A
Mini Project Report
On

"Bank Management System"

Submitted in partially fulfilment for the requirement for the award of the degree of

Bachelor of Technology

in

Computer Science & Engineering

Submitted by
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Department of Computer Science & Engineering

UNITED ISTITUTE OF TECHNOLOGY (284)

(Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)

Session-2024-2025

Vision of the Department

To be a center of excellence in the field of Computer Science and Engineering for producing talented engineers to ethically serve constantly changing needs of society and industry throughout their career and life.

Mission of the Department

M1. Accomplish excellence with committed faculty by providing theoretical foundation and practical skills for solving complex engineering problems in the state-of-the-art trends in Computer science and allied disciplines.

M2. To foster skills and competency, generating novel ideas, entrepreneurship and model creations focused towards deep knowledge, interpersonal skills and leadership.

M3. To develop habitude of research among faculty and students in the area of Computer Science & Allied disciplines by providing the desired environment, for addressing the needs of industry and society.

M4. To mould the students with ethical principles in thoughts, expression and deeds.

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Chapter-1
Introduction

The Java **Bank Management System** is a robust and user-friendly application designed to streamline essential banking operations, offering a convenient platform for users to manage their accounts securely. This project leverages Java, AWT, Swing, and Oracle Database technologies to create a basic yet functional banking system.

Purpose and Significance:

In today's fast-paced digital era, the need for efficient and accessible banking services has become paramount. The Java Bank Management System addresses this need by providing a simple and intuitive platform for users to perform fundamental banking tasks. From account creation to balance inquiries, the system offers a range of features that cater to the basic requirements of users, ensuring a seamless banking experience.

Key Objectives:

The primary objectives of the Java Bank Management System are:

1. **User Authentication:** Ensure secure access to the system through a reliable and straightforward authentication process.
2. **Account Management:** Facilitate the creation, modification, and retrieval of user account information.
3. **Transaction Processing:** Enable users to perform transactions, including withdrawals and deposits, while ensuring the accuracy of account balances.
4. **User Interface:** Provide a user-friendly graphical interface using AWT and Swing, allowing for easy navigation and interaction.
5. **Data Storage:** Utilize Oracle Database for efficient and secure storage of user data, accounts, and transaction records.

Features Overview

The Java Bank Management System incorporates a range of features to meet the banking needs of its users:

1. **Login:** Secure authentication process to ensure only authorized users can access the system.
2. **Create Account:** User-friendly account creation process capturing essential information and integrated with Oracle DB for data storage.
3. **Update Profile:** Allows users to modify their personal information, ensuring accuracy and relevance.
4. **Withdraw Balance:** Secure withdrawal functionality, verifying account balance before processing transactions.
5. **Deposit Balance:** Simple and efficient deposit process updating account balance in real-time.
6. **Check Balance:** Provides users with real-time access to their current account balance.
7. **Signout:** Enables secure logout, enhancing system security.

Technologies Used:

The Java Bank Management System is built on a foundation of key technologies:

1. **Java:** The core programming language providing the backbone of the application.
2. **AWT and Swing:** Utilized for creating a graphical user interface that is both functional and user-friendly.
3. **Oracle Database:** Employed for efficient and secure data storage and retrieval.

Target Audience.

This project is designed to cater to individuals seeking a straightforward and accessible solution for their banking needs. Whether it's creating a new account, updating personal information, or performing routine transactions, the Java Bank Management System aims to provide a reliable and user-friendly interface for a diverse user base.

Chapter-2
Requirement

Software.

- **Java Development Kit (JDK):** To compile and run Java code.
- **Integrated Development Environment (IDE):** Such as Eclipse or IntelliJ IDEA for code development.
- **Oracle Database:** For local data storage and retrieval.

Hardware:

- **Standard PC/Laptop:** With sufficient processing power and memory to support the development environment.
- **Local Database Server:** Can be installed on the development machine for testing and development purposes.
- **Display:** A standard display for UI design and testing.

Chapter-3

Conceptual Background

Conceptual understanding outlines the system architecture, key concepts, flow of operations, and the significance of the Java Bank Management System.

System Architecture

The Java Bank Management System follows a three-tier architecture:

1. Presentation Layer (Client):

- Implemented using AWT and Swing for the graphical user interface. - Manages user interaction, input validation, and screen navigation.

2. Application Layer (Server): - Contains Java code handling user authentication, account management, and transactions. - Communicates with the database for data retrieval and storage.

3. Data Layer (Database):

- Utilizes Oracle Database for storing user information, account details, and transaction records.
- Ensures data integrity through well-defined tables and relationships.

Key Concepts

1. User Authentication: - Validates user credentials during login using basic username and password validation.

2. Account Management:- Involves creating accounts, updating user profiles, and handling account-related transactions.

3. Transaction Processing:- Implements secure withdrawal and deposit functionalities, ensuring accurate updates to account balances.

4. Graphical User Interface (GUI): - AWT and Swing facilitate the creation of a user-friendly interface for seamless interaction.

5. Data Storage and Retrieval:- Oracle Database serves as the backend for efficient and secure storage and retrieval of user and transaction data**.**

Flow of Operations

1. User Authentication Flow:

- Users log in securely, with the system verifying credentials against stored data.

2. Account Management Flow:

- Users create accounts, update profiles, and perform other account-related operations.

3.Transaction Flow:

- Secure withdrawal and deposit transactions ensure accurate updates to account balances.

4.Graphical Interface Flow:

- AWT and Swing components provide an intuitive interface for users to navigate and interact with the system.

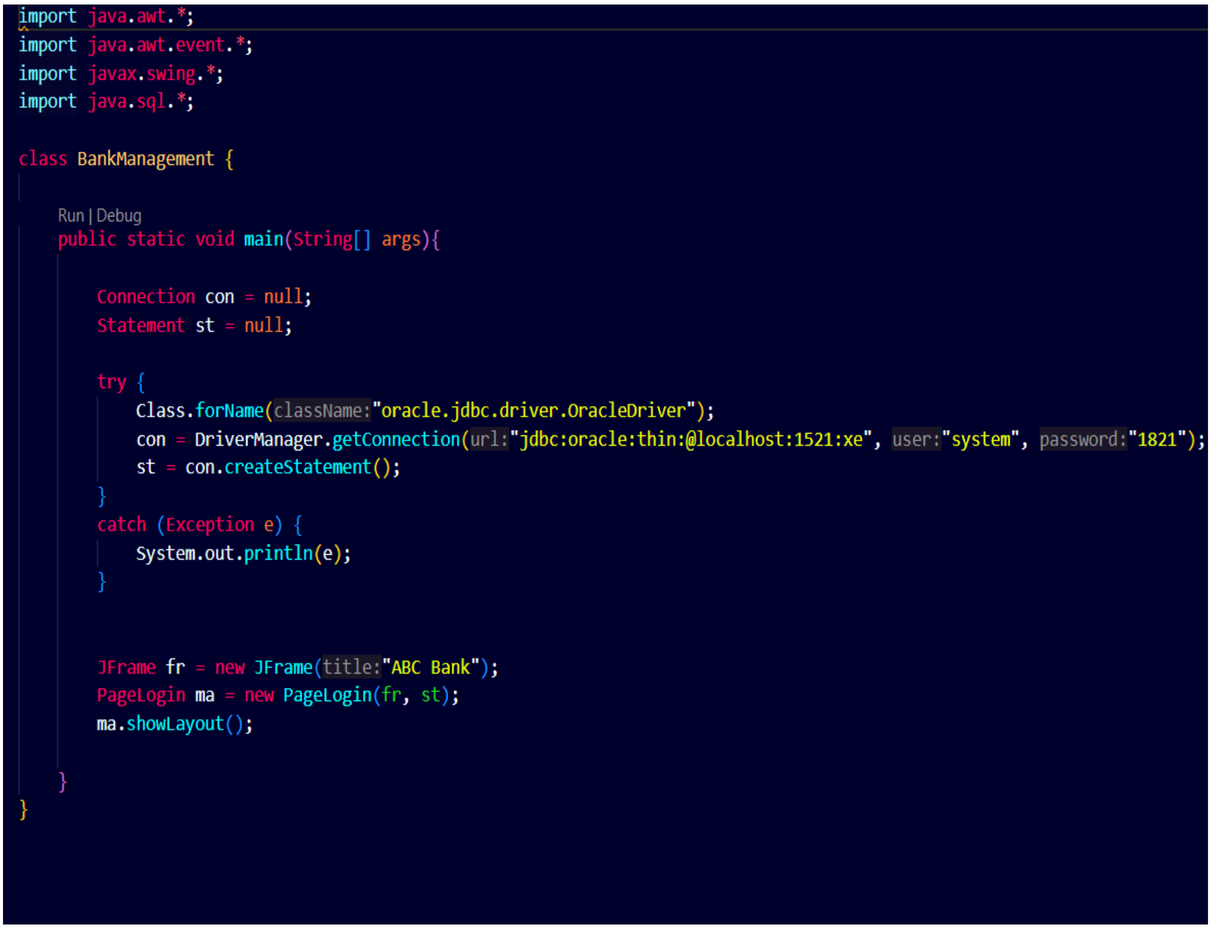
Project Significance

The Java Bank Management System caters to the fundamental banking needs of users by offering a secure, user-friendly, and cost-effective solution. Its significance lies in providing a basic yet efficient platform for account management and transactions, addressing the immediate requirements of users.

Understanding these key concepts and the system's flow of operations is essential for both developers and users to effectively utilize and appreciate the functionalities of the Java Bank Management System.

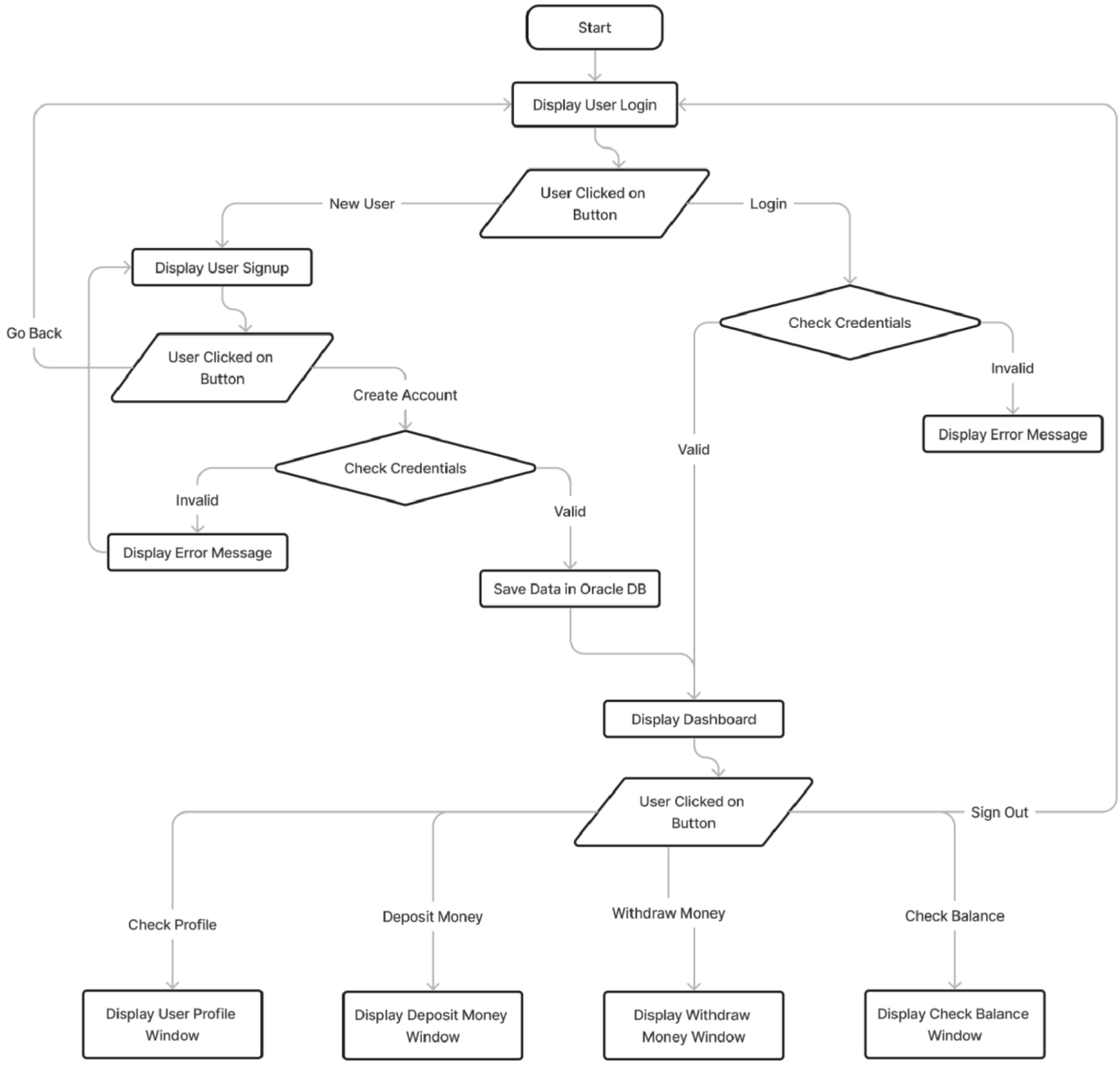
Chapter 3
Implementation

Coding:



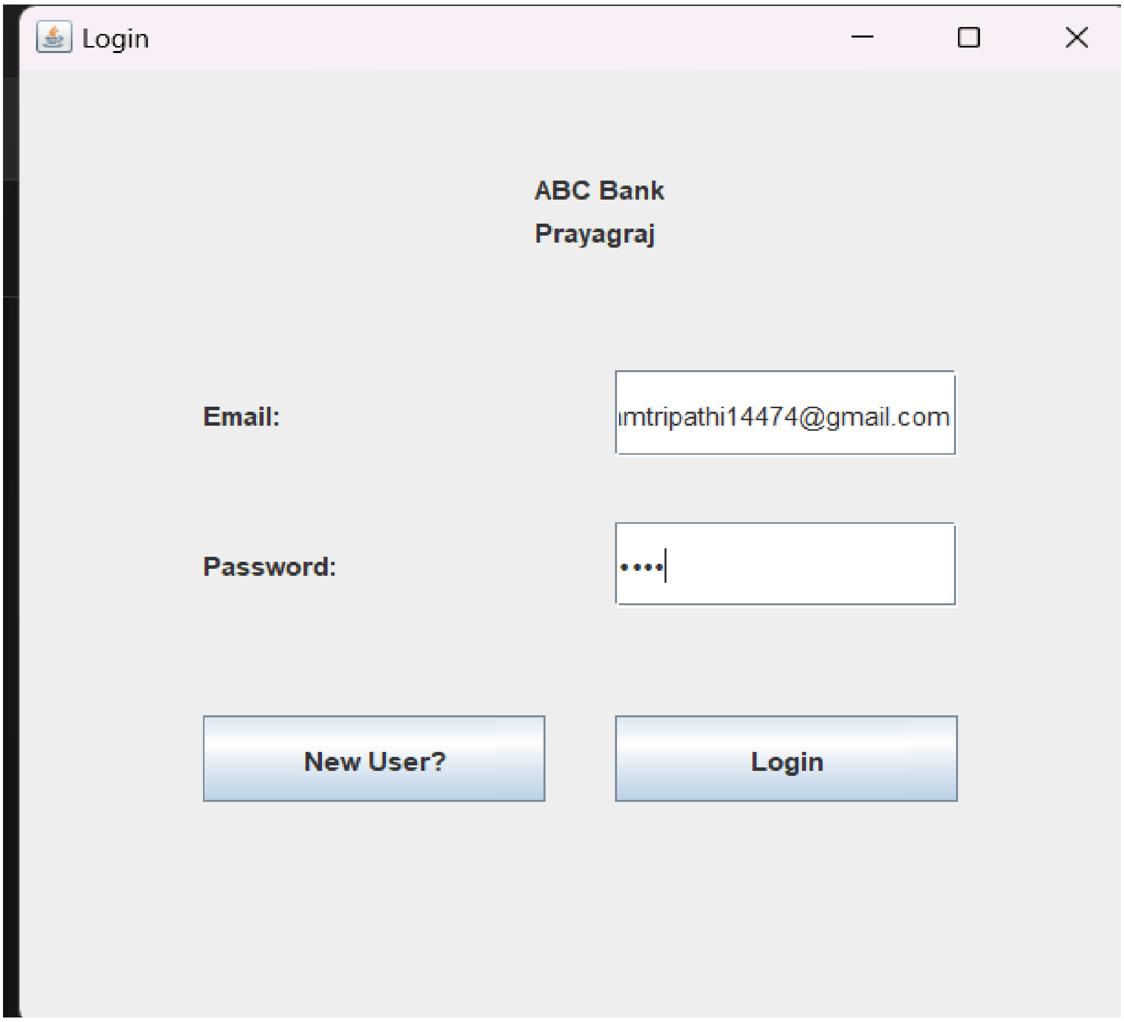
```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
import java.sql.*;

class BankManagement {

    Run | Debug
    public static void main(String[] args){

        Connection con = null;
        Statement st = null;

        try {
            Class.forName(className:"oracle.jdbc.driver.OracleDriver");
            con = DriverManager.getConnection(url:"jdbc:oracle:thin:@localhost:1521:xe", user:"system", password:"1821");
            st = con.createStatement();
        }
        catch (Exception e) {
            System.out.println(e);
        }


        JFrame fr = new JFrame(title:"ABC Bank");
        PageLogin ma = new PageLogin(fr, st);
        ma.showLayout();

    }
}
```

4.2 Flow Chart:



Chapter-5

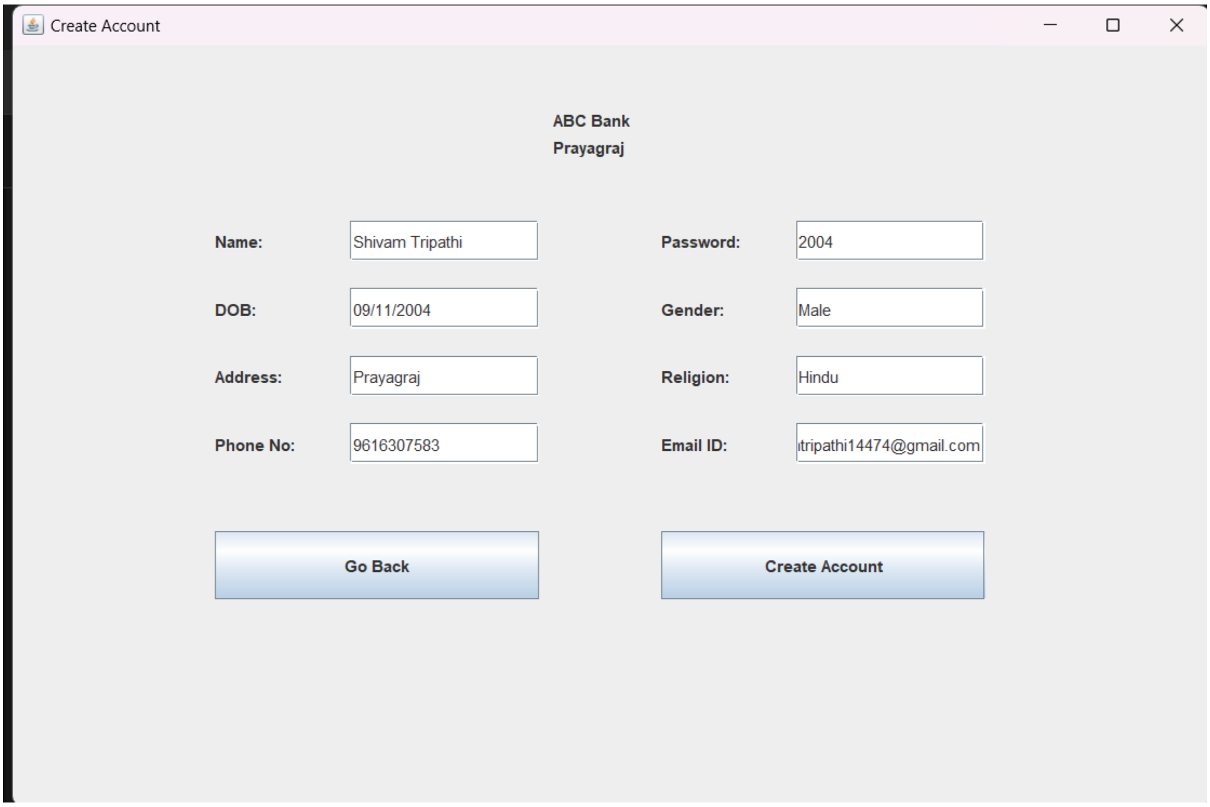
User Interfaces



Email: ımtripathi14474@gmail.com

Password: ••••

Fig:5.1 Login Page



Create Account

ABC Bank
Prayagraj

Name:	Shivam Tripathi	Password:	2004
DOB:	09/11/2004	Gender:	Male
Address:	Prayagraj	Religion:	Hindu
Phone No:	9616307583	Email ID:	tripathi14474@gmail.com

Fig:5.2 Create Account

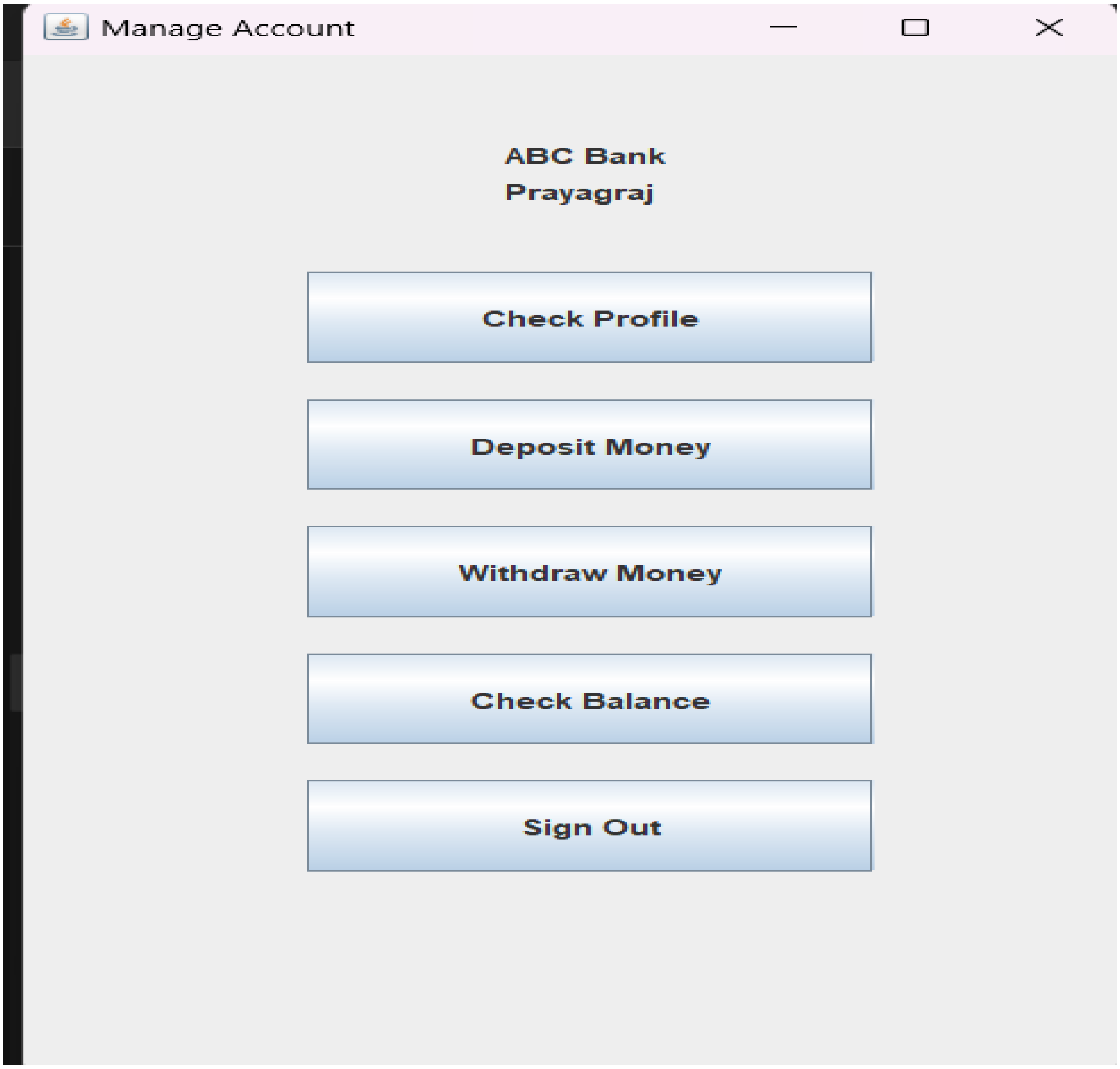
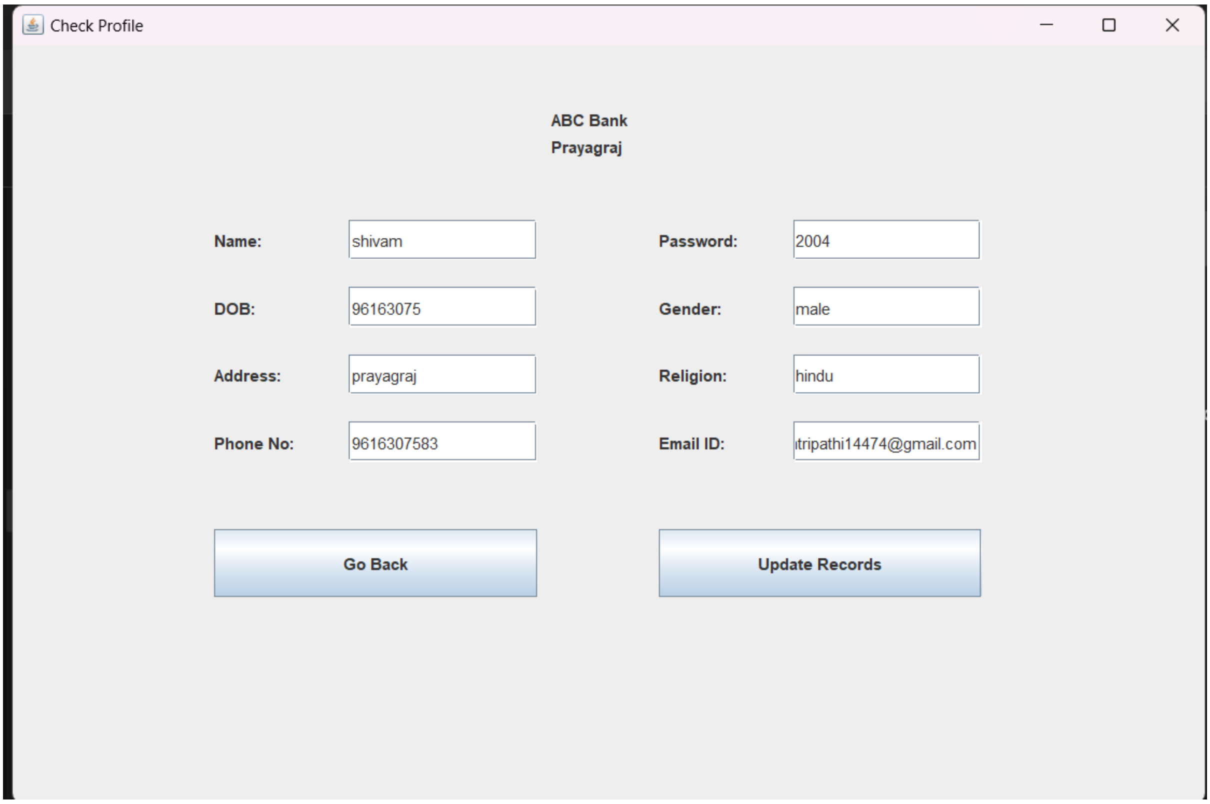


Fig:5.3 Manage Account



ABC Bank
Prayagraj

Name:	shivam	Password:	2004
DOB:	96163075	Gender:	male
Address:	prayagraj	Religion:	hindu
Phone No:	9616307583	Email ID:	ıtripathi14474@gmail.com

Fig:5.4 Profile

Chapter-6
Future Scope

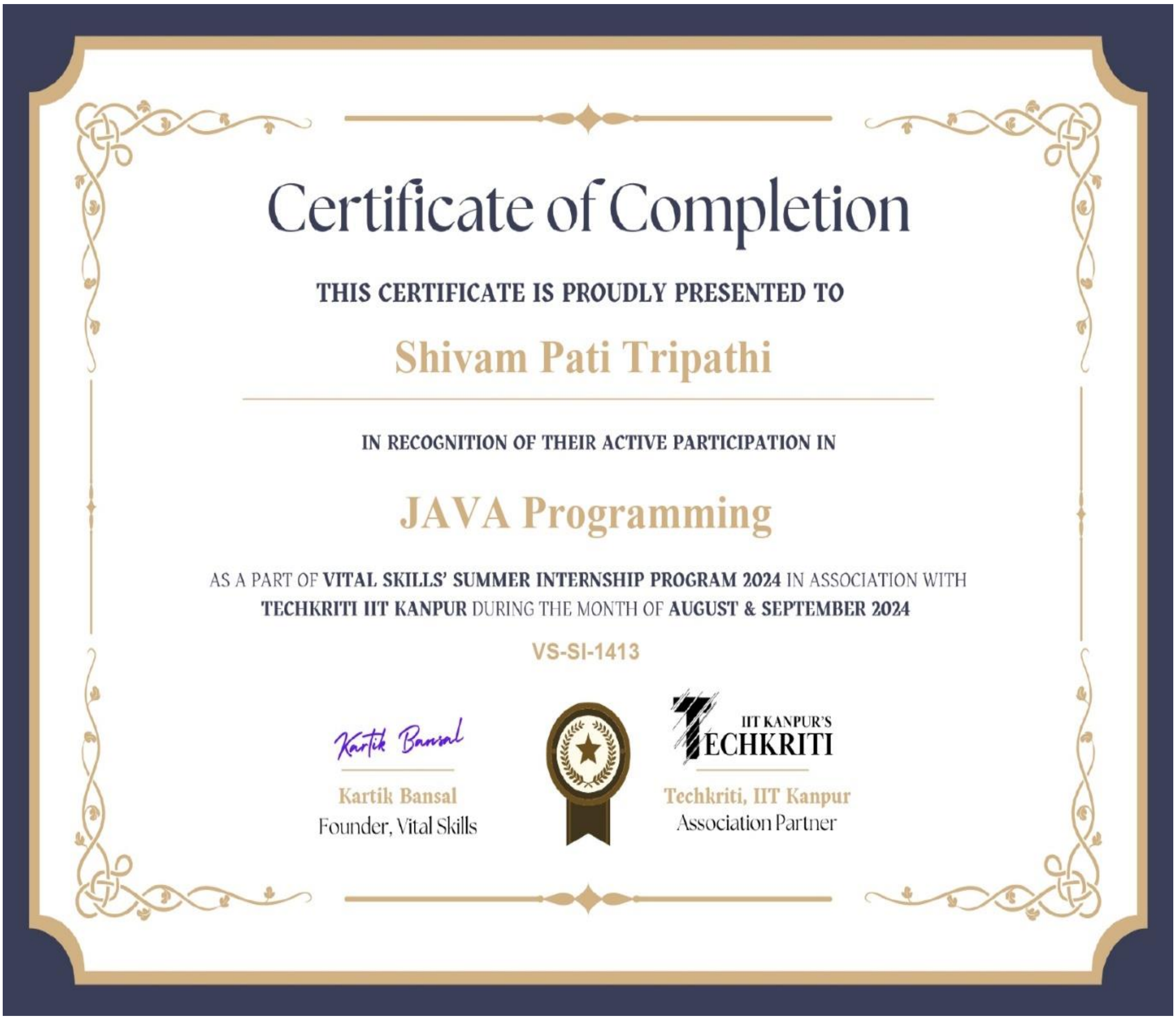
While the current iteration of the system is basic, it lays the groundwork for potential future enhancements and advanced features. The project's scope encompasses fundamental banking operations, offering room for growth and adaptation to meet the evolving requirements of users and the banking industry.

In the following sections, we will delve into the specific features, methodologies employed during development, limitations, and the future scope of the Java Bank Management System.

References:

- Javatpoint
- Studytonight
- Stackoverflow

Appendix:



Certificate of Completion

THIS CERTIFICATE IS PROUDLY PRESENTED TO

Shivam Pati Tripathi

IN RECOGNITION OF THEIR ACTIVE PARTICIPATION IN

JAVA Programming

AS A PART OF **VITAL SKILLS' SUMMER INTERNSHIP PROGRAM 2024** IN ASSOCIATION WITH **TECHKRITI IIT KANPUR** DURING THE MONTH OF **AUGUST & SEPTEMBER 2024**

VS-SI-1413

Kartik Bansal

Kartik Bansal
Founder, Vital Skills

IIT KANPUR'S
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Techkriti, IIT Kanpur
Association Partner