A Mini Project based on

The Evolution of Payment Systems : From Cash to Digital Transaction

S.E. - I.T Engineering

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CERTIFICATE

This to certify that the Mini Project report on The Evolution of Payment System: From Cash to Digital Transaction has been submitted by **Neha Khorne (22104029)**, **Janvi Kadam(22104158)**, **Divya Keni (22104022)** and **Abhirami Kalathil (22104166)** who are the students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in Information Technology, during the academic year 2023-2024 in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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ABSTRACT

The Online Banking Services are increasing day by day in the banking sector in India. In this paper aims to examine the Online Banking Services of the Banking Sectors in India. In this study used to collected data from primary and secondary sources which are collected from Bank Managers, Website and other sources. The Online Banking Services such as ATM-Automated Teller Machine, Personal Computer Banking, Phone Banking and Mobile Banking, Email Banking. The researcher concludes that through effective regulation, creating awareness of the Banking Customers. Keywords: Online Banking Services, Customer satisfaction in Banking Sectors, Pros and Cons of Online Banking.

Banking sector play a very crucial role in the financial system of an economy. It facilitates the creation and maintenance of a robust payment system to meet the requirements of businesses, the government and general public. It also serves as a credit delivery mechanism, which can be accessed by those who are in need of funds. Overall, the banking sector of the economic activities represents the centre of a nation Thus, a strong and healthy banking system is essential for economic growth. The Indian banking sector, at present is witnessing an IT revolution and is heading towards digitalization. The internet and IT has entirely changed the way of functioning of banks and the financial institutions. The Information technology was introduced in the Indian banking sector in the late eighties. However, current phase of IT revolution is more intense and impactful, which probably has the potential to change not only the banking landscape, but the overall structure and direction of the economy. The modernization of banking sector, after the introduction of IT and internet has benefitted both the customers as well as banks. The banking now is not just limited to transactions in the branches, but it has made its way into hand held devices like smart phones and tablets. The current phase of banking may be aptly called as 'Digital Banking'.

TABLE OF CONTENTS

CHAPTER NO: 1

INTRODUCTION

The “The Evolution of Payment System: From Cash To Digital Transaction” project is a model Internet Banking Site. This site enables the customers to perform the basic banking transactions by sitting at their office or at homes through PC or laptop. The system provides the access to the customer to create an account, deposit/withdraw the cash from his account, also to view reports of all accounts present. The customers can access the banks website for viewing their Account details and perform the transactions on account as per their requirements. With Internet Banking, the brick and mortar structure of the traditional banking gets converted into a click and portal model, thereby giving a concept of virtual banking a real shape. Thus today's banking is no longer confined to branches. E-banking facilitates banking transactions by customers round the clock globally. The primary aim of this “Bank Account Management System” is to provide an improved design methodology, which envisages the future expansion, and modification, which is necessary for a core sector like banking. This necessitates the design to be expandable and modifiable and so a modular approach is used in developing the application software.

Anybody who is an Account holder in this bank can become a member of Bank Account Management System. He has to fill a form with his personal details and Account Number. Bank is the place where customers feel the sense of safety for their property. In the bank, customers deposit and withdraw their money. Transaction of money also is a part where customer takes shelter of the bank. Now to keep the belief and trust of customers, there is the positive need for management of the bank, which can handle all this with comfort and ease. Smooth and efficient management affects the satisfaction of the customers and staff members, indirectly. And of course, it encourages management committee in taking some needed decision for future enhancement of the bank.

Now a day’s, managing a bank is tedious job up to certain limit. So software that reduces the work is essential. Also today’s world is a genuine computer world and is getting faster and faster day-by-day. Thus, considering above necessities, the software for bank management has became necessary which would be useful in managing the bank more efficiently. All transactions are carried out online by transferring from accounts in the same Bank or international bank. The software is meant to overcome the drawbacks of the manual system.

1.1 Purpose:

The primary purpose of a Online banking System is to offer customers a convenient and secure platform for managing their financial transactions and accounts. These apps are designed to empower users with easy access to their banking services, ensuring they can perform a wide range of activities, including checking their account balances, transferring money and ordering a cheque book.
24/7 access to account information, and the ability to perform transactions from anywhere in the world. The overarching goal is to enhance the overall customer experience, making banking more efficient, user-friendly, and accessible.

1.2 Problem Statement:

Traditional banking methods are increasingly becoming obsolete and cumbersome for both customers and financial institutions. Customers face challenges in accessing and managing their accounts conveniently, while banks struggle to provide efficient and secure services. Legacy systems often result in delayed transactions, limited accessibility, and heightened security risks. In this rapidly evolving financial ecosystem, there is an urgent need for a modern banking system app that overcomes these hurdles, offering a user-friendly, secure, and feature-rich platform that caters to the diverse financial needs of customers. This banking app aims to provide a solution by enabling users to effortlessly conduct transactions, manage their accounts, and access a range of financial services with confidence, all within a single, easy-to-use application

1.3 Objectives :

- **Enhanced accessibility**: To Establish a secure MySQL-based database system for the organized storage of user data.
- **Efficiencient :** To manage the detailed information/summary of employee, and customer.
- **Enhanced User Experience** : Prioritize the user experience through user-friendly interfaces, responsive design, and efficient navigation.
- **Transactions** : Facilitate seamless other financial transactions, reducing processing time and errors.

1.4 Scope :

- **Customer Relationship Management :** Building a customer database and loyalty programs.
- **Savings and Investments** : Offer tools to open, manage, and track savings and investment accounts.
- **Account Services :** Access to account balance**.**
- **Instant Payement** : Helps end customer to perform efficient transaction.
- **Ordering Cheque book** : Helps end customer to oder cheque book from our online banking platform.

CHAPTER NO: 2

LITERATURE REVIEW

1] **Digital Payments Methods in India**: A study of Problems and Prospects

Author -Lalita Malusare

India is going to became cashless. Indian government launched digital India Campaign to reduce dependency of Indian economy on cash and prevent from money laundering. To making cashless India and increasing trends in using digital payment system various Payment methods are emerging and developing. India is developing country and maximum area is rural and shocking is computer literacy is only 6.5% then question arises that implementation of digital payment system. The research paper is making focus on the problems of digital payment system in India and effects of the system in people and economic system of India. The research is paper also trying to explain the future scope of the Digital payment system.

2] **Adoption of Digital Payment System by Consumer**: A review of Literature

Author - Gourab Ghosh

The advancement of information and communication technology opened the gate way for modern methods of payments. The growth in smartphone and access to internet made life easier for the people and which gave advent to digitalization t is also a great way to make the Digital India initiative taken by the government to make it a successful programme and make our country a cashless economy.

CHAPTER NO: 3

PROPOSED SYSTEM

Features & Functionality:

Account Management:

- Users should be able to view their account balances and can perform transactions.

User-Friendly:

- User-friendly banking app has been meticulously designed to simplify your financial life. We prioritize ease of use, ensuring that managing your money is intuitive, efficient, and stress-free.

Security:

- login and registration process has been crafted with precision to provide you with a safe and streamlined banking experience. Whether you're a new customer looking to join us or an existing one returning for your banking needs

CHAPTER NO: 4

REQUIREMENTS ANALYSIS

Functional Requirement

1)Cash-Based Systems:
Traditional transactions using physical currency. Limitations in terms of geographical constraints and security. Manual handling and counting of cash.

2)Online Banking and EFT:
Development of online banking platforms for account management. Introduction of Electronic Funds Transfer (EFT) systems. Reduction in the use of physical checks and cash.

3)Physical to Digital Transition:
The primary functionality of this evolution is the transition from physical cash to digital records. Digital transactions enable the movement of money without the need for tangible currency, making it more convenient and efficient.

Non – Functional Requirement

1)Reliability:
The payment system should be highly reliable, ensuring that transactions are processed accurately and without errors. Downtime and service interruptions should be minimized to maintain user trust.

2)Availability:
The payment system should be available 24/7, ensuring that users can perform transactions at any time.

3)User Experience (Usability):
The system should be user-friendly and intuitive. It must provide a smooth and straightforward user experience for individuals of various technical backgrounds.

CHAPTER 5

PROJECT DESIGN

5.1 Block Diagram : System architecture is used to showcase the flow of data or step wise algorithm of our banking app that is step by step representation of a executed command established while using the system.

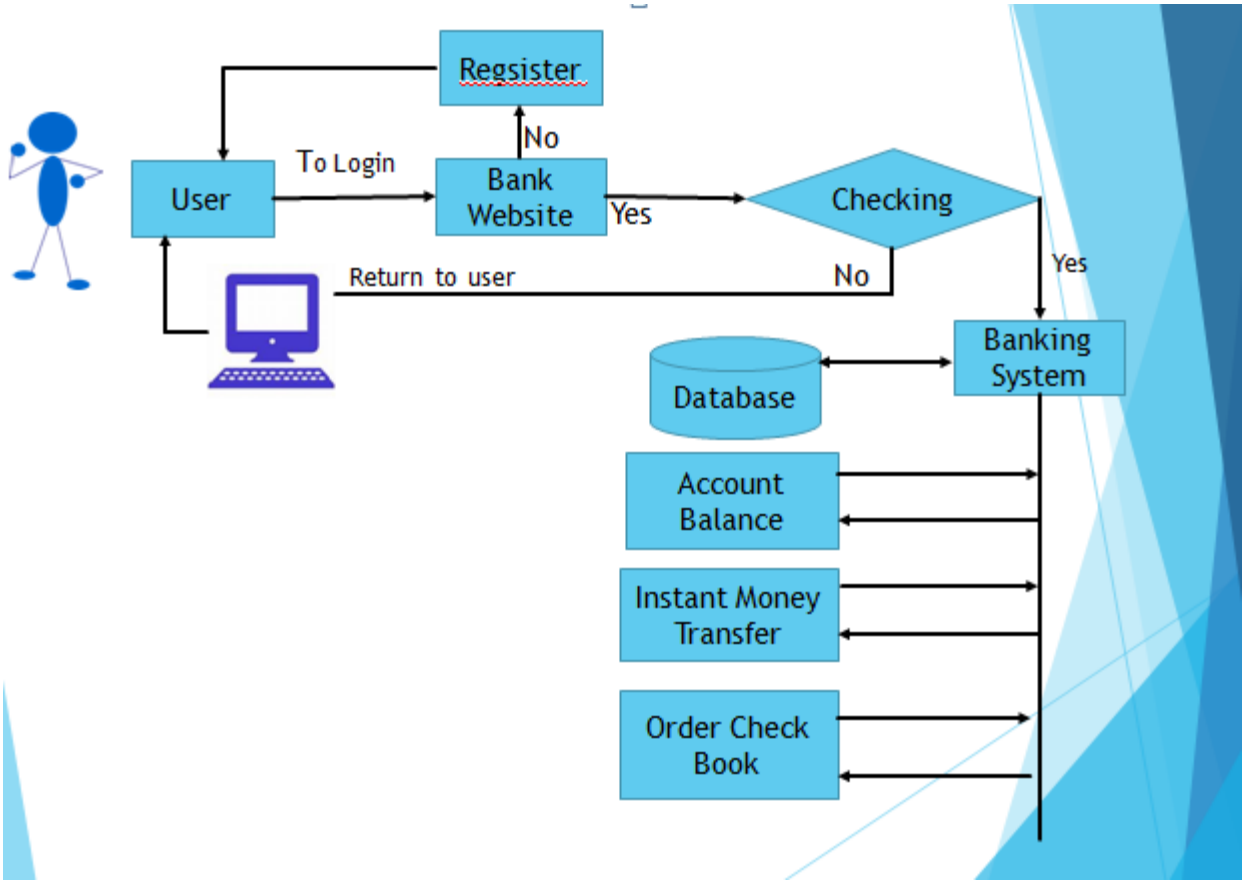


Fig.5.1 Block Diagram

5.2 System Architecture

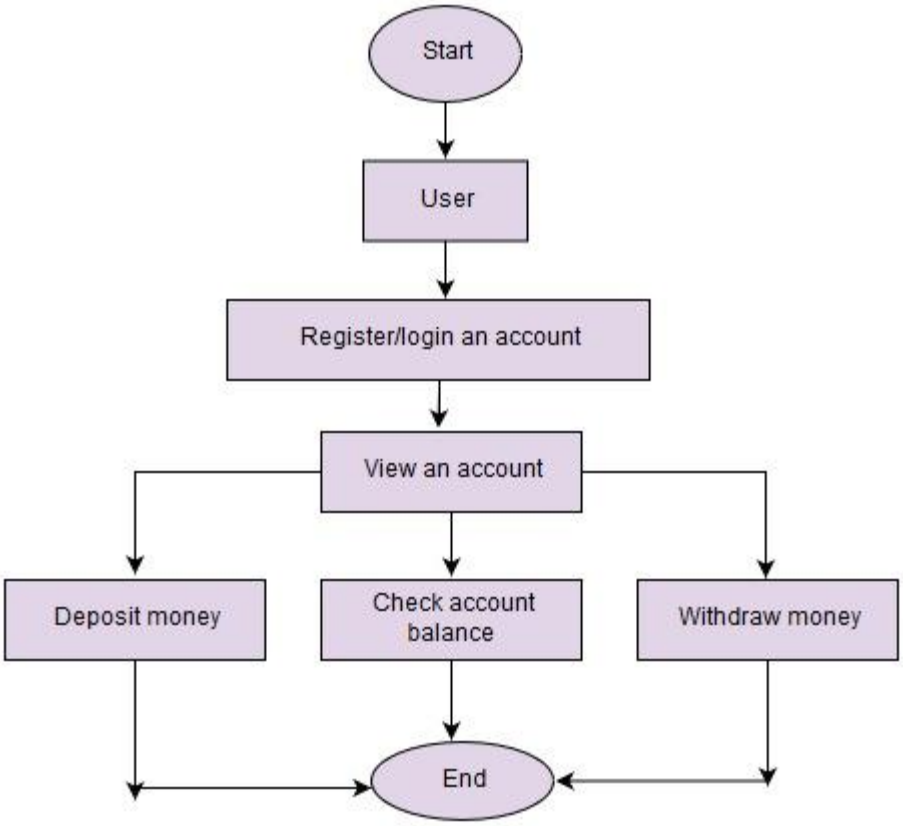


Fig.5.2 System Architecture

System architecture is used to showcase the flow of data or step wise algorithm of our banking app that is step by step representation of a executed command established while using the system.

CHAPTER NO: 6

TECHNICAL SPECIFICATIONS

- **Development: NetBeans IDE**
  NetBeans IDE serves as a powerful and versatile development environment for our Java-based project. Its feature-rich platform offers a range of tools and capabilities that significantly contribute to the efficiency and effectiveness of the development process. The intuitive user interface of NetBeans simplifies code navigation, editing, and debugging, fostering a seamless development experience. The robust support for Java development, including the latest versions, ensures compatibility and adherence to industry standards. The NetBeans GUI Builder is particularly advantageous for designing the graphical user interface of our cafe management system, providing a visual development environment for creating and modifying UI elements effortlessly.

- **Frontend: Java (Swing)**
  Java Swing is a robust GUI toolkit that facilitates the development of cross-platform desktop applications, providing a rich set of components for creating interactive and visually appealing user interfaces in Java. Leveraging Swing's flexibility and versatility, developers can craft dynamic and responsive graphical applications with ease.

- **Backend: MySQL Server, MySQL Workbench.**
  MySQL Server serves as a reliable and scalable relational database management system, providing a robust platform for storing and managing data in our Java-based cafe management system. MySQL Workbench complements this by offering an intuitive visual interface for database design, administration, and query development, enhancing the efficiency of database-related tasks. Together, they form a dynamic duo, ensuring seamless data management and interaction within our project.

CHAPTER NO:7

PROJECT SCHEDULING

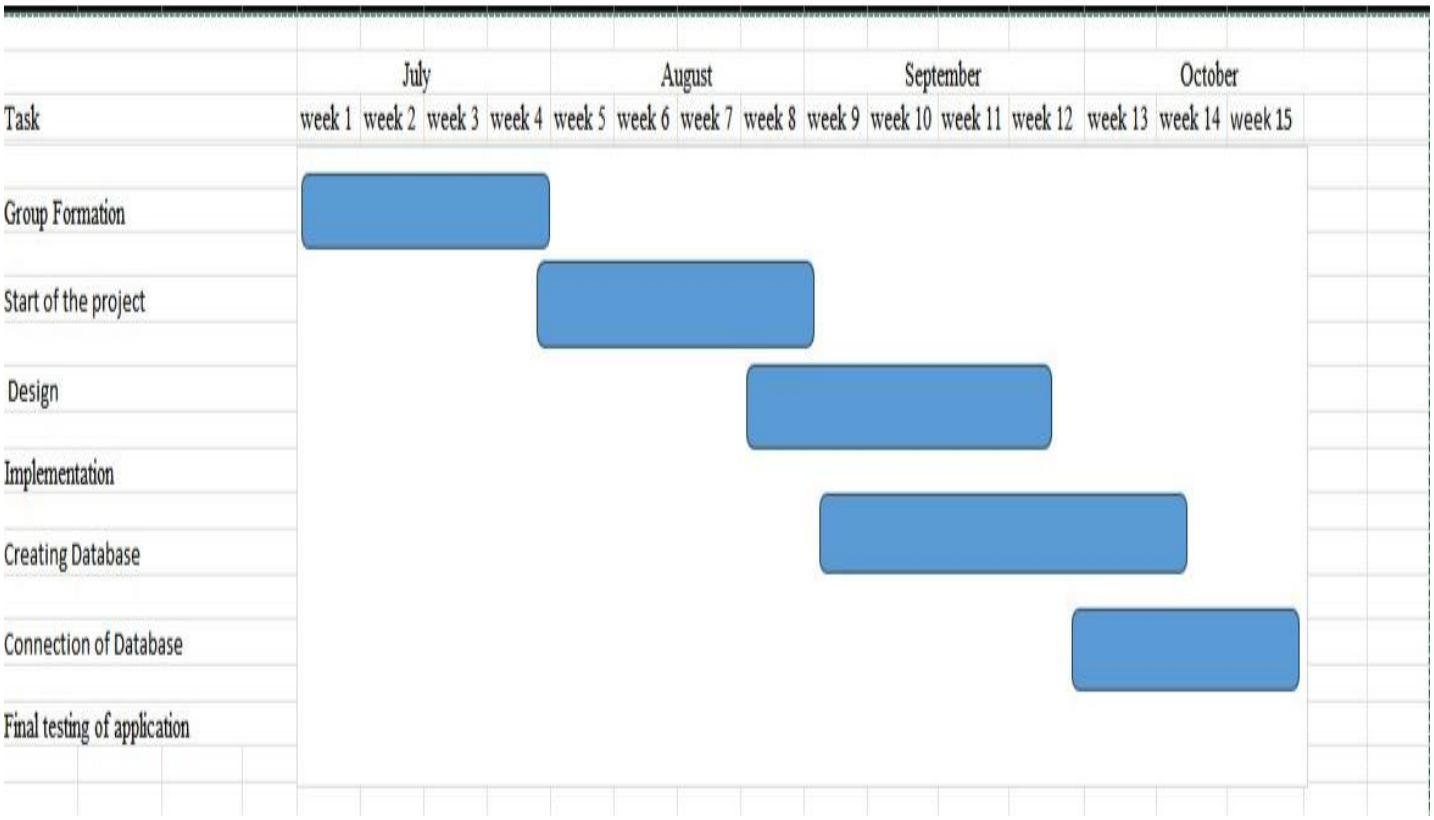


Fig.7.1 Gantt Chat

CHAPTER NO: 8

IMPLEMENTATION

1. System Design:

• System Architecture: Design the technical architecture, including the choice of hardware, software, and databases.

• User Interface Design: Create wireframes or prototypes of the user interface to visualize how the system will look and function.

2. Development:

• Software Development: Develop the banking management software according to the design specifications. This involves coding and building the various modules and features.

• Database Development: Design and create the database structure to store information like account number, customer data, and total account balance.

3. Testing:

• Unit Testing: Test individual components and modules to ensure they work as intended.

CHAPTER NO: 9

RESULTS

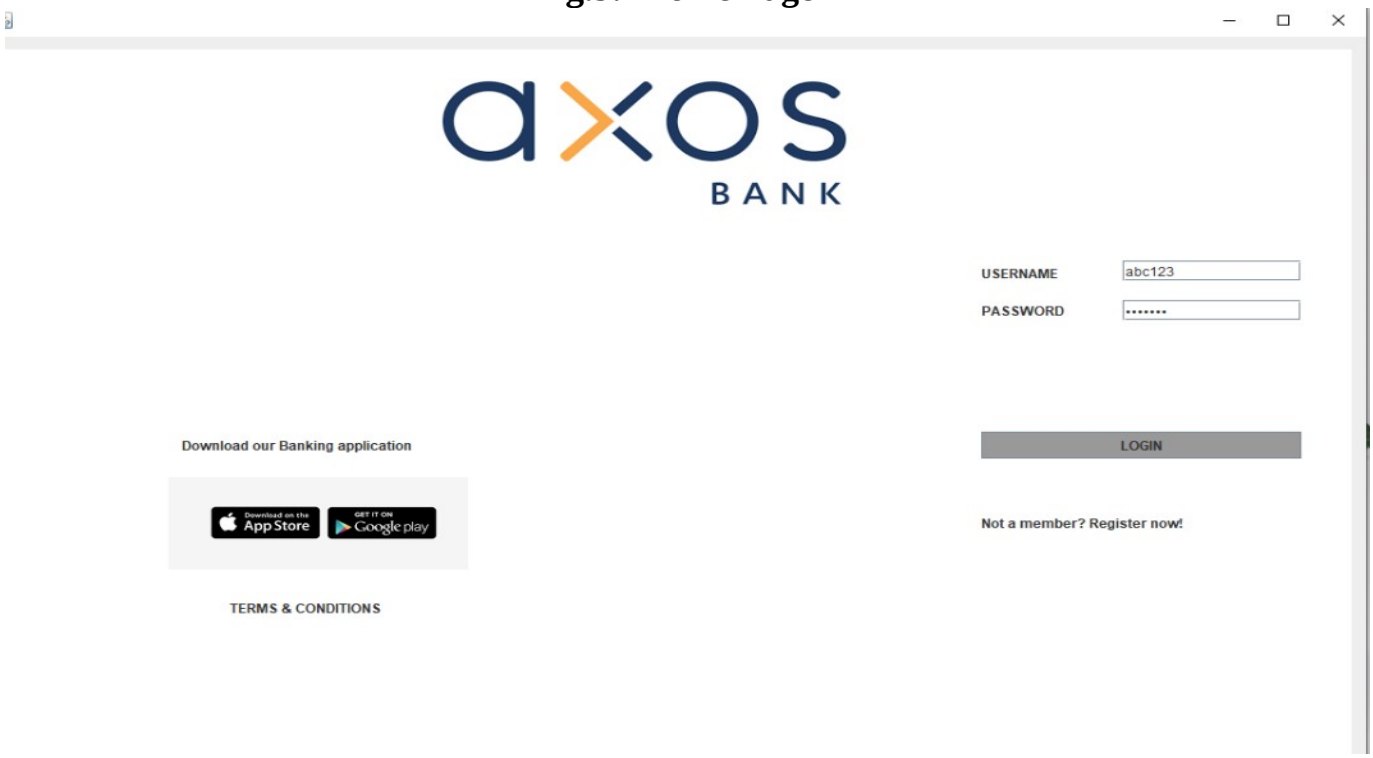
Login page:

• The login page serves as user friendly and secure gateway for authorized access to the admin.

• With robust user authentication measures, it ensures that only authorized personnel can access and manage the system's comprehensive features as it stores sensitive information.

•The Login Page is a crucial component of the Banking Management System, providing a secure and controlled entry point for users to manage the system effectively and maintain the integrity operations performed by users.

Fig.9.1Home Page



Dashboard :

• A dashboard for a banking system plays a crucial role in providing an overview of user's financial accounts and transactions.

• Dashboard gives mainly three features for end user that is checking their respective account balance , ordering a cheque book and performing instant transaction.

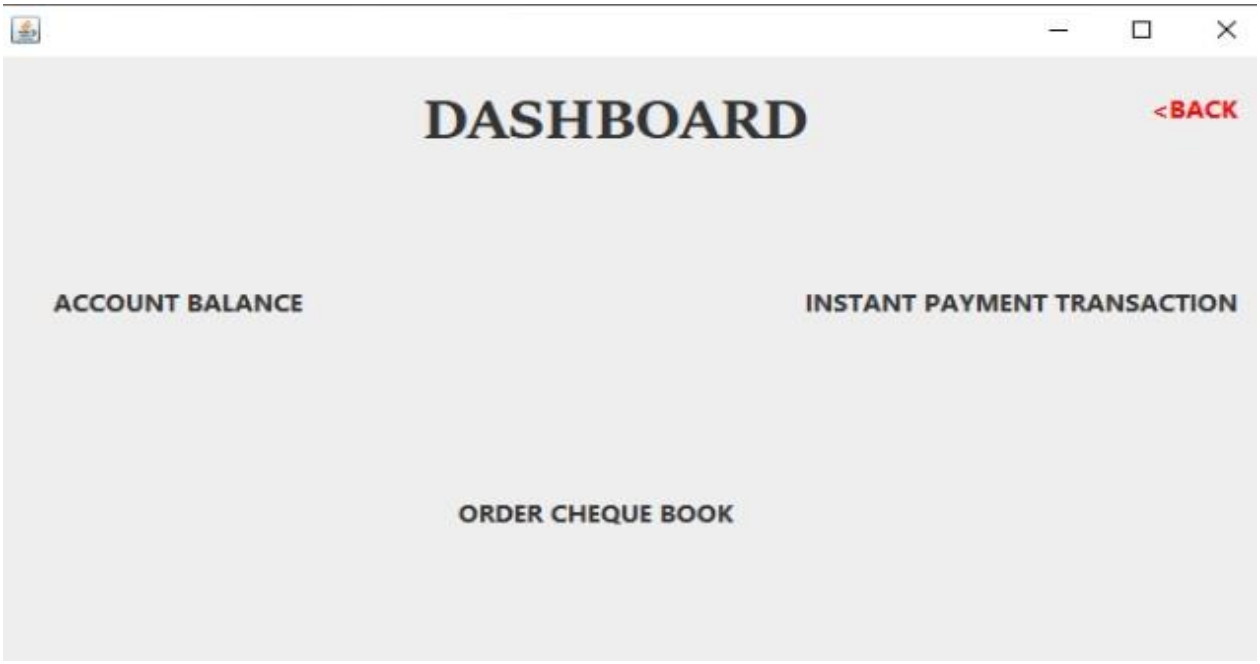


Fig.9.2 Dashboard

Registration page :

• Registration page can effortlessly add new user, facilitating personalized service through the system's registeration page feature. Adding an user and manage its detail is one of the key features of the system.

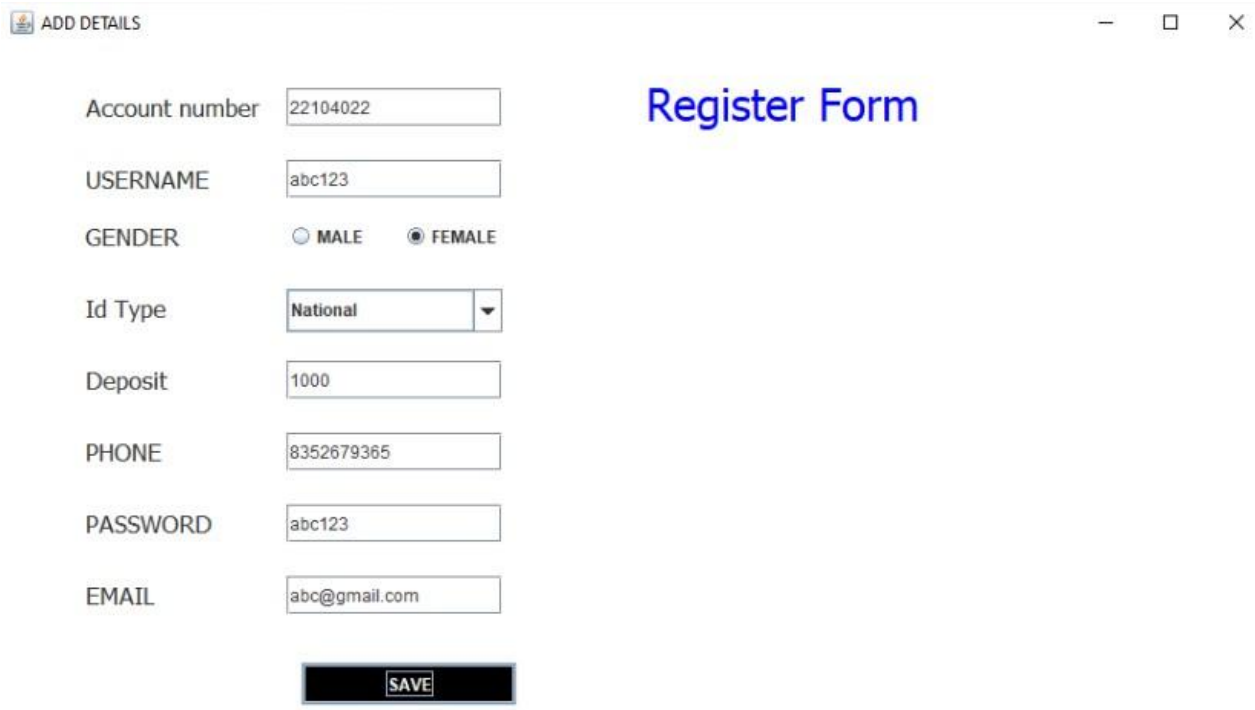


Fig.9.3 Registration Page

Show Account balance :

• This page provides end user to check their account balance in their respective account by entering the account number.

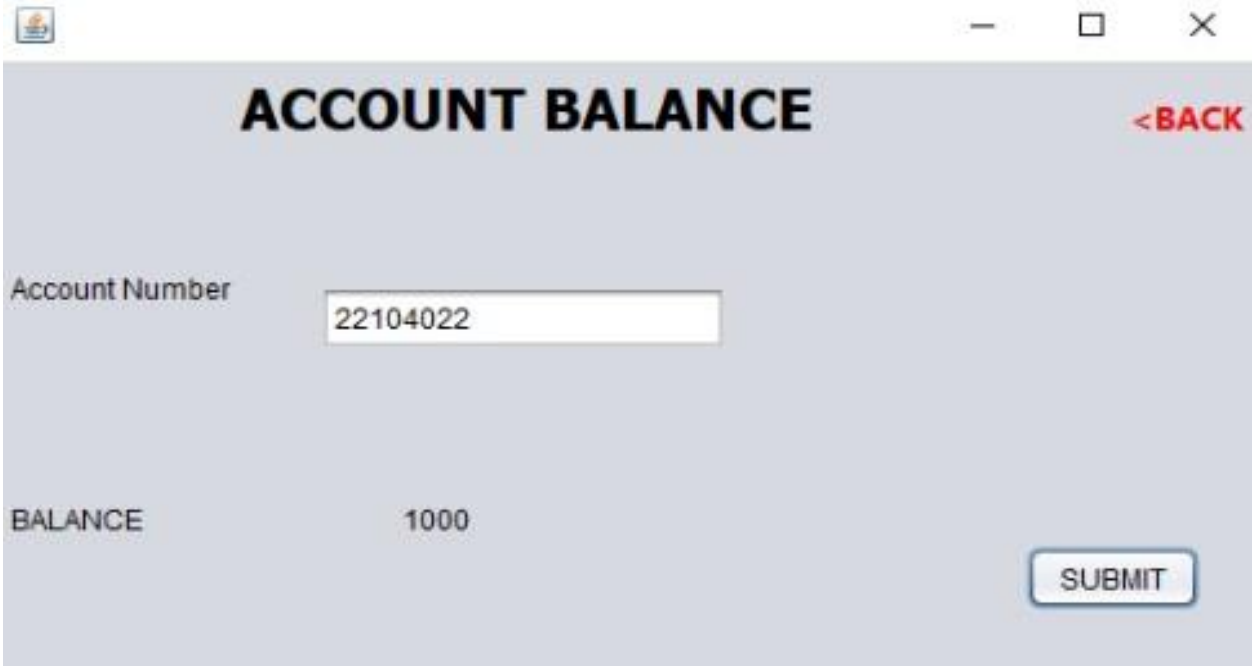


Fig.9.4 Show Balance Page

Instant payment :

• This page provides end user to perfom transaction from one account to another , by providing account number and specific amount to be transferred.

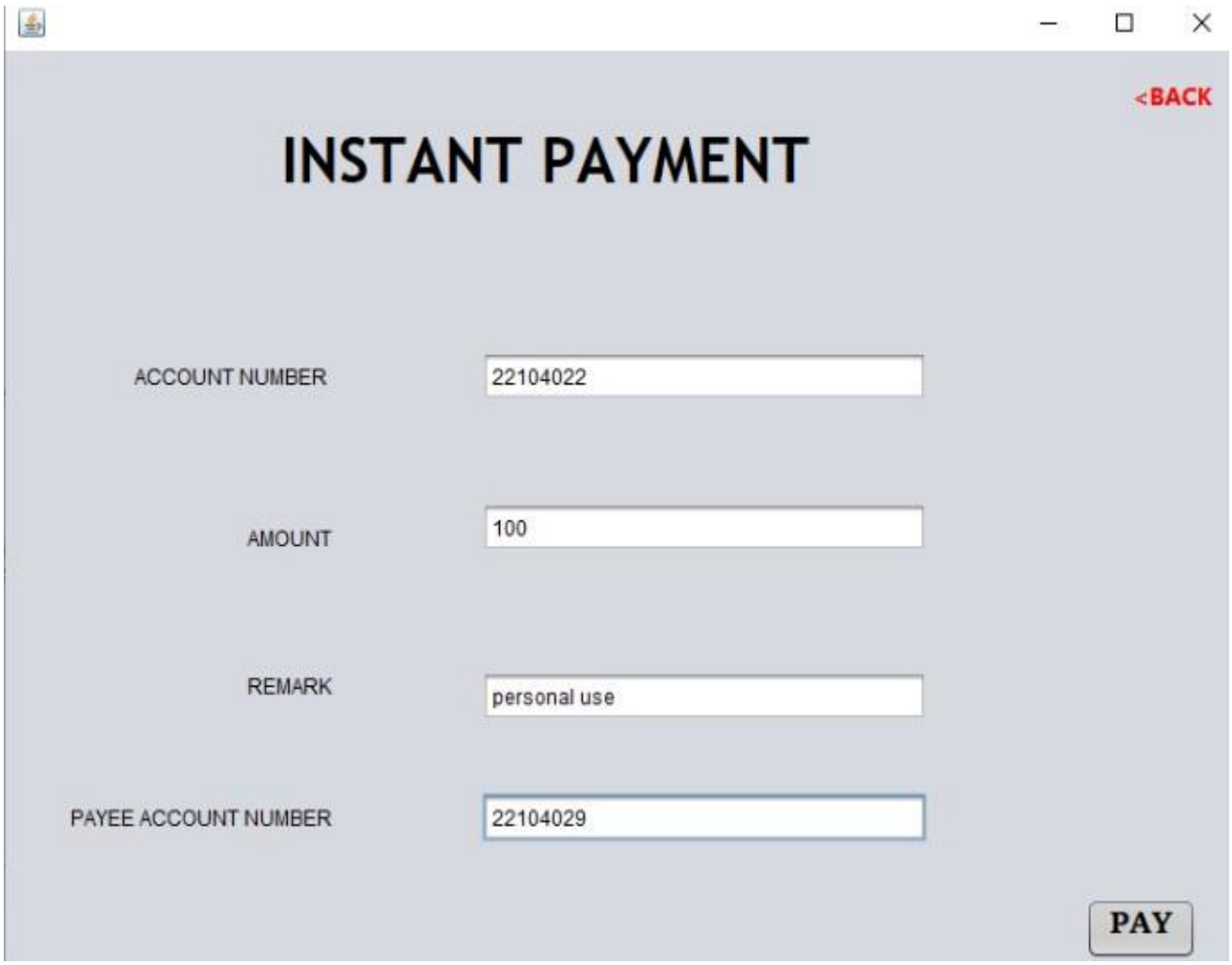


Fig.9.5 Instant Payment Page

Ordering Cheque Book :

• This page provides end user to order cheque from our online banking platform by providing bank account number which is registered and entering the number of leaves for cheque book.

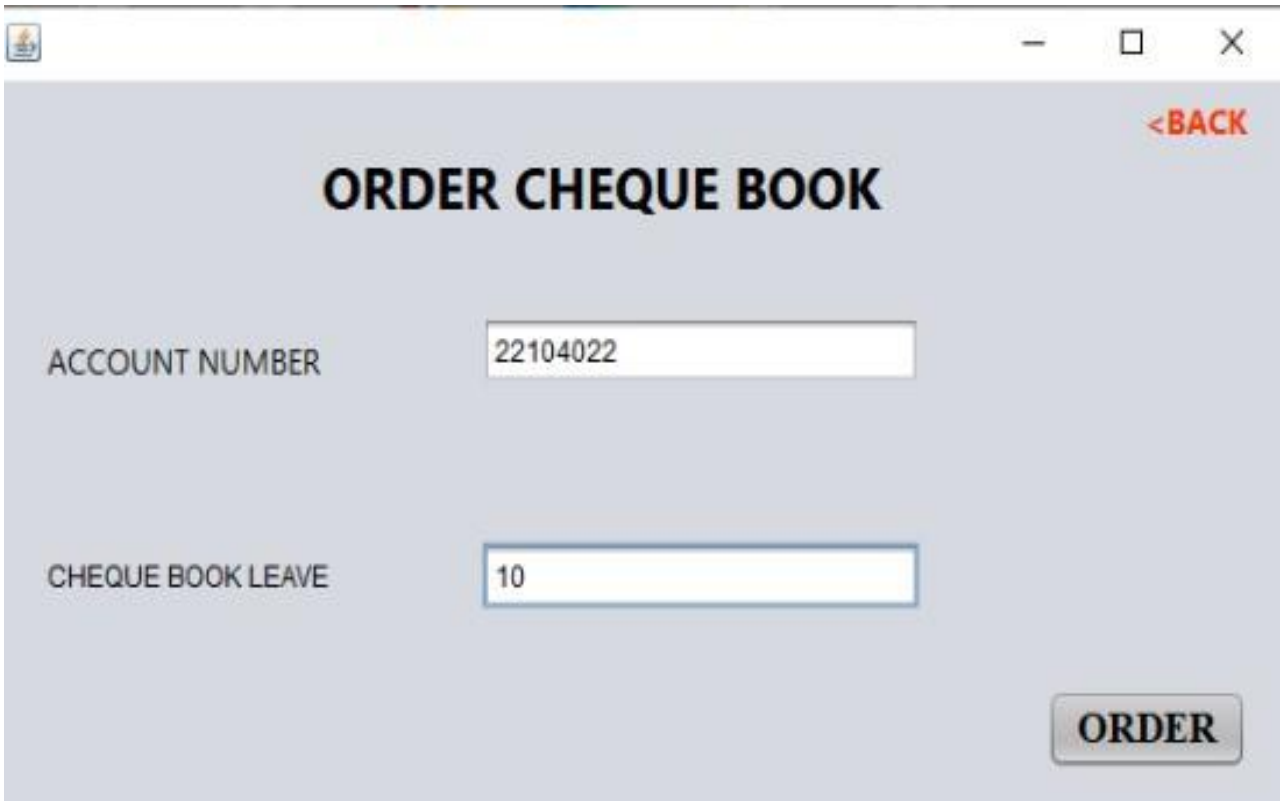


Fig.9.6 Order Cheque Book Page

CHAPTER NO:10

CONCLUSION

In conclusion, the evolution of payment systems from cash to digital transactions represents a positive transformation in many ways. It has made financial transactions more convenient, secure, and inclusive, fostering economic growth and innovation. As this evolution continues, it is crucial to strike a balance between the benefits of digitalization and the need to address the associated challenges, ensuring that payment systems remain accessible, secure, and equitable for all. The shift to digital transactions has led to improved security measures, including encryption and authentication, making it more difficult for fraud and theft to occur. Notable challenges, including data privacy, cybersecurity threats, and the potential exclusion of those without digital access, must be addressed to ensure the continued success and fairness of digital payment systems. Striking a balance between the benefits and challenges of digital payments is crucial for a sustainable and inclusive payment system that serves the needs of all consumers.

In summary, the evolution of payment systems from cash to digital transactions has undeniably brought convenience, security, financial inclusion, and data-driven insights to the forefront. Nevertheless, ongoing efforts are necessary to mitigate challenges and ensure that digital payment systems remain accessible, secure, and equitable for everyone.

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