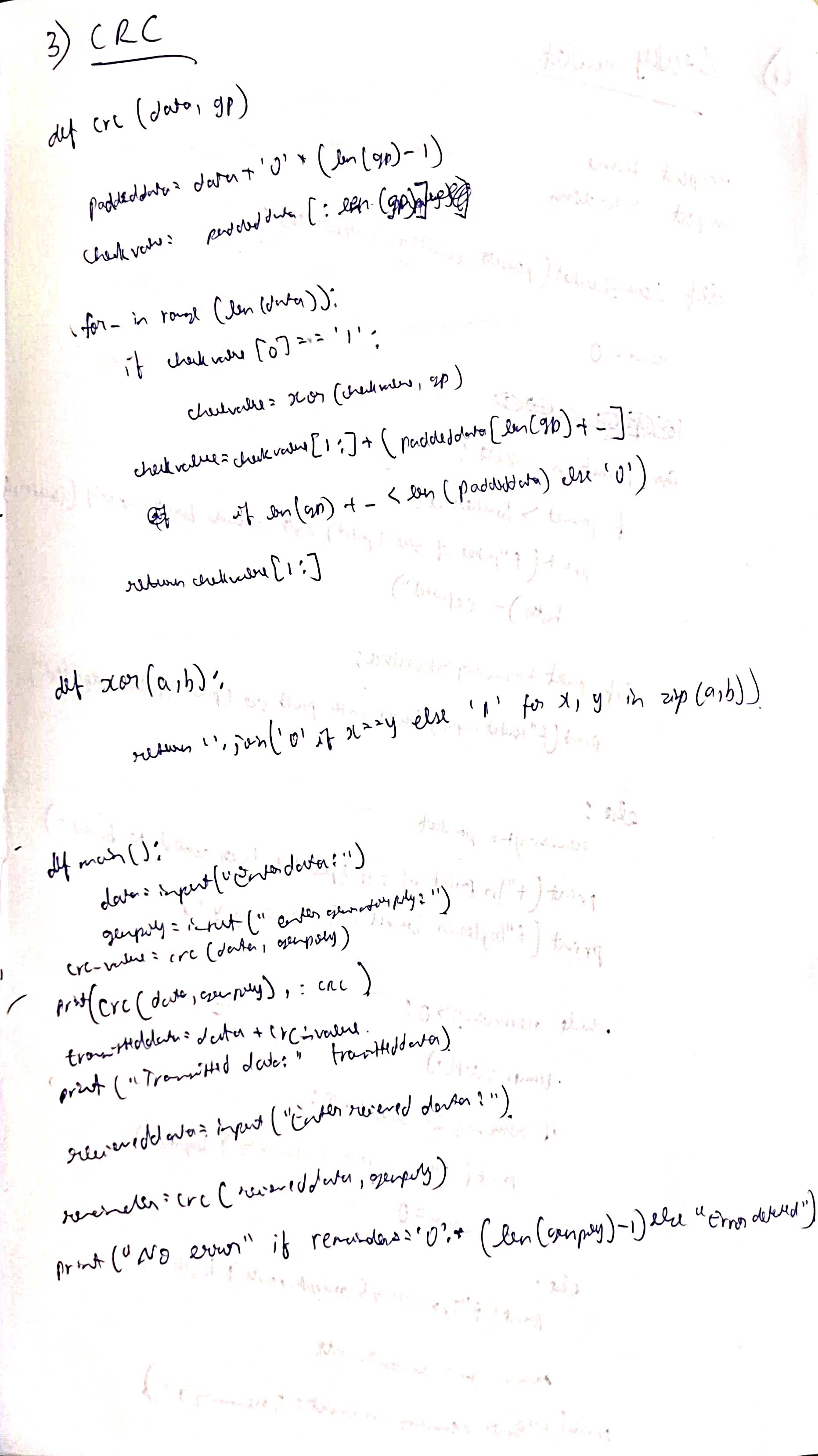


### PART-B

#### Program 14

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

**Code :**

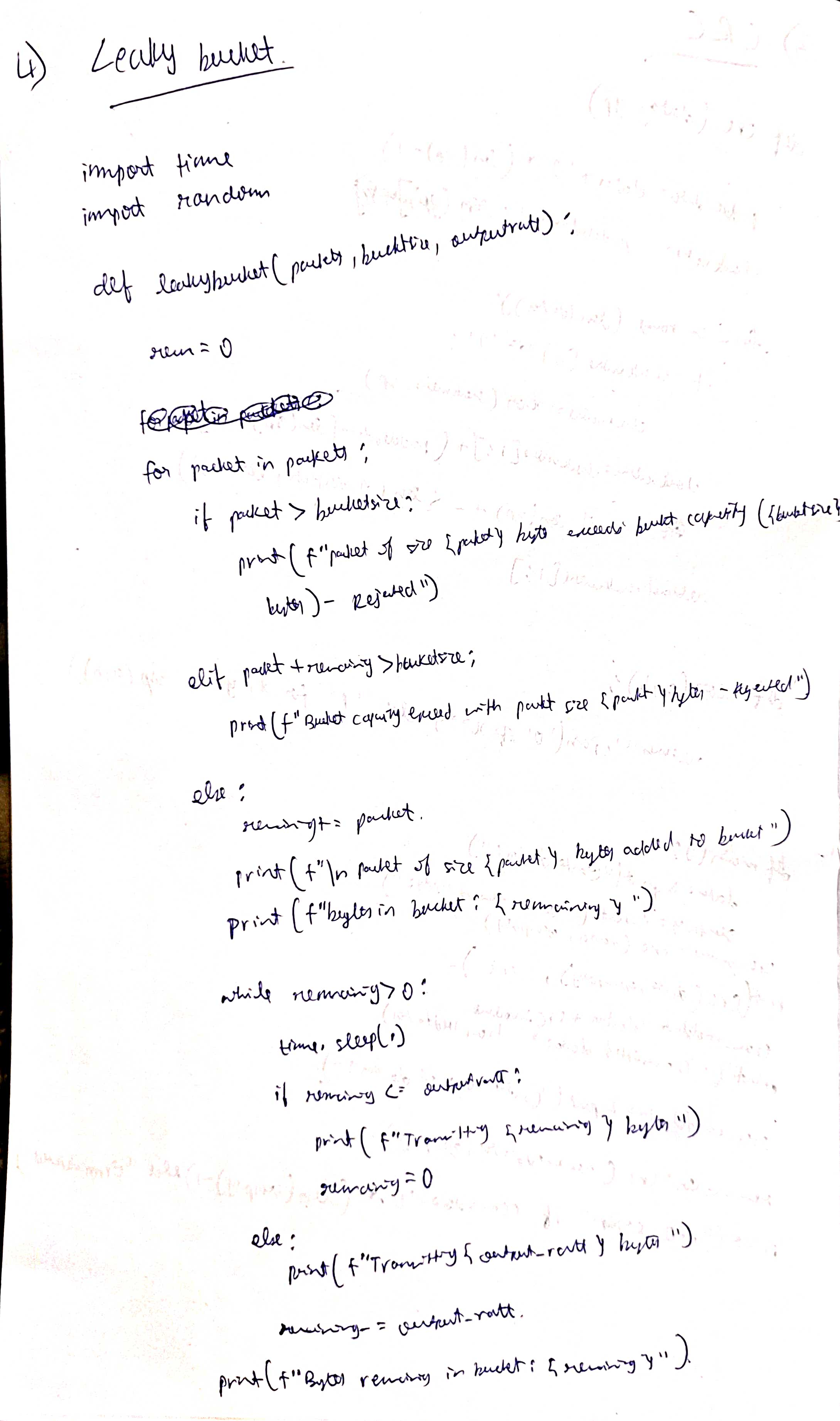


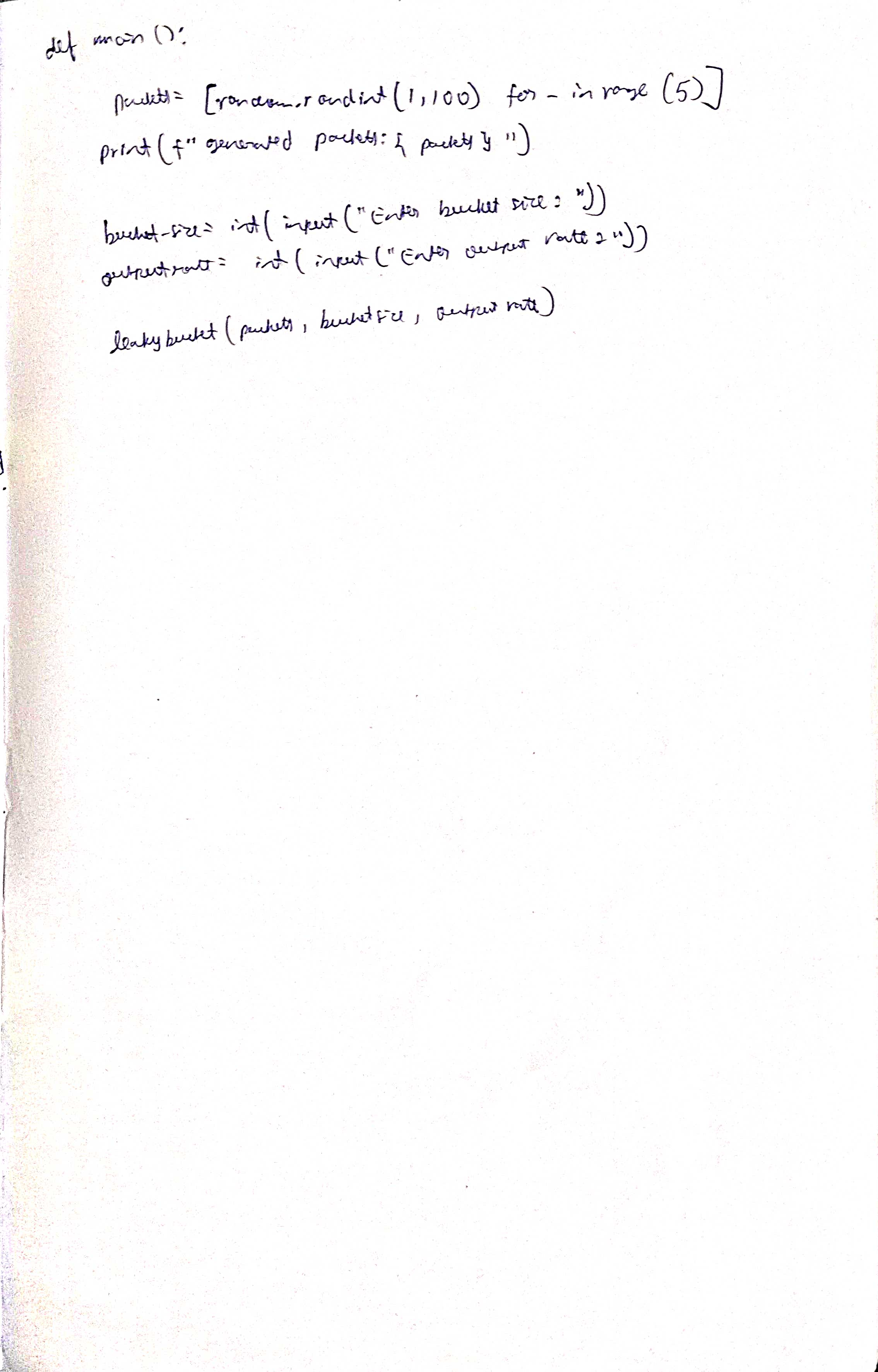
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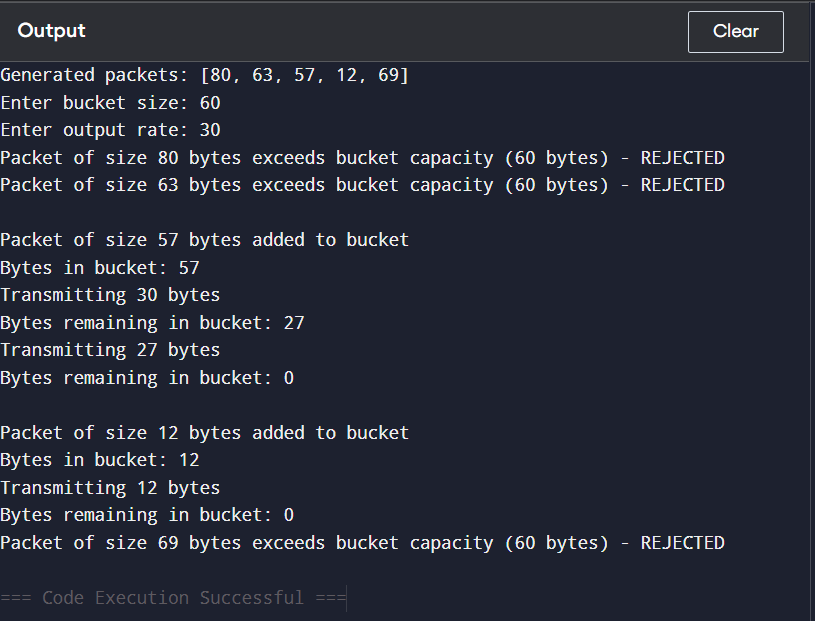
#### Program 15

Write a program for congestion control using Leaky bucket algorithm.

**Code :**



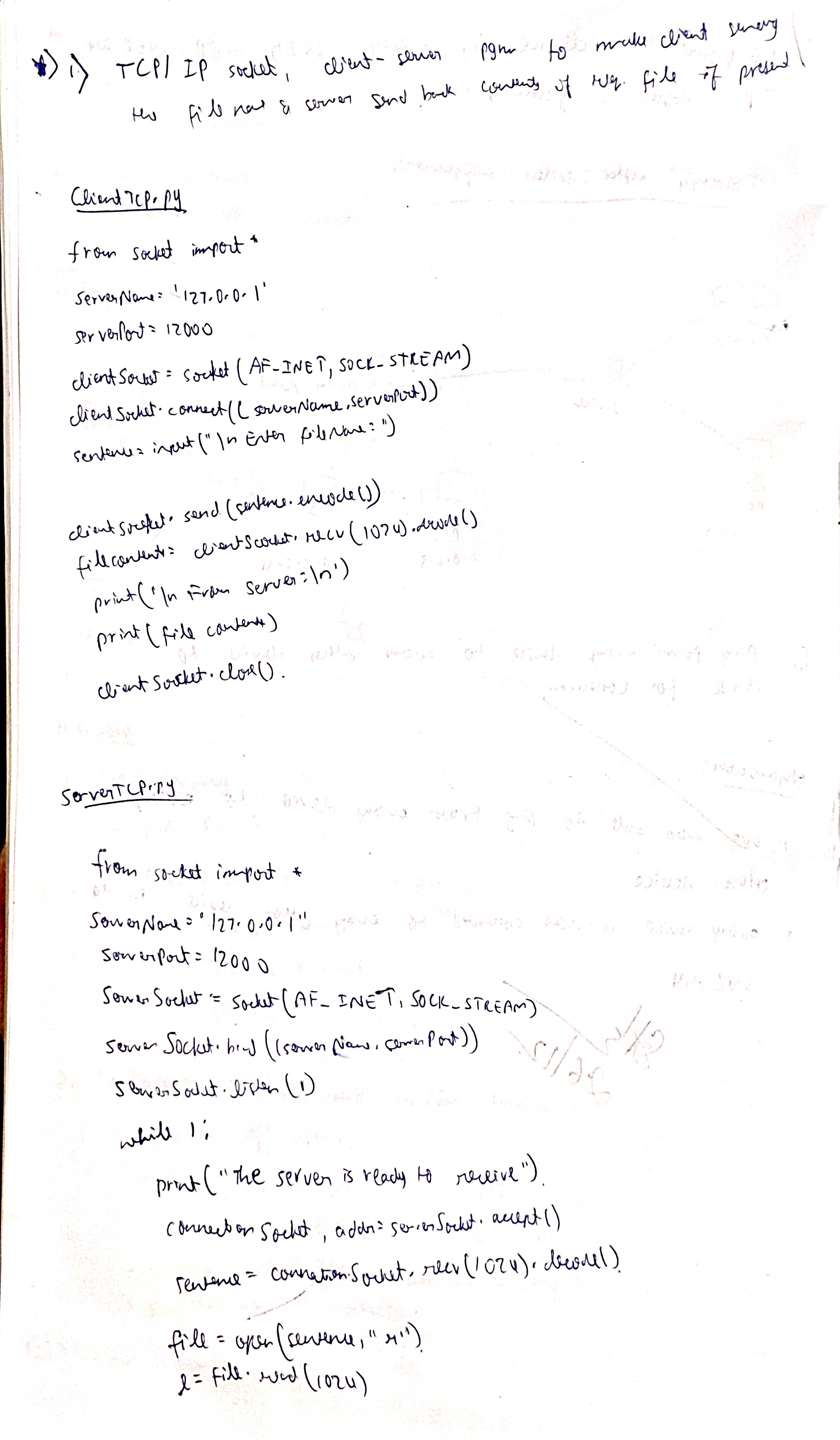


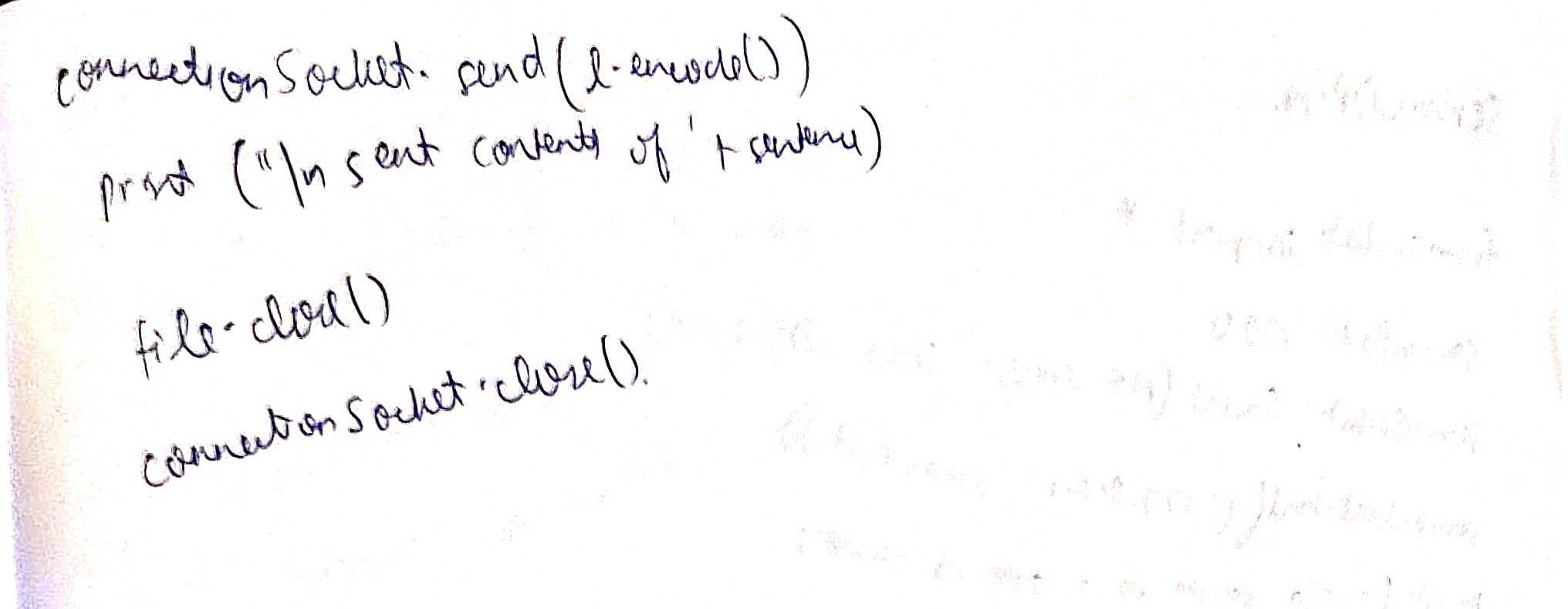


#### Program 16

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:**





#### 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:**

