Bank Management System

AN INTERNSHIP PROJECT REPORT

Submitted by

Mahmadamin Lodhiya

200200107054

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

Computer Engineering

Government Engineering College, Rajkot

Gujarat Technological University, Ahmadabad

May - 2024

GOVERNMENT ENGINEERING COLLEGE, RAJKOT

Mavdi - Kankot Road, Near Hanuman Mandir, Rajkot, Gujarat 360005

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Bank Management System** has been carried out by **Mahmadamin Lodhiya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering**, 8th Semester of Gujarat Technological University, Ahmadabad during the academic year 2023-24.

Prof. Jahnvi Doshi
Internal Guide

Prof. (Dr.) S. M. Shah
Head of the Department

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2023-2024

Date of certificate generation : 23 April 2024 (11:44:20)

This is to certify that, ***Lodhiya Mahmadamin Abdulrajak*** (Enrolment Number - 200200107054) working on project entitled with ***Bank Management System*** from ***Computer Engineering*** department of ***GOVERNMENT ENGINEERING COLLEGE, RAJKOT*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Lodhiya Mahmadamin Abdulrajak

Name of Guide : Miss.Doshi Jahnvi Viraj

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

COMPANY CERTIFICATE

TRACKWIZZ

TSS Consultancy Pvt. Ltd.
Regd. And Corp Office: 602/603, A Wing, Tradelink Bldg., Kamala Mill Compound, Lower Parel, Mumbai -400013
U67120MH2005PTC153186
Email: hr@tssconsultancy.com Phone: +91 22 61641181/140

Ref No: 257/024
Date: 12th April 2024

Internship Certificate

This is to certify that Mr Mahmadamin Lodhiya has been interning as an 'Associate Software Engineer-Intern' in our organisation from 08th January 2024 till date. He is hard-working, sincere and diligent.

For TSS Consultancy Pvt. Ltd.

KRUNAL HARESH KANANI

TSS CONSULTANCY PVT. LTD.

Authorised Signatory

GOVERNMENT ENGINEERING COLLEGE, RAJKOT

Mavdi - Kankot Road, Near Hanuman Mandir, Rajkot, Gujarat 360005

DECLARATION

I hereby declare that the Internship / Project report submitted along with the Internship /Project entitled **Bank Management System** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a Bonafede record of original project work carried out by me at **TSS CONSULTANCY PVT LTD** under the supervision of **Mr. NISHANT VERMA** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Mahmadamin Lodhiya

200200107054

ACKNOWLEDGEMENT

I wish to express our sincere gratitude to our External guide, **Mr. NISHANT VERMA**, for continuously guiding me at the company and answering all my doubts with patience. I would also like to thank my Internal Guide **Prof. Jahnvi Doshi** for helping us through our internship by giving us the necessary suggestions and advice along with their valuable coordination in completing this internship. At the same time, I would like to thank my Head of the Computer Engineering Department **(Prof.) Dr. S. M. Shah** for his kind cooperation and support. I would also appreciate his keen interest in helping me and his regular guidance throughout the project.

I would also like to extend my hearty gratitude to **TSS CONSULTANCY PVT LTD** for the internship opportunity. Your experience and knowledge in the field have been invaluable in helping me to gain a deeper understanding of the industry. Your constructive feedback and guidance have enabled me to develop my skills and become a more effective contributor to the organization.

In addition, my focus and dedication to learn something new helped me to clinch success in the internship and learn a lot of new things and get hands on experience on live projects.

ABSTRACT

During a period of 12 weeks of training at TSS CONSULTANCY PVT LTD, I was assigned the role of Associate Software Engineer Intern. The main objective of the internship was to gain hands-on experience in .net and Angular to apply the theoretical knowledge acquired during the academic course in a practical setting. In this internship I learned SOLID Principles.

ASP .net Core, Middleware, Working with Web API, SQL ,Object Relational Mapper , Entity Framework Core , Linq ,Synchronous v/s Asynchronous.

Communnication,Authentication v/s Authorization,Monolithic vs Microservices , Logging and Debugging , Scrum and Kanban. I worked on Kyc and Ckyc Services in which solved some issues and improved functionality.Created models for apis.Also created a project with .net tech during the training.

Overall, this internship provided valuable experience in Software Development and Analytics, and the skills gained are expected to be useful in future projects and career opportunities.

LIST OF FIGURES

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CHAPTER 1: OVERVIEW OF THE COMPANY

1.1 HISTORY

TSS Consultancy Private Limited (TCPL) is a leading Private Limited Indian Non-Government Company incorporated in India on 11 May 2005 and has a history of 19 years. Its registered office is in Mumbai, Maharashtra, India.

The Corporate was formerly known as Tanna Software Solutions Private Limited. The Company is engaged in providing software development services.

TSS Consultancy offers a wide range of products and services, including:

- Stock Trading/Money Market
- Currency Trading Services
- Computer Software & Mobile Apps
- Data Management Systems
- Corporate Finance & Leasing Advisors
- Investment Service

The Company's status is Active, and it has filed its Annual Returns and Financial Statements up until 31 March 2023.. It is a company limited by shares with an authorized capital of Rs 5.00 cr and a paid-up capital of Rs 2.36 cr.

The Corporate has already closed loans amounting to ₹25.93 cr, and has no open charges as per the Ministry of Corporate Affairs (MCA) records.

1.2 SCOPE OF WORK

- Designing of optimized and scalable microservices.
- Business Intelligence and data flow
- Improved sync communication between services
- Error handling and revoke
- Database management

1.3 TECHNOLOGIES

- Asp .Net core
- NHibernate - Hibernate
- Angular
- Sql

1.4 VALUES

- Data Driven
- Innovation
- Well established process
- Ethics & Integrity
- Agility
- Collaboration

CHAPTER 2: INTRODUCTION TO INTERNSHIP

2.1 INTERNSHIP SUMMARY

GTU provides the opportunity to get experience before students step intoprofessional life. In 2024, I began my internship at **TSS CONSULTANCYPVT LTD**. Working at the office, I found inspiration in my everyday journeys thanks to a fantastic work environment. It was an opportunity for me to demonstrate my worth as an employee, a trustworthy colleague, and adedicated student. I have worked across several tools during my course of internship. The encouragement and honest responses I received were morethan enough to put me at ease. I am grateful to my mentor for giving me the opportunity to grow both physically and personally.

2.2 PURPOSE

Excelling in exams and earning a degree alone may not be enough to succeed in today's job market. Real world experience through internships is crucial for professional growth, expanding knowledge, and determining the right career path.

2.3 SCOPE

Internships offer valuable opportunities to gain real-world experience, expand knowledge and determine career direction in today's job market. They bridge the gap between academic learning and workplace skills, providing essential professional development for success in the modern employment landscape.

2.4 OBJECTIVE

The main objective of this internship was to make candidates work-ready in web development using Angular and .Net technology. I was mainly focused on practical and self- learning. I aimed to build my programming base and write code by following coding standards. From an individual employee's point of view, the main aims are:

- Be self-assured and introduce ourselves in professional settings.
- Be skillful in one or more areas of expertise.
- Develop soft skills like taking public speaking initiatives, taking .
- To gain leadership quality.

CHAPTER 3: TOOLS & TECHNOLOGIES

3.1 .Net

.NET is a software framework developed by Microsoft that primarily runs on Windows operating systems. It provides a platform for building, deploying, and running various types of applications, including web, desktop, mobile, and cloud-based solutions.

Introduced in the early 2000s, .NET is designed to facilitate easier development, integration, and management of software applications by providing a consistent programming model and a vast set of libraries and tools. It supports multiple programming languages, including C#, Visual Basic, and F#, allowing developers to choose the language that best fits their needs and preferences.

One of the key features of .NET is its Common Language Runtime (CLR), which manages the execution of .NET programs and provides features such as memory management, exception handling, and security. Additionally, .NET includes a comprehensive class library, known as the .NET Framework Class Library (FCL), which offers reusable code components for common programming tasks.

Over the years, .NET has evolved with updates and enhancements, such as the introduction of .NET Core, a cross-platform, open-source version of .NET, and later, .NET 5, which merged .NET Core with the .NET Framework. These advancements have expanded the reach of .NET, making it a versatile and powerful framework for building modern applications across various platforms and devices.

3.2 ENTITY FRAMEWORK

Entity Framework (EF) is an object-relational mapping (ORM) framework provided by Microsoft as part of the .NET ecosystem. It simplifies the process of interacting with databases by allowing developers to work with data in terms of objects and classes, rather than database tables and SQL queries.

Introduced alongside .NET Framework 3.5 in 2008, Entity Framework became a core component of the .NET ecosystem, offering features such as automatic CRUD (Create, Read, Update, Delete) operations, LINQ (Language Integrated Query) support, change tracking, and database migrations.

With Entity Framework, developers can define a data model using classes (referred to as entities) and their relationships, known as entity relationships. These classes map directly to database tables, and EF handles the translation between object-oriented code and relational database structures.

Entity Framework supports various database systems, including SQL Server, MySQL, PostgreSQL, and SQLite, among others. It abstracts the underlying database provider, enabling developers to switch between different database engines with minimal code changes.

Overall, Entity Framework simplifies data access and manipulation in .NET applications, allowing developers to focus more on application logic and less on database interactions.

3.3 ANGULAR

Angular is a front-end web application framework maintained by Google, used for building dynamic single-page applications (SPAs). Written in TypeScript, Angularoffers features like components, data binding, dependency injection, directives, services, routing, and forms. Components encapsulate HTML templates, CSS styles, and TypeScript code, promoting modularity and reusability. Two-way data binding synchronizes data between the model and view, simplifying UI updates. Dependency injection facilitates managing dependencies between components for improved modularity and testability. Directives manipulate the DOM, with optionsfor creating custom directives. Services encapsulate business logic and data access for reuse across the application. Angular's powerful routing system allows for building SPAs with multiple views and navigation capabilities. It also provides robust support for building forms with validation and error handling. Overall, Angular is a comprehensive framework emphasizing performance, maintainability,and developer productivity, making it a popular choice for modern web development.

3.4 SQL

SQL (Structured Query Language) databases are relational databases that utilize SQL as their primary language for data management and manipulation. They structure data into tables interconnected via common fields or keys. SQL databases serve as repositories for vast amounts of structured data, offering capabilities for data creation, modification, and retrieval. These databases empower developers with tools to efficiently store, organize, and query data, facilitating rapid extraction of specific information from extensive datasets.

CHAPTER 4: SYSTEM ANALYSIS

4.1 Study Of Current SystemINTRODUCTION

The backend project in .NET for bank management is a sophisticated system engineered to deliver seamless and efficient banking services. Developed exclusively using .NET technologies such as ASP.NET Core and Entity Framework, this backend solution is built for scalability, reliability, and performance.

The project utilizes a robust database architecture powered by Microsoft SQL Server to manage vast amounts of banking data efficiently. Throughmeticulously crafted APIs, the backend provides endpoints for user authentication, account management, transaction processing, customer management, and regulatory compliance.

PROBLEM STATEMENT

Create an application for managing bank accounts of a customer. There willbe multiple types of accounts - Savings and Current.

- Features required:

1. Get Interest rates based on account type (Suggestion: Use DI)
2. Add, Update, Delete an Account
3. Get Account Details (Customer Details, Account Balance)
4. Transactions (Withdraw and Add Money to the account)
5. Transactions Summary (Optional)

METHODS:

Requirement Analysis: Gather requirements, including features like user authentication, account management, transaction processing, Customer management, and scalability needs.

Database Design: Design the database schema using Microsoft SQL Server to store user information, account details, transaction records, Customer information, and other relevant data.

Choose Framework: Select ASP.NET Core for building the backend, leveraging its performance, scalability, and cross-platform capabilities.

API Development: Develop RESTful APIs using ASP.NET Core Web API to expose endpoints for user authentication, account management, transaction processing, Customer management and other functionalities.

Business Logic: Implement business logic for managing user accounts, account operations, transaction processing and data validation.

Scalability Considerations: Design the architecture to handle high loads and scalability requirements, such as load balancing, caching, and asynchronous processing for transaction handling.

Testing: Perform unit testing, integration testing, and end-to-end testing to ensure the reliability and functionality of the backend services, including account operations, transaction processing.

CONCLUSION:

In conclusion, the project focused on developing a scalable backend system fora bank management solution using .NET technologies. By leveraging ASP.NET Core and Microsoft SQL Server, the backend effectively managed user authentication, account operations, transaction processing, and loan management functionalities. Through meticulous planning and implementation,the project addressed the core requirements of a modern banking platform. Moving forward, ongoing optimization and feature enhancements will be crucial to continually improve the user experience and ensure the platform remains competitive in the evolving landscape of financial services.

4.1 WEAKNESS OF CURRENT SYSTEM

One significant weakness of the current system is the inability for users to perform money transfers to other accounts. This limitation hampers the functionality and convenience of the banking platform, as users are unable to conduct essential transactions such as transferring funds to family members, friends, or other accounts within or outside the bank. This deficiency undermines the competitiveness of the bank and may result in dissatisfaction among customers who expect modern banking services to include seamless money transfer capabilities. As a result, addressing this weakness byimplementing secure and efficient money transfer functionalities should be a priority for enhancing the overall user experience and meeting the evolving needs of customers in the digital banking era.

4.1 FEATURES OF NEW SYSTEM

To address weaknesses and enhance the bank management project, several solutions and new features can be implemented. Firstly, expanding the banking services portfolio through collaborations with multiple financial institutions and service providers ensures a comprehensive range of financial products and services. Scalability improvements, such as investing in cloud infrastructure and adopting microservices architecture, accommodate growing user demand effectively.

Reducing dependency on external systems by developing in-house solutions for essential banking functionalities and enhancing security measures with robust protocols like data encryption and multi-factor authentication safeguard customer data. Improving user experience involves intuitive interface designs, personalized financial recommendations, and social integration features for seamless communication with bank representatives.

Implementing various monetization strategies, including service fees for premium features and financial products, ensures sustainable revenue generation. Strengthening regulatory compliance through adherence to banking regulations and employing advanced monitoring tools minimizes legal risks. Introducing new features like budget management tools, investment portfolio tracking, and financial planning assistance differentiates the platform and attracts new users.

CHAPTER 5: SYSTEM DESIGN

5.1 ABSTRACT OF SYSTEM

This project entails the development of a backend system for a bank management solution using .NET technologies. The system aims to efficiently handle core banking functionalities such as account management, transaction processing. Leveraging ASP.NET Core and Microsoft SQL Server, the backend system ensures scalability, performance, and reliability in managing diverse banking operations. The project focuses on delivering a seamless user experience while providing essential features for user authentication, account operations.

System Design:

The system architecture with distinct components for handling account management, transaction processing, user authentication, and account managemen via RESTful APIs, allowing for modular development and scalability.

Account Management Service:

Manages the creation, modification, and retrieval of user accounts and account-related operations. Utilizes Microsoft SQL Server for data persistence and provides APIs for managing accounts, including account creating, deleting, and updating account information.

Transaction Processing Service:

Handles the processing of various banking transactions such as deposits, withdrawals. Stores transaction data in the database and exposes APIs for performing transactional operations securely.

User Authentication Service:

Manages user authentication and authorization using Angular for user management and token-based authentication for API access. Handles user login.

Overall, the system design prioritizes scalability, performance, and security, ensuring that the backend infrastructure can support a large number of concurrent users and handle high volumes of banking operations seamlessly. Additionally, the use of .NET technologies and industry-standard frameworks ensures compatibility, reliability, and ease of maintenance in the banking domain

5.2 DATABASE DESIGN

The database design includes tables for Account, Customer, TransactionInfo and TransactionType. It facilitates efficient storage and retrieval of bank-related information, supporting operations like account creation and account management for a banking service.

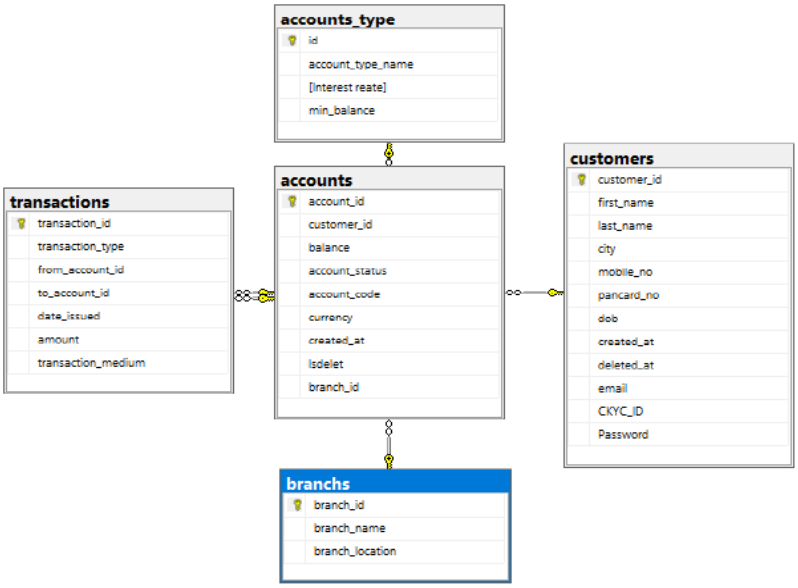


Fig 5.2 Database Design

CHAPTER 6: IMPLEMENTATION

6.1 IMPLEMENTATION PLATFORM:

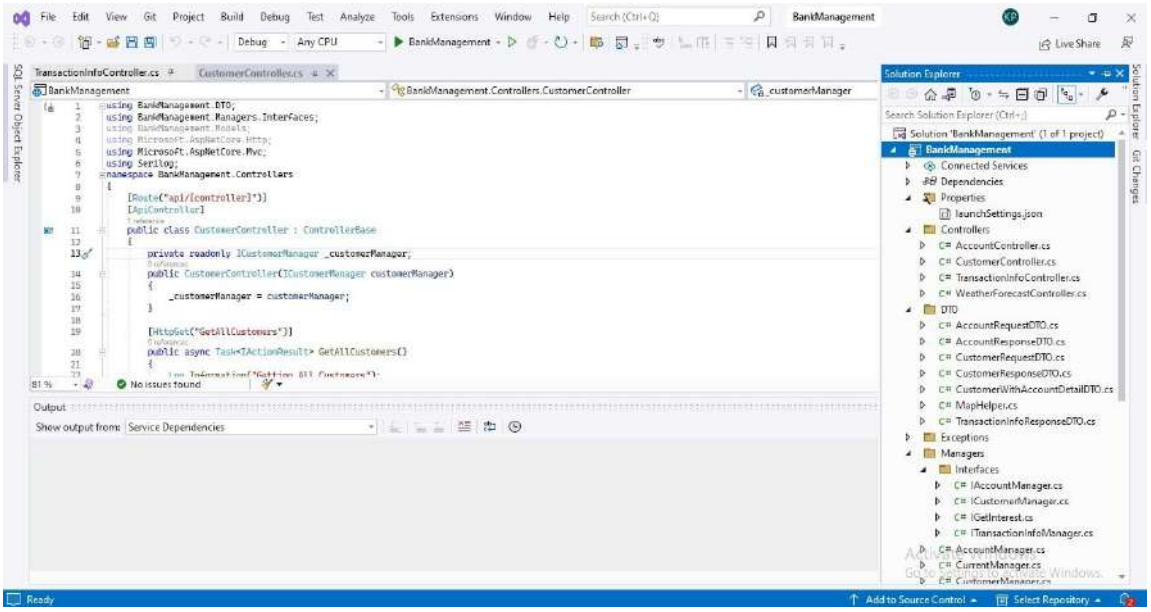


Fig 6.1.1 Visual Studio

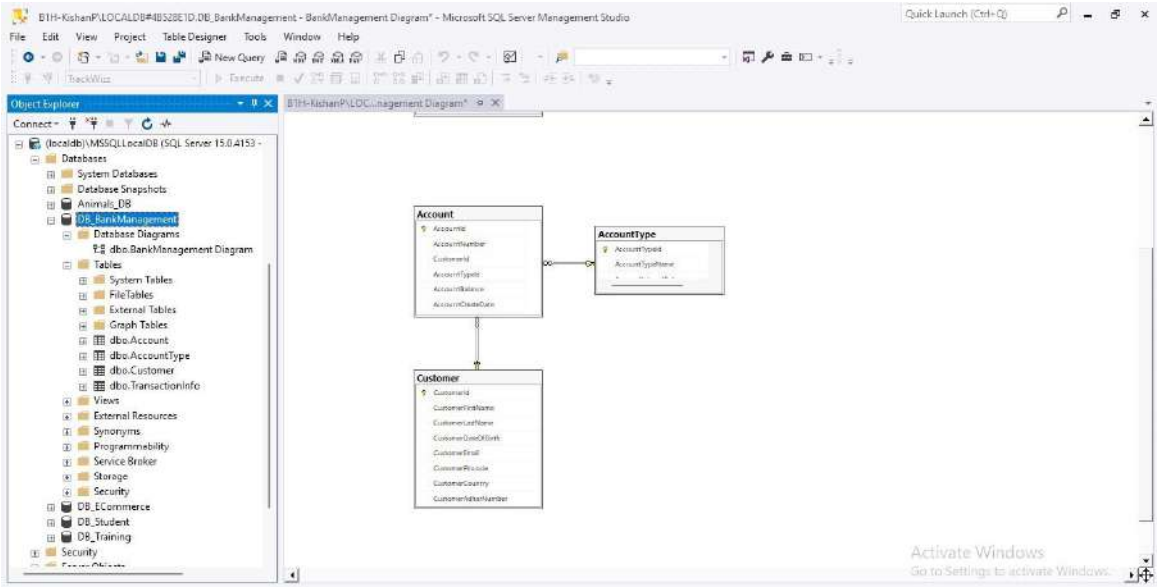


Fig 6.1.2 MS SQL Server Management Studio

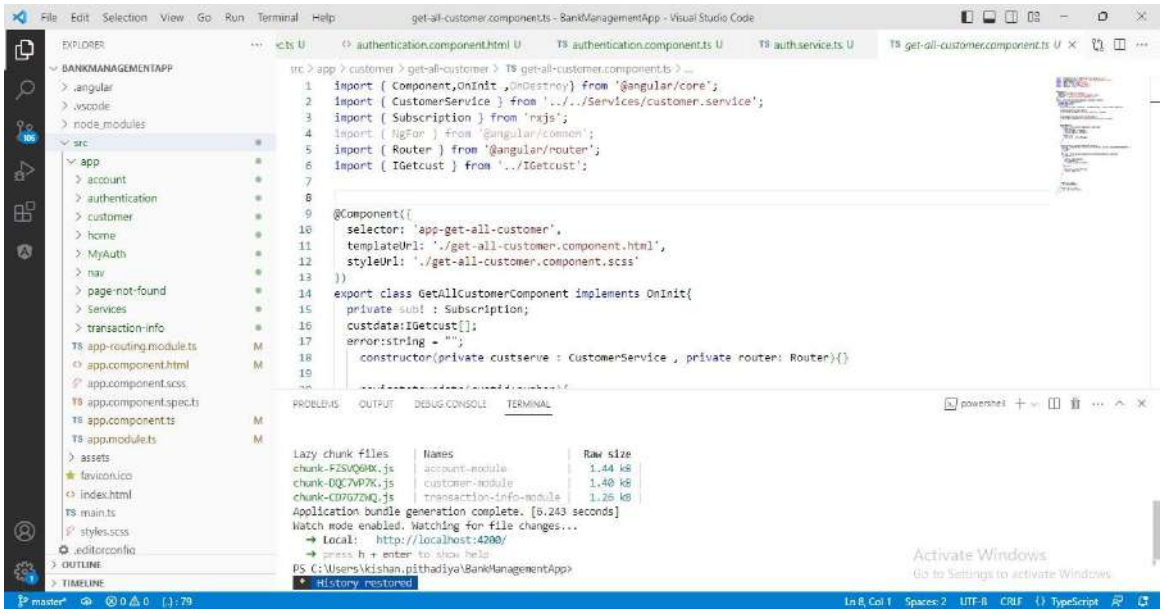


Fig 6.1.3 Visual Studio Code

6.2 PROGRAM

6.2.1 Visual Studio Account Repo

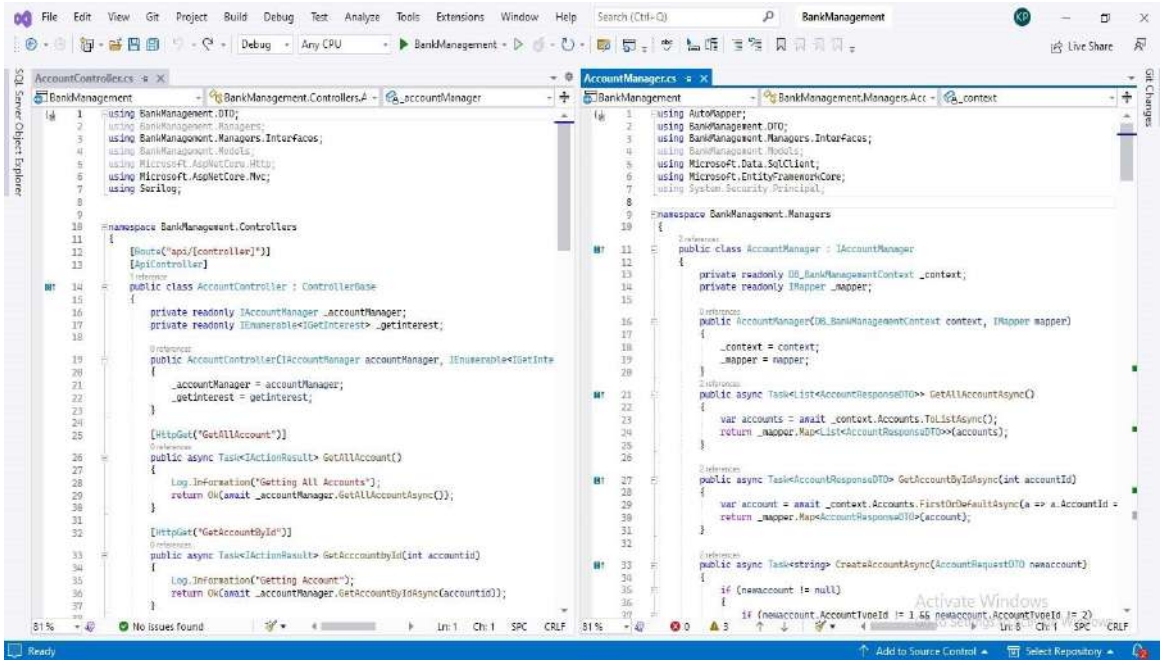


Fig 6.2.1 Visual Studio Account Repo

6.2.2 Visual Studio Customer Repo

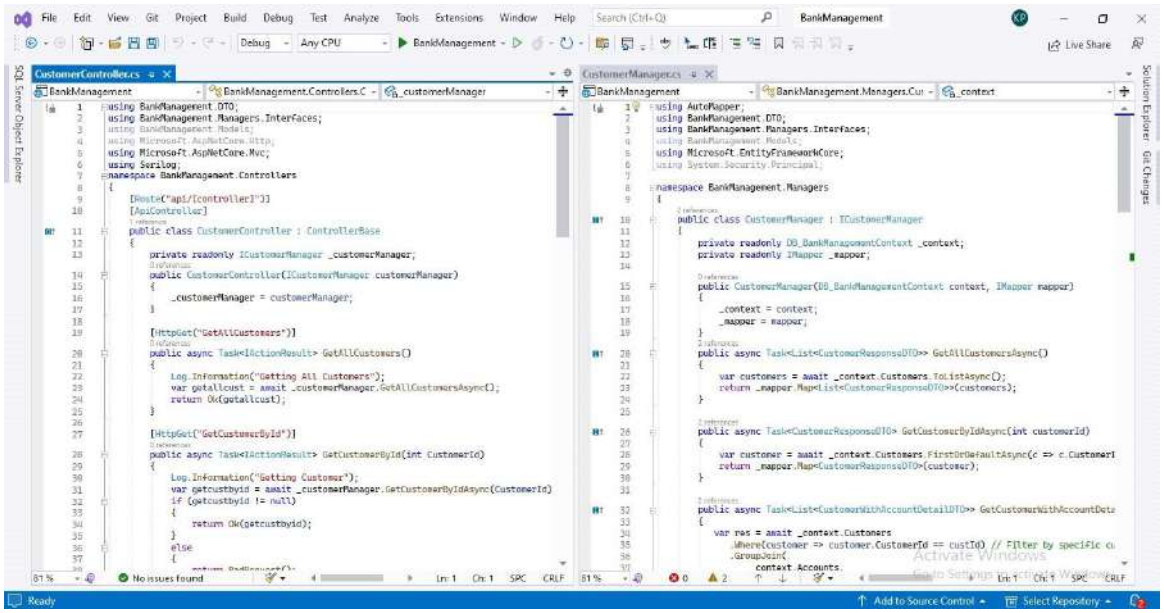


Fig 6.2.2 Visual Studio Customer Repo

6.2.3 Visual Studio TransactionInfo

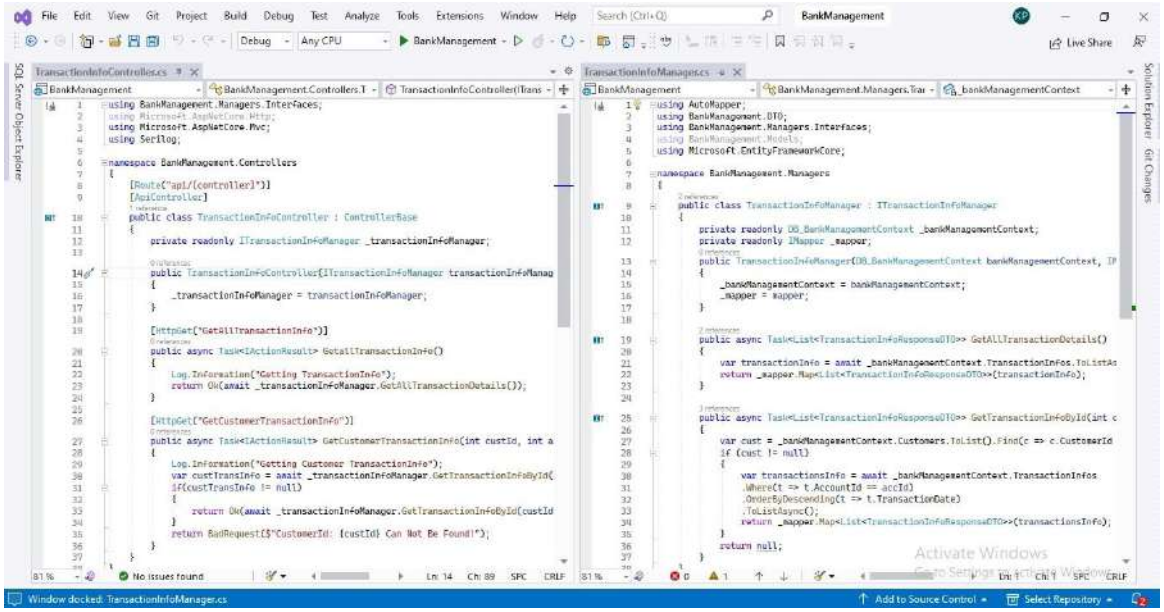


Fig 6.2.3 Visual Studio TransactionInfo Repo

6.3 User Interface

6.3.1 All Customers

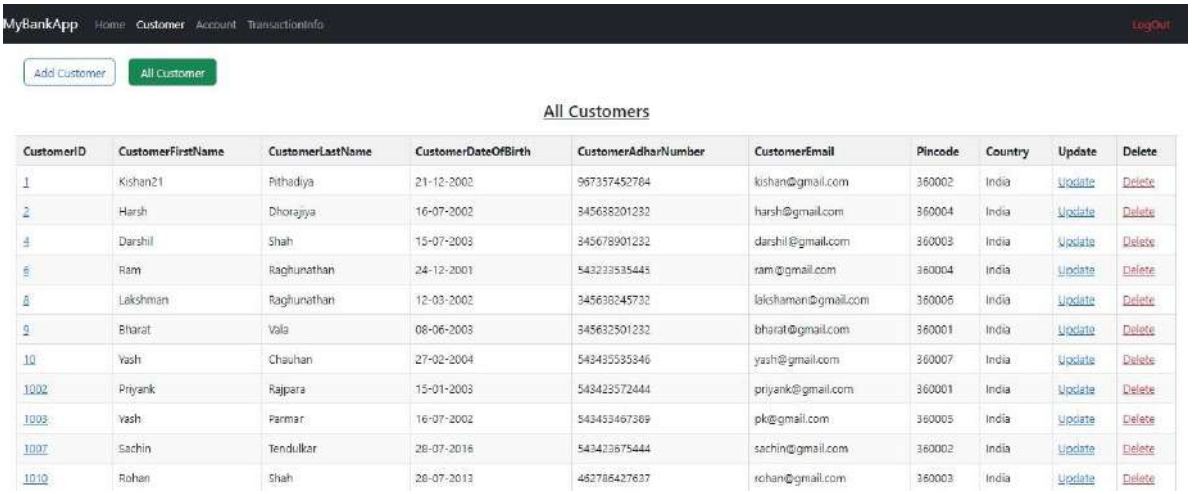


Fig 6.3.1 All Customers

6.3.2 Add Customer

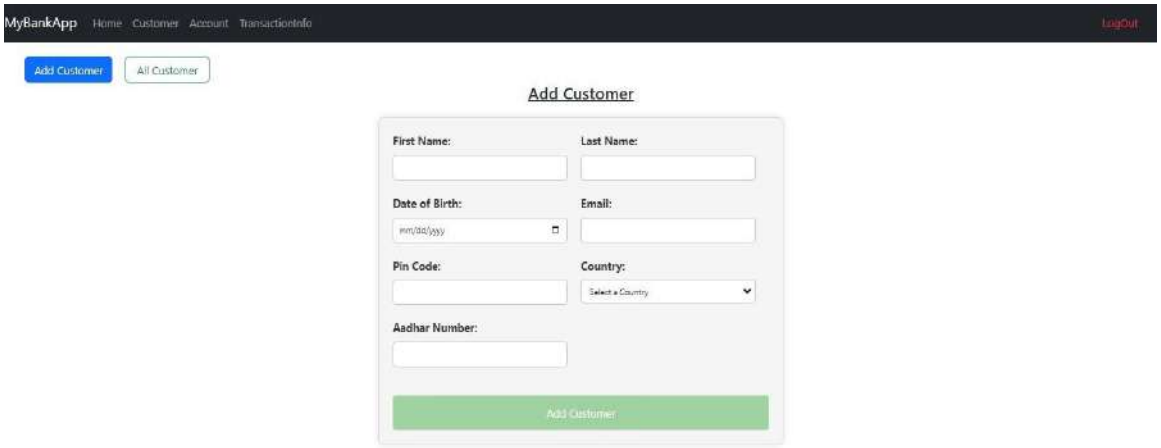


Fig 6.3.2 Add Customer

6.3.3 All Accounts

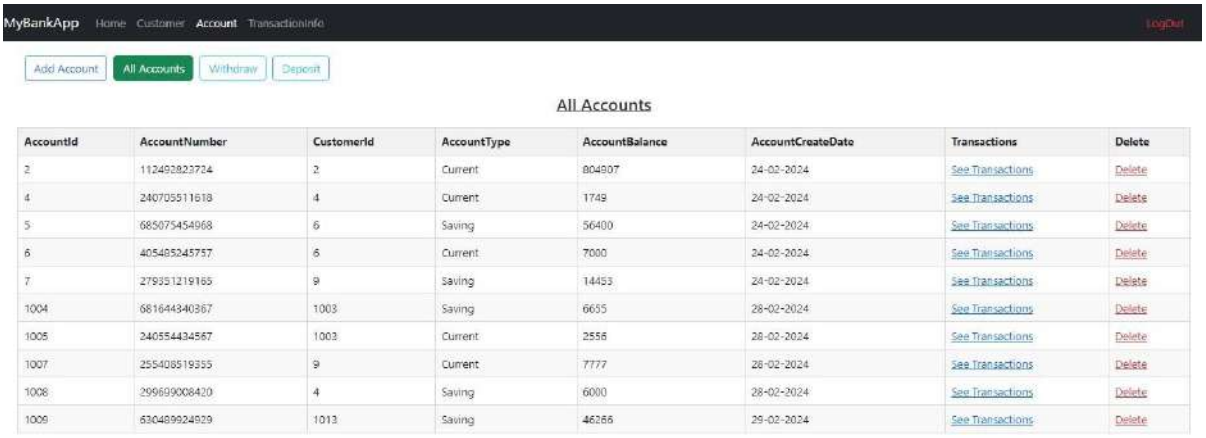


Fig 6.3.3 All Accounts

6.3.4 Add Account

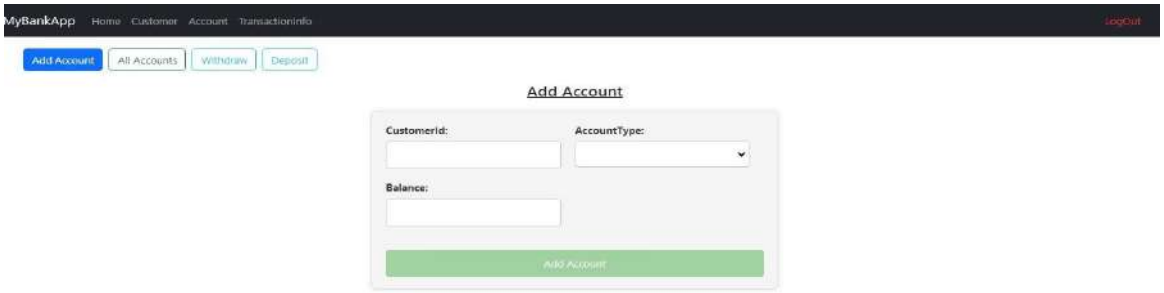


Fig 6.3.4 Add Account

6.3.5 Withdraw Money

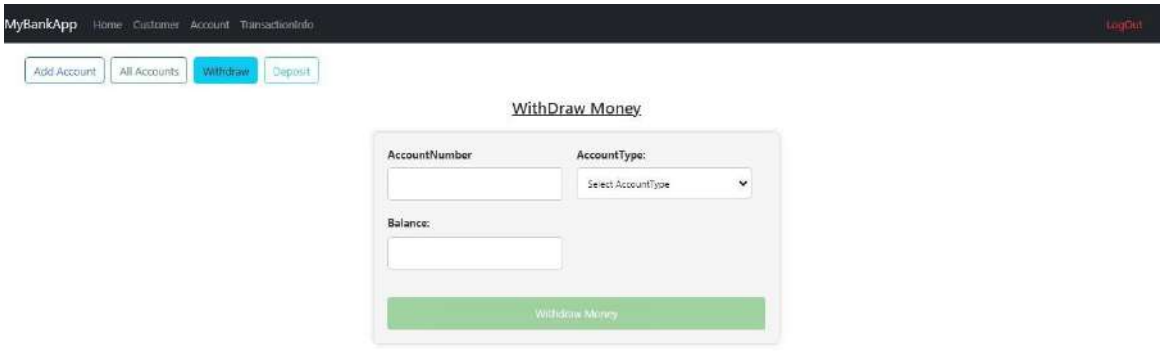


Fig 6.3.5 Withdraw Money

6.3.6 Deposit Money

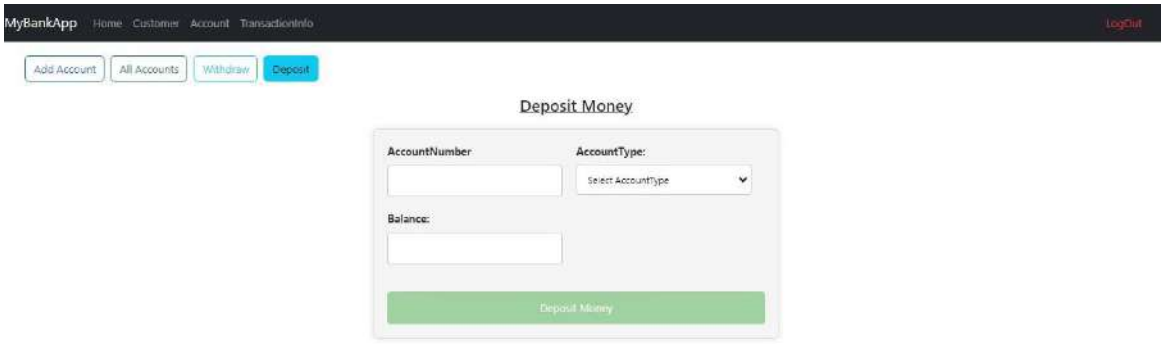
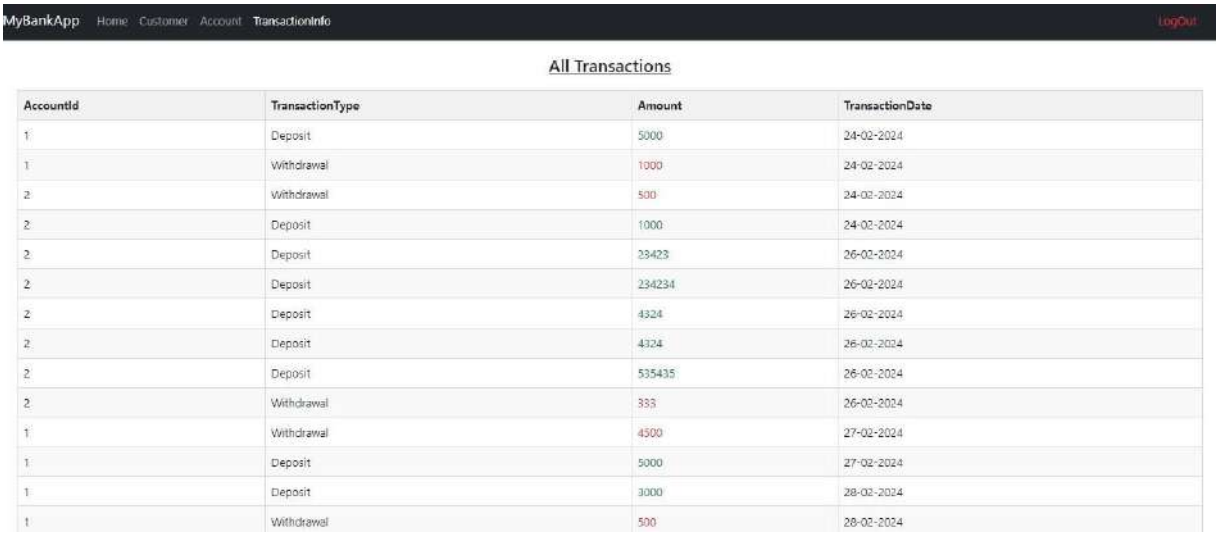


Fig 6.3.6 Deposit Money

6.3.7 All Transactions



AccountId	TransactionType	Amount	TransactionDate
1	Deposit	5000	24-02-2024
1	Withdrawal	1000	24-02-2024
2	Withdrawal	500	24-02-2024
2	Deposit	1000	24-02-2024
2	Deposit	23423	26-02-2024
2	Deposit	234234	26-02-2024
2	Deposit	4324	26-02-2024
2	Deposit	4324	26-02-2024
2	Deposit	535435	26-02-2024
2	Withdrawal	333	26-02-2024
1	Withdrawal	4500	27-02-2024
1	Deposit	5000	27-02-2024
1	Deposit	3000	28-02-2024
1	Withdrawal	500	28-02-2024

Fig 6.3.7 All Transactions

CHAPTER 7: TESTING

7.1 TESTING STRATEGIES

Utilize Swagger for comprehensive testing of the backend. Test each API endpoint through Swagger, covering scenarios like user authentication, account management, transaction processing, and customer management. Verify responses, error handling, and data integrity for each endpoint.

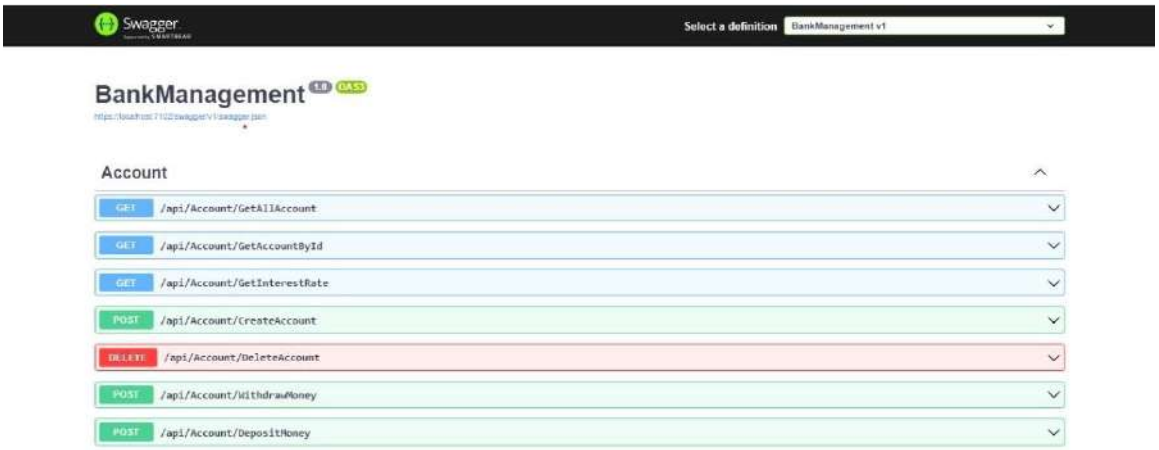


Fig 7.1.1 Swagger Api Testing for Account

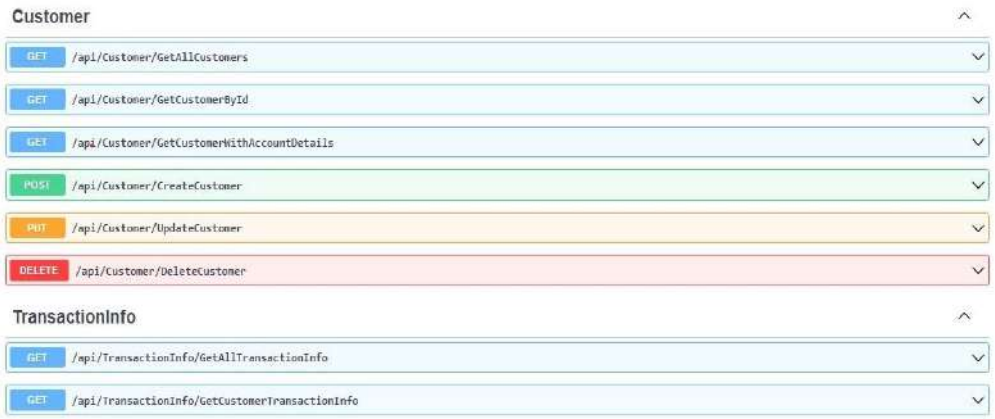


Fig 7.1.2 Swagger Api Testing for Customer and TransactionInfo

7.2 TEST CASE

7.2.1Customer:

1) Adding Customer

Fig 7.2.1 Testing For Add Customer

2) Update Customer

Fig 7.2.2 Testing For Update Customer

1) Get All Customer With Account Details

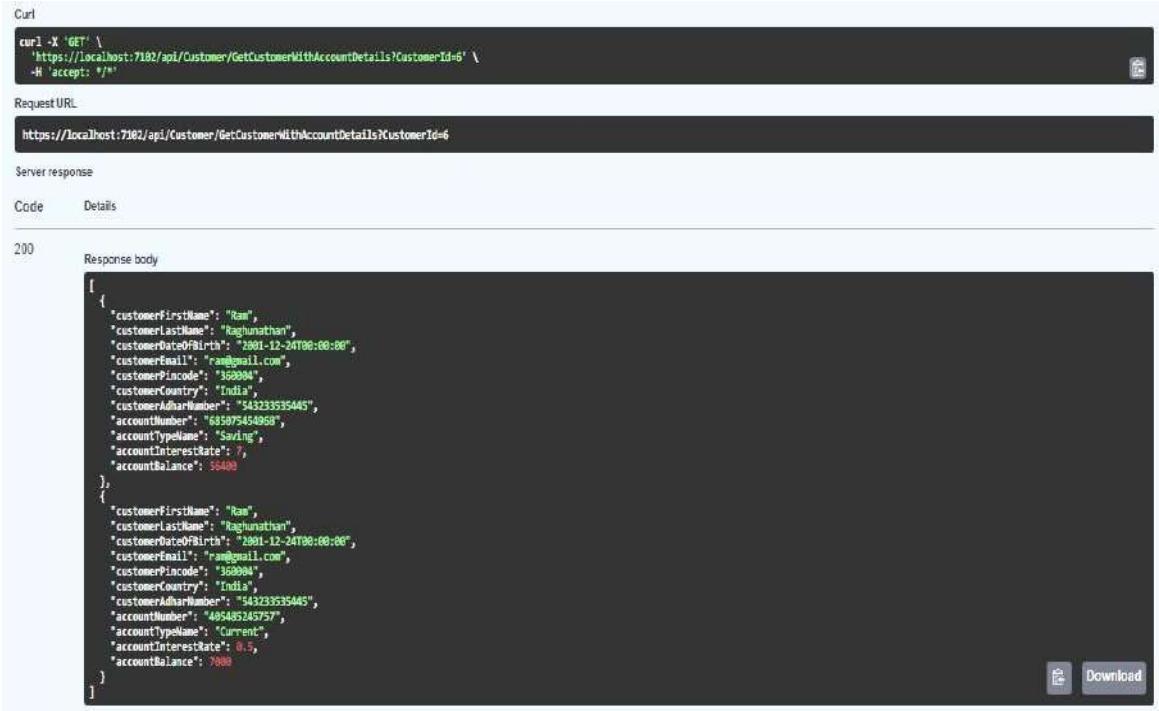


Fig 7.2.3 Testing For Customer With Account Details

2) Delete Customer

Fig 7.2.4 Testing For Delete Customer

Account:

Adding Account

Fig 7.2.5 Testing For Add Account

Delete Account

Fig 7.2.6 Testing For Delete Account

Withdraw Money

Fig 7.2.7 Testing For Withdraw Money

Deposit Money

Fig 7.2.8 Testing For Deposit Money

Get Interest Rate

Fig 7.2.9 Testing For Interest Rate

Transaction Info:

1) Get Customer Transaction Info

Fig 7.2.10 Testing For Customer Transaction Inf

CHAPTER 8: CONCLUSION & DISCUSSION

8.1 OVERALL ANALYSIS OF INTERNSHIP

During my internship at TSS CONSULTANCY PVT LTD, the project offered anopportunity to showcase technical prowess in .NET development, SQL database management, and API design with Swagger. Collaborating with colleagues demonstrated teamwork and communication skills, fostering a productive work environment. Problem-solving abilities were tested through challenges, encouraging creative solutions and innovative approaches. Effective project and time management ensured tasks were completed promptly, enhancing efficiency and productivity. The experience facilitated significant learning and growth, identifying areas for improvement and future development. Engaging with mentors and supervisors provided valuable guidance and mentorship, contributing to professional development. Overall, the internship at TSS CONSULTANCY PVT LTD was a rewarding experience, offering practical insights into the software development process and laying a foundation for continued growth and success in the field.

8.2 SUMMARY OF INTERNSHIP

I experienced significant growth not only in technical skills but also in a range of non-technical competencies. Engaging in real-world projects provided a platform to enhance my proficiency in .NET development, SQL database management, and API design using Swagger. Moreover, collaborating with colleagues and mentors cultivated effective communication, teamwork, problem-solving, and time management skills. This holistic learning experience in a supportive environment has equipped me with a well-rounded skill set, essential for navigating future challenges within the company. With a solid foundation in bothtechnical expertise and interpersonal competencies, I am ready to embrace new opportunities and contribute meaningfully to ambitious projects. I am eager to leverage my diverse skill set to drive innovation and excellence, fostering a culture of growth and collaboration within the organization. As I embark on the next phase of my career journey, I am confident in my ability to tackle any new challenge with enthusiasm, adaptability, and a commitment to continuous learning and improvement.

8.3 FUTURE ENHANCEMENT

Enhanced User Experience:

Implement features like personalized dashboard views, customizable notifications, and intuitive navigation to enhance user satisfaction and engagement.

Advanced Search and Filtering:

Introduce advanced search and filtering capabilities, allowing users to easily find transactions, account details, statements, and other banking information based on various criteria like date, amount, account type, and transaction type.

Social Integration:

Integrate social media platforms and messaging services to enable users to share banking tips, financial insights, and other relevant information with friends, family, and followers, enhancing community engagement and awareness.

Analytics and Reporting:

Incorporate analytics and reporting features to provide users with insights into their spending habits, savings trends, investment performance, and financial goals, empowering them to make informed decisions.

Transaction Collaboration:

Enable users to collaborate on transactions, allowing multiple users to contribute and manage joint accounts or shared expenses, fostering transparency and collaboration.

Voice Commands:

Implement voice command functionalities, allowing users to check balances, transfer funds, and perform other banking tasks hands-free, enhancing accessibility and user convenience.

Enhanced Security Measures:

Strengthen security measures such as multi-factor authentication, biometric verification, data encryption, and regular security audits to safeguard user data and protect against unauthorized access and cyber threats.

Continuous Performance Optimization:

Continuously optimize the backend infrastructure, databases, and APIs to improve performance, scalability, and responsiveness, ensuring a seamless banking experience for users, even during peak usage periods.

8.4 References

1) [Dot Net Tutorials] (https://dotnettutorials.net/):

This website offers a comprehensive range of tutorials, articles, and resources related to .NET development. It covers various topics such as C#, ASP.NET, Entity Framework, MVC, and more. The tutorials are well-structured and cater to both beginners and advanced developers, making it a valuable resource for learning and mastering .NET technologies.

2) [ASP.NET Official Documentation](https://dotnet.microsoft.com/en-us/apps/aspnet):

Provided by Microsoft, this official documentation for ASP.NET covers everything from getting started guides to in-depth technical references. ASP.NET is a popular framework for building dynamic web applications and services. The documentation includes tutorials, API references, and best practices to help developers create robust and scalable web applications using ASP.NET.

3) [Swagger] (https://swagger.io/):

Swagger is an open-source framework for designing, building, and documenting APIs. It provides tools for developers to generate interactive API documentation, client SDKs, and server stubs automatically from a Swagger/OpenAPI specification. Swagger simplifies the process of API development by offering a standardized way to define and communicate API specifications.

4) [W3Schools SQL Tutorial] (https://www.w3schools.com/sql/):

W3Schools is a popular online platform for learning web development technologies. Their SQL tutorial covers the fundamentals of Structured Query Language (SQL), including database management, querying data, modifying tables, and performing advanced operations. The tutorial includes examples, explanations, and interactive exercises to help learners grasp SQL concepts effectively.

5) [Microsoft T-SQL Language Reference] (https://learn.microsoft.com/en-us/sql/t-sql/language-reference):

T-SQL (Transact-SQL) is Microsoft's implementation of SQL with additional features for querying and managing SQL Server databases. This official language reference provides detailed documentation on T-SQL syntax, functions, operators, and statements. It serves as a comprehensive resource for developers and database administrators working with SQL Server databases.

6) [GeeksforGeeks - Object-Oriented Programming (OOPs) Concepts] (https://www.geeksforgeeks.org/object-oriented-programming-oops-concept):

GeeksforGeeks is a widely-used platform for computer science education and programming tutorials. This article specifically covers the core concepts of Object-Oriented Programming (OOPs), including classes, objects, inheritance, polymorphism, encapsulation, and abstraction. It provides explanations, examples, and illustrations to help learners understand OOPs principles.

7) [Baeldung - SOLID Principles] (https://www.baeldung.com/solid-principles):

SOLID is an acronym representing five design principles in object-oriented programming: Single Responsibility Principle, Open/Closed Principle, Liskov Substitution Principle, Interface Segregation Principle, and Dependency Inversion Principle. This article on Baeldung explains each SOLID principle in detail, along with examples and practical insights on how to apply them in software design and development.