

PROJECT REPORT
ON
ONLINE BANKING
SYSTEM

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TO
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ABSTRACT

The Online Banking System is a secure web platform that allows customers to manage their bank accounts and perform financial transactions, such as checking balances, transferring money, and paying bills, from anywhere using the internet. It offers an easy-to-use interface, ensuring that users can access their banking services quickly and safely. The system uses strong security measures, like passwords, encryption, and real-time monitoring, to protect user data and transactions. By making banking services available online, it aims to make banking more convenient, improve customer satisfaction, and reduce the need for physical visits to the bank.

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INTRODUCTION

The Online Banking System is a digital platform that enables customers to perform various banking transactions and access financial services over the internet. This system eliminates the need for customers to visit a physical bank branch by providing a secure and convenient way to manage accounts, transfer money, pay bills, and access other banking services anytime and anywhere. With the rapid growth of internet usage and the increasing demand for digital financial solutions, online banking has become an essential service for banks to meet customer expectations and enhance overall user experience.

Objective

The primary objective of the Online Banking System is to provide a user-friendly and secure platform that allows customers to conduct banking activities remotely. This system aims to:

- Enhance customer convenience by enabling access to banking services 24/7.
- Improve operational efficiency for banks by reducing the need for in-person transactions.

Scope

The scope of the Online Banking System includes:

- **Account Management:** Enabling customers to view account balances, transaction histories, and manage multiple accounts.
- **Fund Transfers:** Facilitating secure and instant inter-bank fund transfers.

ANALYSIS AND DESIGN

The analysis and design of the Online Banking System involve understanding user requirements, defining system functionalities, and creating a detailed architecture that ensures security, efficiency, and scalability. This process covers various aspects, such as identifying the system's core components, designing the user interface, defining data flow, and ensuring robust security mechanisms.

System Analysis

1. Requirements Analysis:

User Requirements: Customers need a secure, easy-to-use platform to manage accounts, transfer funds, and perform other banking operations online. The system should be accessible via web.

Functional Requirements:

- User Authentication and Authorization: Secure login and multi-factor authentication.
- Account Management: Access to account details, transaction history, and statements.
- Fund Transfers: Intra-bank and inter-bank transfers, recurring payments, and international transfers.

Non-Functional Requirements:

- Security: Strong encryption, multi-factor authentication, and fraud detection.
- Performance: Fast response times, minimal downtime, and high availability.
- Scalability: Ability to handle a growing number of users and transactions.

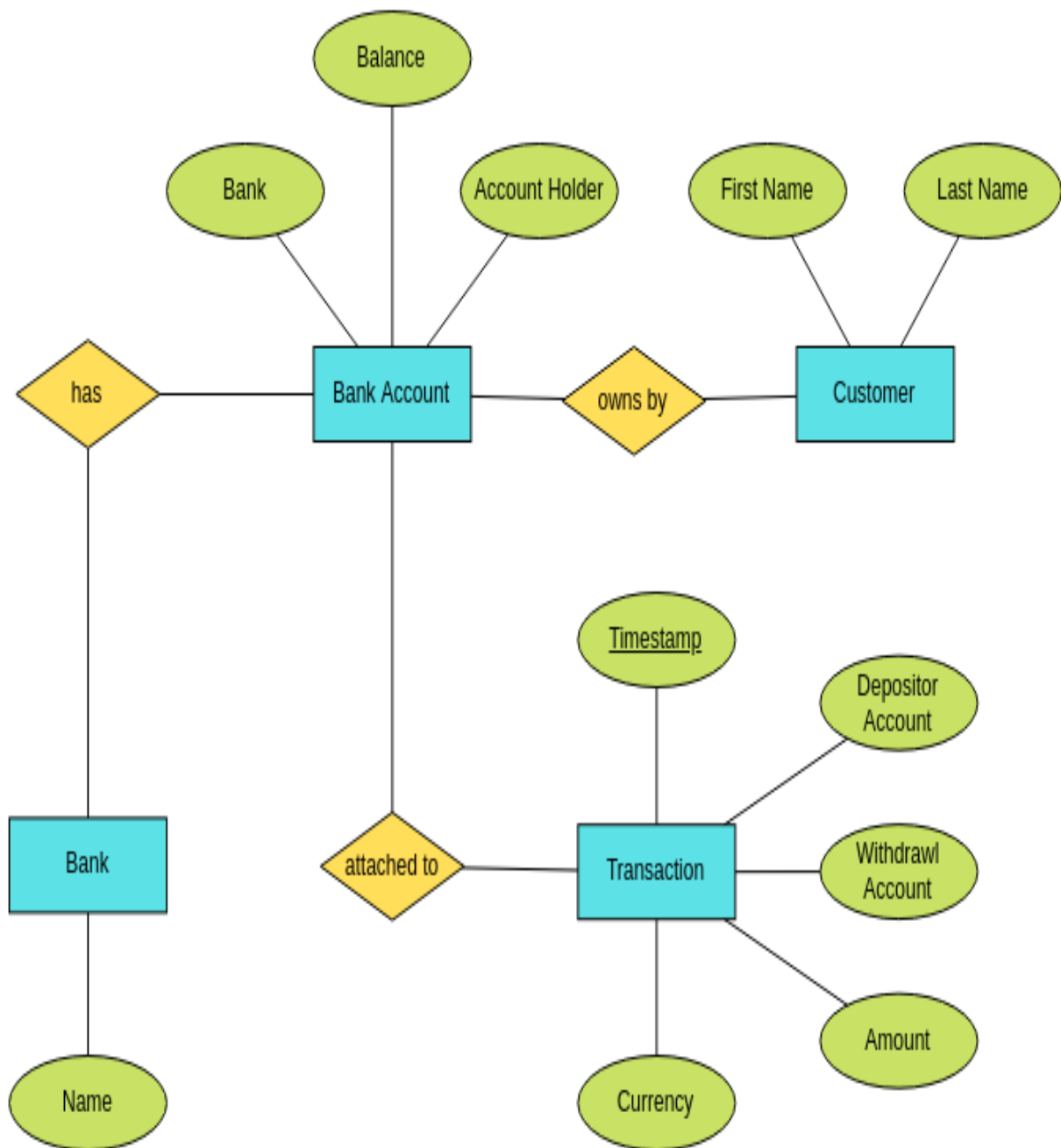
2.Database Design:

Entities and Relationships: Key entities include customers, accounts, transactions, payments, and support tickets.

Schema Design:

- Tables for Customers (Customer ID, Name, Contact Details)
- Tables for Accounts (Account Number, Account Type, Balance, Customer ID)
- Tables for Authentication (User ID, Password, Multi-Factor Details)

ER Diagram



METHODOLOGY

To develop an Online Banking System using Java Swing for the front-end, JDBC (Java Database Connectivity) for database communication, NetBeans IDE for coding and debugging, and MySQL as the database, a structured methodology is essential. This methodology follows a step-by-step approach to ensure a well-organized and efficient development process.

1. Requirement Gathering and Analysis

- **Define Functional Requirements:** List all necessary functionalities like user authentication, account management, fund transfers, bill payments, and customer support.
- **Define Non-Functional Requirements:** Set criteria for performance, security, scalability, and usability.
- **Identify Stakeholders:** Determine end-users (customers and bank staff) and other stakeholders (developers, testers, regulatory bodies).

2. System Design

- **Architecture Design:** Use a **three-tier architecture**:
 - Presentation Layer:** Java Swing for GUI development.
 - **Business Logic Layer:** Java classes to handle application logic and processing.
 - **Data Layer:** MySQL for storing and retrieving data.
- **Database Design:**
 - Design the schema using MySQL Workbench or directly in the MySQL server.
 - Define tables such as Customers, Accounts, Transactions, Payments, and Authentication.

- Establish relationships and constraints (primary keys, foreign keys).
- **UI/UX Design:**
 - Design the user interface using Java Swing components (JFrame, JPanel, JButton, JTextField, etc.).

3. Development Environment Setup

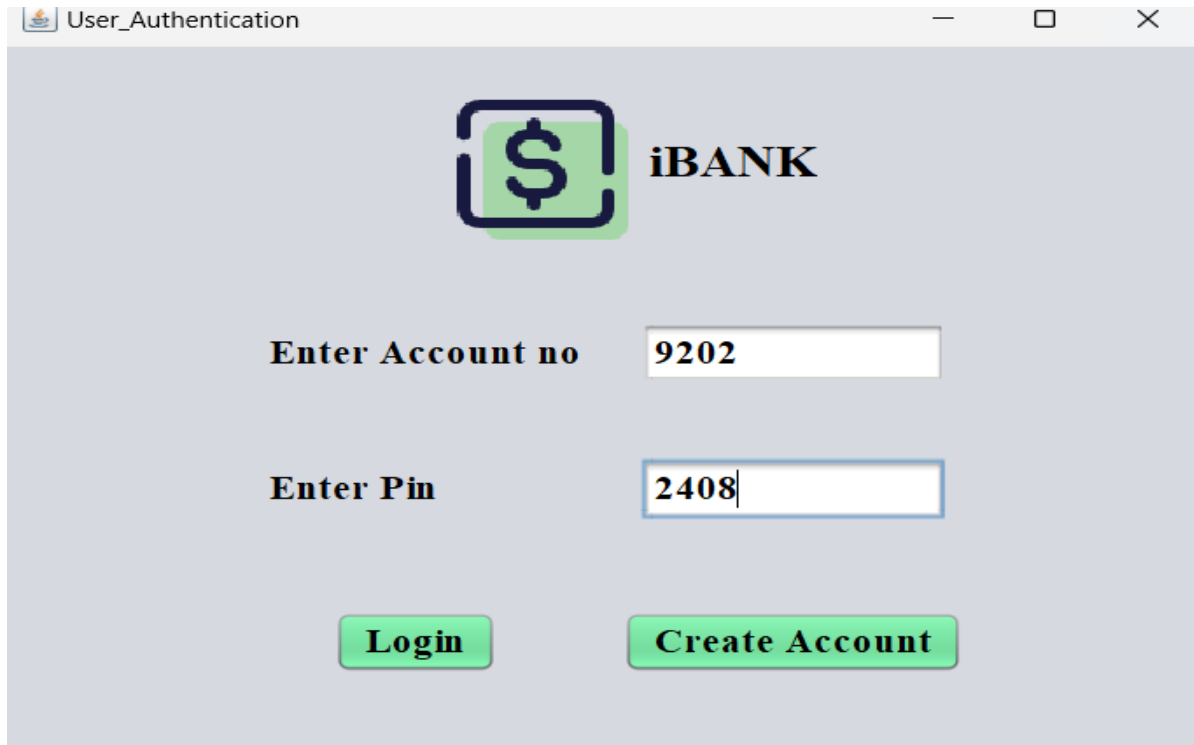
- **Install and Configure Tools:**
 - Install **NetBeans IDE** for Java development.
 - Set up **MySQL Server** and configure the database.
 - Install the **JDBC driver** to enable communication between Java and MySQL.
- **Configure Project in NetBeans:**
 - Create a new project in NetBeans and set up the Java Swing framework.
 - Add the JDBC library to the project to handle database connectivity.

4. Testing and Quality Assurance

- **Objective:** To ensure the system is reliable, secure, and performs as expected under various conditions.
- **Activities:**
 - **Unit Testing:** Test individual components and modules using JUnit to verify they function correctly.
 - **Integration Testing:** Test the integration between different components (UI, backend, database) to ensure seamless communication and data flow.
 - **System Testing:** Perform end-to-end testing to validate the complete functionality of the system.
 - **User Acceptance Testing (UAT):** Involve end-users to test the system in real-world scenarios and provide feedback.

RESULTS

1. User Authentication

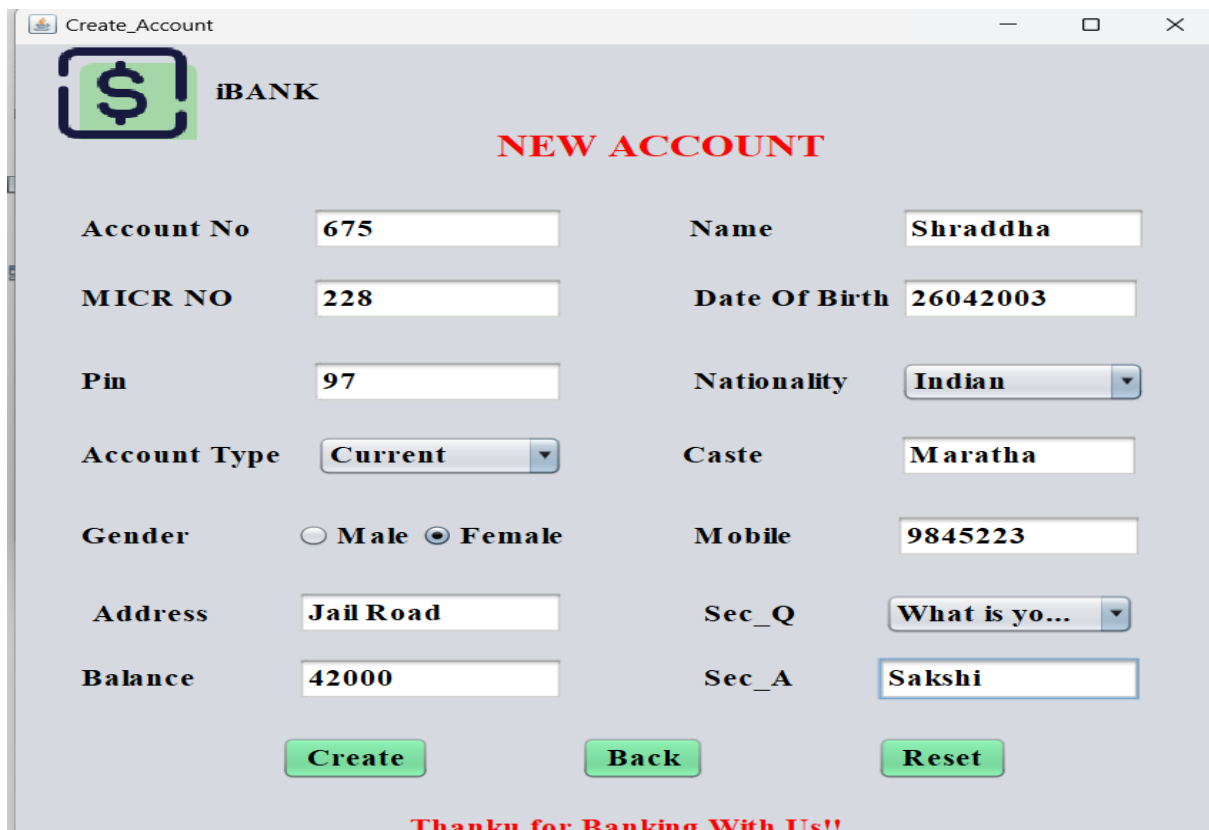


The 'User_Authentication' window displays the iBANK logo at the top. Below the logo, there are two input fields: 'Enter Account no' with the value '9202' and 'Enter Pin' with the value '2408'. At the bottom, there are two green buttons: 'Login' and 'Create Account'.

Field	Value
Enter Account no	9202
Enter Pin	2408

Buttons: Login, Create Account

2. Create Account



The 'Create_Account' window displays the iBANK logo at the top. Below the logo, the text 'NEW ACCOUNT' is shown in red. The form contains several fields for account creation, including Account No, MICR NO, Pin, Name, Date Of Birth, Nationality, Account Type, Caste, Gender, Mobile, Address, Sec_Q, Balance, and Sec_A. At the bottom, there are three green buttons: 'Create', 'Back', and 'Reset'. A red message 'Thanku for Banking With Us!!' is displayed at the very bottom.

Field	Value
Account No	675
MICR NO	228
Pin	97
Name	Shraddha
Date Of Birth	26042003
Nationality	Indian
Account Type	Current
Caste	Maratha
Gender	<input type="radio"/> Male <input checked="" type="radio"/> Female
Mobile	9845223
Address	Jail Road
Sec_Q	What is yo...
Balance	42000
Sec_A	Sakshi

Buttons: Create, Back, Reset

Thanku for Banking With Us!!

3.Profile

Home

\$

iBANK

User

Shraddha

Click Here

Date

3-9-2024

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance

Change Pin

About

Profile

Name

Shraddha

Account No

675

Date of Birth

26042003

Account type

Current

Nationality

Indian

Caste

Maratha

Gender

Female

Mobile

9845223

Address

Jail Road

Security Q

What is your nick name?

Edit

Save

4.Deposit

Home

\$

iBANK

User

Click Here

Date

3-9-2024

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance

Change Pin

About

Profile

User

Omkar

Search

Name

Omkar

Account No

9202

Available Balance

90000

Deposit Amount

1000

91000

Total

Deposit

Message


i

Amount Successfully Deposited

OK

5.Transfer

Home

 **iBANK**

User [Click Here](#)

Date

[Deposit](#) [Transfer](#) [Withdraw](#) [Customer List](#) [Transaction](#) [View Balance](#) [Change Pin](#) [About](#) [Profile](#)

User [Search](#)

Name

Account No


Availiable Balance

Transfer Amount [Total](#)

Credit Account

[Show](#) [Transfer](#)


Message

 Transferred Sucessfully

[OK](#)

6.Withdraw

Home

 **iBANK**

User [Click Here](#)

Date

[Deposit](#) [Transfer](#) [Withdraw](#) [Customer List](#) [Transaction](#) [View Balance](#) [Change Pin](#) [About](#) [Profile](#)

User [Search](#)

Name


Account No

Available Balance

Amount


Total [Show](#) [Withdraw](#)

Message

 Withdraw Sucessfully

[OK](#)

7.Customer List



User

Click Here

Date

3-9-2024

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance


Change Pin

About

Profile

Acc	Name	DOB	Acctype	Mobile
675	Shraddha	26042003	Current	9845223
742	Saurabh	14012002	Saving	2548528
1593	Ankita	24012002	Current	242309
9202	Omkar	8042000	Current	24356

8.Transaction



User

Click Here

Date

3-9-2024

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance

Change Pin


About

Profile

Acc	Name	MICR_NO	Balance
742	Saurabh	173	1000
9202	Omkar	574	90000

9.View Balance

Home

iBANK

User

Click Here

Date

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance

Change Pin

About

Profile

User

Search

Name

Account No

MICR NO

Rate Of Interest


Avaiable Balance

Mod Balance

Nomination Registered

10.Change Pin

Home

iBANK

User

Click Here

Date

Deposit

Transfer

Withdraw

Customer List

Transaction

View Balance

Change Pin

About

Profile


Enter Old Pin

Enter New Pin

Change


Reset

Message

Pin Changed Successfully

OK

11.About

**iBANK**


User

[Click Here](#)

Date

[Deposit](#) [Transfer](#) [Withdraw](#) [Customer List](#) [Transaction](#) [View Balance](#) [Change Pin](#) [About](#) [Profile](#)

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Email:ankitadhokane24@gmail.com
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Database

```
1 • Use bank_management;  
2  
3 • select *from create_account;  
4
```

Acc	Name	DOB	Pin	Acctype	Nationality	Caste	MICR_No	Gender	Mobile	Address	Sec_Q	Sec_A	Accbal
675	Shraddha	26042003	97	Current	Indian	Maratha	228	Female	9845223	Jail Road	What is your nick name?	Sakshi	42000
742	Saurabh	14012002	249	Saving	Indian	Maratha	173	Male	2548528	Road	What is your nick name?	saur	1000
1593	Ankita	24012002	589	Current	Indian	Hindu	911	Female	242309	Nashik	What is your nick name?	Anku	1000
9202	Omkar	8042000	2408	Current	Indian	Hindu	574	Male	24356	palse	What is Your mother's name?	Anjani	90000

Acc	Name	MICR_NO	Balance
742	Saurabh	173	1000
9202	Omkar	574	80000

Conclusion

The online banking system project has effectively achieved its core objectives by delivering a secure, user-friendly, and efficient platform for financial management. Through advanced encryption and multi-factor authentication, the system ensures robust security, protecting users' sensitive data and transactions. The intuitive interface enhances the user experience, making banking activities more accessible and convenient.

The impact of the online banking system extends beyond immediate user benefits, transforming traditional banking operations and reducing overall costs for the institution.

In summary, the project has set a strong foundation for ongoing development, demonstrating the potential for online banking systems to innovate and improve the financial sector.