A
Mini Project Report
on

"EasyBank: Digital Banking System For Financial Management"

Submitted in partial fulfillment of the requirements for the degree

Second Year Engineering – Computer Science Engineering (Data Science)
by

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Academic year: 2024-25

CERTIFICATE

This to certify that the Mini Project report on **EasyBank : Digital Banking System For Financial Management** has been submitted by Nishant Chauhan(23107010), Nikhil Aunumulla(23107055), Chinmay Ghosh(23107001) and Sneha Edugunoori(23107011) who are a Bonafide students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in **Computer Science Engineering (DATA SCIENCE)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Guide

Ms. Anagha Aher
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ACKNOWLEDGEMENT

This project would not have come to fruition without the invaluable help of our guide **Ms. Richa Singh**. Expressing gratitude towards our HOD, **Ms. Anagha Aher**, and the Department of Information Technology for providing us with the opportunity as well as the support required to pursue this project. We would also like to thank our teacher **Ms. Avani Nair and Ms. Richa Singh** who gave us her valuable suggestions and ideas when we were in need of them. We would also like to thank our peers for their helpful suggestions.

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Chapter 1

Introduction

The Bank Account Management System is a user-friendly application designed to streamline bank account management. This project aims to demonstrate the core functionalities of a banking system, covering essential features and extending beyond the capabilities of traditional banking applications. Built using Java and connected to a MySQL database, this system addresses the financial needs of customers within a banking environment, providing a range of features to facilitate banking tasks. With EasyBank, we aim to enhance the speed and efficiency of banking processes, making everyday transactions simpler for both customers and banks, ultimately saving users valuable time.

1.1 Purpose:

The purpose of this Banking System mini-project is to simplify and streamline banking operations, making account management faster, more efficient, and user-friendly through a Java-based application with MySQL integration.

- Simplification of Banking Operations: Provides a user-friendly platform for managing bank accounts and performing transactions easily. Wider Accessibility: This banking allows individuals from remote areas to access banking services without the need to visit physical locations.
- Core Banking Features: Enables users to perform essential tasks like checking balances, depositing, withdrawing, and viewing transaction histories.
- Environmental Impact: Reduces the need for paper-based transactions, contributing to a more sustainable and eco-friendly banking model.
- Streamlined Loan Management: Simplifies the process of applying for and managing loans through digital application forms and easy access to status updates. Users can apply for loans from home and track their application progress, making the process more user-friendly and accessible without the need for repeated visits to a bank branch.

1.2 Problem Statement:

The banking system faces several challenges that limit convenience and efficiency for customers. Traditional methods often require physical visits to branches for basic transactions like checking balances or transferring funds, which can be time-consuming. This is especially problematic for those with mobility issues or who live in remote areas. Additionally, banks typically operate within fixed hours, making it difficult for customers to access services outside these times. As a result, delays in completing transactions can lead to frustration and dissatisfaction among users.

Tracking transactions is another issue, as customers relying on physical statements lack real-time access to account information. This delay makes it harder to monitor spending or detect unauthorized activities. Online banking can address some of these concerns, but not all users find it accessible. Those who are less tech-savvy may struggle with digital platforms, leaving them reliant on traditional methods. To ensure better service, banks must address these challenges and create a more inclusive, user-friendly experience.

1.3 Objectives:

- To build a user-friendly banking interface using Java.
- To enable customers to open, update, and close accounts efficiently.
- To provide functionality for applying for loans and tracking payments.
- To establish a reliable database for storing customer and transaction details.

1.4 Scope:

The scope of making a banking system project is broad and essential in today's world. This project aims to create a platform where customers can easily access and manage their bank accounts.

- The scope is to enhance the accessibility and usability of banking services by creating a system that caters to a diverse range of users, including those in remote areas and individuals who may not be familiar with advanced technology. The system aims to deliver a banking platform that simplifies core financial operations, allowing users to perform transactions such as deposits, withdrawals, and balance checks with ease.

- By focusing on user-friendly design and streamlined functionality, the project makes it possible for those with limited technical knowledge to access banking services without the need for in-depth training. This ensures that the system is not only accessible to tech-savvy users but is also suitable for those who may struggle with complex digital interfaces.

- Furthermore, the project seeks to address the challenges faced by rural communities, where access to physical bank branches can be limited. Through the implementation of this banking system, we aim to bridge the gap in financial services, providing rural residents with a reliable way to manage their finances remotely. This can significantly reduce travel time and associated costs, offering a more practical and time-efficient alternative to traditional banking methods.

- Overall, the system is designed to be cost-effective, saving both users and financial institutions from the expenses associated with manual, paper-based processes. By automating transactions and making services available, the project reduces the reliance on physical branches, making banking more efficient and reducing operational costs.

Chapter 2

Proposed System

The proposed system for banking system is designed to address the challenges identified in the problem definition by offering a comprehensive and user-friendly platform for managing banking activities.

- **Banking Platform**: Develop a user-friendly banking system that allows customers to perform essential transactions, such as checking account balances, transferring funds, and paying bills. This platform will enable users to manage their finances conveniently from home or on the go, eliminating the need for physical visits to bank branches.

- **Extended Access Hours**: Implement a 24/7 banking service that allows customers to access their accounts and complete transactions at any time, regardless of traditional banking hours. This will provide greater flexibility for users to conduct their banking activities whenever it suits them, reducing frustration and wait times.

- **Automated Processes**: Streamline banking tasks by automating processes and minimizing manual paperwork. The system can incorporate features like application forms for transfers, allowing users to complete transactions quickly and efficiently without the need for physical documentation.

- **Real-Time Transaction Tracking**: Incorporate features that allow customers to view their transaction histories as they occur. This will enable users to monitor their spending habits more easily and ensure they are aware of their financial activities in a timely manner. Having immediate access to their transaction details will help customers stay organized and informed about their finances.

- **Simplified Banking Process**: It is a platform that prioritizes ease of use, ensuring that all banking tasks are straightforward and intuitive. The design will focus on minimizing complexity, allowing users to navigate the system effortlessly. By making the banking process simple and user-friendly, the platform will be accessible to everyone, enabling all customers to manage their finances with confidence.

2.1 Features and Functionality:

User Dashboard

- **Feature**: A simple interface displaying key account information.
- **Functionality**: Users can easily view account balances, recent transactions, and access various banking functions through an organized menu.

Forms

- **Feature**: Easy-to-fill forms for essential applications.
- **Functionality**: Users can complete applications for loans and cards quickly and efficiently, simplifying the application process.

Navigation

- **Feature**: Clear and intuitive menus for seamless navigation.
- **Functionality**: Users have easy access to account management, fund transfers, and bill payments, ensuring a smooth user experience.

Download Transaction History

- **Feature**: Easy download of transaction history.
- **Functionality**: The platform ensures a consistent and smooth user experience across various devices, including desktops, tablets, and smartphones.

Account Overview

- **Feature**: Comprehensive summary of bank accounts.
- **Functionality**: Users can view current balances for savings and other accounts, along with a list of recent transactions, including details such as date, amount, and description.

Bill Payments

- **Feature**: Direct payment of various bills through the platform.
- **Functionality**: Users can select the type of bill to pay, enter payment details, and choose to schedule or make immediate payments for electricity bill, gas bill and other regular payments.

Loan Applications

- **Feature**: Direct application for various loan types.
- **Functionality**: Users can access loan application forms, enter the required information, and submit their applications for personal, education, or home loans directly through the platform.

Chapter 3

Project Outcomes

User Login Access

- Users can easily log in to their accounts to access a range of banking features. This outcome ensures that customers can confidently engage with their banking services, allowing them to manage their finances and transactions efficiently. The login process is designed for simplicity, enabling quick access to important banking functions.

Detailed Transaction History

- Users can view a comprehensive transaction history that includes detailed information such as transaction dates, amounts, and descriptions. This outcome empowers customers to monitor their spending habits effectively and track their financial activities in real time. With easy access to transaction details, users can identify trends and make informed financial decisions.

Bill Payment Functionality

- Users can pay various bills directly through the platform, including utility bills, credit card payments, and loans. This outcome simplifies the bill payment process, allowing customers to select the type of bill, enter the payment details, and schedule or make immediate payments. By streamlining this process, users can ensure timely payments and better manage their financial obligations.

Fund Transfer Capability

- Customers can easily transfer funds between accounts or to other users within the platform. This outcome enhances convenience by allowing quick and secure money transfers, whether for personal or business purposes. The streamlined process ensures that users can complete transactions with minimal effort, improving their overall banking experience.

Editable Dashboard

- Users have access to a customizable dashboard that allows them to organize and display the information most relevant to their banking needs. This outcome enables customers to tailor their banking experience according to their preferences, ensuring that important account details, transaction summaries, and shortcuts to key features are always easily accessible.

Chapter 4
Software Requirements

Java Development Kit (JDK):

Role: Provides core libraries and tools needed for developing and executing Java applications like the Bank Management System.

NetBeans IDE:

Role: Serves as a powerful IDE for coding, debugging, and managing Java projects. It includes robust tools for handling MySQL databases, streamlining the development process for the banking application.

MySQL Database Server:

Role: Acts as a relational database system used to store, retrieve, and manage critical banking data, such as account details, transaction histories, loan records, and customer information.

MySQL Connector:

Role: A JDBC driver that facilitates communication between the Java-based Bank Management System and the MySQL database for seamless data access and manipulation.

Java Runtime Environment (JRE):

Role: Required for running the Bank Management System after development, providing the necessary environment to execute the application.

Chapter 5

Project Design

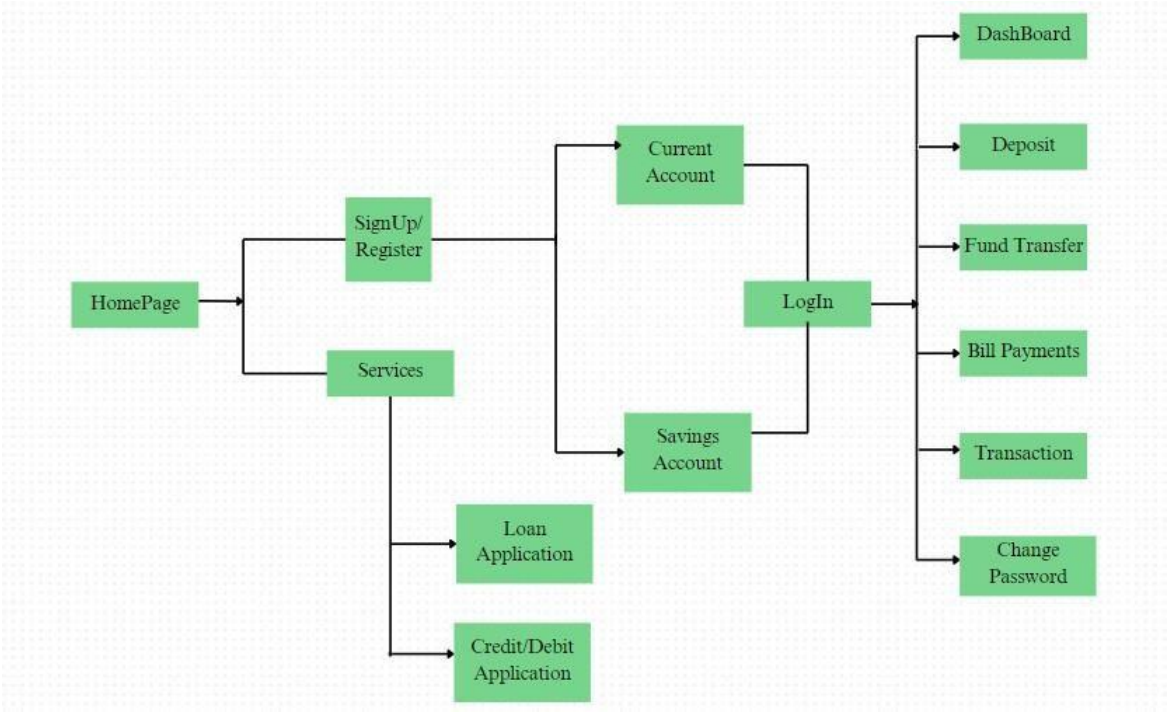


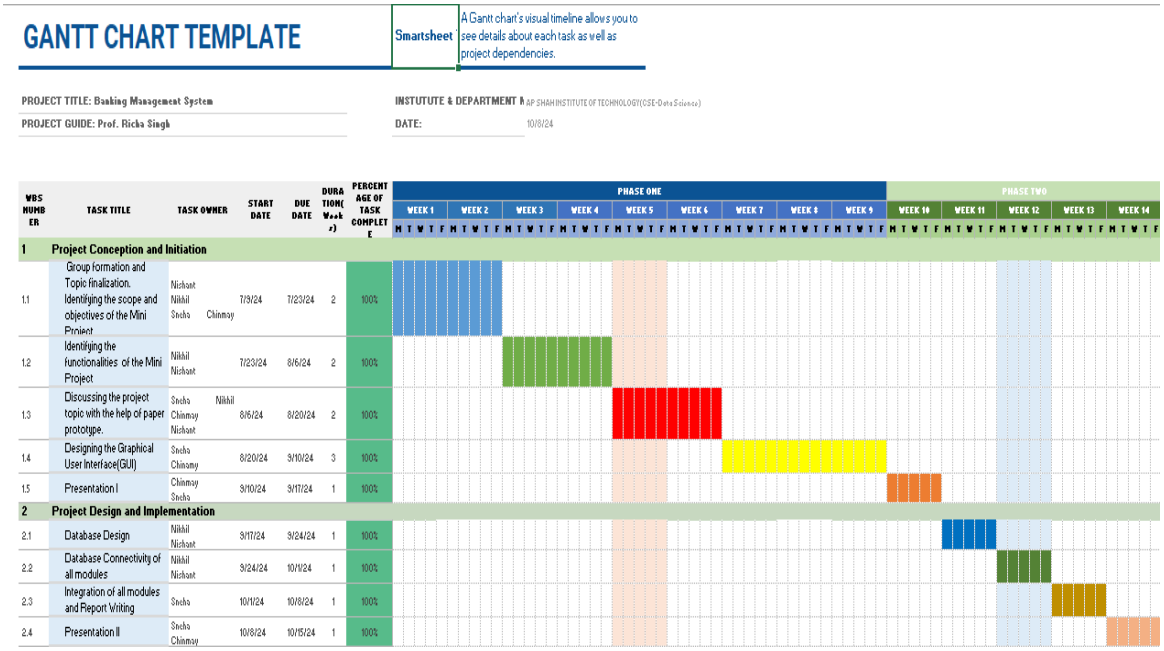
Fig 5.1: Proposed system

Fig 5.1 represents the proposed structure of a banking management system. It starts with the homepage, which serves as the entry point for users. From the homepage, users can either sign up/register for a new account or access various services.

If they choose to sign up or register, they proceed to select the type of account—either a current account or a savings account. Once registered, users can log in to access their banking features.

After logging in, users can navigate to different features of the system:
- Dashboard: A summary of account details.
- Deposit: Add money to their account.
- Fund Transfer: Transfer money to other accounts.
- Bill Payments: Pay various bills directly from their account.
- Transaction: View past transactions and details.
- Change Password: Update the login password

Chapter 6
Project Scheduling



WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION (Weeks)	PERCENTAGE OF TASK COMPLETE
1	**Project Conception and Initiation**					
1.1	Group formation and Topic finalization. Identifying the scope and objectives of the Mini Project	Nishant Nikhil Sneha Chinmay	7/9/24	7/23/24	2	100%
1.2	Identifying the functionalities of the Mini Project	Nikhil Nishant	7/23/24	8/6/24	2	100%
1.3	Discussing the project topic with the help of paper prototype.	Sneha Nikhil Chinmay Nishant	8/6/24	8/20/24	2	100%
1.4	Designing the Graphical User Interface(GUI)	Sneha Chinamy	8/20/24	9/10/24	3	100%
1.5	Presentation I	Chinmay Sneha	9/10/24	9/17/24	1	100%
2	**Project Design and Implementation**					
2.1	Database Design	Nikhil Nishant	9/17/24	9/24/24	1	100%
2.2	Database Connectivity of all modules	Nikhil Nishant	9/24/24	10/1/24	1	100%
2.3	Integration of all modules and Report Writing	Sneha	10/1/24	10/8/24	1	100%
2.4	Presentation II	Sneha Chinmay	10/8/24	10/15/24	1	100%

Fig 6.1: Gantt chart

Fig 6.1 Gantt chart outlines the **Banking Management System** project, managed by **Ms. Richa Singh** at **A.P. Shah Institute of Technology**. It shows tasks, owners, start/end dates, and progress across 14 weeks, divided into two phases.

Phase 1: Project Conception and Initiation

1. **Group Formation and Topic Initiation** (All) – Done in Week 1.
2. **Identifying Scope & Objectives** (Nikhil and Nishant) – Completed Week 1.
3. **Understanding Requirements** (All) – Finished Week 1.
4. **Project Title Selection** (Nikhil and Nishant) – Done Week 2.
5. **Understanding Existing System** (Chinmay and Sneha) – Completed Week 2.
6. **UI/UX Design** (Sneha and Chinmay) – Finished Week 2.
7. **Presentation** (Nikhil and Nishant) – Done Week 2.

Phase 2: Project Design and Implementation

1. **Database Design** (Nikhil and Nishant) – Completed Weeks 2–3.
2. **Database Connectivity** (Nikhil and Nishant) – Done Weeks 3–4.
3. **Integration of Modules** (Sneha) – Finished Week 4.
4. **Final Presentation** (Chinmay) – Done Week 5.

Chapter 7
Results

Home Page:

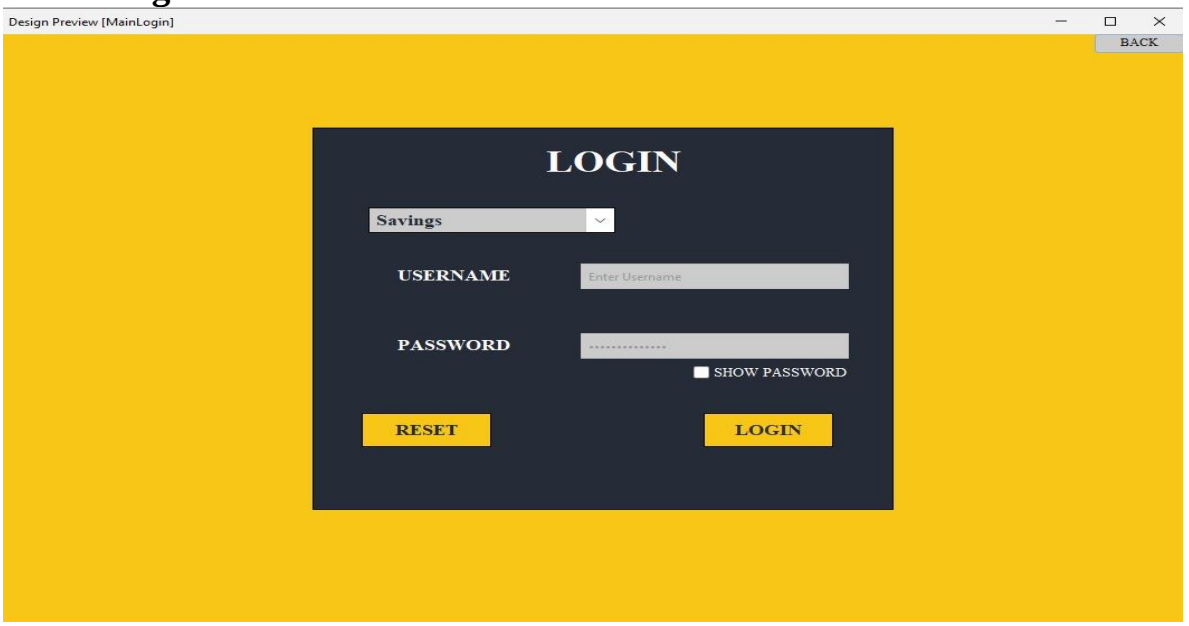


Fig 7.1: Login Page

Fig 7.1 allows users to access their accounts by entering their username and password. They can choose between a savings account or current account.

Login Page:

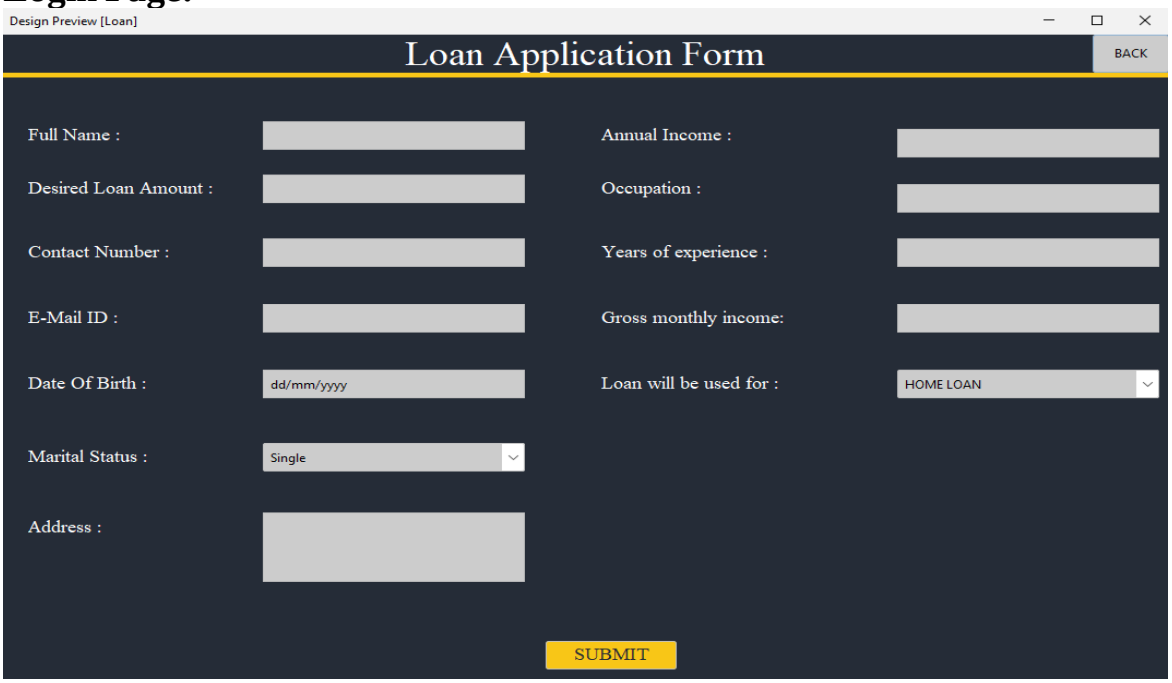


Fig 7.2: Loan Application Form

Fig7.2, Loan Application Form collects key personal and financial details, including loan amount, income, occupation, and loan purpose, with dropdowns for marital status and usage.

Register:

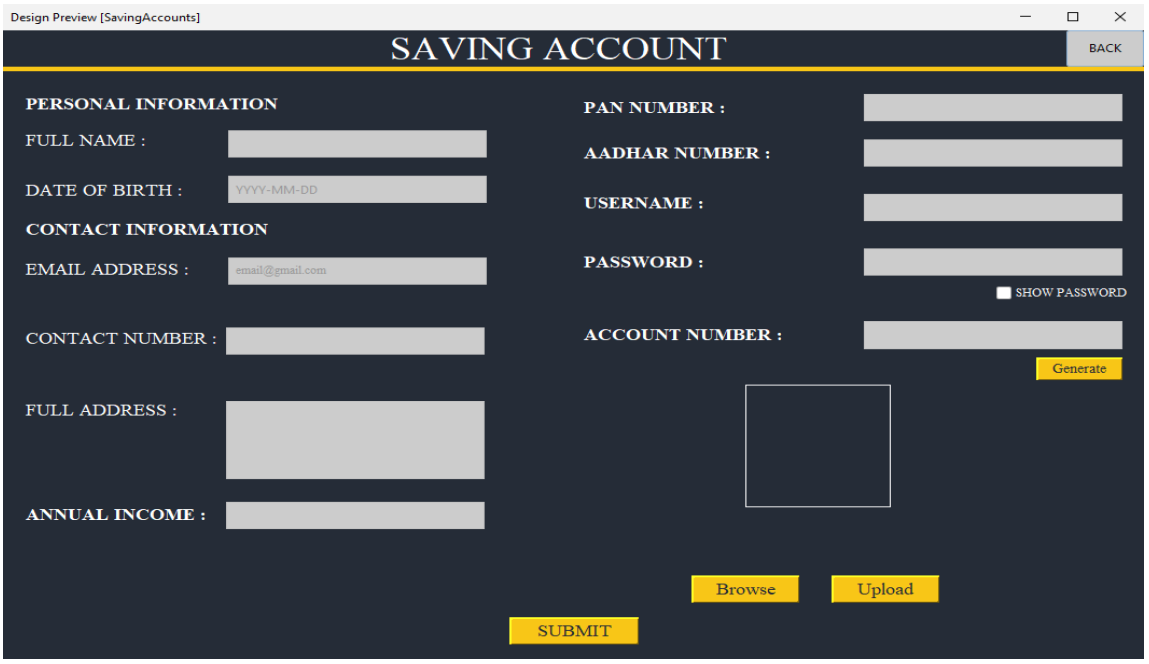


Fig 7.3: Register

Fig 7.3 it is a savings account registration form that collects personal details, including name, date of birth, etc. Users create a username and password, enter their account number, address, and annual income, and can upload documents before clicking the "Submit" button.

Bill Payments:

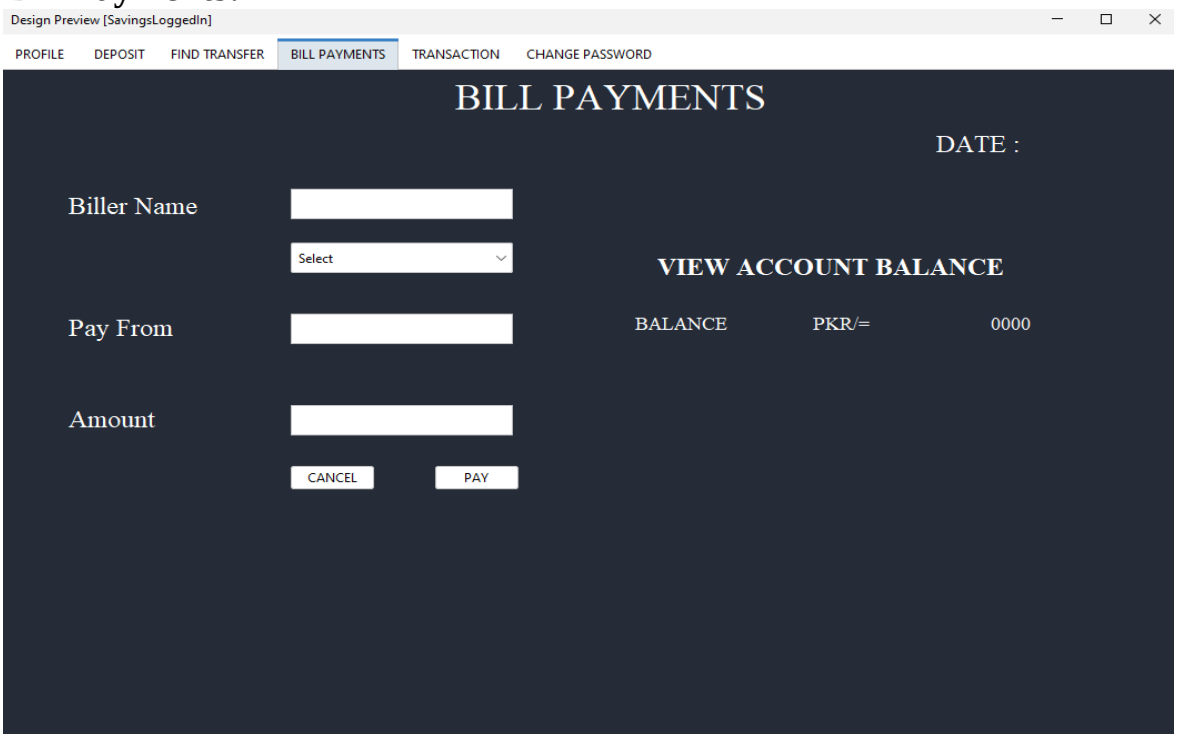


Fig 7.4: Bill Payments

The fig 7.4, bill Payments interface allows users to select a biller, specify the payment account, and enter the amount. It displays the current account balance and includes options to cancel or proceed with the payment.

Chapter 8
Conclusion

The Bank Account Management System project has been designed to address the evolving needs of customers in the banking sector by providing a comprehensive, user-friendly platform that simplifies and enhances the banking experience. This project is grounded in the recognition of common challenges faced by users of traditional banking systems, such as inconvenient branch visits, limited operational hours, and complex manual processes. By leveraging technology, this system aims to create a more efficient and accessible banking environment for all users, including those in remote areas and individuals who may not be tech-savvy.

In summary, the Bank Account Management System project not only addresses the fundamental needs of modern banking users but also enhances their overall experience by focusing on convenience, accessibility, and user empowerment. By integrating innovative solutions into traditional banking processes, this system aims to improve customer satisfaction and engagement while paving the way for a more inclusive and efficient banking environment. As the banking landscape continues to evolve, this project serves as a pivotal step toward a more connected and user-centric financial future.

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