Green University of Bangladesh

Department of Computer Science and Engineering (CSE)
Semester: (Spring, Year: 2023), B.Sc. in CSE (Day)

Banking Networking Application using Cisco Packet Tracer

Course Title: Computer Networking Lab
Course Code: CSE 312
Section: 203D1

Students Details

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Submission Date: 16-05-2023
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Lab Project Status	
Marks:	**Signature:**
Comments:	**Date:**

Contents

Chapter 1

Introduction

1.1 Overview

An ideal Bank Networking system will be fully network base and easy with friendly user interface. The idea of making a Banking system for make reliable system for service provider and also for customers. In this networking system are used by all banking users can use by shared their data very easily. So that every user use to take about Network Structure Security of Banking System instantly this way anywhere.

1.2 Motivation

I decided to choose this project:

- I am interested in the field of computer networking and security
- I have experience with Cisco devices and networking technologies.
- I believe that this project will be a valuable learning experience for me.
- I am confident that I can successfully complete this project.

I am excited to be a part of this project and I look forward to the challenges and opportunities that it will present. I am confident that I can make a significant contribution to the project and that I will learn a great deal from the experience.

In addition to the reasons mentioned above, I also chose this project because I believe that it is important to help protect people's financial information. Banking systems are a prime target for cyber attacks, and I want to do my part to help make them more secure. I believe that this project will make a real difference in the lives of people who use banking services.

1.3 Problem Definition

1.3.1 Problem Statement

The existing banking networking systems often face challenges in terms of efficiency and security. Some individuals and communities still face barriers to accessing banking services due to geographical constraints, and lack of physical infrastructure. And advanced banking networking system that improves the efficiency, and scalability of a banking system.

1.3.2 Complex Engineering Problem

The following Table 1.1 must be completed according to your above discussion in detail. The column on the right side should be filled only on the attributes you have chosen to be touched by your own project.

Table 1.1: Summary of the attributes touched by the mentioned projects

Name of the P Attributess	**Explain how to address**
P1: Depth of knowledge required	In-depth knowledge regarding existing languages,software tolls, applications, and coding is required.
P2: Range of conflicting requirements	No
P3: Depth of analysis required	Analysis of Screen Controlling systems of Literature and in context to the applications, along with other interactions.
P4: Familiarity of issues	No
P5: Extent of applicable codes	No
P6: Extent of stakeholder involvement and conflicting requirements	Extensive thinking of the system to the users, as well as to the developers are required.
P7: Interdependence	No

1.4 Design Goals/Objectives

- To design a network infrastructure for the banking system, including routers, switches, servers, and client devices.
- To implement strong security measures to protect sensitive banking data and ensure secure communication between different network segments.
- To implement network monitoring and management tools to monitor network performance
- To implement appropriate controls and security measures to meet regulatory requirements.

1.5 Application

- Computer
- Cisco Packet Tracer.

Chapter 2

Design/Development/Implementation of the Project

2.1 Introduction

The Cisco project aims to implement an advanced banking networking system that addresses the challenges faced by traditional banking systems in terms of efficiency, security, scalability, accessibility, and compliance.The project begins with upgrading the network infrastructure of the banking institution.

2.2 Project Details

The banking network system project aims to design and simulate a secure and efficient network infrastructure using Cisco Packet Tracer for a banking network.
Project Features:

1. Reliable System for user
2. Secure Connectivity
3. Centralized Data Management
4. Strong Security
5. Secure Wireless Connectivity
6. Network Monitoring

2.3 Configurations

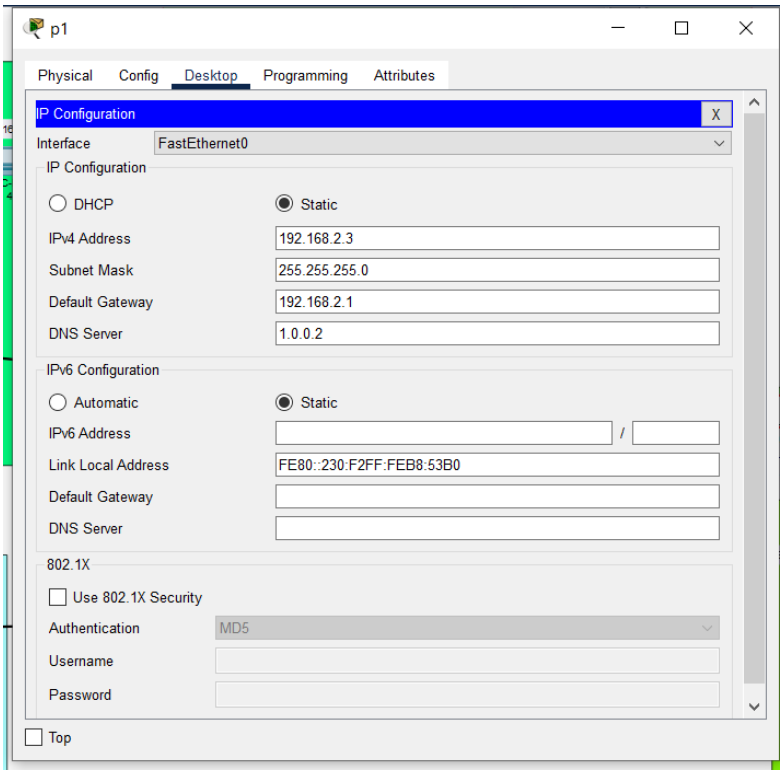

Figure 2.1: PC IP configuration

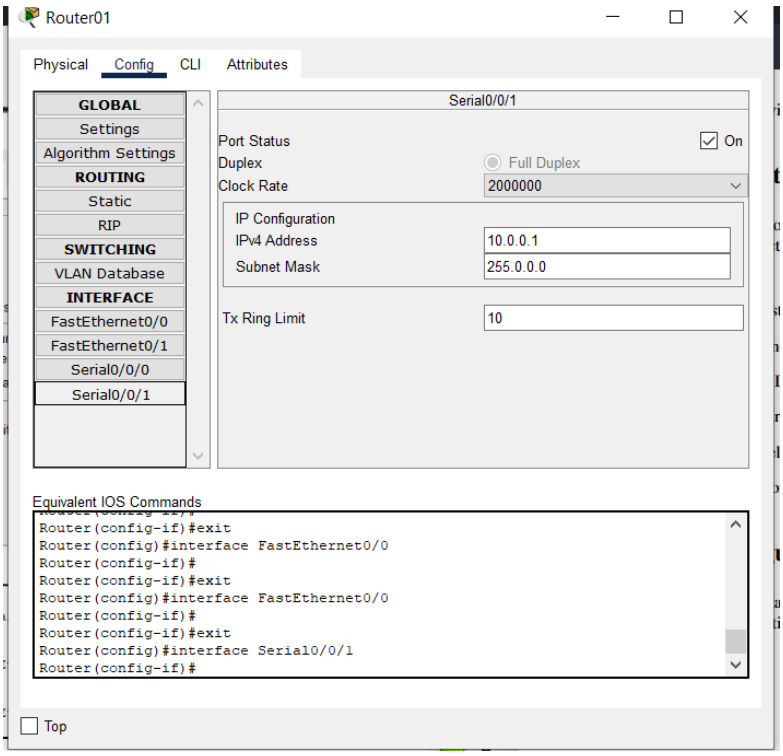

Figure 2.2: Router Serial Port configuration

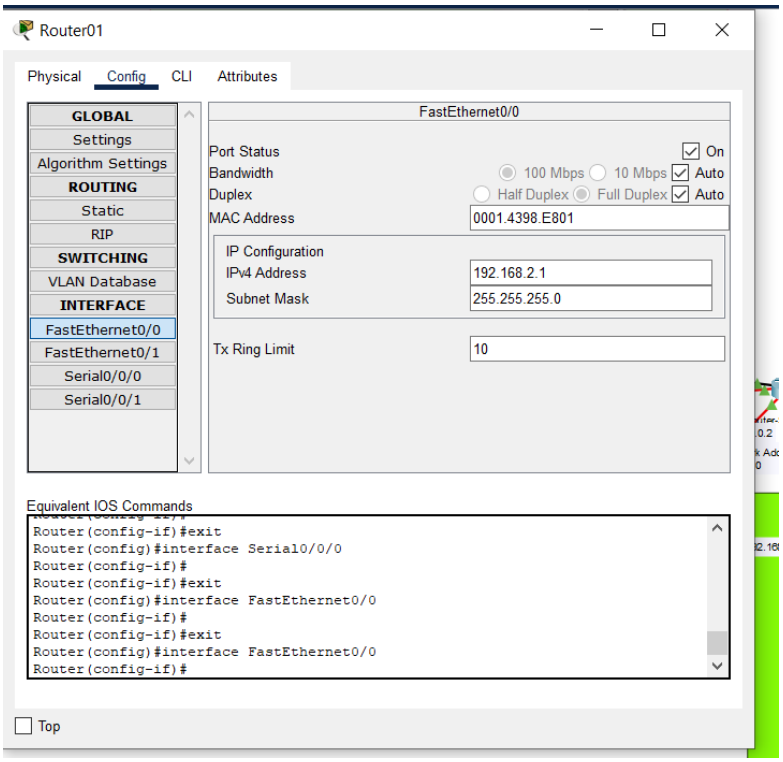

Figure 2.3: Router FastEthernet configuration

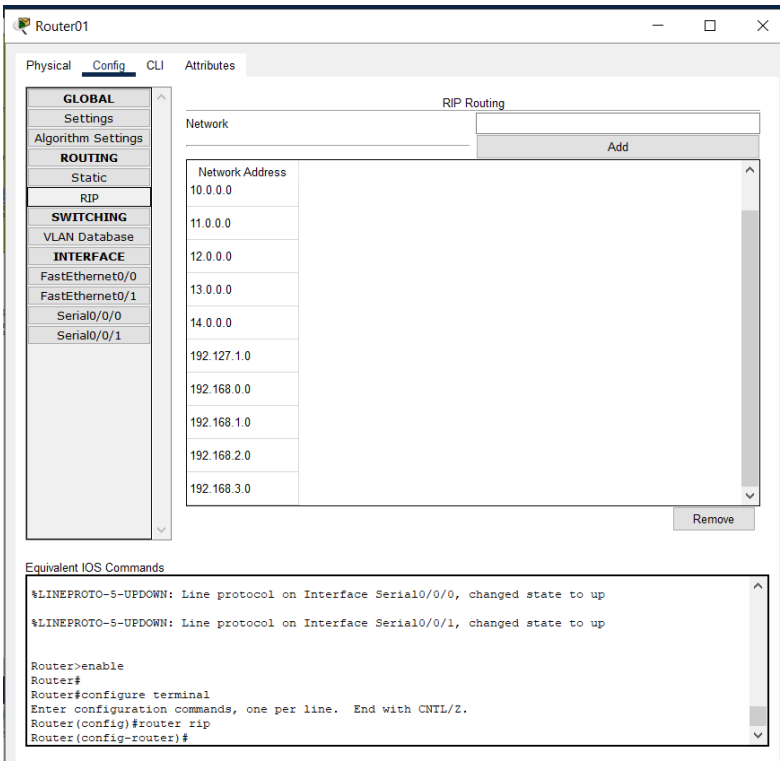

Figure 2.4: Dynamic Routes Configuration by RIP Protocol

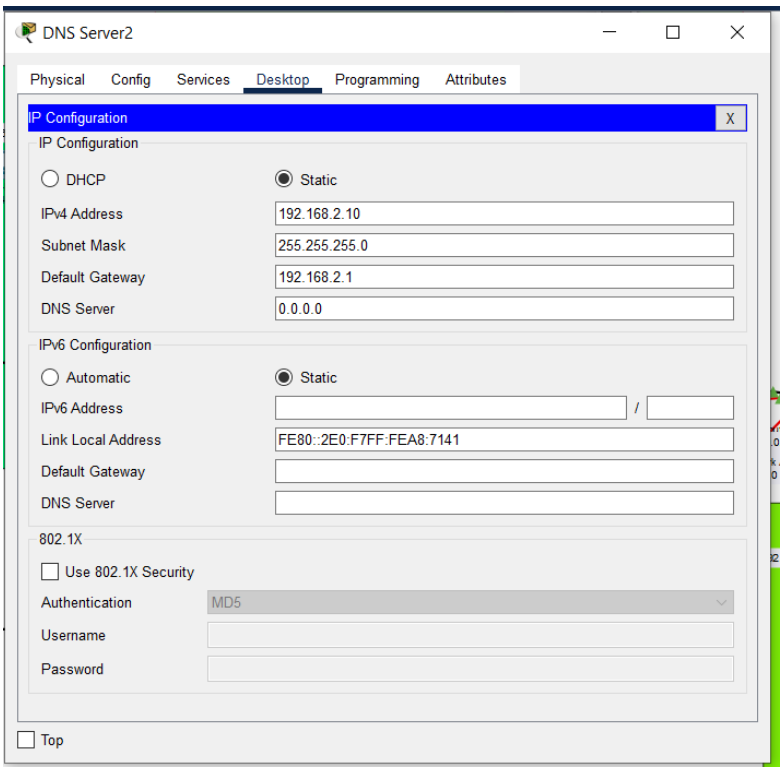

Figure 2.5: DNS IP configuration

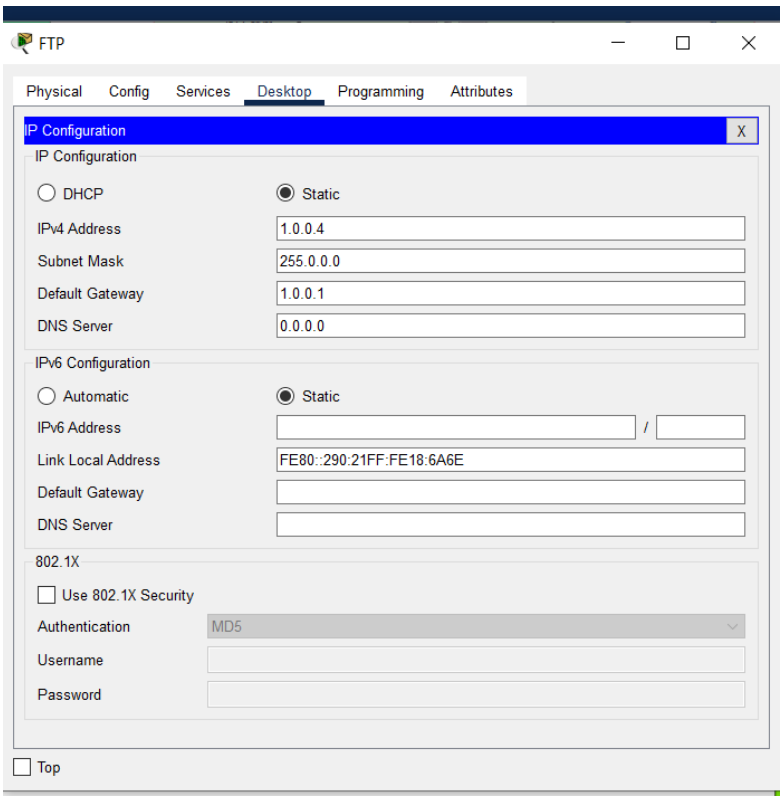

Figure 2.6: FTP IP configuration

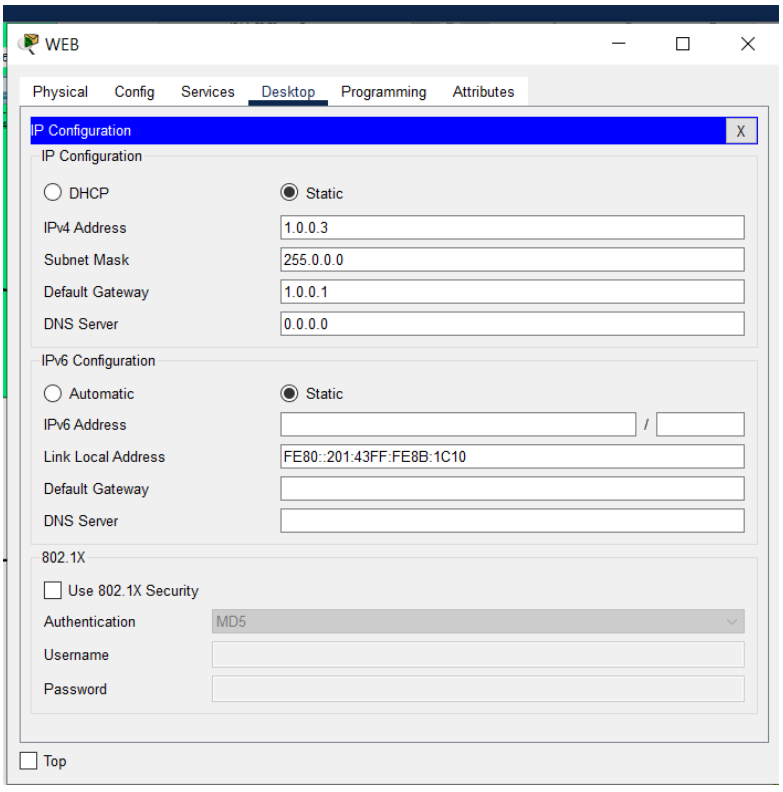

Figure 2.7: Web IP configuration

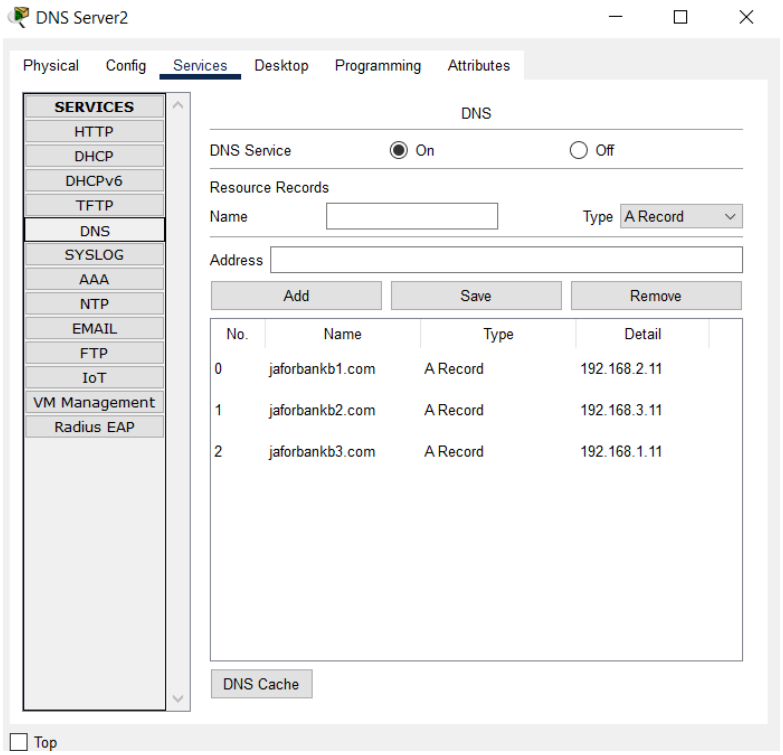

Figure 2.8: DNS Server configuration

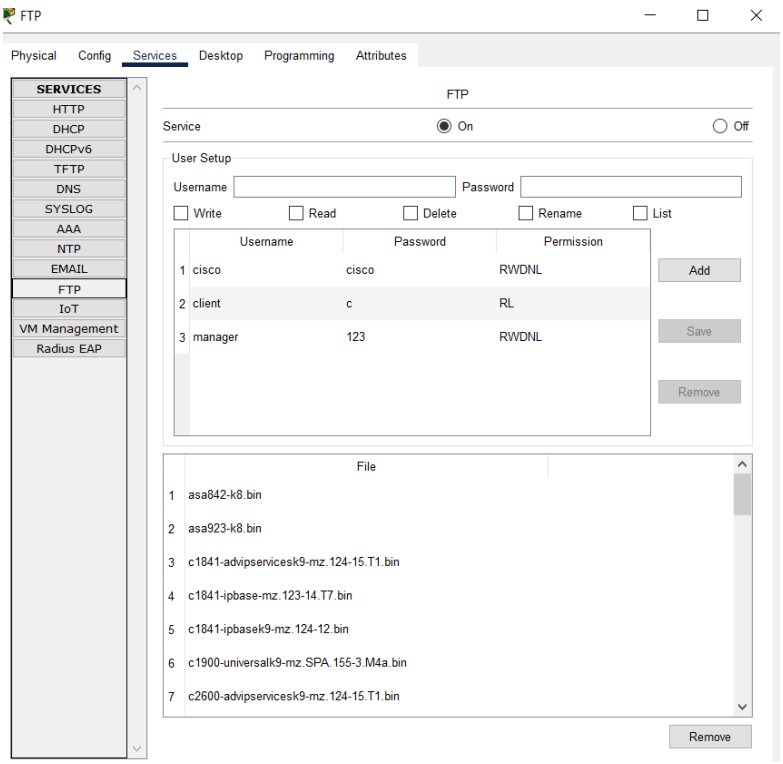

Figure 2.9: FTP Server configuration

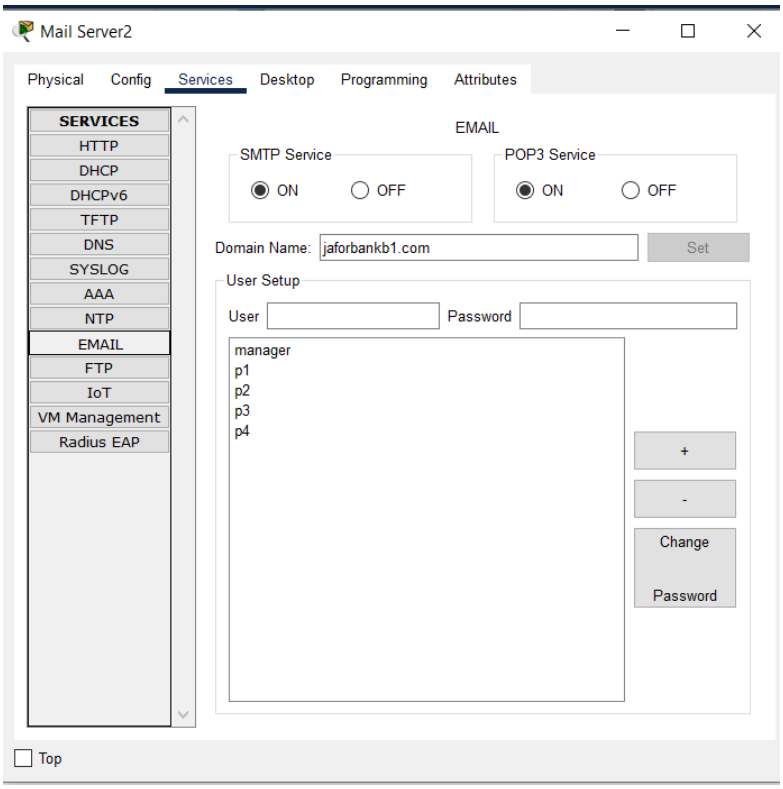

Figure 2.10: Mail Server configuration

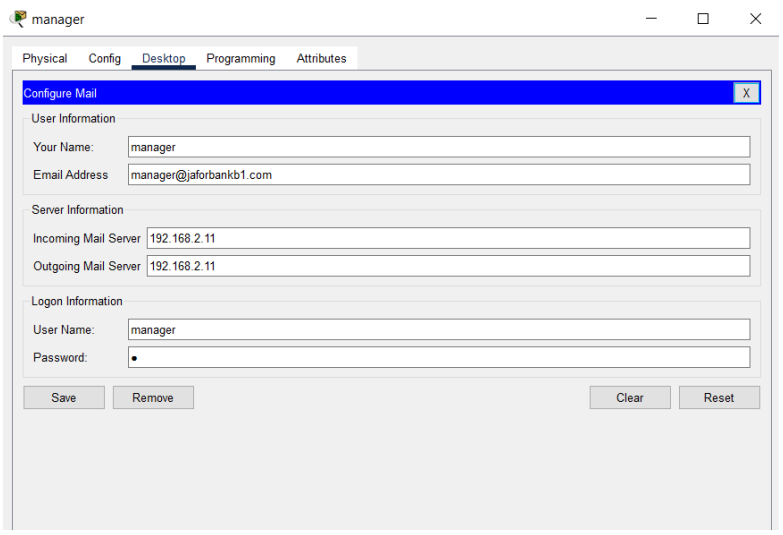

Figure 2.11: Mail configuration

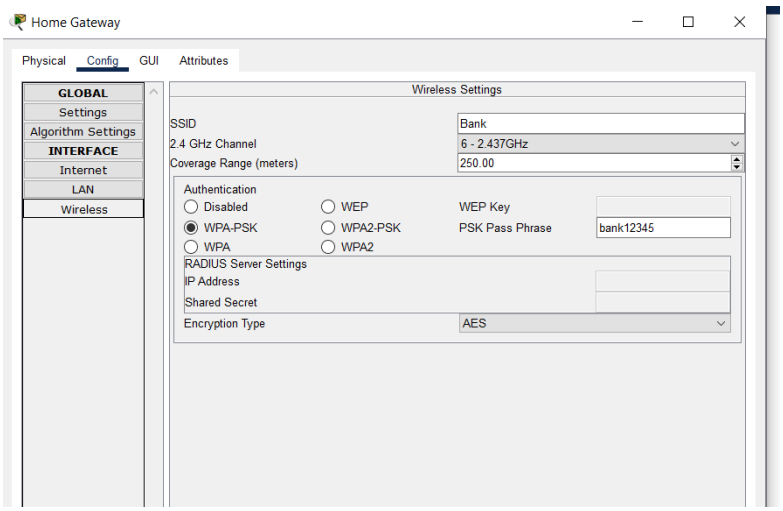

Figure 2.12: Wireless Router configuration

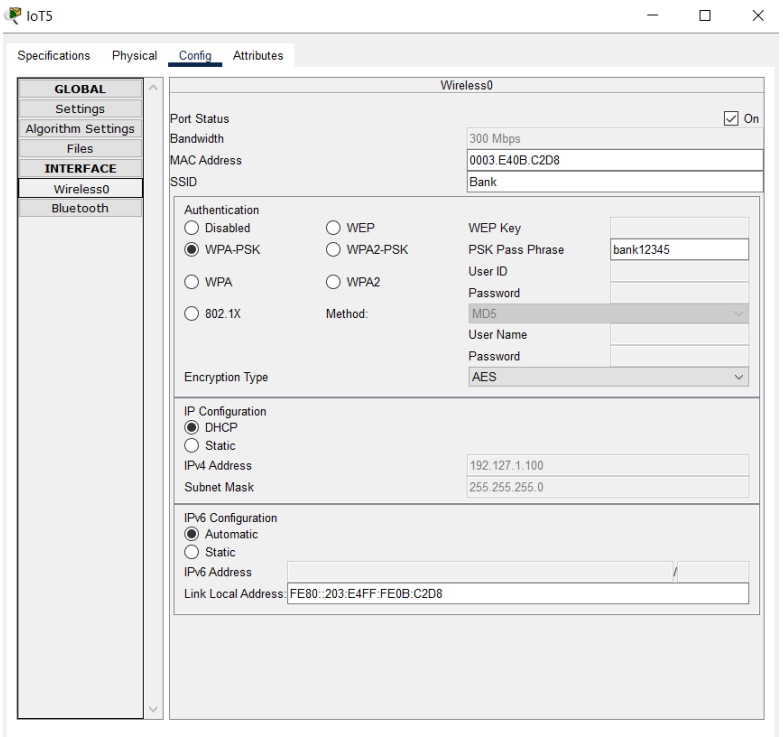

Figure 2.13: Wireless device configuration

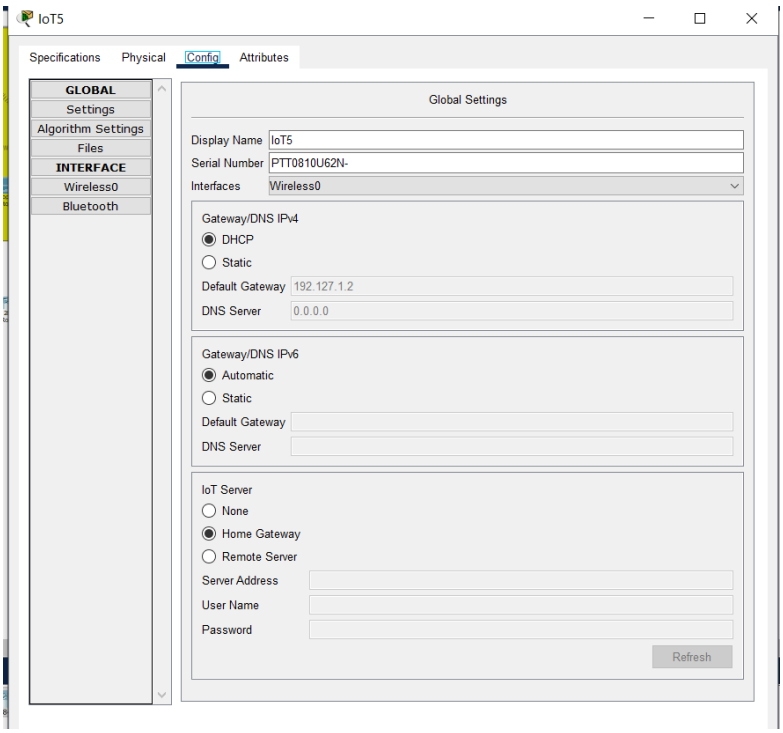

Figure 2.14: Global Settings

Chapter 3

Performance Evaluation

3.1 Simulation Environment

Here I use Cisco pocket Tracer for complete this project. As we know Cisco packet tracer one of the popular simulation based platform among the other network simulation platform. Start by adding the necessary Cisco devices to your simulation environment. This typically involves dragging and dropping the device icons onto the workspace of the simulation tool. Then, configure the devices.

3.2 Results Analysis/Testing

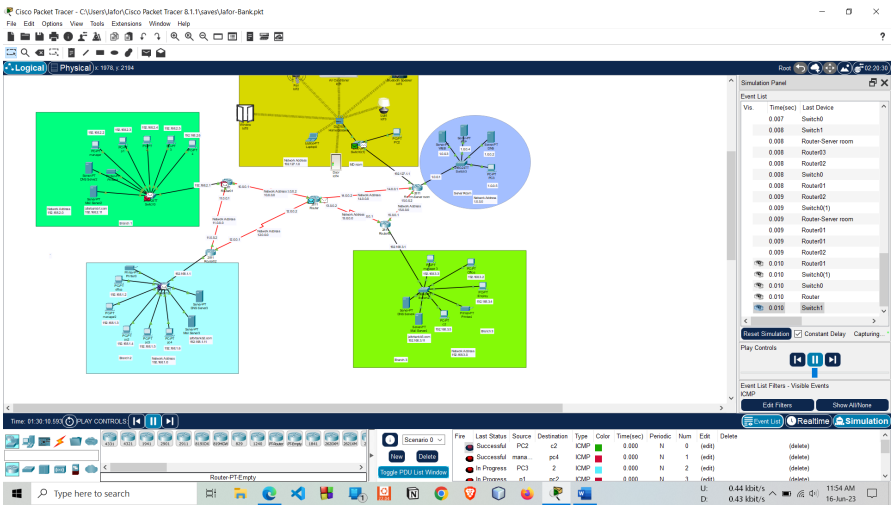

Figure 3.1: Output of Dynamic Routing

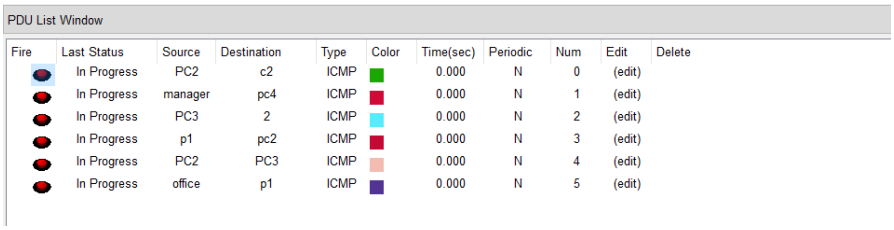

Figure 3.2: Output of Dynamic Routing

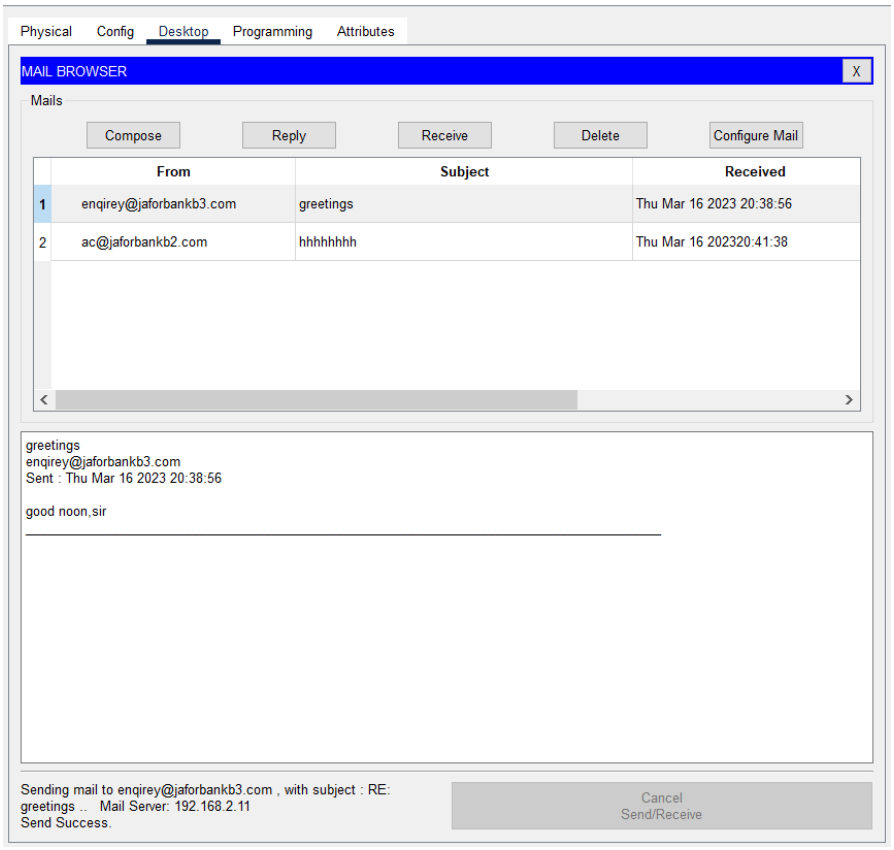

Figure 3.3: Output of Mail Send & received

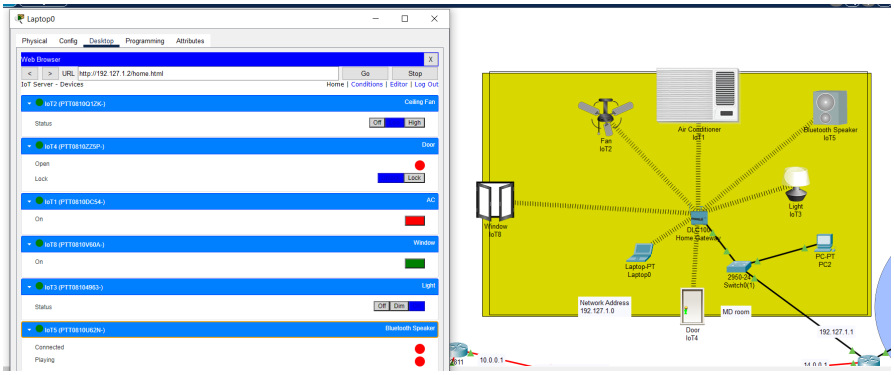

Figure 3.4: Output of IoT

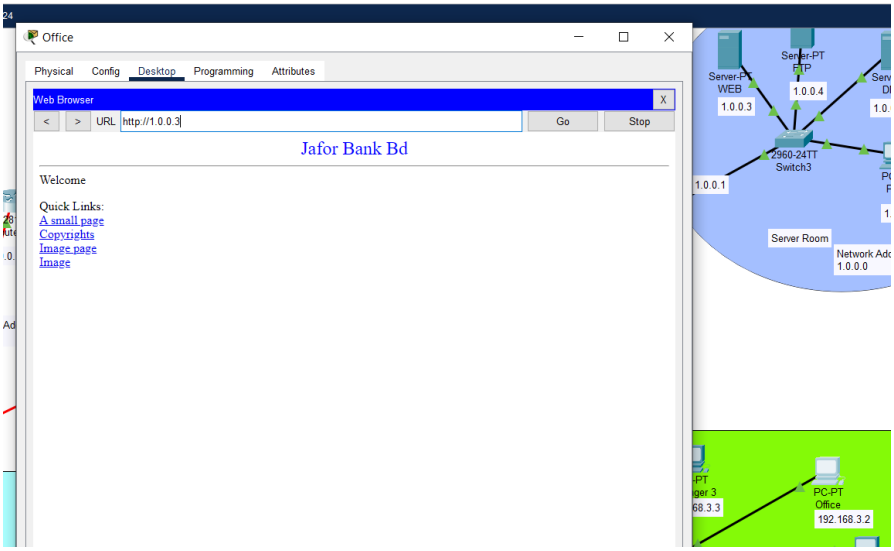

Figure 3.5: Output of Web from Branch 3

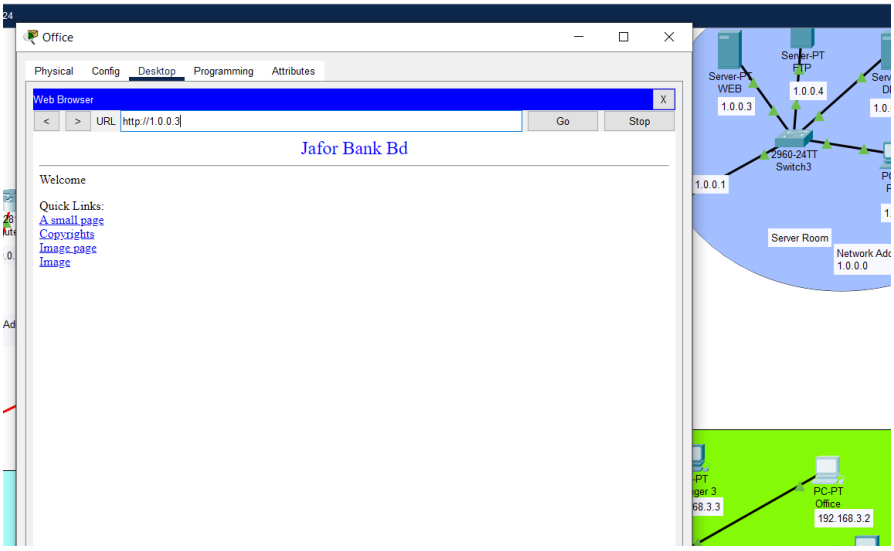

Figure 3.6: Output of Web from Branch 3

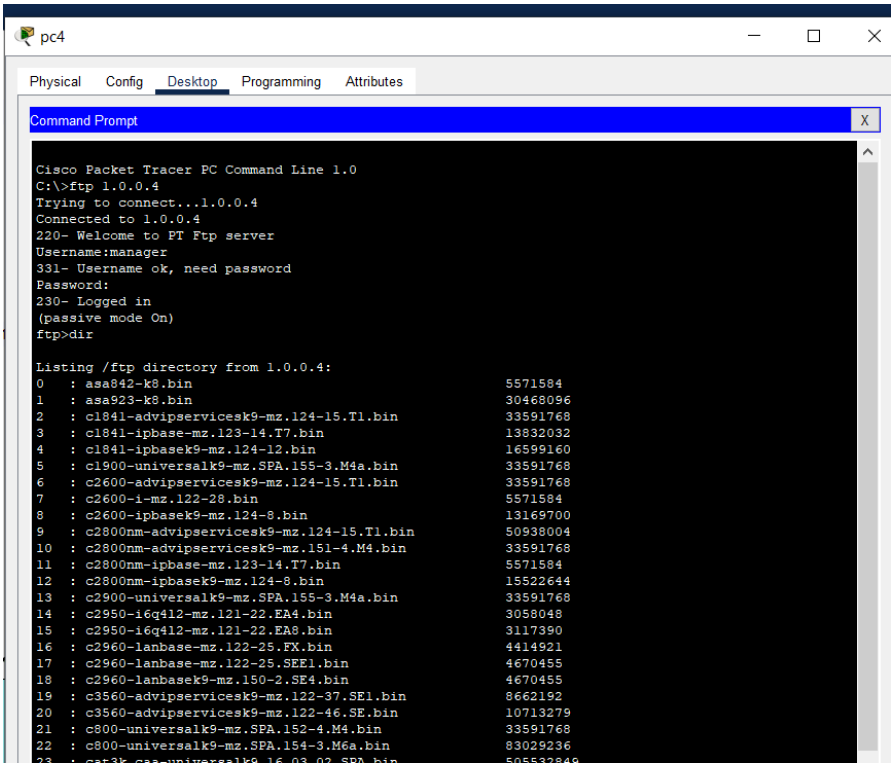

Figure 3.7: Output of FTP from Branch 2 as Manager

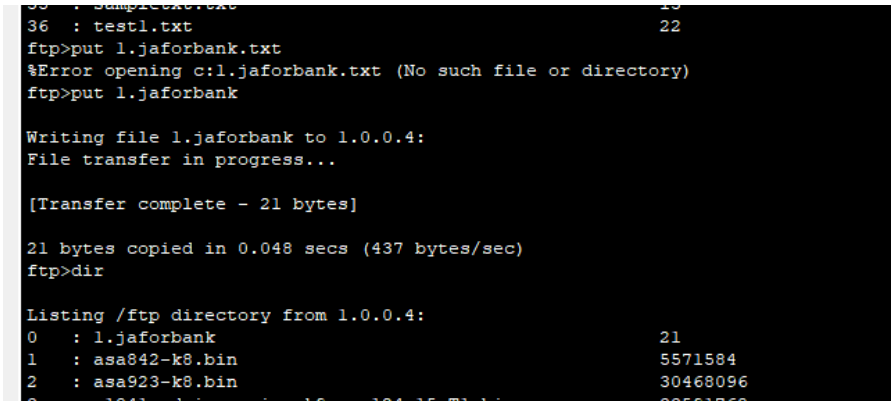

Figure 3.8: Output of FTP from Branch 2 as Manager

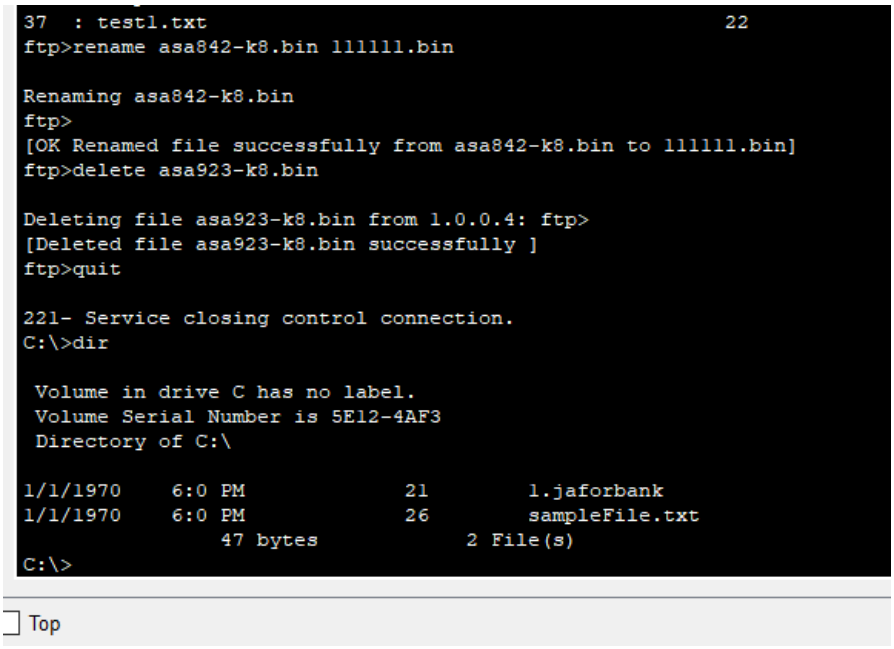

Figure 3.9: Output of FTP from Branch 2 as Manager

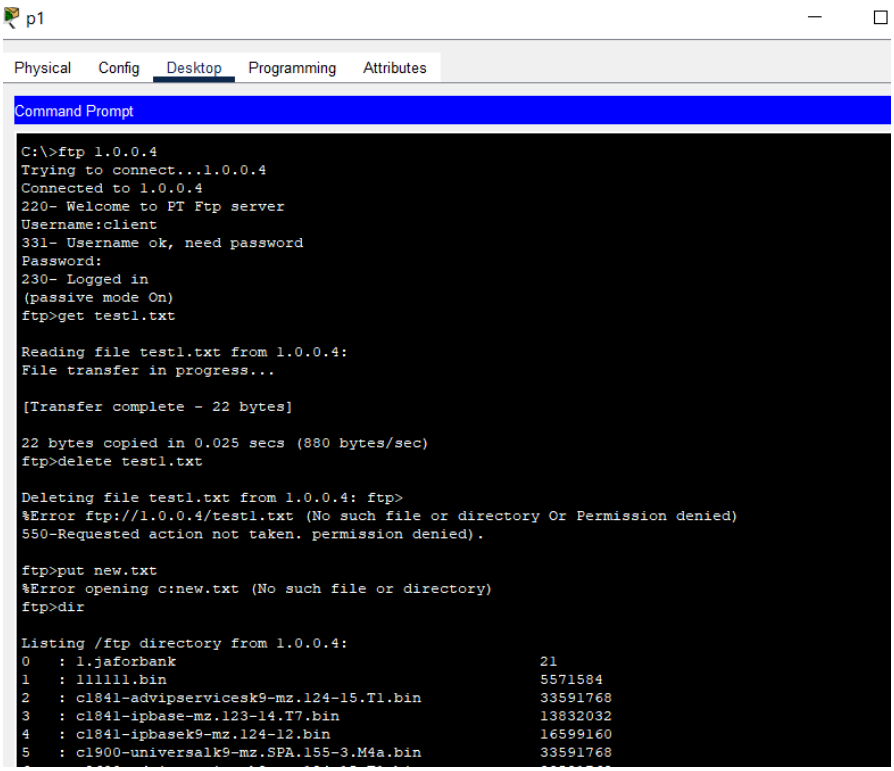

Figure 3.10: Output of FTP from Branch 1 as Client

3.3 Results Overall Discussion

Here you can see the overall architecture of our Networking final project :

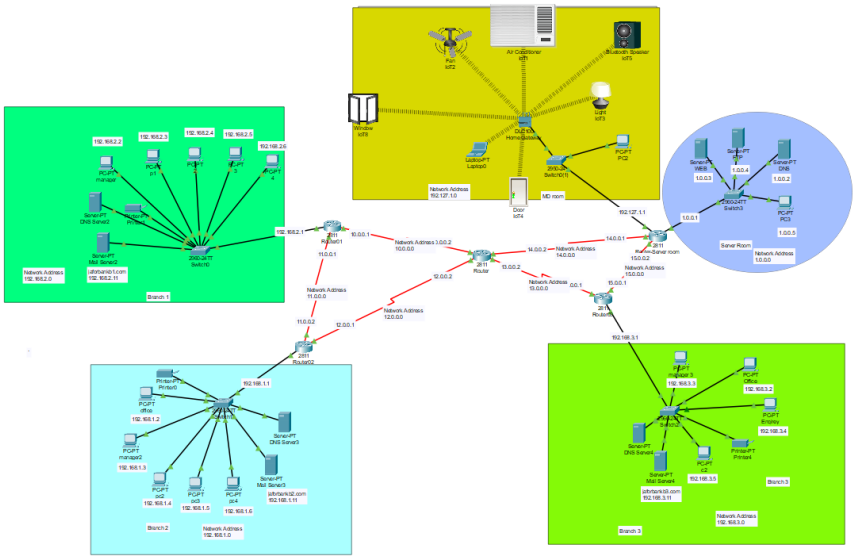

Figure 3.11: Full view

Chapter 4

Conclusion

4.1 Discussion

Here I completed an advanced Banking networking system which is done by Cisco packet tracer platform. The Banking Networking System project implemented in collaboration with Cisco brings significant advancements and improvements to traditional banking systems. The project also prioritizes high availability and redundancy to minimize downtime and ensure uninterrupted banking services. By following the procedure planning step which idea I give in the project proposal, my project successfully completed as per expectations.

4.2 Limitations

Limitations of my project are implementing costs which create financial challenges, particularly for smaller banks or institutions with limited budgets.Then banks need to assess and plan for scalability continually and also security risk of hacking or scams through the internet network.

- The main Limitation is implementing the project in the real world. Because we only simulate it via packet tracer.
- Due to less time and work pressure we could not add more features that could make the project more useful.

4.3 Scope of Future Work

the future scope of work for the bank networking system with Cisco Packet Tracer includes expanding services, integrating fintech solutions, enhancing security measures and artificial intelligence .For future work it will contribute to a more innovative, secure, and customer-centric banking experience.

1. Add time based transmission.

2. Make the project more user friendly.
3. Real life implementation.

References

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