

ATM Simulator System — Project Specifications

Project Title

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ATM Simulator System

Purpose

To simulate core ATM functionalities in a secure, GUI-based Java application using Swing and JDBC. It allows users to create accounts, log in, and perform banking operations like deposits, withdrawals, balance checks, and PIN changes.

Technologies Used

Layer	Technology
Frontend	Java Swing (GUI)
Backend	Java JDBC
Database	MySQL
Build Tool	Apache Ant / NetBeans
External Libs	JCalendar (for date picker)

Database Schema

1. signup

Stores personal details from Signup page 1.

Column	Type
formno	VARCHAR
name	VARCHAR
fname	VARCHAR
dob	VARCHAR
gender	VARCHAR
email	VARCHAR
marital	VARCHAR
address	VARCHAR

Column	Type
city	VARCHAR
pincode	VARCHAR
state	VARCHAR

2. signup2

Stores additional details (education, occupation, etc.).

3. signup3

Stores account type, services, card number, and PIN.

Column	Type
formno	VARCHAR
accountType	VARCHAR
cardno	VARCHAR
pin	VARCHAR
services	VARCHAR

4. login

Stores card number and PIN for authentication.

Column	Type
cardno	VARCHAR
pin	VARCHAR

5. bank

Stores all transactions.

Column	Type
pin	VARCHAR
date	DATETIME
mode	VARCHAR ("Deposit", "Withdrawal", etc.)
amount	INT

Modules and Features

Module	Description
Signup	Multi-step account creation with personal, educational, and account details.
Login	Authenticates users via card number and PIN.

Module	Description
Transactions	Main menu for all banking operations.
Deposit	Adds money to account and logs transaction.
Withdrawal	Withdraws money with balance check and logs transaction.
FastCash	Quick withdrawal of preset amounts.
BalanceEnquiry	Displays current account balance.
MiniStatement	Shows recent transactions.
PinChange	Allows users to change their PIN securely.

Security Considerations

- PIN and card number stored securely (not encrypted in current version — future improvement).
 - SQL injection risk mitigated using PreparedStatement.
 - Input validation for numeric fields and empty values.
 - Max withdrawal limit enforced (e.g., ₹10,000).
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Testing Checklist

- [] Signup flow stores correct data.
 - [] Login accepts valid credentials and rejects invalid ones.
 - [] Deposit updates balance and logs transaction.
 - [] Withdrawal checks balance and enforces limits.
 - [] FastCash works with preset amounts.
 - [] BalanceEnquiry shows accurate balance.
 - [] MiniStatement lists recent transactions.
 - [] PinChange updates PIN across all relevant tables.
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Deployment Notes

- Requires MySQL server running with bankmanagementsystem database.
- JCalendar JAR must be added to project libraries.
- Run via NetBeans or Ant (ant clean jar).
- GUI is undecorated and full-screen for ATM-like experience.