Green University of Bangladesh
Department of Computer Science and Engineering(CSE)
Faculty of Sciences and Engineering
Semester: (Spring, Year:2025), B.Sc. in CSE (Day)

LAB REPORT NO: 01
Course Title: Computer Networking Lab
Course Code: CSE 312 Section: 223 D1

Lab Experiment Name: Incorporating SMTP, FTP, and DNS servers.

Student Details

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Submission Date : 29-04-2025
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Lab Report Status

Marks: …… **Signature:.....**
Comments:..... **Date:.....**

1. TITLE OF THE EXPERIMENT

Understanding and Configuring SMTP, FTP, and DNS Network Services

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2. Objectives

- To explore the functions of SMTP (Simple Mail Transfer Protocol), FTP (File Transfer Protocol), and DNS (Domain Name System) in computer networks.
- To understand the role of these protocols in enabling email communication, file sharing, and website access.
- To gain practical experience by setting up, configuring, and troubleshooting each type of server.
- To observe how these network services interact and support daily internet activities.

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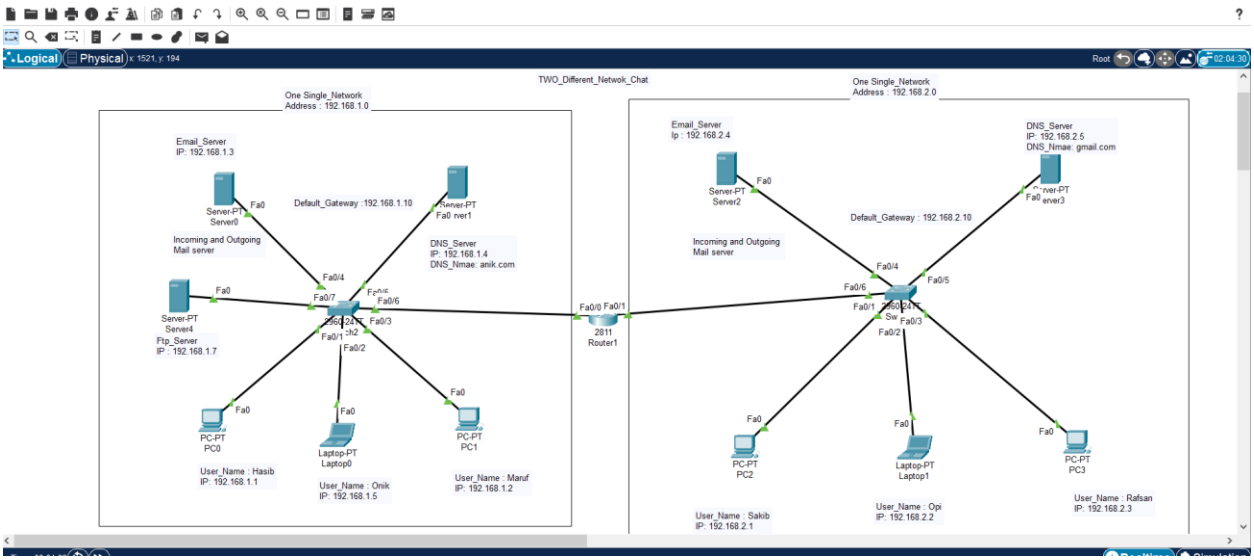
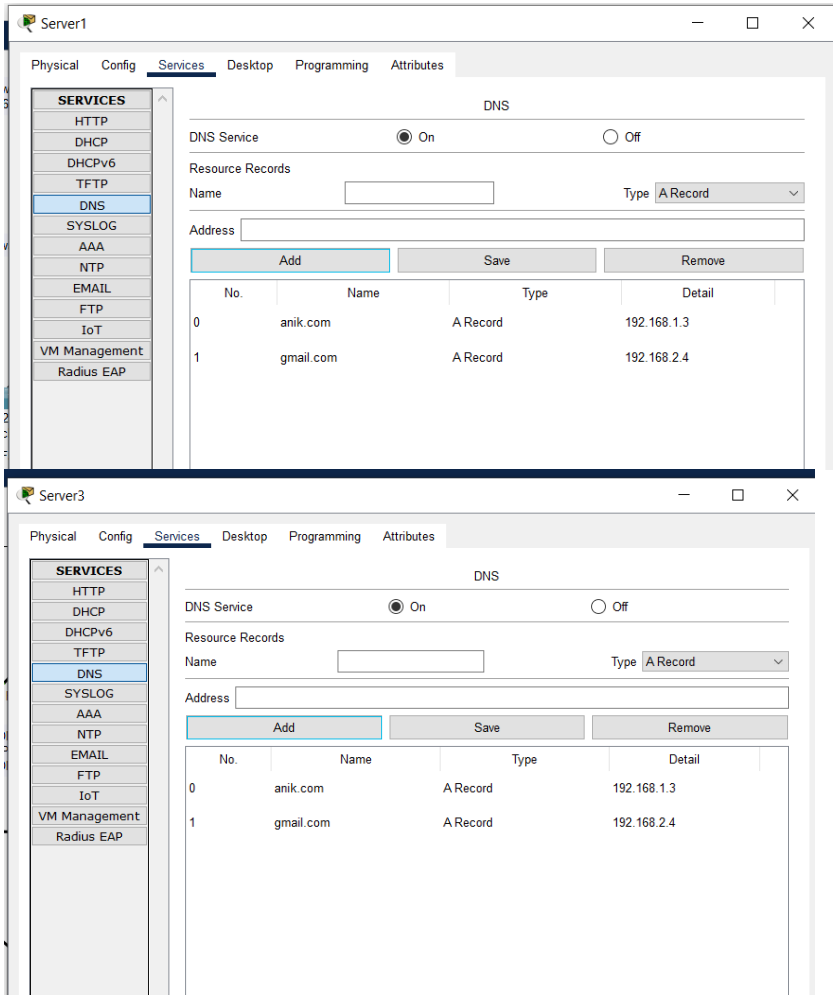
3. Experimental Procedure

- Begin by preparing the system environment with all required software and network tools for SMTP, FTP, and DNS.
- Set up the **SMTP server** first to handle email sending. Configure necessary settings to enable message delivery between users.
- Proceed to install and configure the **FTP server** to allow file transfers between systems, both uploading and downloading.
- Next, configure the **DNS server** to resolve domain names into their corresponding IP addresses correctly.
- Perform functional testing for each service:
    - Send test emails between configured accounts using the SMTP service.
    - Transfer sample documents using the FTP protocol to check file sharing capabilities.
    - Use DNS to resolve domain names like "example.com" to verify name resolution works.
- Identify and resolve any configuration errors or connection issues during testing.

4. IMPLEMENTATION

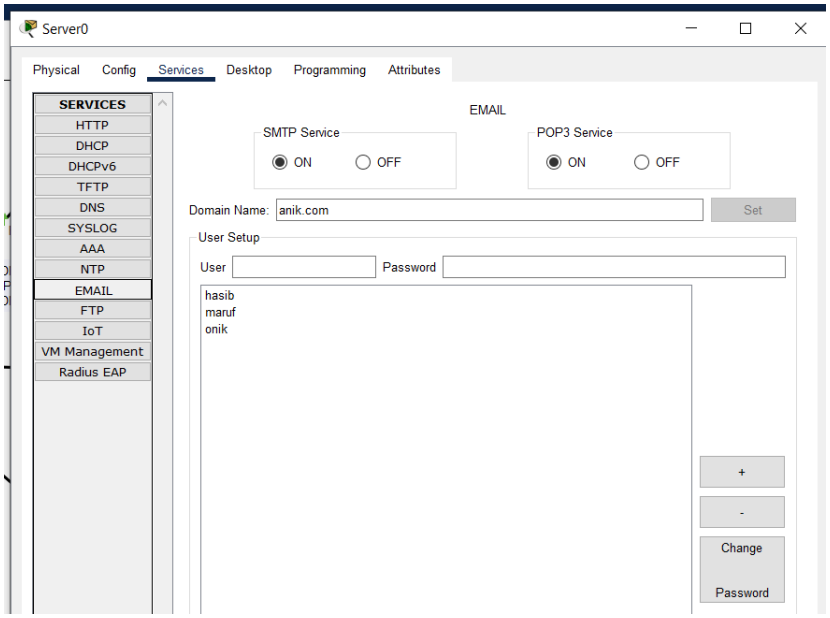


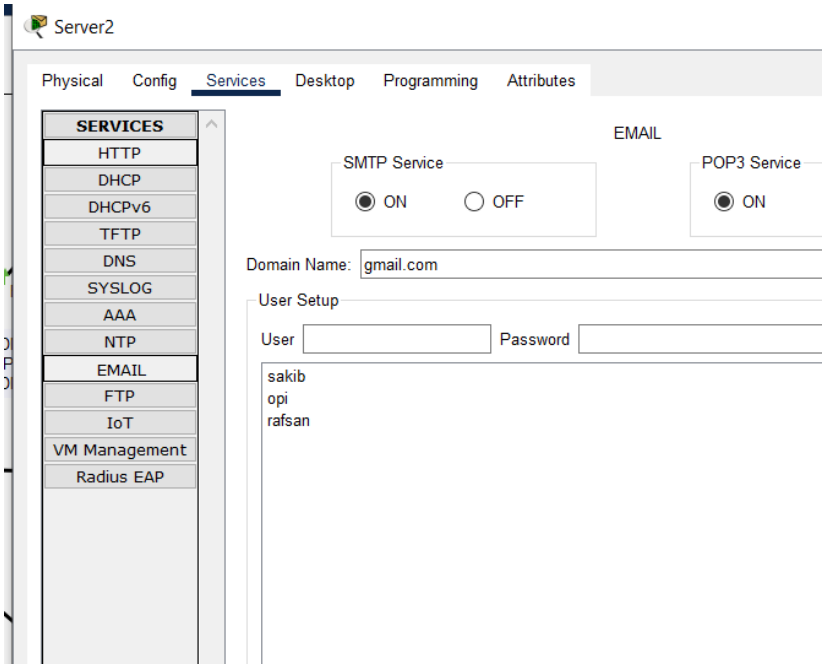
1.1 Simulation of the DNS, SMTP, and FTP Servers



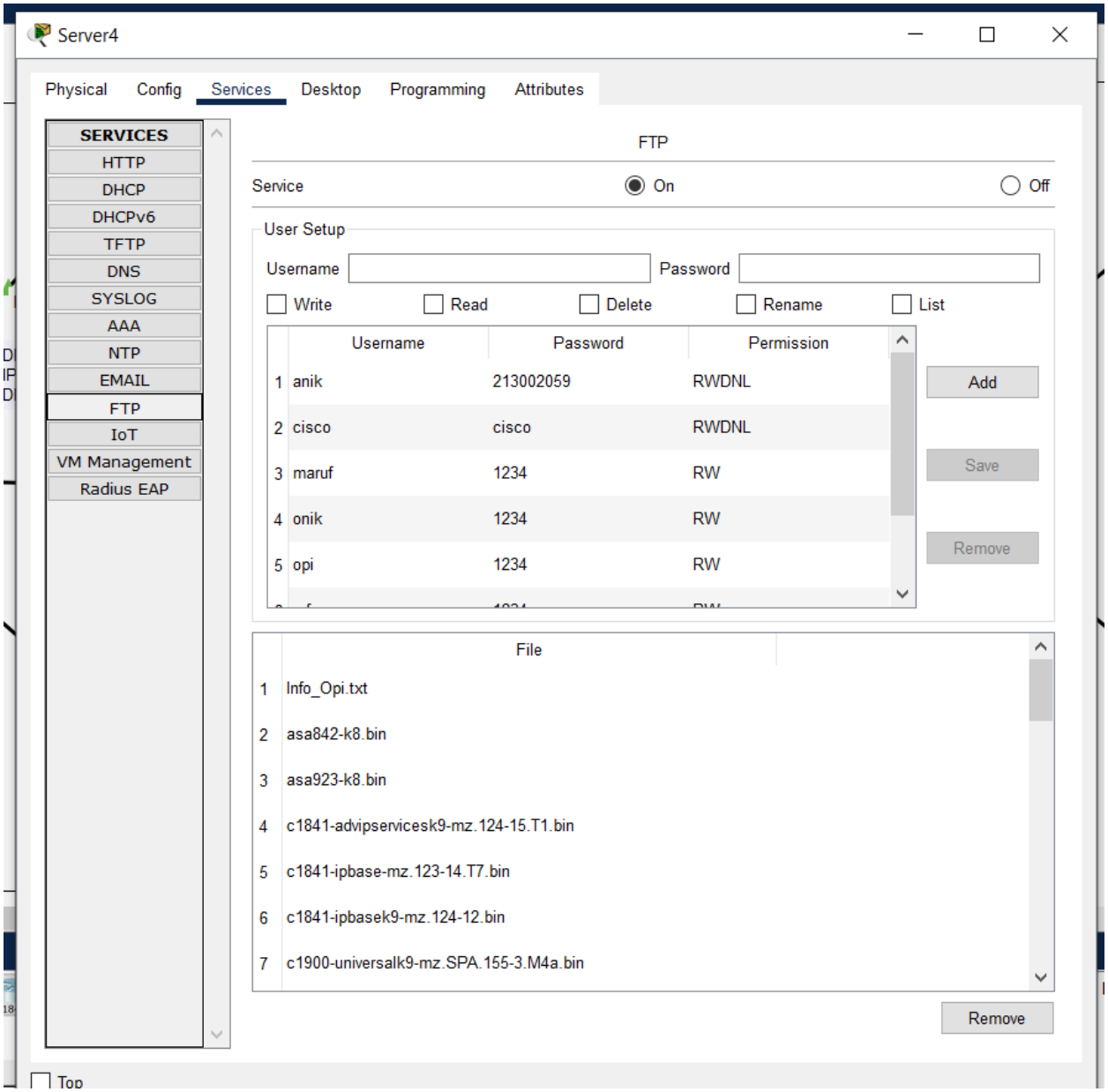
4.2 Implementation of DNS Server

For Network 1 and 2.



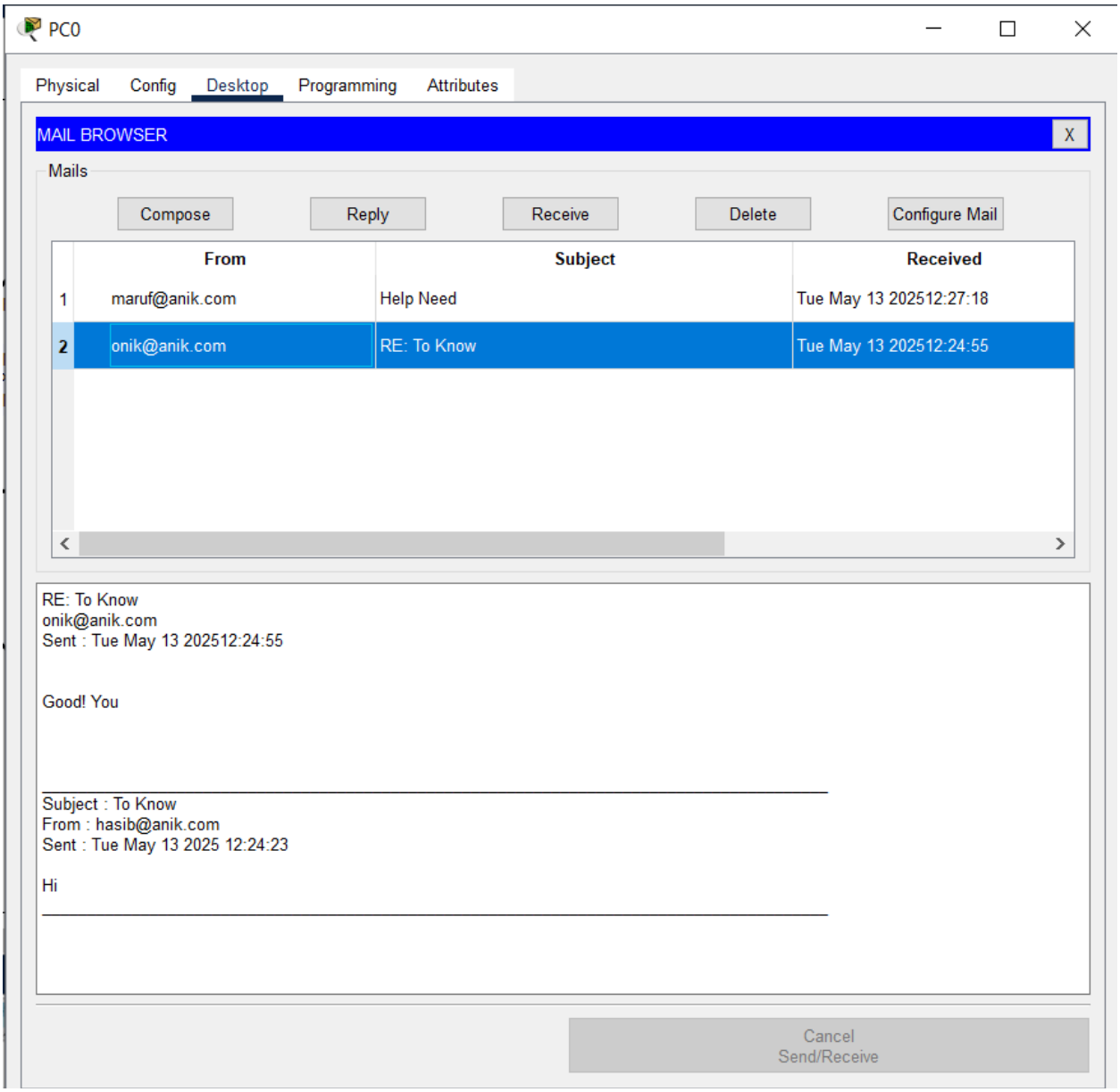


4.3 Implementation of SMTP Email Server For network 1 and 2.

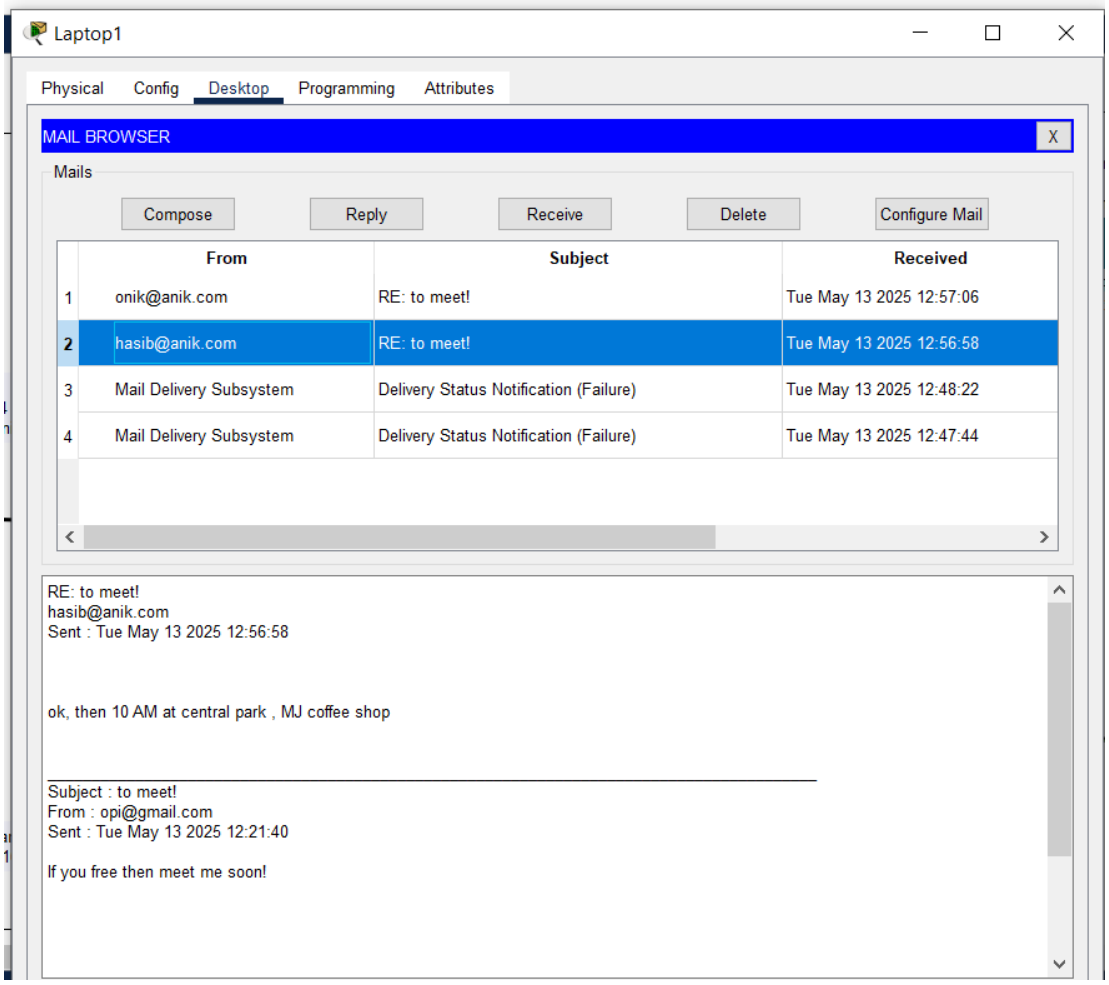


1.2 Implementation of FTP Server

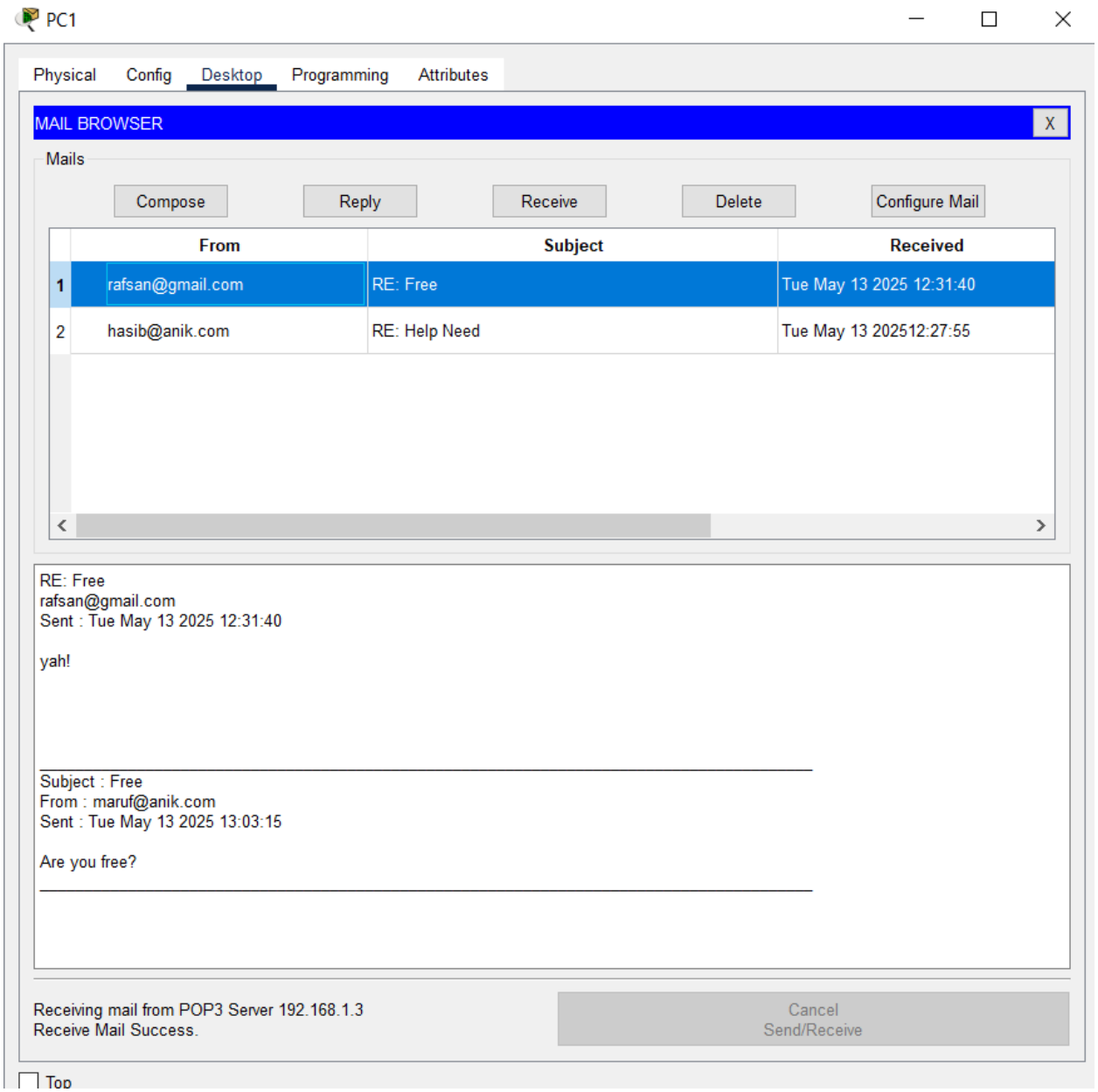
5. SAMPLE INPUT/ OUTPUT



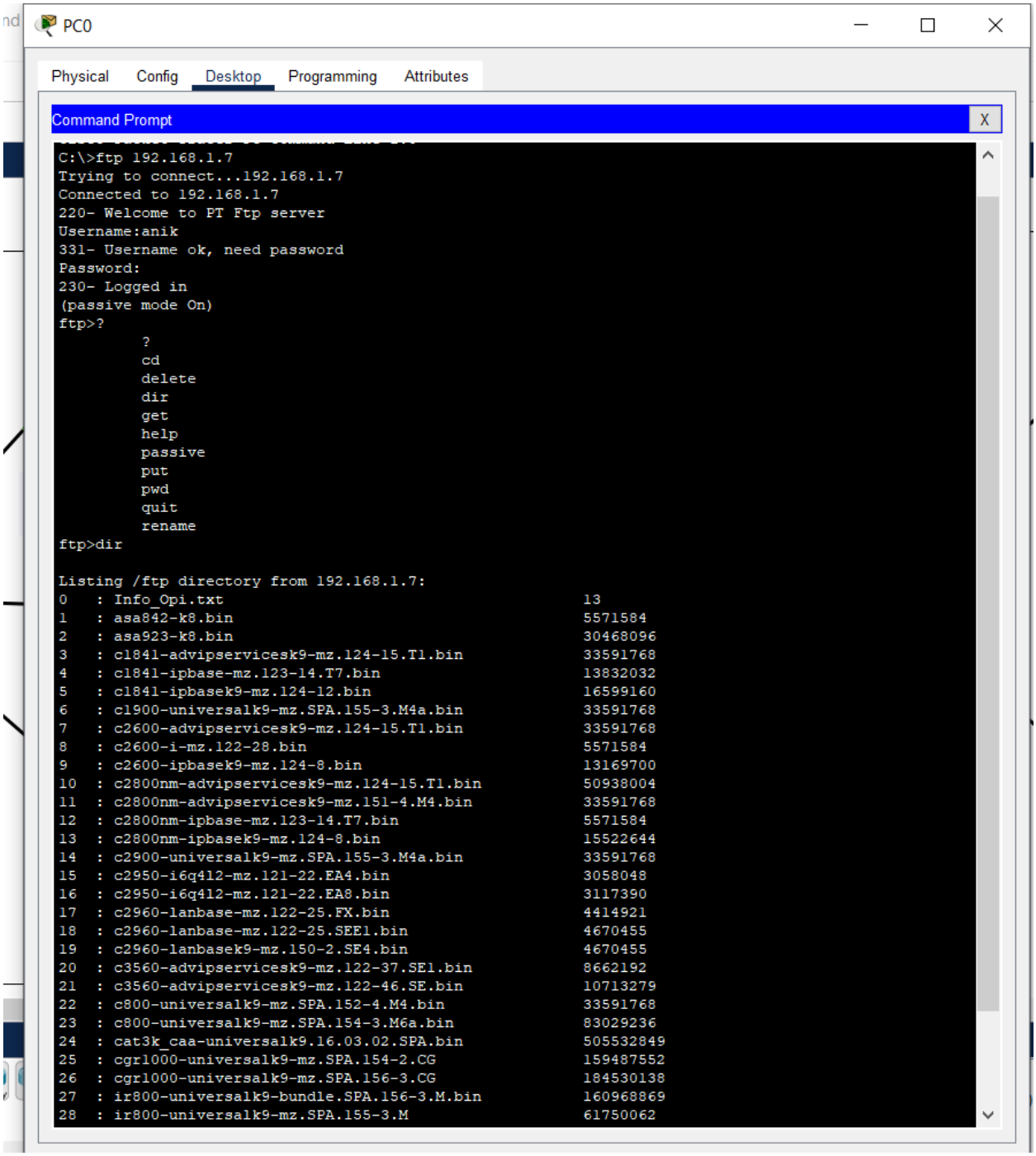
a. Hasib Successfully Received from onik and maruf Email.



b. Opi Successfully Received from hasib and onik Email.



c. Successfully Received from rafsan to maruf Reply Email.



d. Successfully logged in FTP Server and access the file

6. Discussion

During this experiment, I configured and tested three key types of servers that play vital roles in internet and network communication:

- **SMTP (Simple Mail Transfer Protocol)**: Managed the sending of emails between users. After successful setup, test messages were delivered accurately.
- **FTP (File Transfer Protocol)**: Allowed me to upload and download files between systems. File transfers were smooth and efficient.
- **DNS (Domain Name System)**: Translated user-friendly domain names into IP addresses used by computers. It worked well during testing by resolving names quickly and correctly.

Throughout the process, I encountered challenges, especially while setting up the SMTP server. Initially, email messages weren't being sent due to misconfigured ports and authentication issues. With help from tutorials and documentation, I resolved the errors and improved my understanding of the SMTP protocol.

One key takeaway was how these services are interconnected in real-world networking. Emails (SMTP) often rely on correct DNS configuration to locate recipient domains, while file sharing (FTP) can benefit from stable DNS resolution when accessing remote servers.

7.Conclusion

This experiment provided a solid foundation in how email systems, file transfers, and domain resolution work. By configuring each server and resolving setup issues, I learned how these essential services support communication and data sharing over the internet. It was a valuable hands-on experience that deepened my understanding of core network technologies.

Github Link:

https://github.com/Anik2059/Configuring-SMTP-FTP-and-DNS-Network-Services