



**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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[For Teachers use only: **Don't Write Anything inside this box**]

<b><u>Lab Report Status</u></b>	
<b>Marks:</b> .....	<b>Signature:</b> .....
<b>Comments:</b> .....	<b>Date:</b> .....

# 1. TITLE OF THE EXPERIMENT

Understanding and Configuring SMTP, FTP, and DNS Network Services

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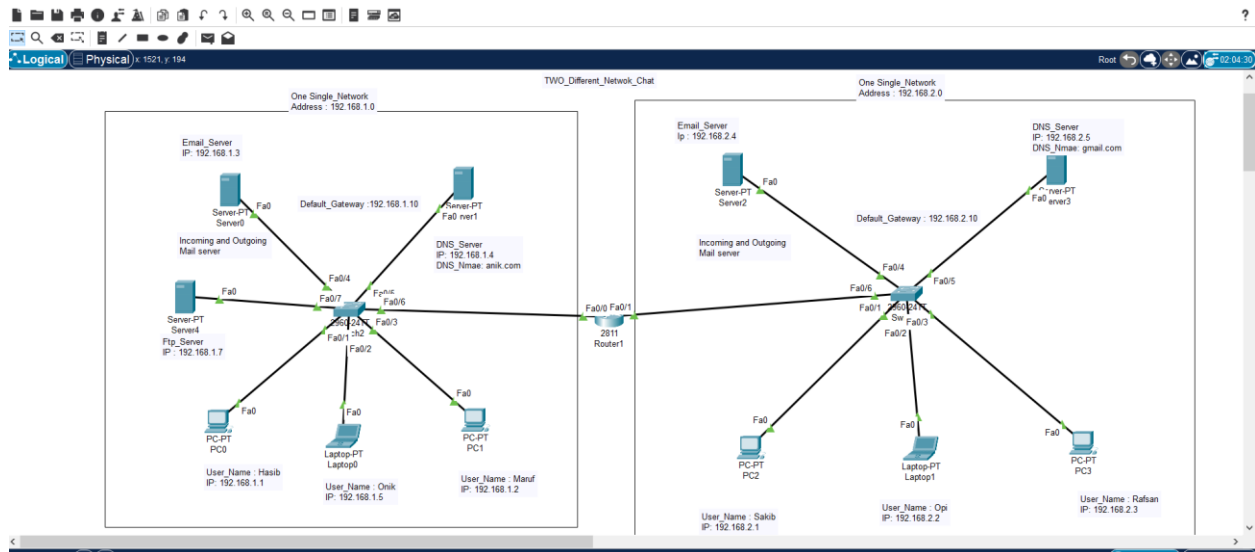
## 2. Objectives

- 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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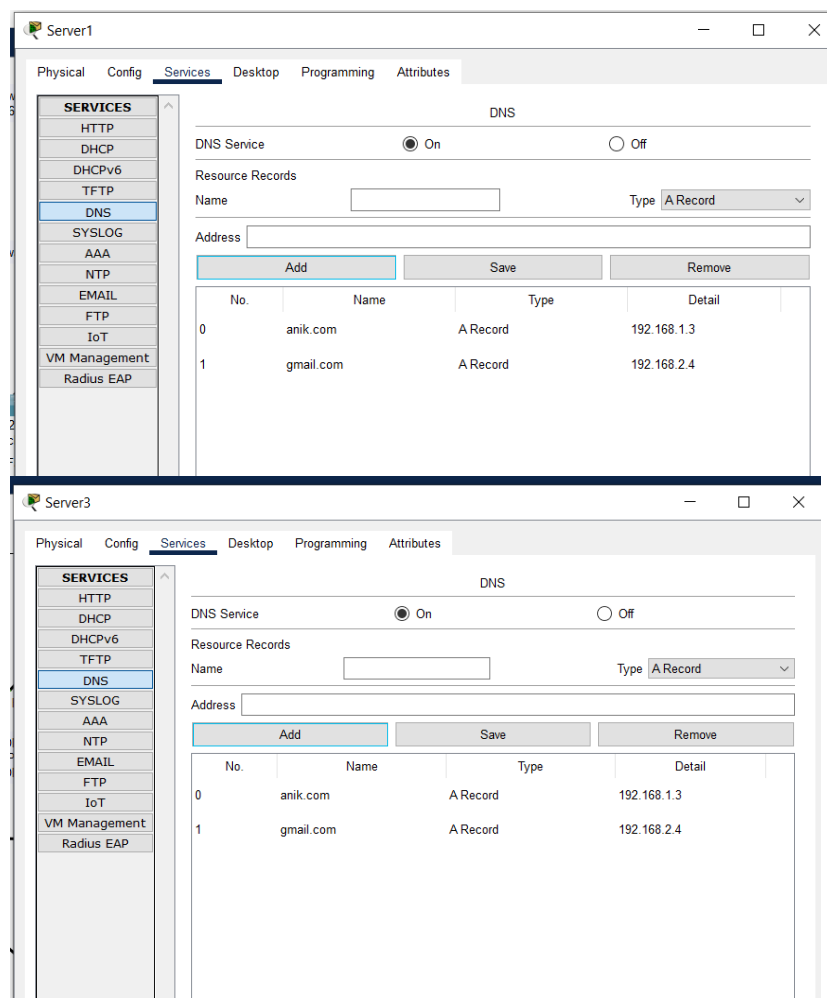
## 3. Experimental Procedure

- 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.

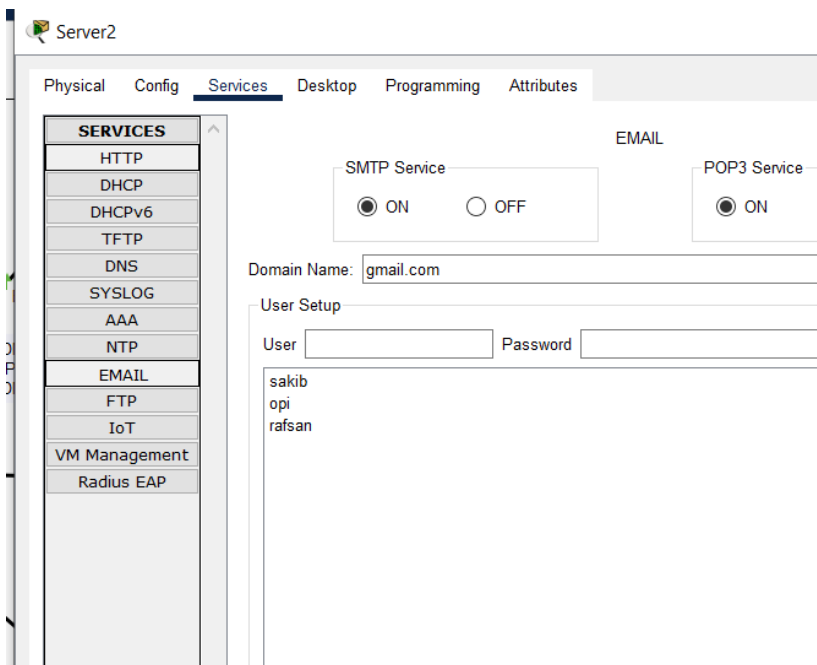
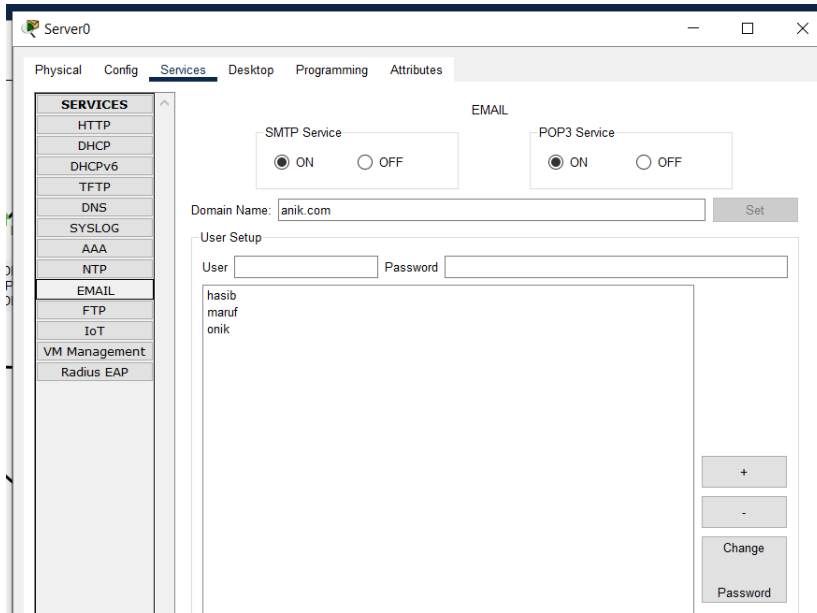
## 4. IMPLEMENTATION



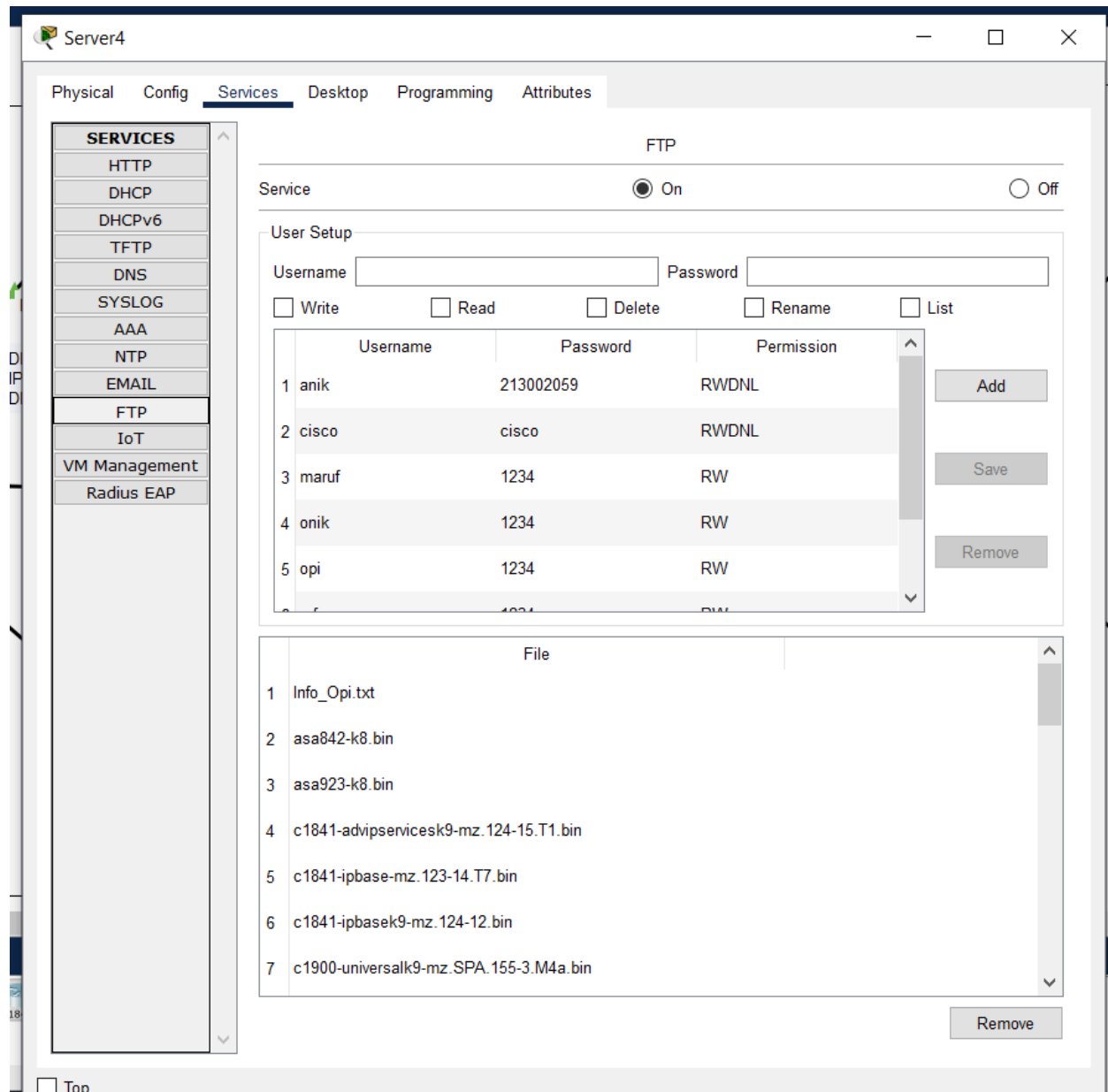
1.1 Simulation of the DNS, SMTP, and FTP Servers



## 4.2 Implementation of DNS Server For Network 1 and 2.

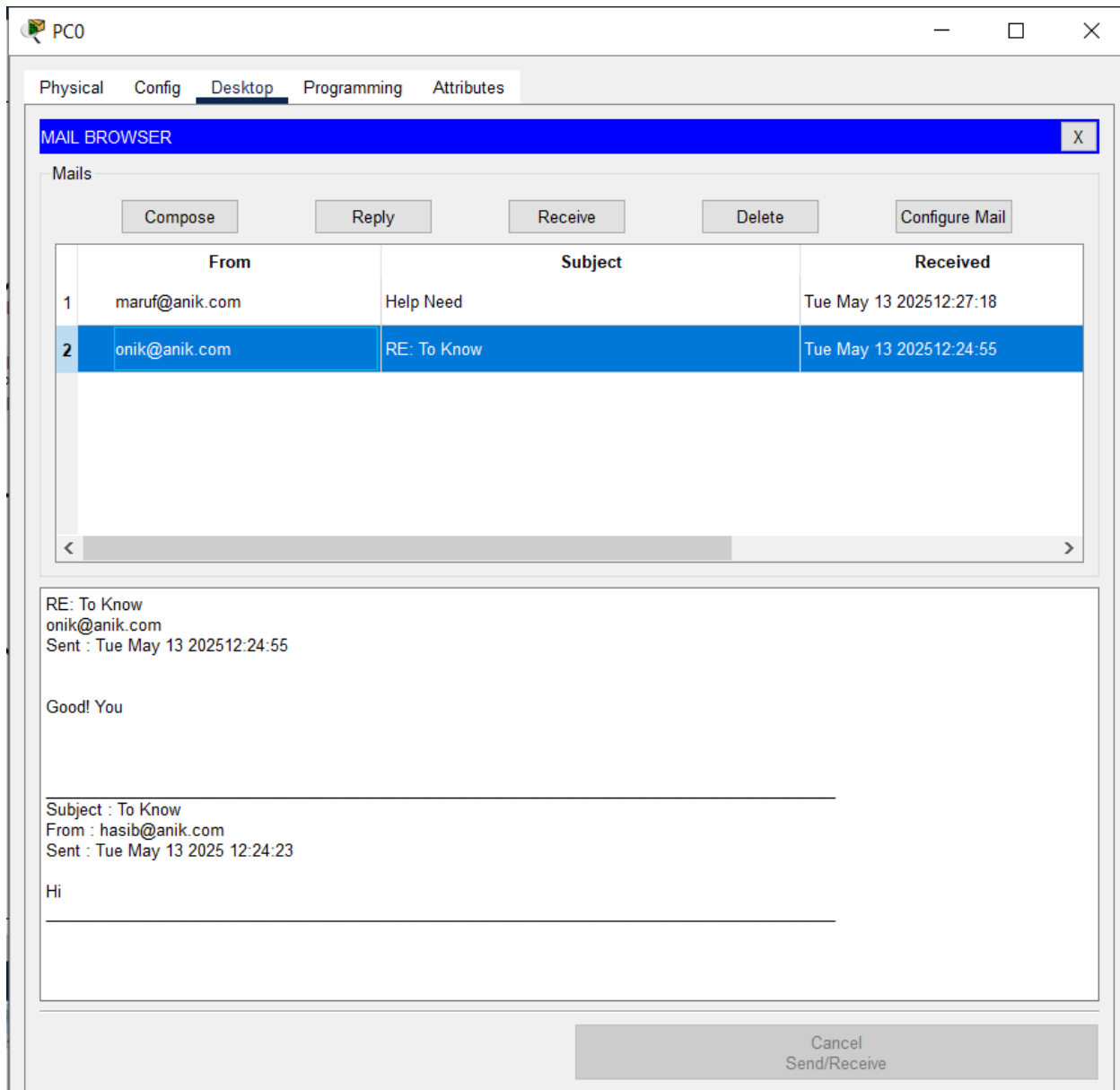


#### 4.3 Implementation of SMTP Email Server For network 1 and 2.

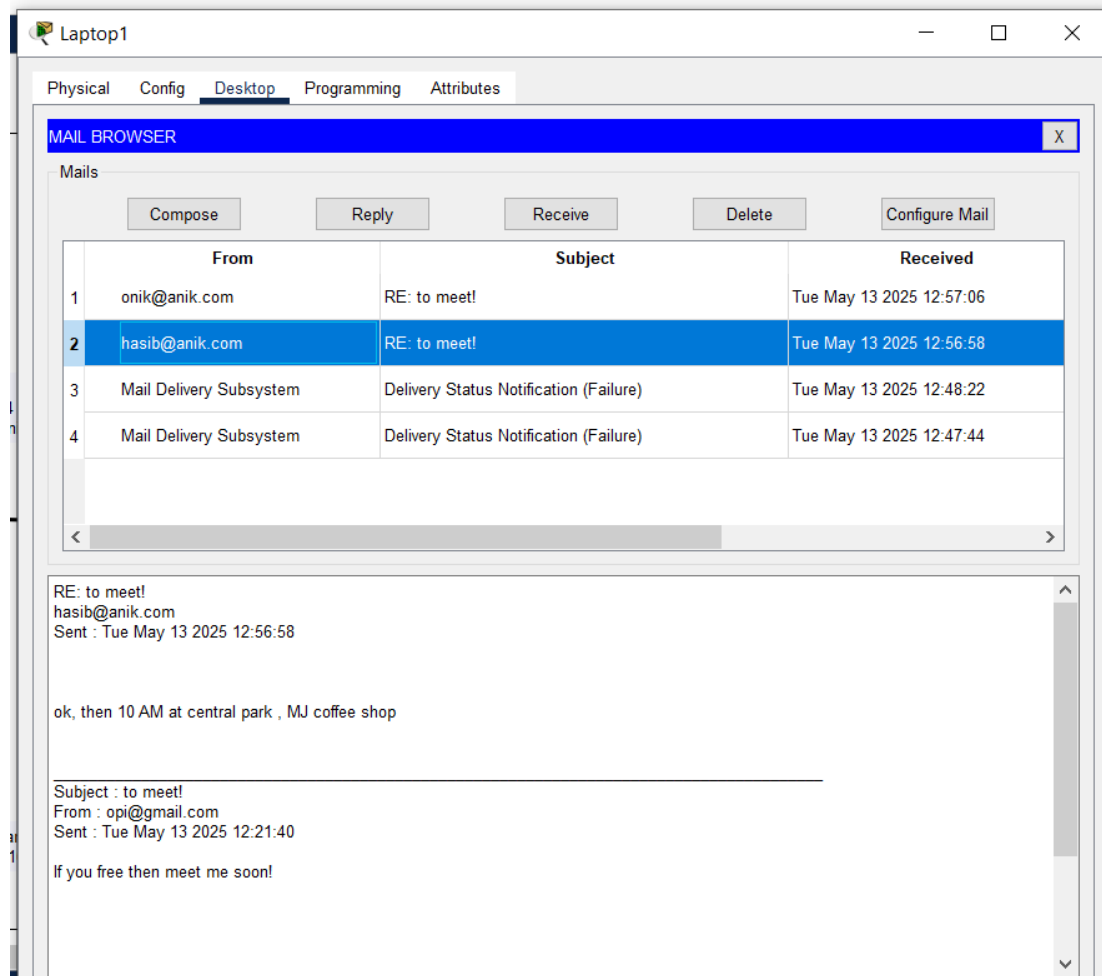


## 1.2 Implementation of FTP Server

## 5. SAMPLE INPUT/ OUTPUT

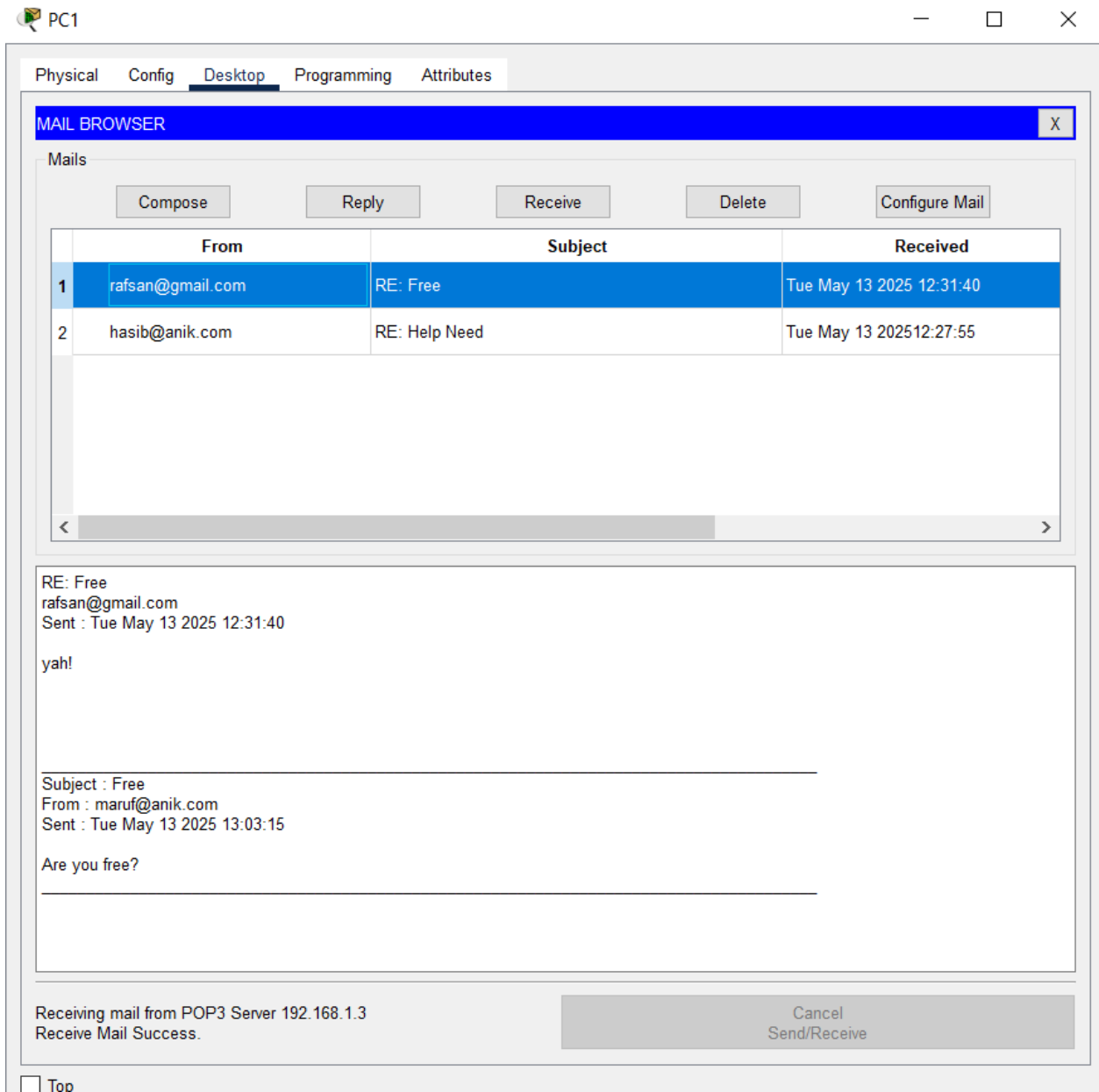


a. Hasib Successfully Received from onik and maruf Email.

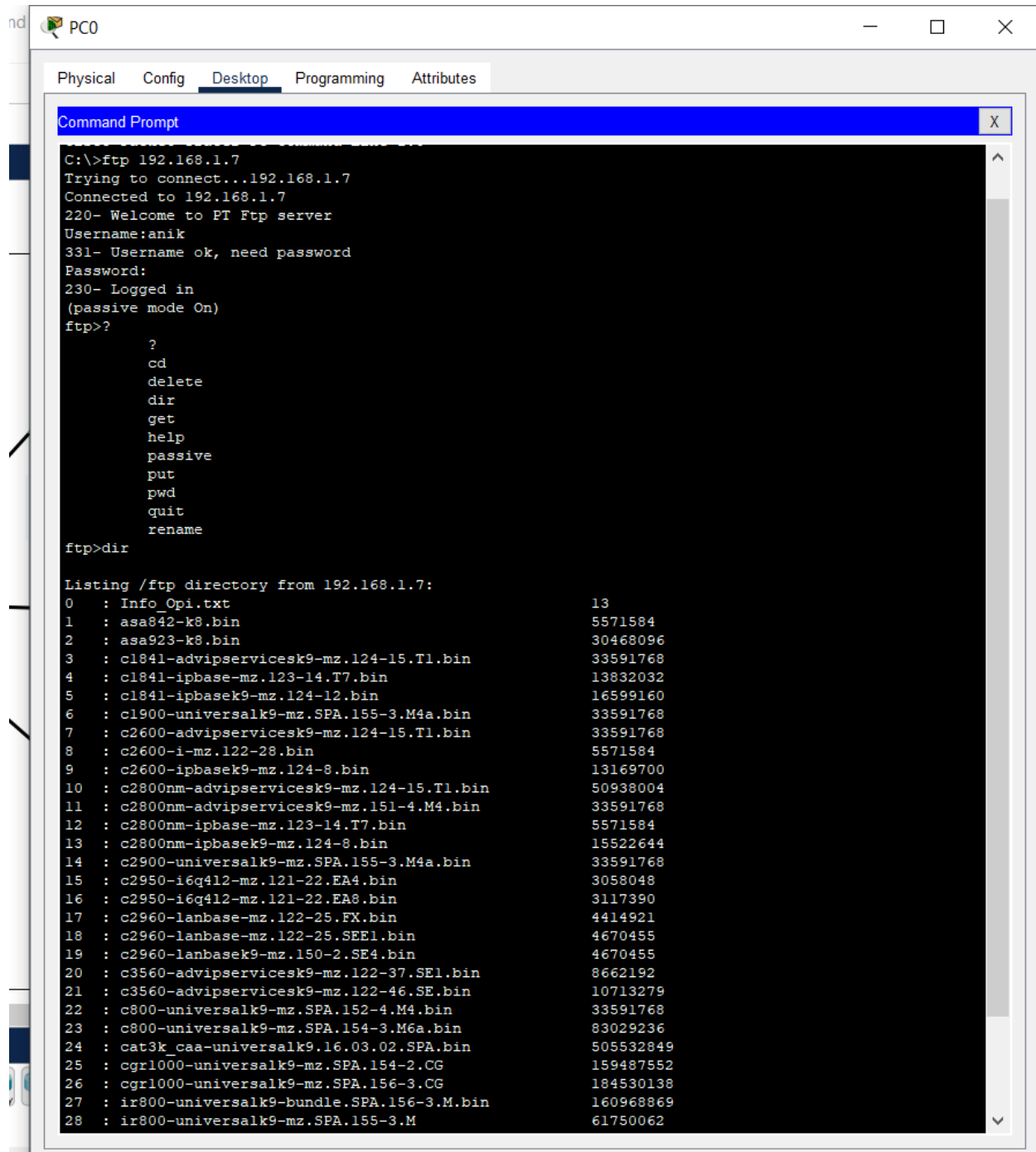


b. Opi Successfully Received from hasib and onik Email.





c. Successfully Received from rafsan to maruf Reply Email.



The screenshot shows a Windows PC window titled "PC0" with a taskbar at the bottom. The window has four tabs: "Physical", "Config", "Desktop", and "Attributes". The "Desktop" tab is active, and a "Command Prompt" window is open within it. The Command Prompt shows the following text:

```
C:\>ftp 192.168.1.7
Trying to connect...192.168.1.7
Connected to 192.168.1.7
220- Welcome to FT Ftp server
Username:anik
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>?
?
cd
delete
dir
get
help
passive
put
pwd
quit
rename

ftp>dir

Listing /ftp directory from 192.168.1.7:
0  : Info_Opi.txt                               13
1  : asa842-k8.bin                             5571584
2  : asa923-k8.bin                             30468096
3  : cl841-advipservicesk9-mz.124-15.T1.bin     33591768
4  : cl841-ipbase-mz.123-14.T7.bin              13832032
5  : cl841-ipbasek9-mz.124-12.bin               16599160
6  : cl900-universalk9-mz.SPA.155-3.M4a.bin     33591768
7  : c2600-advipservicesk9-mz.124-15.T1.bin     33591768
8  : c2600-i-mz.122-28.bin                     5571584
9  : c2600-ipbasek9-mz.124-8.bin               13169700
10 : c2800nm-advipservicesk9-mz.124-15.T1.bin   50938004
11 : c2800nm-advipservicesk9-mz.151-4.M4.bin    33591768
12 : c2800nm-ipbase-mz.123-14.T7.bin           5571584
13 : c2800nm-ipbasek9-mz.124-8.bin             15522644
14 : c2900-universalk9-mz.SPA.155-3.M4a.bin    33591768
15 : c2950-i6q4l2-mz.121-22.EA4.bin           3058048
16 : c2950-i6q4l2-mz.121-22.EA8.bin           3117390
17 : c2960-lanbase-mz.122-25.FX.bin            4414921
18 : c2960-lanbase-mz.122-25.SEE1.bin          4670455
19 : c2960-lanbasek9-mz.150-2.SE4.bin          4670455
20 : c3560-advipservicesk9-mz.122-37.SE1.bin   8662192
21 : c3560-advipservicesk9-mz.122-46.SE.bin    10713279
22 : c800-universalk9-mz.SPA.152-4.M4.bin      33591768
23 : c800-universalk9-mz.SPA.154-3.M6a.bin     83029236
24 : cat3k_caa-universalk9.16.03.02.SPA.bin    505532849
25 : cgr1000-universalk9-mz.SPA.154-2.CG       159487552
26 : cgr1000-universalk9-mz.SPA.156-3.CG       184530138
27 : ir800-universalk9-bundle.SPA.156-3.M.bin  160968869
28 : ir800-universalk9-mz.SPA.155-3.M         61750062
```

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.

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## 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>