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# Smart Banking With ATM System

Course Title: Database Management System  
Course Code: CSE2101

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# This presentation covers

- Smart Banking ATM System project,
- Detailing its purpose,
- Working process,
- Technology stack,
- Features,
- Architecture,
- Chalanges and Limitations,
- Future Plan of this Project.

# Project Overview

- ❑ A secure banking application developed in Java with MySQL
- ❑ User Authentication & Account Management
- ❑ Banking Transactions
- ❑ Database Integration
- ❑ Admin Functionality
- ❑ **Security Measures**

# Aim of the Project

- Enhance digital banking security and accessibility.
- Reduce manual workload in banking operations.
- Provide a user-friendly banking experience.



# Social and Economic Value

## The Benefits of Digital Banking



## The Convenience of Digital Banking



# Technologies Used



Java  
Programming  
Language for the  
Application Logic



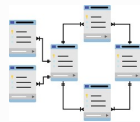
MySQL for  
Database  
Management



JDBC for  
Database  
Connectivity



IntelliJ IDEA /  
Eclipse IDE/ VS  
Code IDE



Entity Relationship  
for design database



Secure Authentication  
and Encryption  
Mechanisms

# Scope



Provides secure login and account management

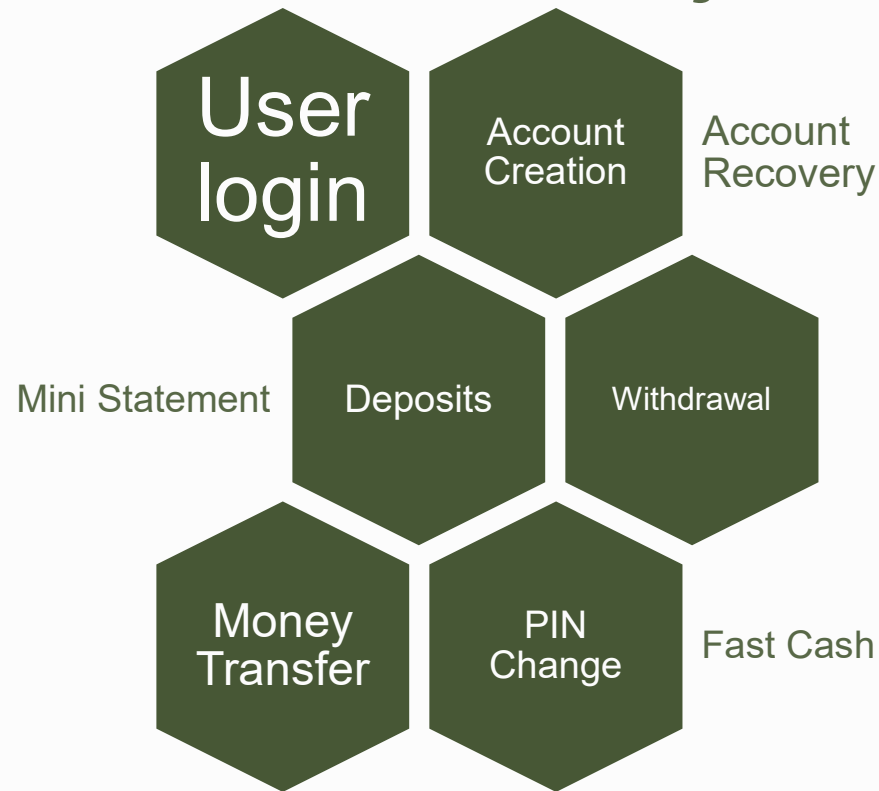


Enables fund transfers, deposits, and withdrawals



Admin can manage accounts and generate reports

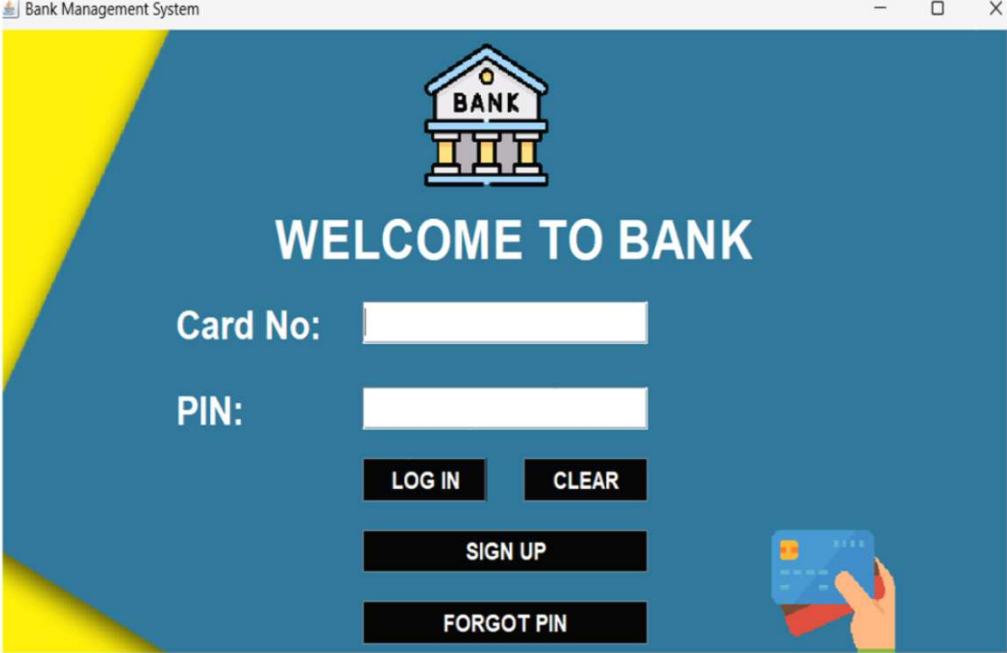
# Key Features of the Project





# Login Page

- ❖ Users can log in using their **Card Number** and **PIN**.
- ❖ New users can create an account by clicking the **Sign Up** button.
- ❖ If users forget their PIN, they can recover it easily.




The image shows a web browser window titled "Bank Management System". The page has a blue background with a yellow diagonal stripe on the left. At the top center is a bank icon with the word "BANK" on its pediment. Below the icon, the text "WELCOME TO BANK" is displayed in white. There are two input fields: "Card No:" and "PIN:". Below the "PIN:" field are four buttons: "LOG IN", "CLEAR", "SIGN UP", and "FORGOT PIN". In the bottom right corner, there is an illustration of a hand holding a blue credit card.

# Application Form for Create Account

New users must submit all required personal details before proceeding to the next page.

APPLICATION FORM

**APPLICATION FORM NO: 5990**  
Page 1  
Personal Details

Name :

doha

Father's Name :

doha sir

Date of Birth :

1

May

1992

Gender :

☒ Male ☐ Female ☐ Other

Email :

doha@gamil.com

Phone :

0178523695

Address :

Dhaka

NID :

1236487982

Passport :

1245679823


Occupation:

Salaried

Back

Next

Banking System Signup Page

 Form No : 5990  
Page 2 : Secure Details

Select Your Account Type :

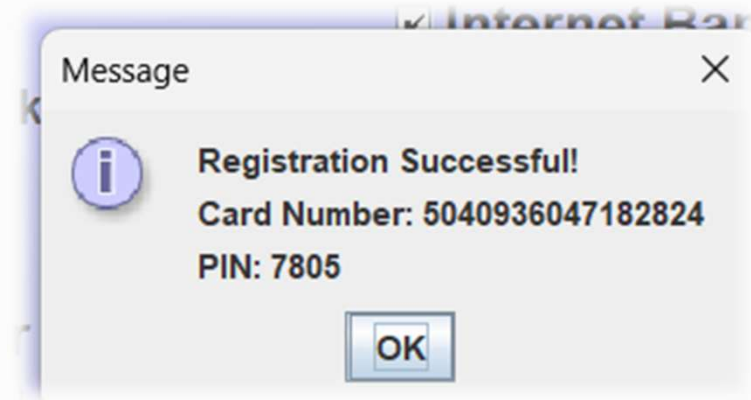
Select You Want Services :

<input checked="" type="checkbox"/> ATM CARD	<input checked="" type="checkbox"/> Internet Banking
<input checked="" type="checkbox"/> Mobile Banking	<input checked="" type="checkbox"/> POS/Online Shopping
<input checked="" type="checkbox"/> PayBill	<input checked="" type="checkbox"/> Mobile Wallet

Card Number :   
(your 16-digit Card number) (It would appear on ATM Card/Cheque Book and Statement)

PIN :   
(4-digit password)

☒ Above entered details are correct.



A **15-digit card number** and a **4-digit PIN** will be automatically generated upon submitting all required information.  
You can change your PIN anytime after opening the account.

# ATM Simulator

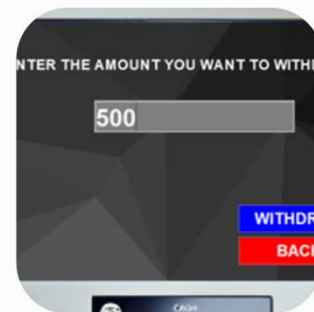


# Transactions and Account Management

Deposit



Withdraw



Fast Cash



# Transactions and Account Management

Transfer  
Money



TRANSFER MONEY TO ANOTHER ACCOUNT

Recipient Account Number :

Amount :

**TRANSFER**  
**BACK**

ATM screen for Transfer Money. The screen displays the title "TRANSFER MONEY TO ANOTHER ACCOUNT". Below the title, there are two input fields: "Recipient Account Number :" and "Amount :". At the bottom, there are two buttons: "TRANSFER" (blue) and "BACK" (red). The screen is part of an ATM interface with a card slot and a keypad at the bottom.

Balance  
Enquiry



Your Current Account Balance is:  
Tk. 1000.00

**BACK**

ATM screen for Balance Enquiry. The screen displays the title "Your Current Account Balance is:". Below the title, it shows the balance "Tk. 1000.00". At the bottom, there is a "BACK" button (red). The screen is part of an ATM interface with a card slot and a keypad at the bottom.

PIN Change



CHANGE YOUR PIN

NEW PIN:

CONFIRM PIN:

**CHANGE**  
**BACK**

ATM screen for PIN Change. The screen displays the title "CHANGE YOUR PIN". Below the title, there are two input fields: "NEW PIN:" and "CONFIRM PIN:". At the bottom, there are two buttons: "CHANGE" (blue) and "BACK" (red). The screen is part of an ATM interface with a card slot and a keypad at the bottom.

# Bank Statement

Account holders can easily view their complete transaction history and access detailed **bank statements** for better financial tracking.

The screenshot shows a software window titled "GS Bank Mini Statement". It displays a card number and a list of transactions. The transactions are as follows:

Date	Time	Transaction Type	Amount	Description
2025-02-11	23:28:49	Deposit	Tk. 1000.0	Cash depos
2025-02-11	23:30:46	Withdraw	Tk. 500.0	ATM Withdr
2025-02-11	23:31:12	Deposit	Tk. 5.0	Cash deposit
2025-02-11	23:31:46	Deposit	Tk. 50454.0	Cash depo
2025-02-11	23:31:55	Withdraw	Tk. 500.0	ATM Withdr

Below the table, there is a horizontal scrollbar. At the bottom of the window, it states "Your Total Balance is Tk. 50459.0" and includes an "Exit" button.



# Security Features

Security is paramount

- involving measures like user authentication via PINs,
- encryption of sensitive data,
- and monitoring for fraudulent activities to protect user accounts.

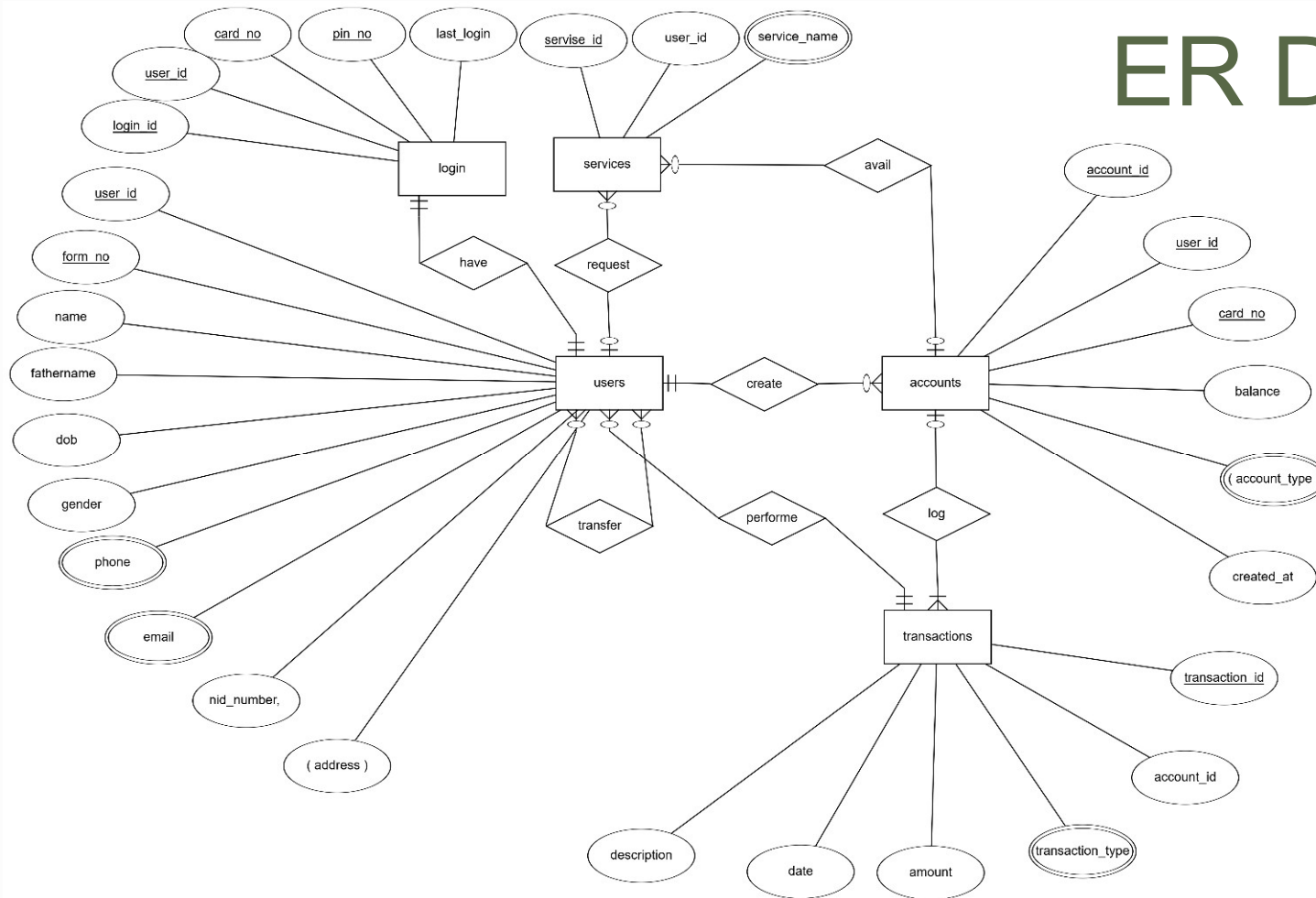


# Database Structure

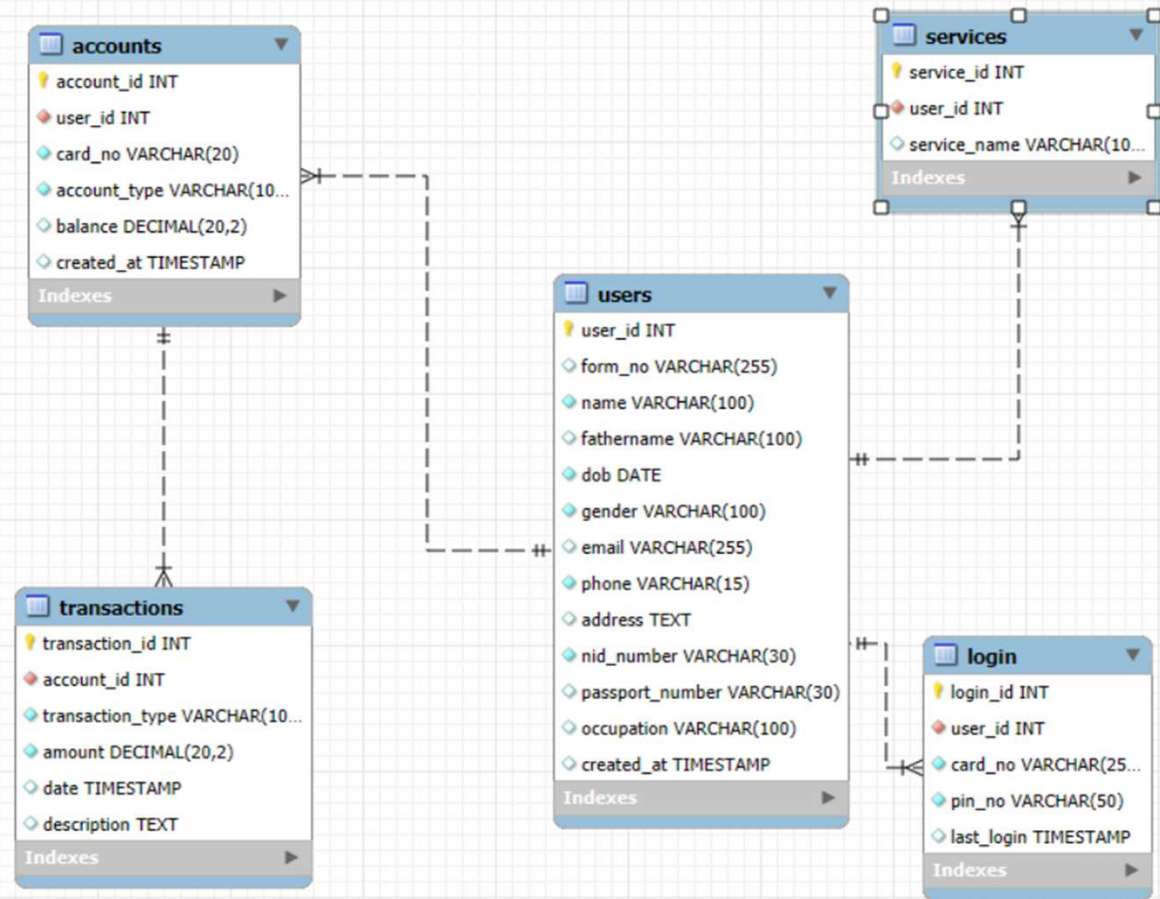
The database is structured to handle user data, transaction records, and account information efficiently, allowing for quick access and security features.



# ER Diagram




# Schema Diagram





# Challenges Faced


Key challenges included ensuring data security,  
managing transaction concurrency,  
and user interface design.





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# Limitations

- Currently designed for desktop applications only.
  - Limited to basic banking functionalities.
  - Requires internet access for database connectivity.
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# Future Enhancements

- Mobile banking integration.
  - Multi-factor authentication for enhanced security.
  - AI-powered fraud detection system.
  - Advanced analytics for banking insights.
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# Project Demonstration

- Live demonstration of login, transactions, and fund transfers.
- Database operations and security implementations.
- Future roadmap and potential upgrades.





## Conclusions

The Smart Banking ATM System effectively automates banking processes through a user-friendly interface and robust security features, demonstrating significant advancements in banking technology.





25

THANK  
YOU  
EVERYONE