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An Undergraduate Internship/Project on Easy Bank

Application
By
Nejamul Haque Sarker
Student ID**: 18309211**

Summer, 2023

Supervisor:

Sajed Imtenanul Haque
Lecturer
Department of Computer Science & Engineering
Independent University, Bangladesh

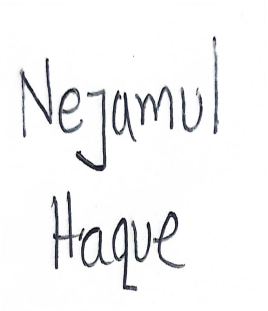
October 19, 2023

Dissertation submitted in partial fulfillment for the degree of
Bachelor of Science in Computer Science

Department of Computer Science & Engineering
Independent University, Bangladesh

Attestation:

I, Nejamul Haque Sarker (1830211), hereby confirm the successful completion and submission of the project titled "Easy Bank Application" as part of the requirements for obtaining a degree in Computer Science and Engineering from Independent University, Bangladesh. I conducted this project under the guidance of Sajed Imtenanul Haque Sir, a lecturer in the Department of Computer Science and Engineering. I took responsibility for overseeing the project from its inception to its conclusion and am delighted to report that I achieved all of its objectives personally.



17 October-2023

Signature | Date

Nejamul Haque Sarker

Name

Acknowledgement:

I want to express my deep appreciation to everyone who played a role in the successful culmination of my internship at Sonali Commercial Bank PLC – Cumilla Cantonment Branch.

To begin, I am profoundly thankful to my University supervisor, Sajed Imtenanul Haque Sir, for generously dedicating his time and providing me with guidance throughout my internship. His support was instrumental in helping me successfully complete my internship tasks.

Next, I extend my gratitude to my supervisor, Rajib Paul (Manager), and my mentors at Sonali Bank Ltd. They not only offered me the opportunity to undertake this internship but also provided continuous support and guidance during the entire internship period. Their valuable insights and constructive feedback have been invaluable in shaping the direction of this report.

Lastly, I would like to convey my appreciation to Independent University Bangladesh (IUB) for equipping me with the essential skills and knowledge needed to carry out this internship and prepare this report.

I want to express my heartfelt thanks to all of you for your unwavering support and encouragement.

Letter of Transmittal:

17 October 2023
Sajed Imtenanul Haque
School of Computer Science and Engineering
Independent University, Bangladesh
Subject: Submission of Internship Report

Dear Sir,

I am delighted to present my concluding report on the "Easy Bank Application." My internship, which commenced on July 31, 2023, and concluded on October 15, 2023, spanned several months. I am grateful to my organization for providing me with the opportunity to work with them and acquire valuable insights in this field. During my time there, I gathered information that I subsequently utilized in my project and report. I kindly request your understanding regarding any imperfections and request that you kindly review my report. Thank you.

Sincerely,
Nejamul Haque Sarker,
1830211,
School of Computer Science and Engineering,
Independent University, Bangladesh

Evaluation Committee

Supervision Panel

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Academic Supervisor	Industrial Supervisor

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Panel Member 1	Panel Member 2

Office Use

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Program Coordinator	Head of the Department

An Undergraduate Internship/Project on Easy Bank Application

By

Nejamul Haque Sarker

Student ID: 1830211

Summer, 2023

Consent from Supervisor

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during and/or before final viva, and the department can use this version for archiving as well as the OBE course material for CSE499.

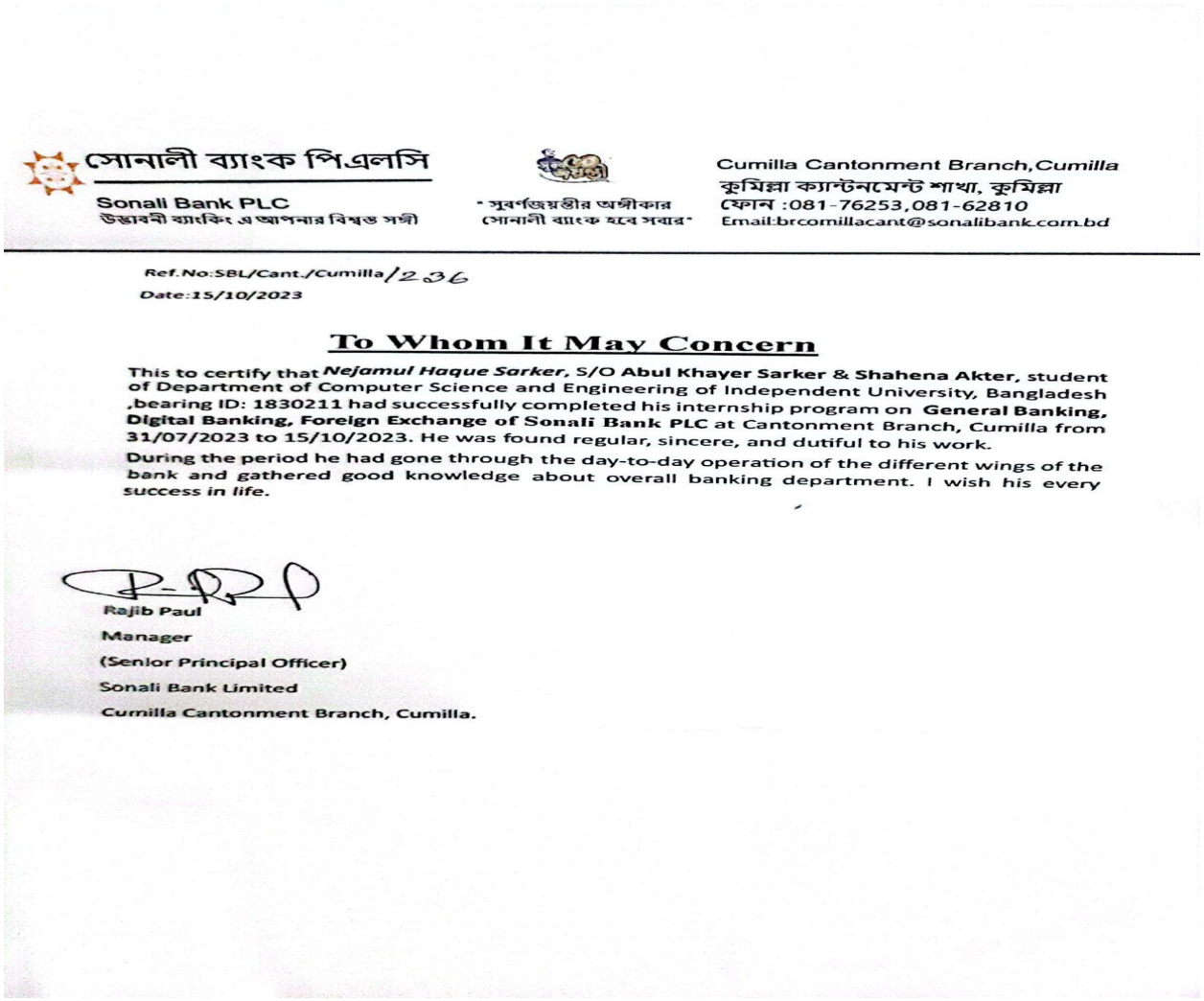
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Sajed Imtenanul Haque
Department of Computer Science & Engineering
Independent University, Bangladesh

Completion Certificate:



সোনালী ব্যাংক পি.এলসি

Sonali Bank PLC
উদ্ভাবনী ব্যাংকিং এ আপনার বিশ্বস্ত সঙ্গী

"সুবর্ণজয়ন্তীর অঙ্গীকার
সোনালী ব্যাংক হবে সবার"

Cumilla Cantonment Branch, Cumilla
কুমিল্লা ক্যান্টনমেন্ট শাখা, কুমিল্লা
ফোন :081-76253, 081-62810
Email:brcomillacant@sonalibank.com.bd

Ref.No:SBL/Cant./Cumilla/236
Date:15/10/2023

To Whom It May Concern

This to certify that ***Nejamul Haque Sarker,*** S/O **Abul Khayer Sarker** & **Shahena Akter,** student of Department of Computer Science and Engineering of Independent University, Bangladesh ,bearing ID: 1830211 had successfully completed his internship program on **General Banking, Digital Banking, Foreign Exchange of Sonali Bank PLC** at Cantonment Branch, Cumilla from 31/07/2023 to 15/10/2023. He was found regular, sincere, and dutiful to his work.

During the period he had gone through the day-to-day operation of the different wings of the bank and gathered good knowledge about overall banking department. I wish his every success in life.

Rajib Paul
Manager
(Senior Principal Officer)
Sonali Bank Limited
Cumilla Cantonment Branch, Cumilla.

Abstract:
This abstract introduces a web application project for the banking sector, which combines PHP, MySQL, HTML, CSS, and JavaScript technologies. Its main aim is to improve the user experience and streamline various banking operations. The web app includes essential features like user, manager, and cashier logins via email and password. Users can access their account details, check account statements, perform money transfers, and view notifications and alerts.

Managers have the capability to add, delete, and send notices, as well as read user messages. Cashiers, using a user account, can manage cash withdrawals and deposits. CSS is employed to ensure the web app functions smoothly on both Android and iOS devices. PHP is the fundamental programming language used for building the web application, providing a robust foundation for its logic and functionality.

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Chapter 1
Introduction
1.1 Overview/Background of the Work:

The banking sector is vital to the global economy, facilitating financial transactions and economic activities. In response to the growing demand for efficient and user-friendly banking services in an increasingly digital world, this project aims to develop a comprehensive web-based banking application.

Key drivers for this initiative include:

1. User-Centric Approach: This application prioritizes user satisfaction by offering a secure and user-friendly platform for various banking activities.

2. Digital Transformation: Embracing the industry's digital shift, this project provides a platform for customers to manage their accounts, perform transactions, and receive notifications online.

3. Efficiency: By automating tasks for users, managers, and cashiers, the application streamlines banking operations, reducing manual efforts.

4. Responsive Design: The application ensures good user experience across devices, through responsive design.

5. Security: Robust authentication mechanisms safeguard user accounts and transactions.

6. Communication: The application enables efficient communication between managers, cashiers, and users through notices, messages, and notifications.

7. Technology Stack: Leveraging PHP, MySQL, HTML, CSS, and JavaScript, this project benefits from proven technologies for web application development.

1.2 Objectives

1. Improved User Experience: Develop an intuitive interface to simplify banking tasks, making it effortless for users to access accounts, conduct transactions, and receive notifications.

2. Efficiency and Automation: Optimize banking procedures by automating tasks for users, managers, and cashiers, reducing manual work and potential errors.

3. Security Priority: Enforce robust security measures to safeguard user accounts and financial transactions, ensuring the confidentiality and integrity of sensitive data.

4. Effective Communication: Enable efficient communication within the platform, allowing users to receive notices, messages, and notifications, while empowering managers and cashiers to interact effectively with customers.

5. Device Flexibility: Ensure seamless functionality across various devices, including smartphones, tablets, and desktops, through the application of responsive design principles.

6. Managerial Empowerment: Provide managers with effective tools to manage notices, messages, and user accounts, enhancing their oversight of banking operations.

7. Transparent Transactions: Grant users access to account statements, permitting them to review transaction histories and account balances at their convenience.

8. Financial Transactions: Facilitate secure and convenient financial transactions such as money transfers and account updates for users.

9. Efficient Database Management: Implement efficient data management using MySQL, enabling the storage and retrieval of user account information, transaction records, and related data.

10. Technological Excellence: Employ a robust technology stack, including PHP, MySQL, HTML, CSS, and JavaScript, to construct a stable, scalable, and responsive web application.

11. Scalability and Future-Readiness: Design the application with scalability in mind, allowing for potential enhancements and the incorporation of additional features to meet evolving banking requirements.

12. Regulatory Compliance: Ensure the application complies with pertinent banking regulations and security standards, instilling user trust and adhering to industry compliance requirements.

1.3 Scopes:

The project aims to significantly improve the user experience by providing an interface that is user-friendly and efficient for banking services.This project allows user easily access and work their accounts.Managers are equipped with tools to oversee user accounts, notices, and messages, enhancing their control and decision-making capabilities.Cashiers can handle withdrawals and deposits.The project has the potential for future expansion, including the introduction of new features and services to meet evolving user needs and market trends.The project involves actively engaging with the user community to establish trust, gather feedback, and foster positive relationships.

Chapter 2
Literature Review
2.1 Relationship with Undergraduate Studies

The creation of the banking application has significantly profited from the expertise and competencies acquired during undergraduate studies. Without the foundation provided by these courses, working on this project would have been much more challenging. Some of the key courses that have been particularly helpful include:

1. Introduction to Computer Programming (CSC101): This course covers the fundamentals of programming, including topics like declaring variables, loops, conditional statements, switch-case statements, arrays, and functions. It serves as an essential introduction to programming languages.

2. Object-Oriented Programming (CSE213): Building upon the basics, this course introduces the concept of classes and objects, variables within classes, and the creation of graphical user interfaces for solving real-life problems.

3. Database Management (CSE303): In the Database Management course (CSE303), we not only learned project design and planning but also gained exposure to crucial planning and strategic methodologies. These included the System Development Life Cycle, Rich Picture, Requirement Analysis, Relationship Diagram, Business Process Model, and Notation Diagram, among others. These techniques were instrumental in shaping the planning and strategic aspects of our project.

4. System Analysis and Design (CSE307): In the System Analysis and Design course (CSE307), we were equipped with a range of tools and methods to design systems through a comprehensive analysis of information systems. The course encompassed subjects such as systems and models, project management, approaches to pinpointing system requirements, creating data flow diagrams, conducting six-element analysis, assessing feasibility, and utilizing UML diagrams.

5. Web Application & Internet (CSE309): In the Web Application & Internet course (CSE309), we acquired an in-depth comprehension of web technologies and their practical uses. Our discussions encompassed front-end programming languages like HTML and Cascading Style Sheets (CSS), backend programming languages such as PHP and MySQL, and the significance of guaranteeing adaptability for different device screen sizes through the use of jQuery.

In summary, the knowledge and skills acquired in these courses have been invaluable in the development, planning, and strategy of our banking application project.

2.2 Related Works

Here are some applications that have similar functionalities and purpose as my application:

1.Cshayan
"Bank-web-App-Using-PHP"https://github.com/Cshayan/Bank-Web-App-Using-PHP
2.zakee94 online-banking-system https://github.com/zakee94/online-banking-system
3.Net Banking App for All Banks Google Play Store,

https://play.google.com/store/apps/details?id=com.netbankingallbanks.app&hl=en&gl=US

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

A Work Breakdown Structure (WBS) is a structured breakdown of the entire project's scope into smaller and more manageable work packages or tasks, organized in a hierarchical manner. Below is a simplified WBS for the development of the web-based banking application

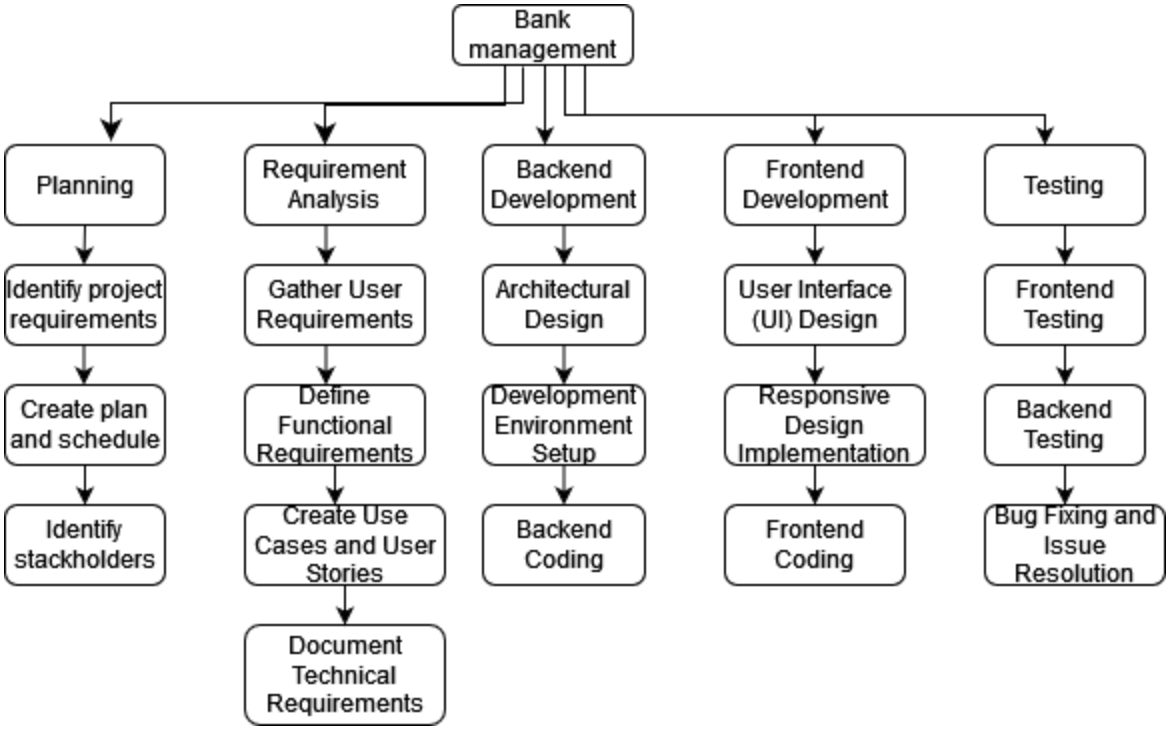


Fig 3.1 Work Breakdown

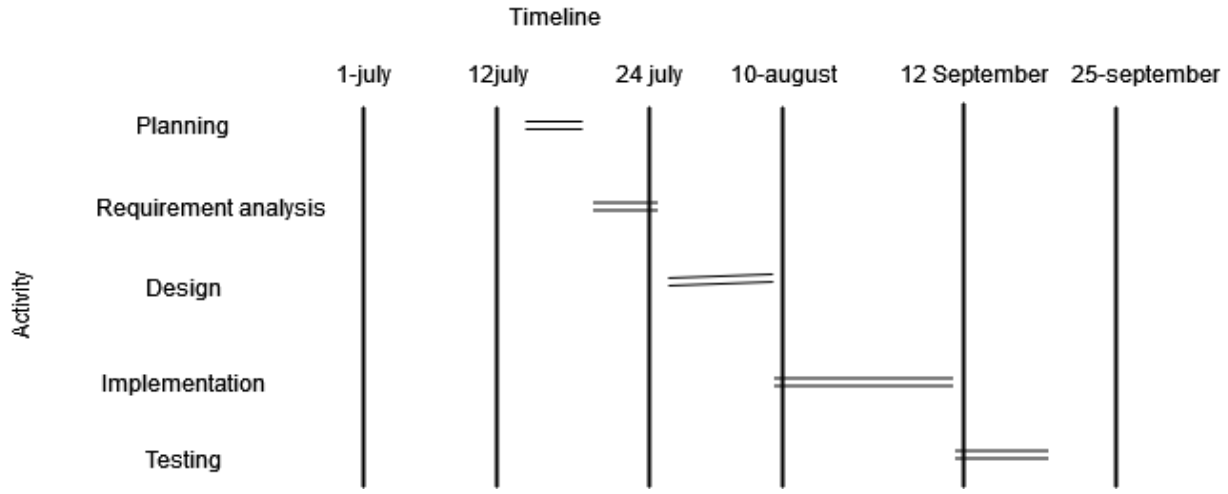
3.2 Process/Activity wise Time Distribution

The Banking system contains a comprehensive roster of all the project's tasks, which I made an effort to complete within the allotted time frame.

Activity	Start Date	End Date	Duration(days)
Planning	15 july	18 july	4
Requirement analysis	19 july	25 july	7
Design	26 july	6 August	11
Implementation	7 August	10 September	35
Testing	11 september	19 September	9

Table 3.1: Process/Activity wise Time Distribution

3.3 Gantt Chart



3.4 Estimated Costing

There was no external cost for the project as this was developed to fulfil the CSE499 course
requirement. As the app was not published to a store and distributed to any real users, there
was virtually zero cost.

Chapter 4
Methodology

The strategy employed for developing this web-based banking application follows a systematic and organized method intended to ensure the successful creation, testing, and deployment of the software. The following summarizes the main steps and strategies employed in this project:

1. Requirement Analysis:
   - Thoroughly collect and document the particular needs of users, managers, and cashiers.
   - Establish the importance and outline the fundamental features and functions.
   - Define usage scenarios and user narratives to gain insights into user interactions and expectations.

2. System Design:
   - Create a comprehensive system structure, detailing the database framework, user interfaces, and application logic.

- Design the user interface (UI) and user experience (UX) to guarantee user-friendliness and adaptability.
- Develop a database structure that efficiently stores and manages user data, transaction records, and other pertinent information.

3. Technology Stack Selection:
- Carefully choose the appropriate technologies, including PHP for server-side scripting, MySQL for database management, HTML/CSS for frontend development, and JavaScript for interactivity.
- Evaluate and select frameworks or libraries that expedite development and bolster security.

4. Development:
- Execute the core functions of the application, commencing with user authentication and account management.
- Implement features such as money transfers, notifications, messaging, and account statements.

5. Testing and Quality Assurance:
- Conduct thorough testing to recognize and resolve issues, security concerns, and performance bottlenecks.
- Execute user acceptance testing (UAT) to ensure alignment with defined requirements and user expectations.
- Employ automated testing when suitable to simplify the testing process.

6. Security Implementation:
- Embed robust security measures, including data encryption, secure authentication, and stringent authorization controls.
- Frequently update and apply patches to software elements in order to address new security risks..

7. Responsive Design:
- Apply responsive web design principles to ensure seamless operation of the application across diverse devices and screen sizes.

8. Documentation:
- Generate extensive documentation, including user guides, technical manuals, and system architecture documentation.
- Thoroughly document the codebase for future reference and maintenance.

9. Deployment:
- Set up the web application in a hosting environment that is both secure and capable of scaling as needed..
- Configure server settings and database connections to optimize performance.

10. User Training and Support:
- Offer comprehensive training sessions or resources to educate users, managers, and cashiers on proficient application usage.
- Create a strong support system to accelerate the resolution of user questions and problems.

11. Monitoring and Maintenance:
- Utilize monitoring tools to oversee application performance, identify irregularities, and ensure consistent uptime.
- Consistently perform application maintenance and updates to tackle problems, introduce fresh features, and bolster security.

12. Compliance and Security Audits:
- Periodically conduct security audits and compliance assessments to confirm alignment with industry regulations and best practices.

13. User Feedback and Iteration:
- Solicit user feedback and analyze user behavior to pinpoint areas for improvement.
- Iterate on the application, incorporating additional features and enhancements based on user input and evolving banking requirements.

14. Scalability Planning:
- Prepare for future expansion by assessing the application's scalability and planning resource allocation or architectural adjustments as needed.

Chapter 5
Body of the Project
5.1 Work Description
While doing my internship in a bank, I gained banking knowledge. Through regular training, I
noticed customers have to visit the bank to transfer money ,check account balance and check account statement . Besides, I have learnt PHP programming in my web application course and started my work for the project. I have decided to implement a

web app function for the Bank where the customers will be able to transfer money ,check account balance and check through the app. For building the frontend, I have used HTML ,CSS and for the backend, I have used a MYSQL database.

5.2 Requirement Analysis

Rich Picture

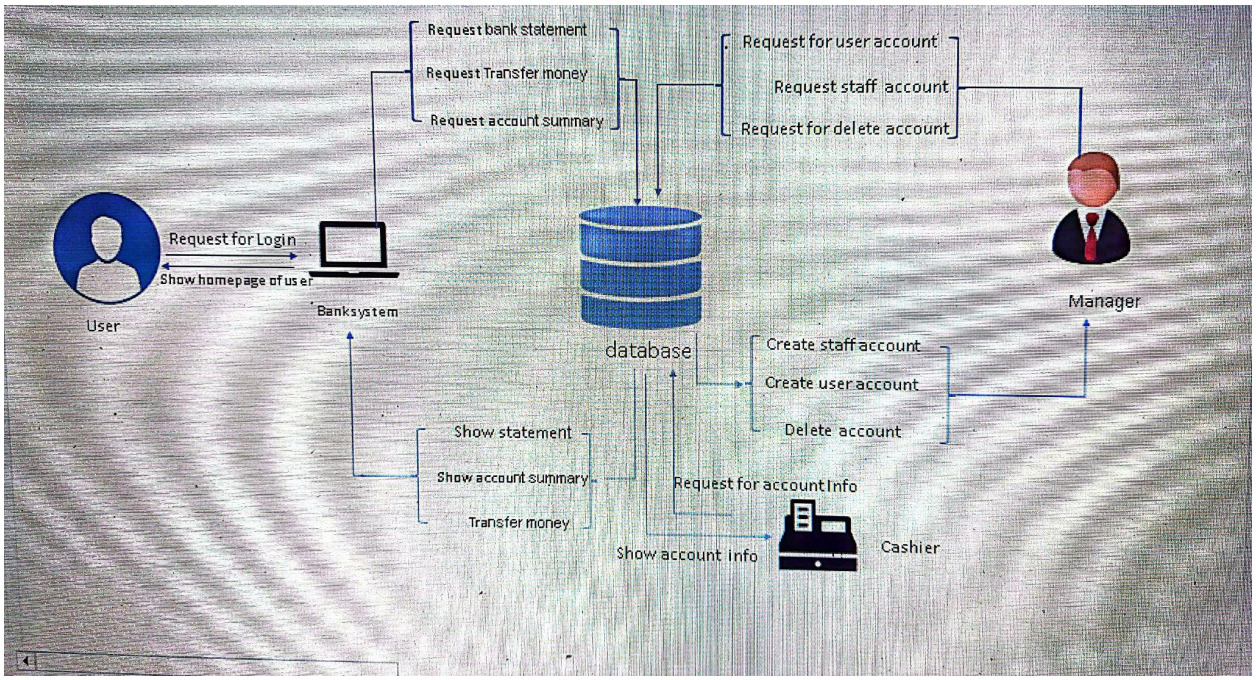


Fig 5.1 Rich Picture

Functional Requirements:

1. User login:
   - The app has to feature a login page for new users.
   - Users have to provide their email address and password on the login page

2. User Authentication:
   - The app should lead the user to the home page after a successful login.

3.User Homepage:
- After a successful login, the program needs to provide a user homepage.
  Homepage should include links to Account summary, transfer money check notification and
  Contact us features.

4.Account summary:
- The app needs to show a data table for this user.

5.Transfer money :

• The app needs to show a form for this user where the user will give an account number to whom he wants to send money.

6. Logout:
• A top-right logout icon should be used to access the app's logout functionality, which enables users to log out of their accounts.

7. Manager login:
• The app has to feature a login page for manager.
• Manager have to provide their email address and password on the login page

8.Manager Authentication:
• The app should lead the Manager to the home page after a successful login.

9.Manager Homepage:
• After a successful login, the program needs to provide a Manager homepage.Homepage should include links to check Feedback, add new accounts,delete accounts and send notices features.

10. Managers Logout:
• A top-right logout icon should be used to access the app's logout functionality, which enables managers to log out of their accounts.
11. Cashier login:
• The app has to feature a login page for Cashier.
• Cashier have to provide their email address and password on the login page

12. Cashier Authentication:
• The app should lead the Cashier to the home page after a successful login.

13.Cashier Homepage:
• After a successful login, the program needs to provide a Cashier homepage.
Homepage should include links to get account info features,Where cashier can check the states of account
14.Cashier Logout:
• A top-right logout icon should be used to access the app's logout functionality, which enables Cashiers to log out of their accounts.

Non-Functional Requirements:
1.User Interface (UI):
• The UI of the app should be simple and easy to use.

• The UI needs to be intuitive and pleasing to the eye.

2 . Security:
• The app should guarantee that sensitive data (such as passwords and account information) is transmitted and stored securely.
• To safeguard user accounts, appropriate systems for authentication and authorization should be put in place.

3. Performance:
• The app should operate quickly and effectively, giving users a pleasant experience.
• The app should manage enormous volumes of data without experiencing major slowdowns, and loading times should be kept to a minimum

4. Compatibility:
• Different mobile devices running should be able to use the app.
• It should be compatible with popular operating systems and a range of screen sizes.

5. Data Persistence:
• The app should securely store user data in a database or other data storage System.
• Mechanisms for data integrity and backup should be in placed to avoid data loss or corruption.

6. Scalability:
• The software should be made to be able to handle future increases in user numbers and data volume.
• The underlying infrastructure and data storage systems need to be scaled into Account

5.3 System Analysis
5.3.1 Six Element Analysis

Process	Human	Hardware	Software	Database	Communication

					& Network
Create account	**User** A.User will go to bank with necessary information **Admin:** **A.**admin will login in the system	Smartphone ,Computer (Laptop, Desktop)	Easy Bank	MYSQL	**Internet** a. Used by the manager, to Access the real time Database and to create a user account.
Account login	**User:** A**.**put in user email and password to login **Manager:** A**.**put in manager email and password to login **Cashier:** A**.**put in Cashier email and password to login	Smartphone ,Computer (Laptop, Desktop)	Easy Bank	MYSQL	**Internet** a. Used by the user b.Used by the cashier c.Used by the manager, to Access the real time Database
Transfer Money	**User:** A**.**After login user can send money by submitting account number	Smartphone ,Computer (Laptop, Desktop)	Easy Bank	MYSQL	**Internet** a. Used by the user
Check Notification	**User:** A**.**After login user can check	Smartphone ,Computer (Laptop, Desktop	Easy Bank	MYSQL	**Internet** a. Used by the user

	notification **Manager:** Manager sends the notice any user personally	)			c.Used by the manager, to Access the real time Database
Feedback	**User:** a.User can send feedback by using contact form **Manager:** Manger can check feedback and can delete it	Smartphone ,Computer (Laptop, Desktop)	Easy Bank	MYSQL	**Internet** a. Used by the user c.Used by the manager, to Access the real time Database
Withdraw & Deposit	**User:** a.User will go to bank and ask to bank to withdraw or deposit money **Cashier:** Cashier will login then will enter user account number for withdraw and deposit	Smartphone ,Computer (Laptop, Desktop	Easy Bank	MYSQL	a. Used by the user b.Used by the cashier

5.3.2 Feasibility Analysis

This application project's technical, financial, and operational viability are all examined as part
of the feasibility analysis.

1. Technical Feasibility: The project utilizes established web technologies, possesses the required resources, and ensures compatibility, establishing its technical viability.

2. Financial Feasibility: Sufficient funding is available, and a cost-benefit analysis supports the project's financial viability, with revenue potential from improved services.

3. Operational Feasibility: The project aligns with operational requirements, engages stakeholders, and has plans for ongoing support and compliance, confirming operational viability.

5.3.3 Problem Solution Analysis

Problem:
• Traditional methods of managing financial transactions are time-consuming and involve physical paperwork.
• Lack of User-Centric Features
•Limited Accessibility

Solution:
• Created a application using php and MYSQL to simplify the maintenance of transactions
• Offers a login page for new users to login and access the app.
• After logging in, users are taken to a dashboard page for simple navigation.
• To enable safe user authentication, procedure needs the entry of an email address and password.
• Relationships between bank and user have been established through contact us and send notification functionality.
• The transfer money functionality is easy and cherishable user only needed receiver account number
•User don’t need to physically attend bank for account statement when it is required
• Enhance accessibility by providing a user-friendly web interface accessible on various devices, ensuring availability in remote areas, and offering multilingual support.
• Prioritize user experience by designing an intuitive interface, providing real-time notifications, and enabling seamless money transfers and account management.
• A top-right icon provides access to the logout option for user convenience

5.3.4 Effect and Constraints Analysis

Effects:

• Users' financial transactions are now more easily accessible and convenient.
• Using the app, processes were streamlined and paper forms were abandoned.
• Improved user experience due to a simple to operate design and simple navigation.
• More effective creation, verification, and administration of accounts.
• Recordkeeping and tracking are made easier by the automation of user ID and timestamp creation

Constraints:
• Security: Ensure that the app has strong security controls to safeguard user data, including appropriate encryption of sensitive data.
• Data Storage: To manage the rising number of records, a dependable and a scalable data storage system must be implemented.
• Compatibility: Ensuring that the app works with a variety of mobile platforms, operating systems, and screen sizes.
• Performance: Improving the app's functionality to cope with conceivable rises in user traffic and data processing.

The project's impacts are favorable overall, giving consumers a practical and effective platform for handling their financial operations. To guarantee data security, performance, and regulatory compliance, some restrictions must be overcome. By taking care of these issues, the app can provide a safe and dependable user experience while also adhering to regulations and serving the varied demands of its users.

5.4 System Design

5.4.1 UML Diagrams

UML diagrams are a visual depiction of software systems or processes that are frequently used in software development and system analysis. UML provides a standardized collection of graphical notations for describing many parts of a system, allowing stakeholders to communicate and understand the structure, behavior, and interactions of the system.

Use Case

A Use Case diagram illustrates the interactions between individuals or external systems (referred to as actors) and the system that is the subject of discussion. Use case diagrams define the features of the system and offer a high-

level overview of its behavior.

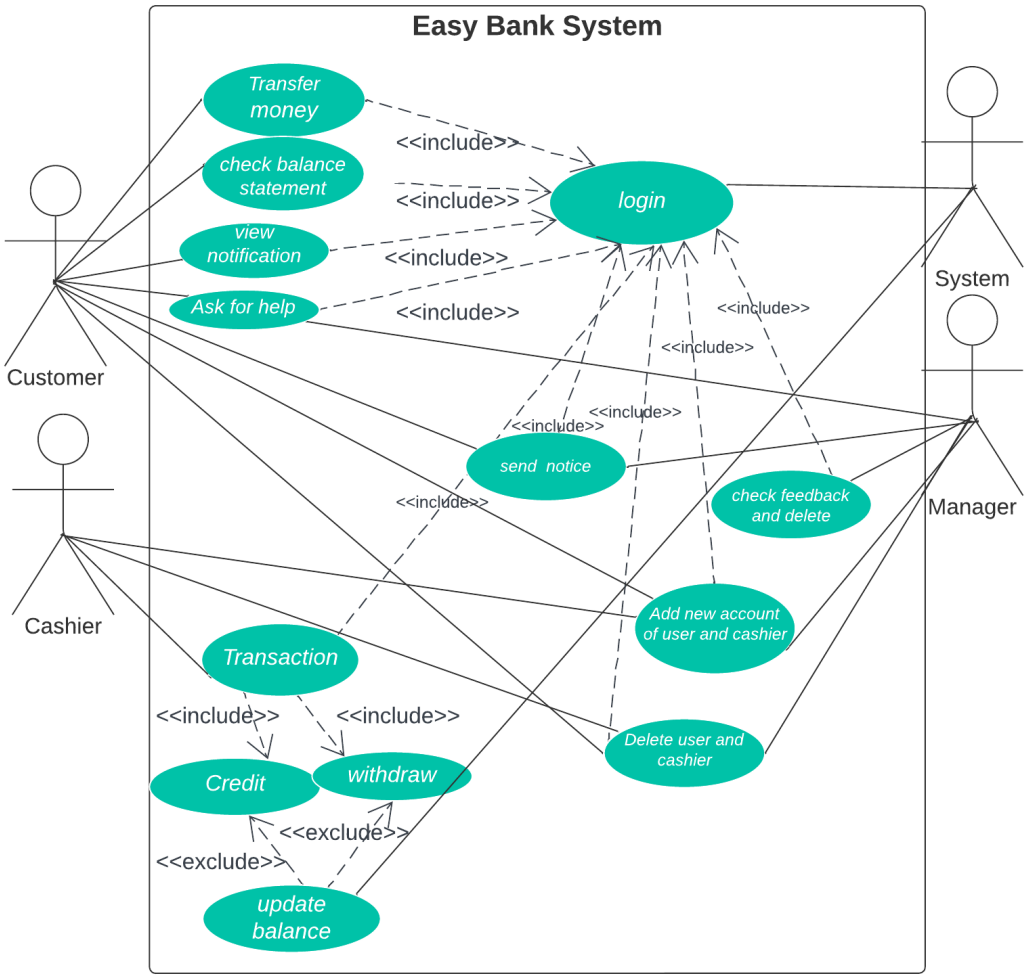
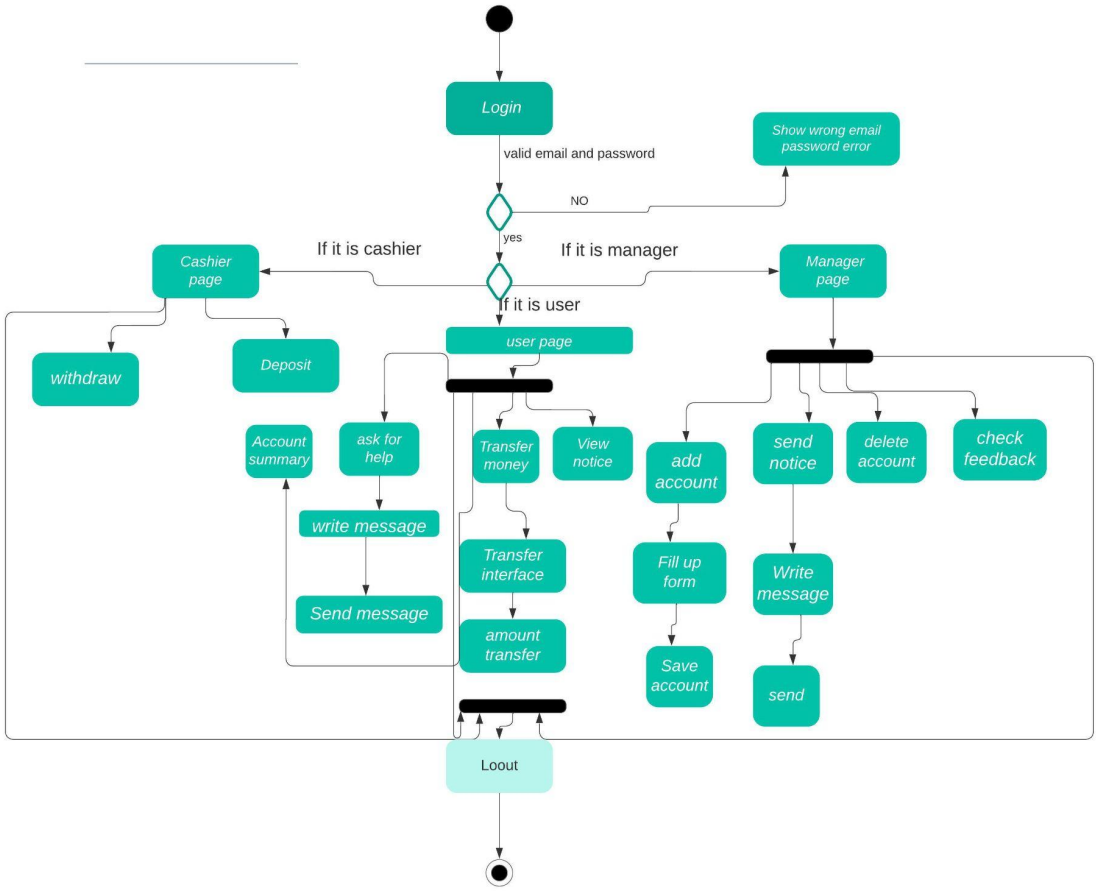


Fig 5.2 Use Case Diagram

Activity Diagram

An Activity Diagram visually represents the sequence of activities or processes occurring within a system. These diagrams depict the various stages of a process, decision points, and activities happening concurrently.



Entity-Relationship Diagram (ERD)

An Entity-Relationship Diagram (ERD) provides a visual representation of the connections or associations between entities within a database. It is an effective tool that database engineers and designers use to model and comprehend the interactions and structure of the data in a system.

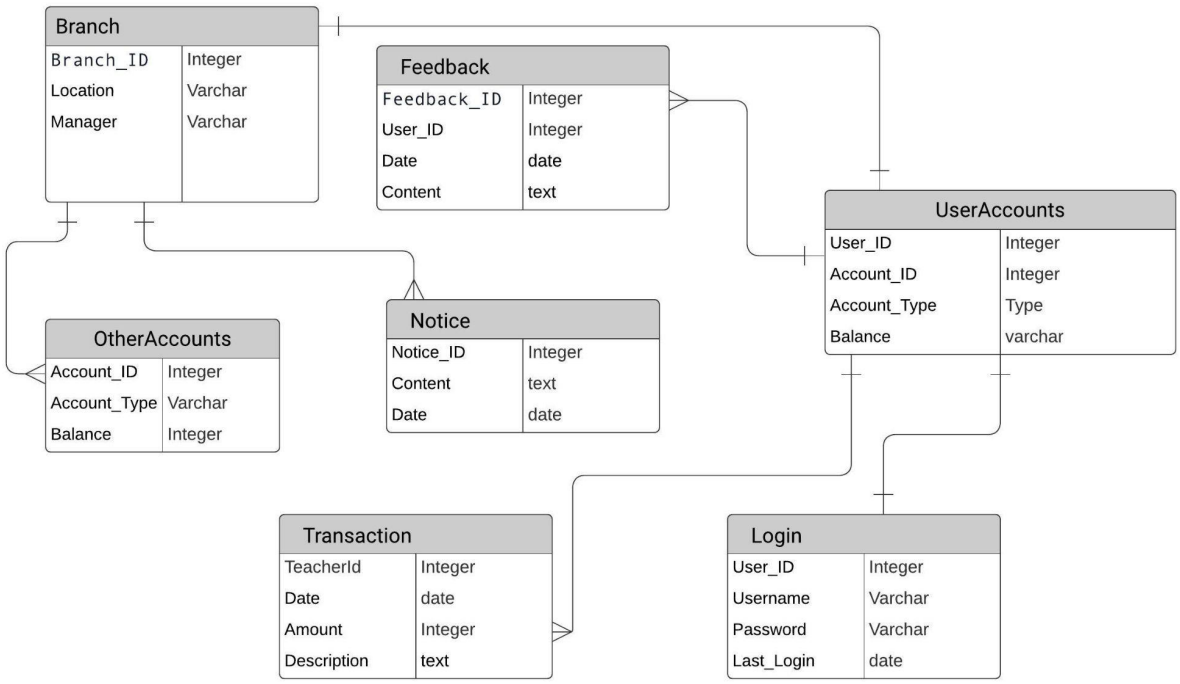


Fig 5.4 Entity-Relationship Diagram

5.5 Implementation & Testing

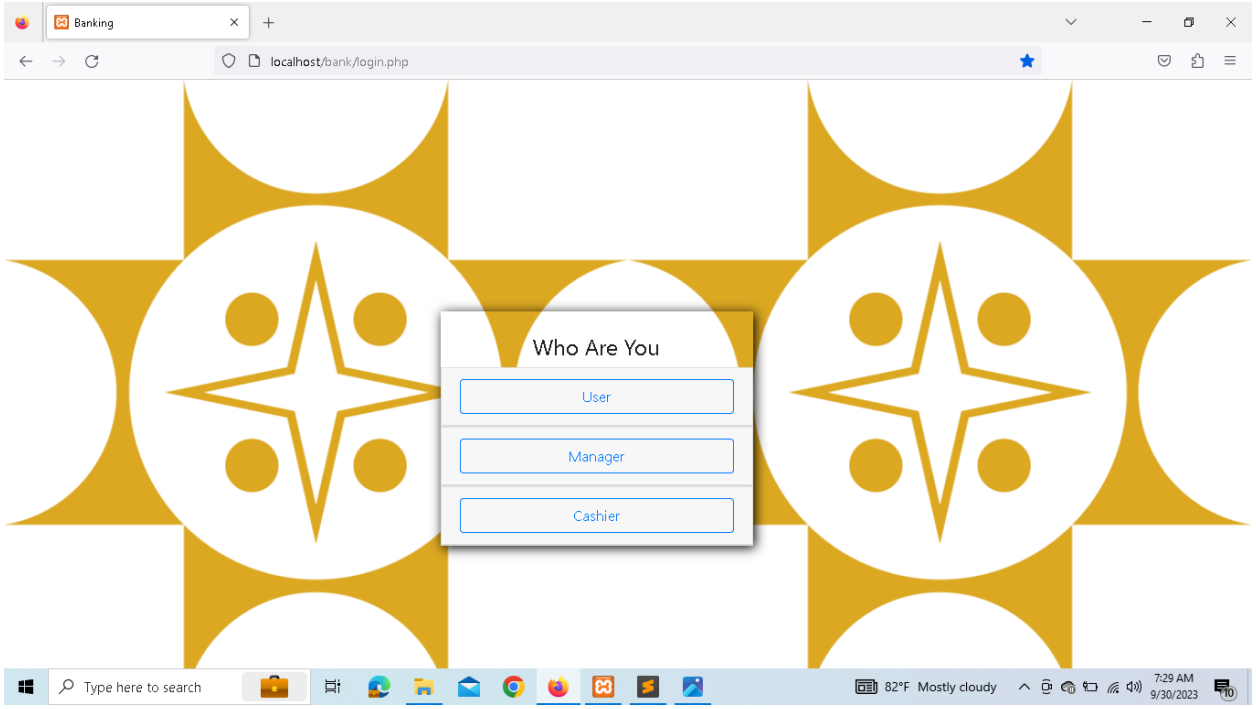


Fig 5.5 Login Page

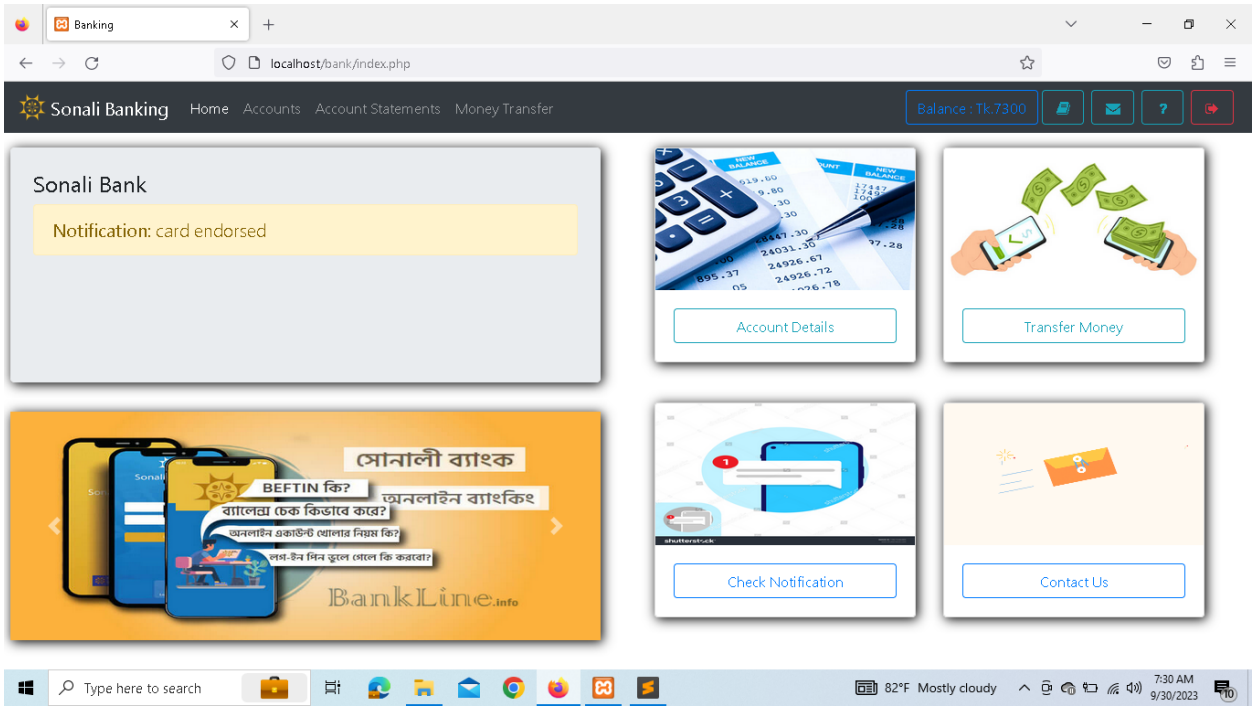


Fig 5.6 User Page

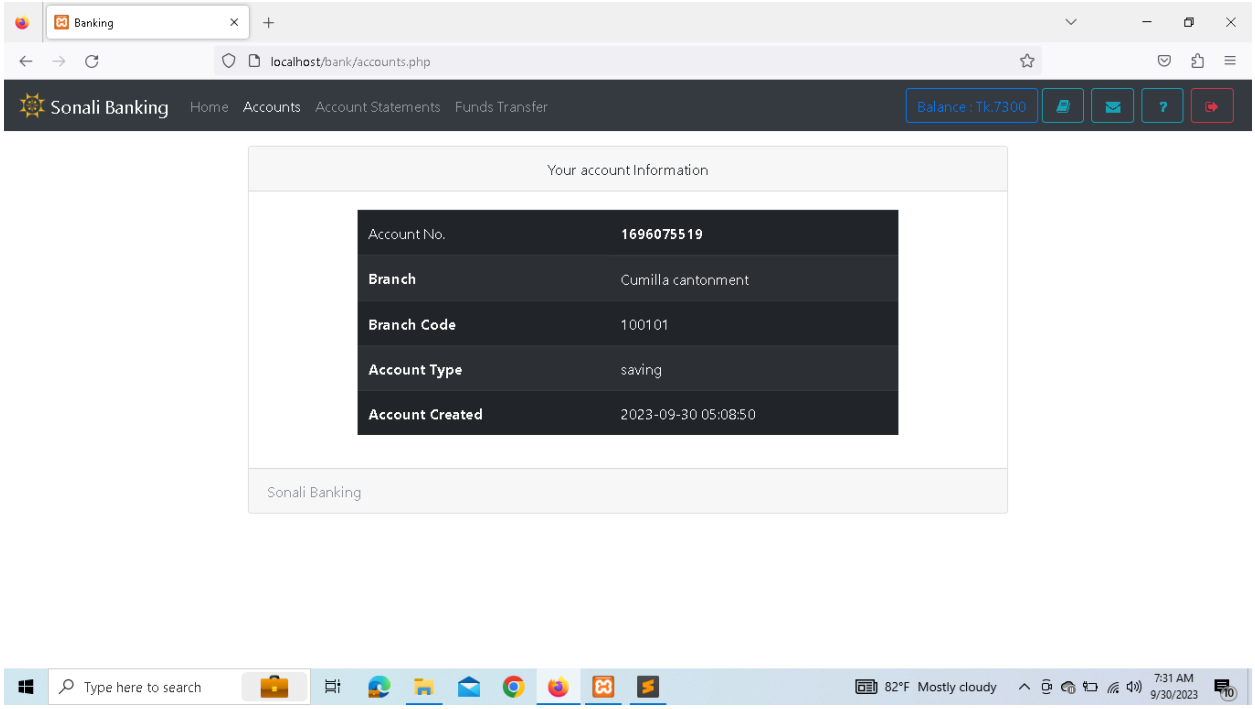


Fig 5.7 User Account

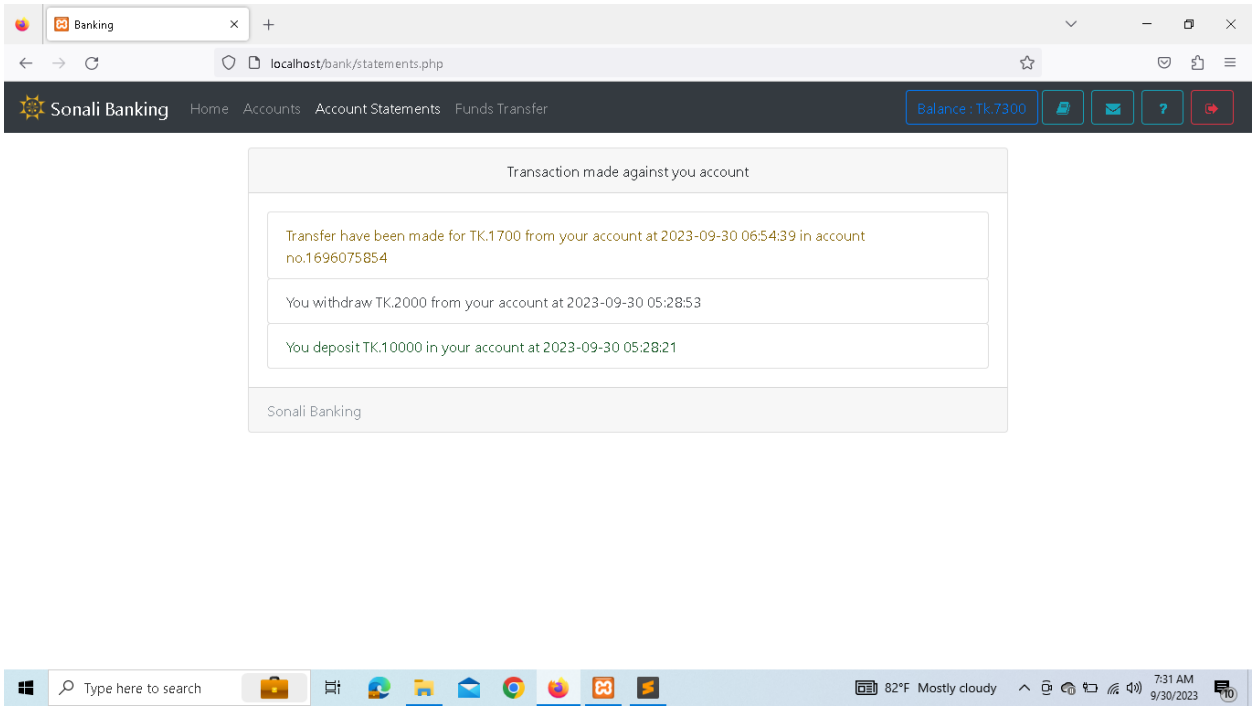


Fig 5.8 User Account statements

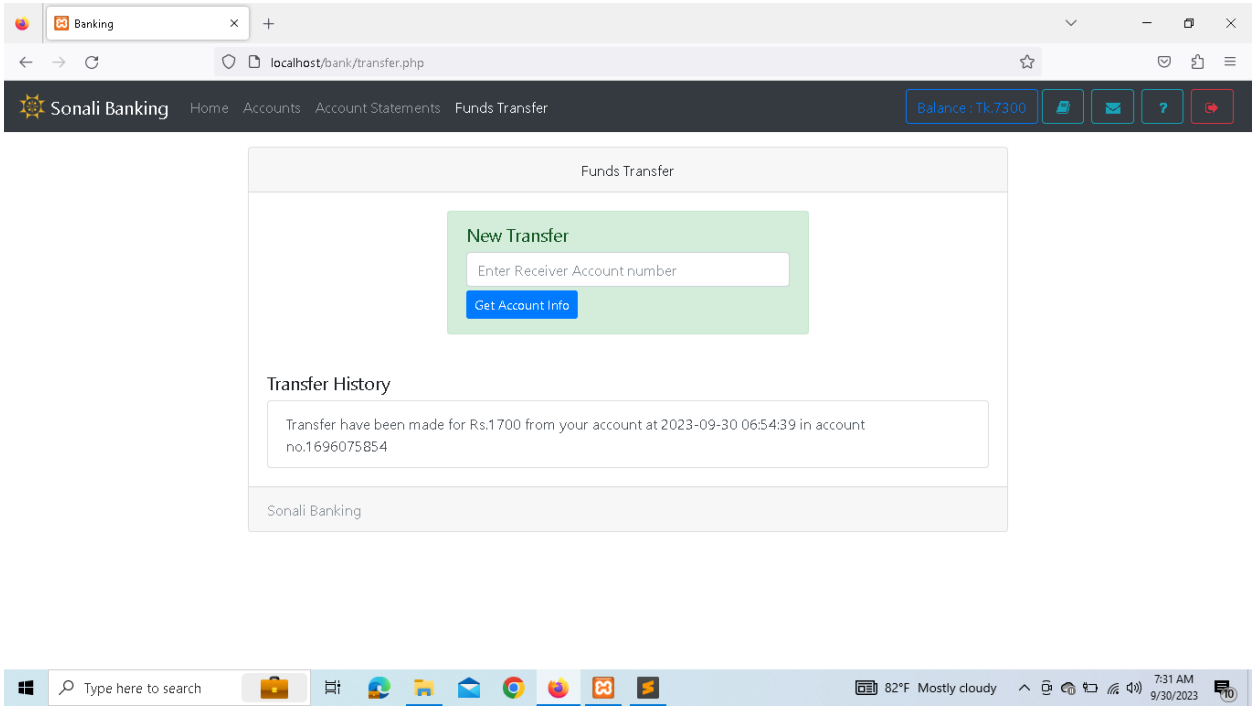


Fig 5.9 User money transfer

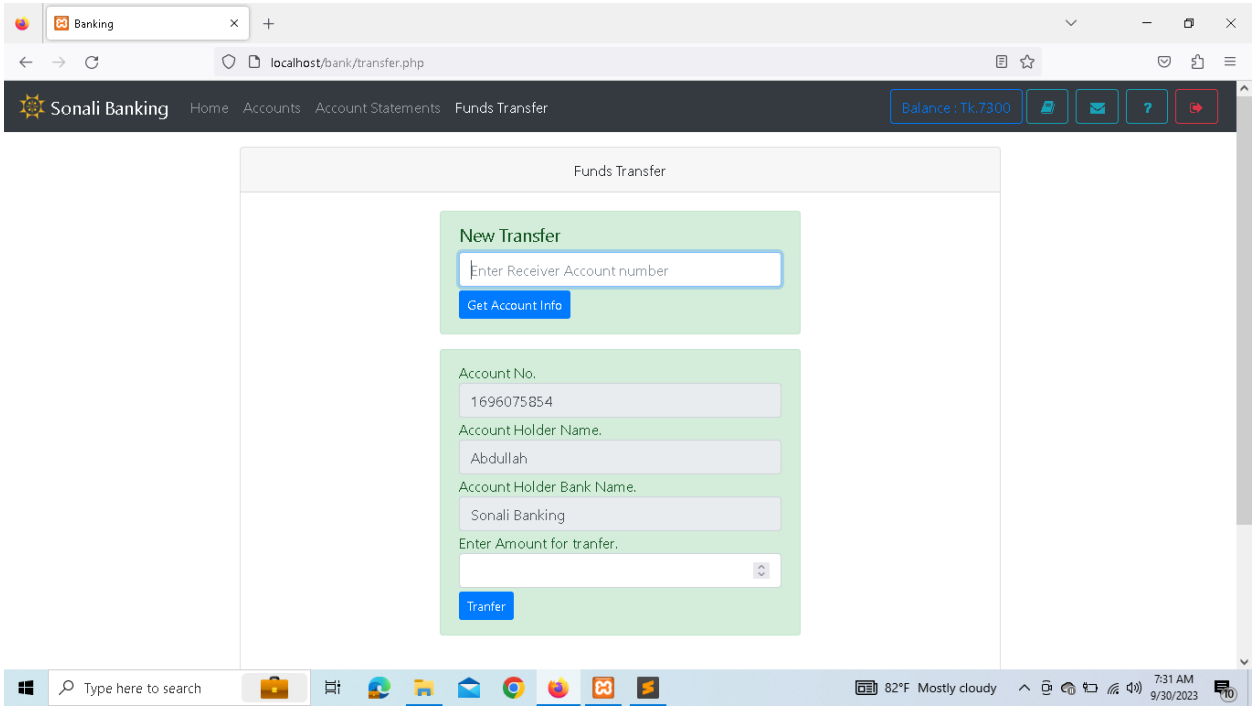


Fig 5.10 User money transfer

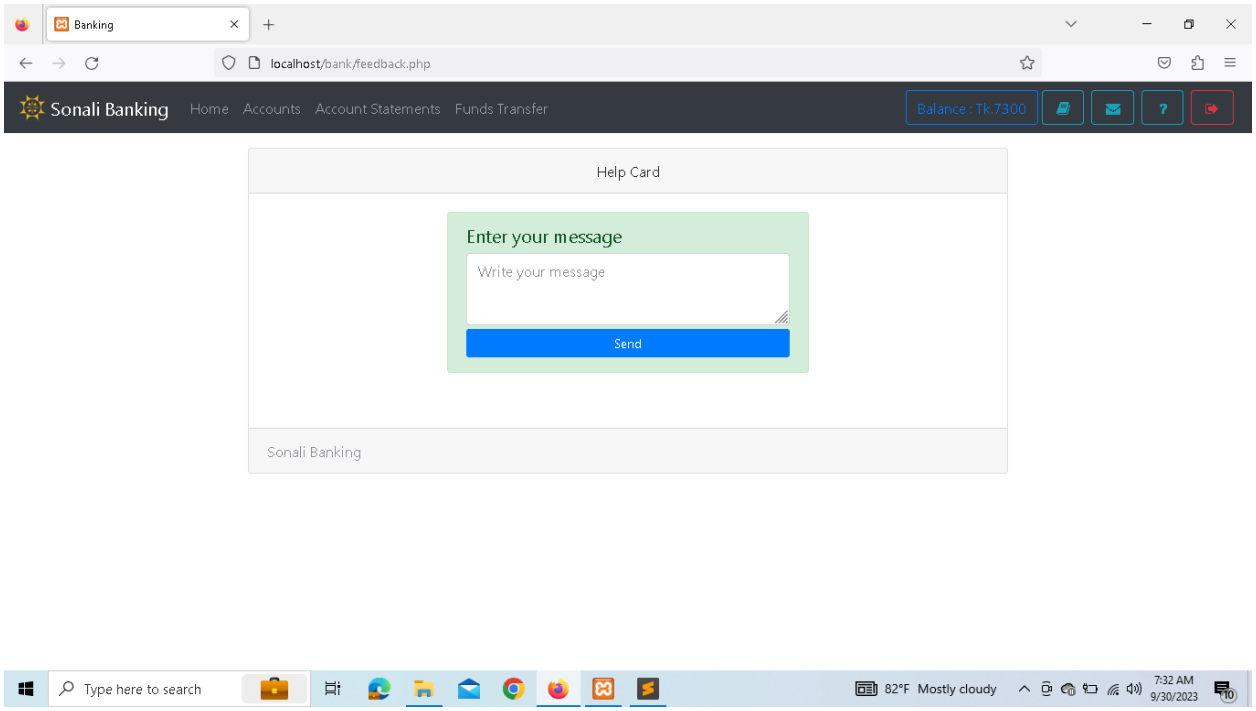


Fig 5.11 User help message

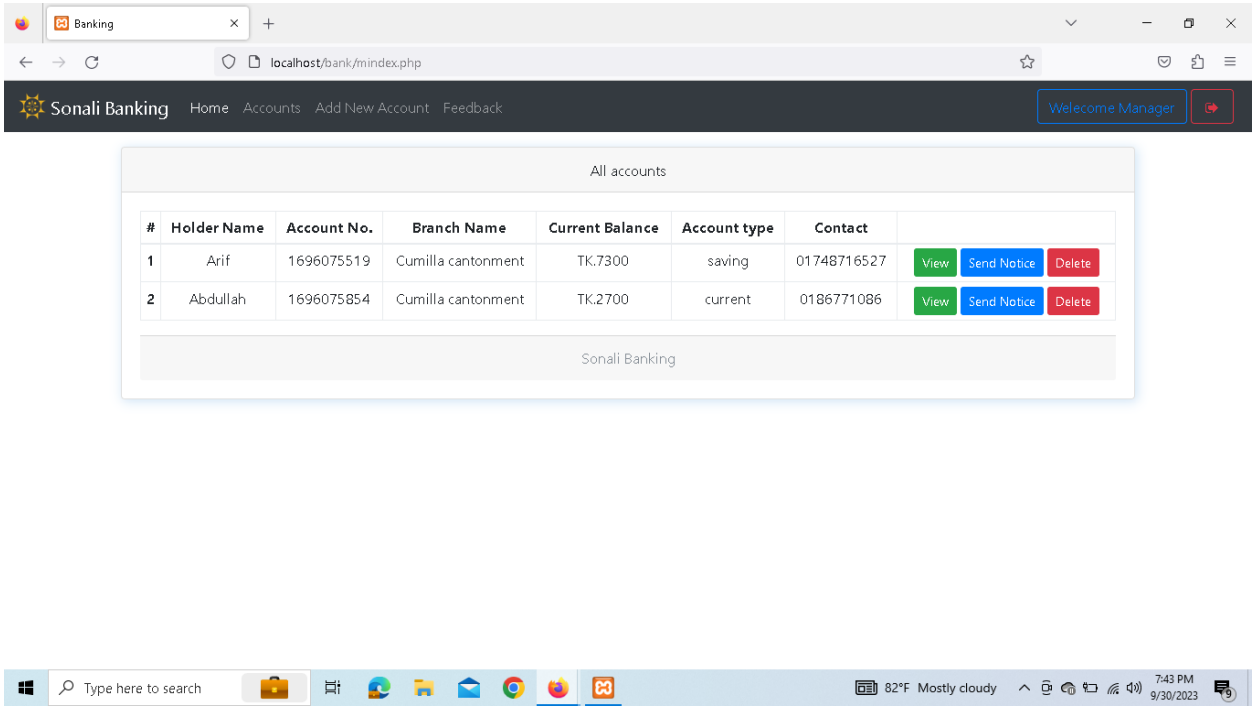


Fig 5.12 Manager page

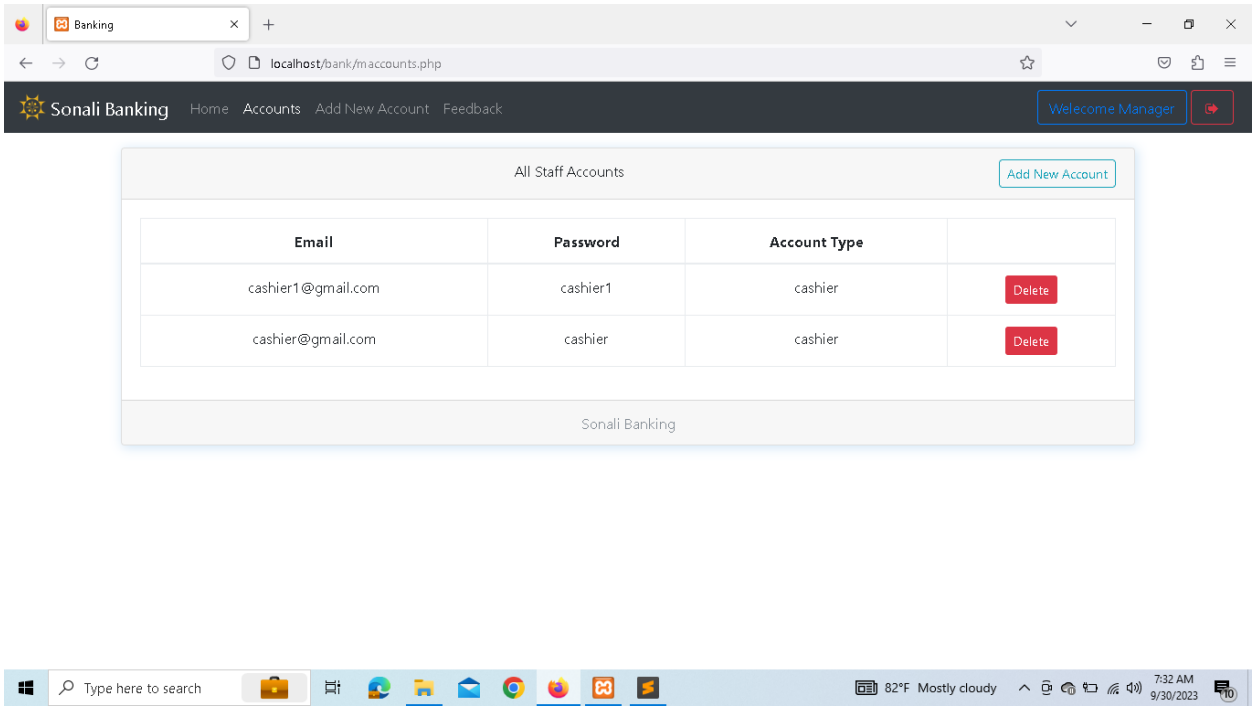


Fig 5.13 Manager page with cashier account

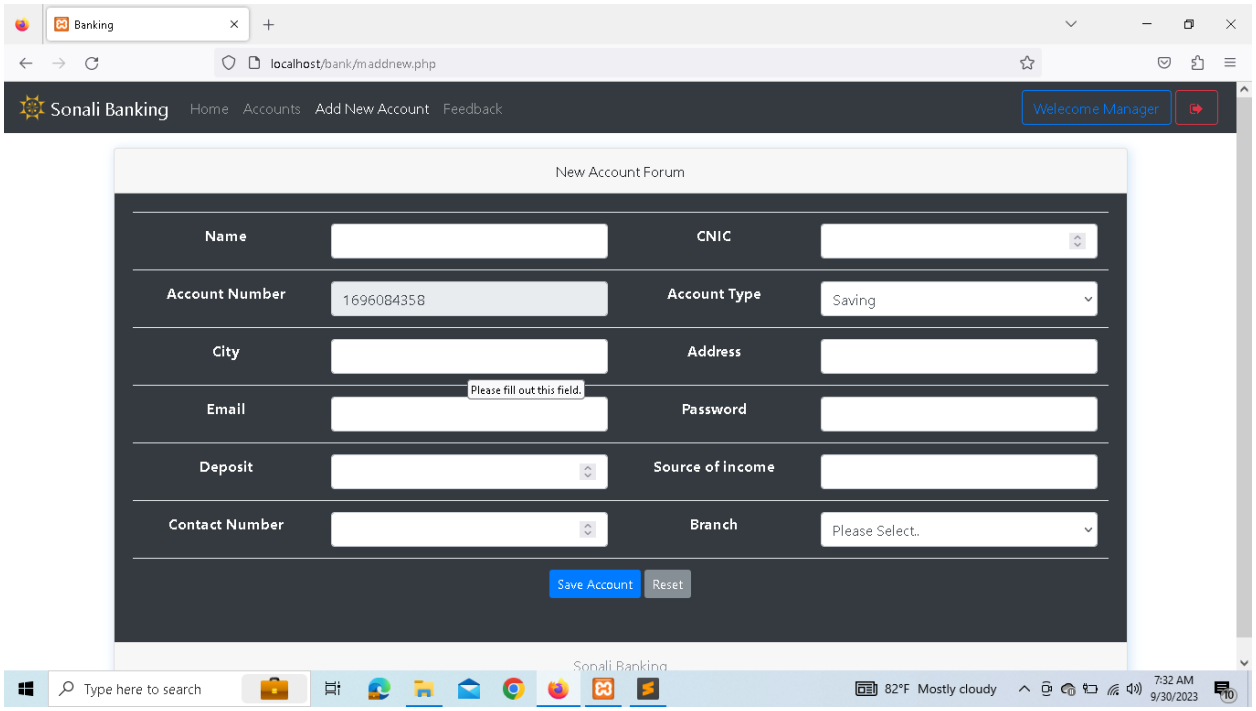


Fig 5.14 Manager page with add user account

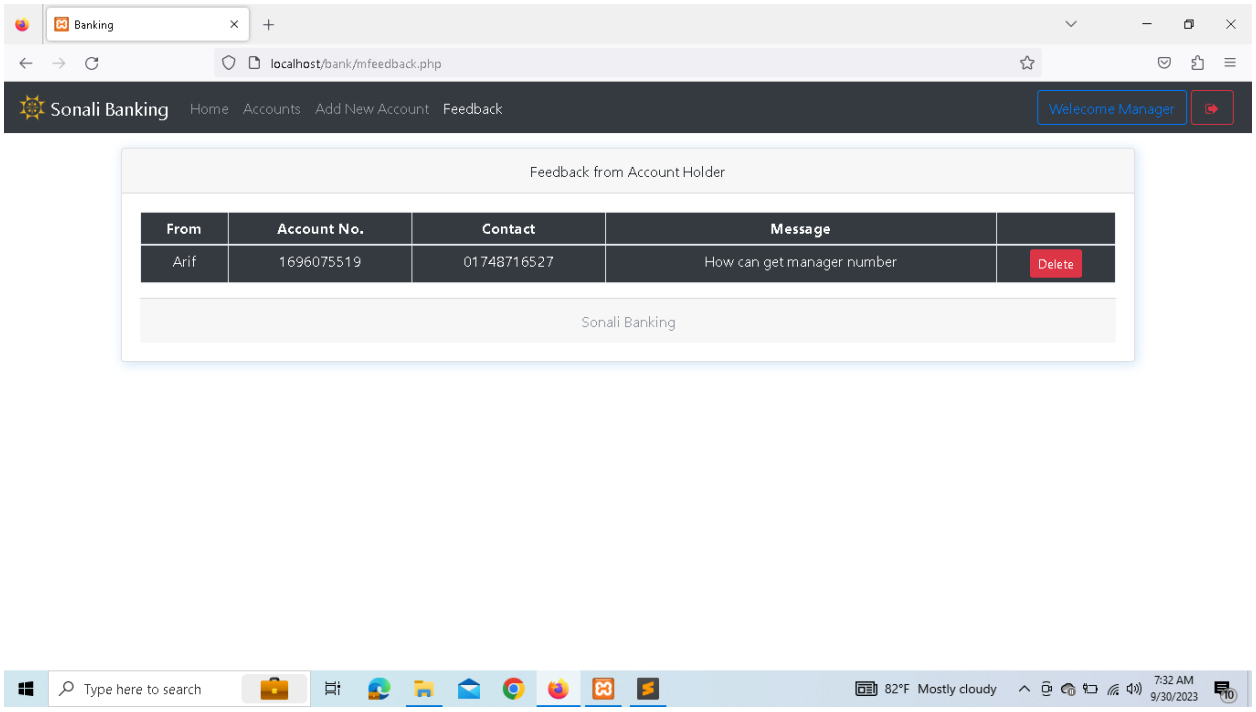


Fig 5.15 Manager page with feedback

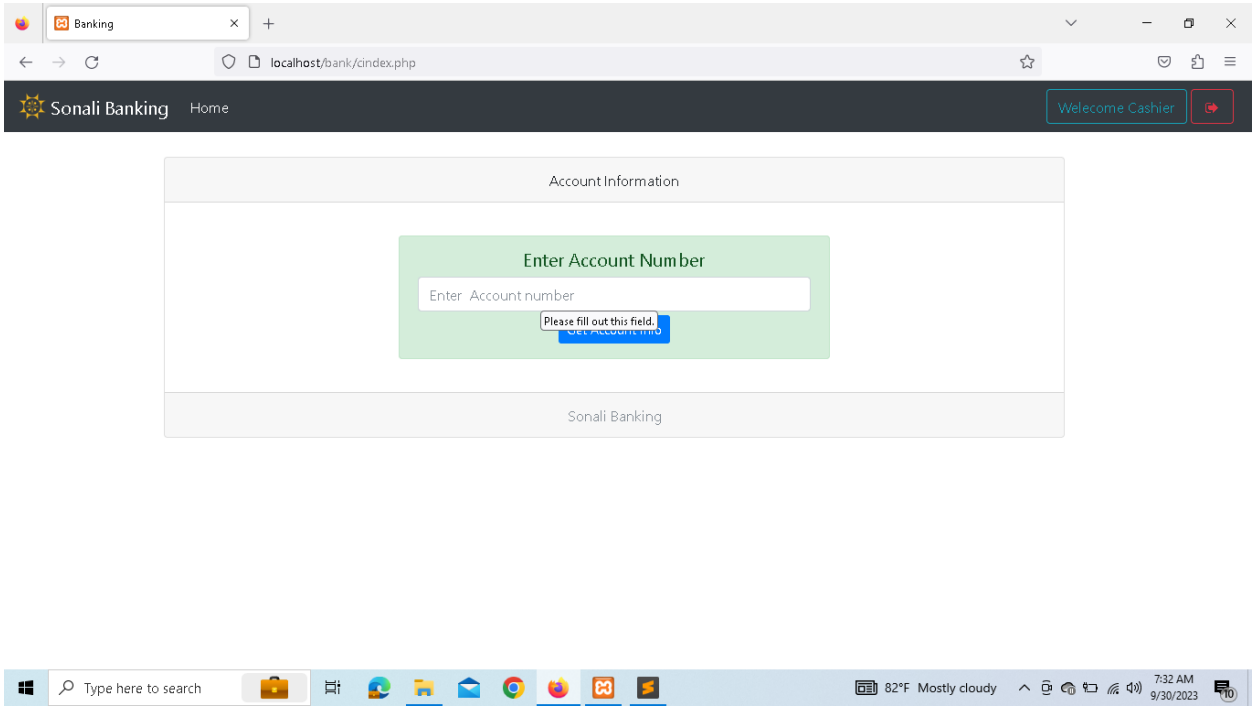


Fig 5.16 cashier page

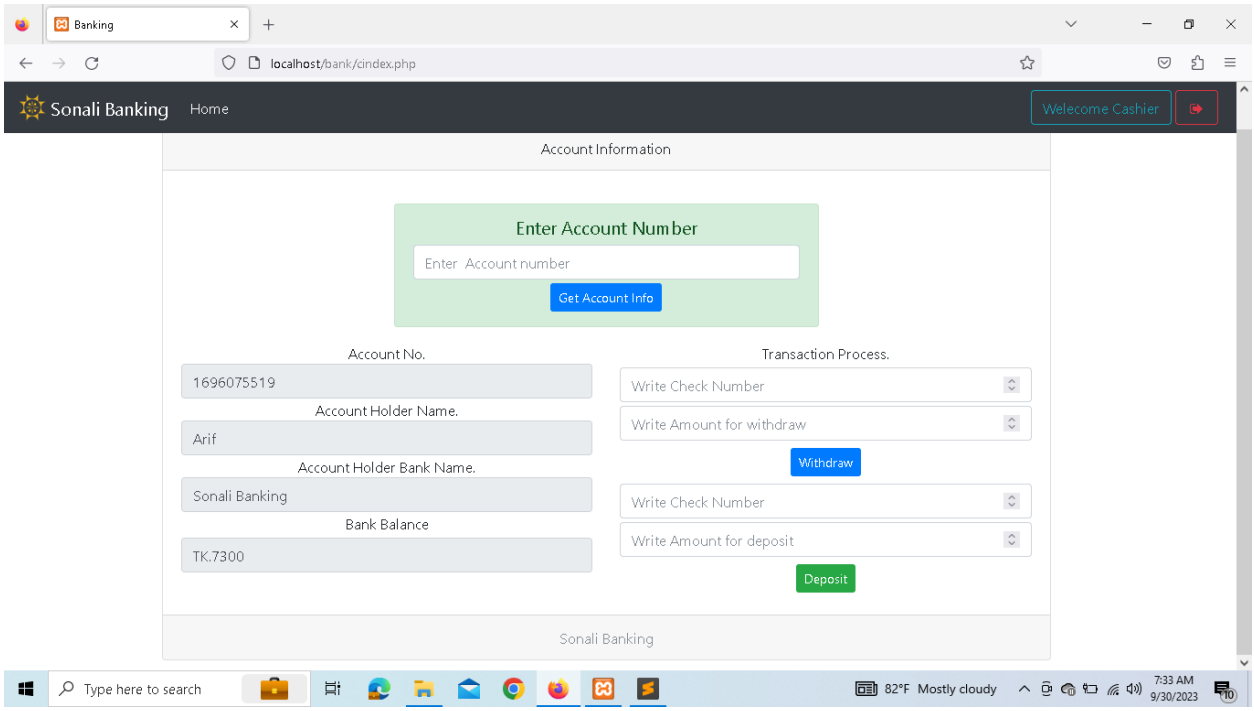


Fig 5.17 Cashier page with withdraw and deposit money

Chapter 6
Results & Analysis

After running the app successfully, the login page properly takes user,manager,cashier information for login, such as email and password. The login page is operational and allows users,manager,and cashier to log in by entering their credentials. The app then returns users,manager,cashier to their dashboard page after successful login.If email and password is incorrect app will redirect you to the login page and send a message Username or password wrong try again!.If it is a user page user can observe personal notice and total balance.

The transfer menu can be accessed from the user dashboard, providing the necessary inputs to send a fixed amount of money.User can check account,account statement,fund transfer,view notice ,ask for help from Navigation Bars as well as from four cards.If it is a manager dashboard page in home manager can see all user account from them manager can send notice ,delete account and view details of the user.From

Navigation Bars manager can view cashier account from that manager can delete and add cashier account.From Navigation Bars manager can add user account through filling a form.From Navigation manager can reach feedback page can check feedback and delete it. If it is a cashier page ,in home cashier can see a form where the cashier fills this with an account number then another page will appear from which the cashier can deposit money or withdraw money.The logout icon located in the upper right corner of the application effectively logs the user out, terminating their session and redirect them to the login screen. In general, the software aptly incorporates the required functionality, as evidenced by the successful passing of all tests.

Chapter 7
Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

In the current digital age, the sustainability of a banking app created in PHP and MYSQL
is crucial. Due to its efficiency, flexibility, and cross-platform capabilities, PHP, a programming language, and MYSQL, an open-source database are rapidly gaining
popularity among developers. There are a number of important elements to take into account
when it comes to sustainability.
The app's environmental impact must be addressed in the first place. Banking apps
naturally help to a more sustainable banking system by reducing the demand for physical
branches and paper transactions. These apps greatly minimize the paper waste and carbon
emissions involved with driving to a brick-and-mortar bank by enabling users to conduct
various banking operations directly from their mobile devices, such as checking balances,
transferring payments, and paying bills.
Furthermore, PHP and mysql have advantages that directly support the system sustainability.
Ensure that your project has well-established aims and purposes that align with the needs and interests of its intended audience. This clarity of purpose helps in maintaining focus and relevance.Effective management of resources, including

finances, human resources, and technology infrastructure, is vital for sustainability. Adequate budgeting and financial planning are essential to prevent resource shortages.Be ready to adapt to changing circumstances and requirements as markets, technologies, and user preferences evolve.Involve the community or relevant stakeholders in project activities. Encourage their participation, listen to their feedback, and engage them in decision-making, fostering a sense of ownership and gaining valuable insights.Collaborate with like-minded organizations or projects that share similar objectives, as partnerships can provide additional resources, expertise, and support for sustainability.
Assess whether the project can expand its reach, serve more communities, or broaden its scope while maintaining its effectiveness.Invest in the education and training of project team members to equip them with the necessary skills and knowledge for ongoing success.

Without having to completely rewrite the software, developers may add new features, correct problems, and improve security. This adaptability enables ongoing

7.2 Social and Environmental Effects and Analysis

There is absolutely no environmental harm or harm from this application. After finishing their task, clients should dispose of the paper scraps in the trash or recycle them

7.3 Addressing Ethics and Ethical Issues

Since I was assigned to work in Bank Where I had to work in digital banking,Foreign Exchange, data management Learning them while simultaneously working on my easy bank application after work was difficult. It took some time to become used to the php programming language. Over the time, I managed to finish my work at office and return home to work on the project.

Chapter 8
Lesson Learned

During my internship in Sonali Bank PLC, I gained knowledge on general banking, digital banking,Foreign Exchange, data management. I learnt how to deal with the customers and the type of issues they come up with. Since my project is based on an Easy bank application, I attempted to research how the customers visit Sonali Bank PLC to get . On the other side, I PHP, MYSQL and how to implement them in web applications.

8.1 Problems Faced During this Period

Working from 10am to 5pm at bank and then going home to learn PHP was pretty challenging. Particularly during the month of Summer, there was a lot of strain at work, and I had to put off studying because of the Hydration and frequent exhaustion. I listed some of the difficulties I encountered while working on the Project:

• I had to spend a lot of time behind gradle at first since it was continuously crashing and displaying errors.
• During the initial stage, I attempted to implement the application with MERN, but failed.
• Because of my internship in general banking, I didn't have as much time as my other classmates to work on my project and improve it.
• Every week at least once I had to visit Dhaka from Comilla
• There were lots of online resources for PHP, which was a challenge which one to follow.

8.2 Solution of those Problems

• After running into gradle problems, I was forced to start my work over every time, which miraculously worked.
• After experiencing issues with MERN I made the decision to work with php and mysql
• When I got stuck on a problem, I had to do a lot of research because most of them were answered in various ways.

Chapter 9
Future Work & Conclusion

9.1 Future Works

There are multiple features that can be implemented in the future to upgrade the app's functionality. Here are some of my plans for the future:

• Implementing Live Chat Support will help the customers. Customers can discuss about problems with service officers here. They will be able to text tech support without any difficulty throughout this live chat.
• Making the application multilingual will benefit a large number of users since many of them are comfortable using the Bengali interface. Due to the English interface, many users in Bangladesh avoid utilizing applications. Thus, the multilingual feature will attract more customers to use the application.

• Explore opportunities to integrate blockchain technology and cryptocurrency services, aligning with emerging trends in the financial sector.
• Incorporate artificial intelligence and automation to streamline operations, enhance customer service, and improve decision-making within the application.
• Regularly evaluate and enhance the application's performance to ensure swift response times and minimal downtime.
• Create dedicated mobile apps for Android and iOS platforms to offer users a more convenient and customized experience on their mobile devices.
• Identify chances to introduce fresh features and functionalities into the banking web application based on user input and market trends. This could involve adding additional banking services like loans or investments or integrating new technologies such as AI-powered chatbots for customer support.

9.2 Conclusion

The web-based banking application project represents a substantial initiative with the goal of enhancing user experiences and simplifying banking operations. It offers a range of essential features, including user, manager, and cashier account management, facilitating tasks like account inquiries, transaction handling, notice distribution, and secure messaging. The project's underlying technology stack, encompassing PHP, MySQL, HTML, CSS, and JavaScript, provides a robust foundation, ensuring seamless functionality across a variety of devices and web browsers. Additionally, the project places a strong emphasis on sustainability, addressing aspects such as financial stability, scalability, operational efficiency, environmental responsibility, and user-centric design

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