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# School of Computer Science and Engineering

## Department of Computer Engineering and Technology (DCET)

### Mini Project in Java Panel-C

**PC - 12 - KRISHNA HITNALIKAR (1032221979)**

**PC - 15 - RAJAT DESHPANDE (1032222074)**

**PC - 19 - SARVESH MAHAJAN (1032222104)**

**PC - 18 - YOGESH FAWADE (1032222097)**

**Faculty-  
Prof. Ranjana Agarwal**

# Problem Statement & Proposed Solution

## Problem Statement:

Banks deal with vast amounts of sensitive customer data and multiple interaction points between staff and customers. Traditional methods of handling customer relations lack.

- Centralized customer data management.
- Real-time updates from core banking systems.
- Secure tracking of communication and appointments.
- In-depth reporting and regulatory compliance.

# Problem Statement & Proposed Solution

## Proposed Solution:

We propose a secure, Java-based CRM Tool tailored for banking that:

- Manages customer profiles and banking details securely.
- Integrates with databases using JDBC for real-time updates.
- Ensures security with role-based access.
- Support ticket tracking and solving issues.
- Improve service delivery and user experience through intuitive UI.

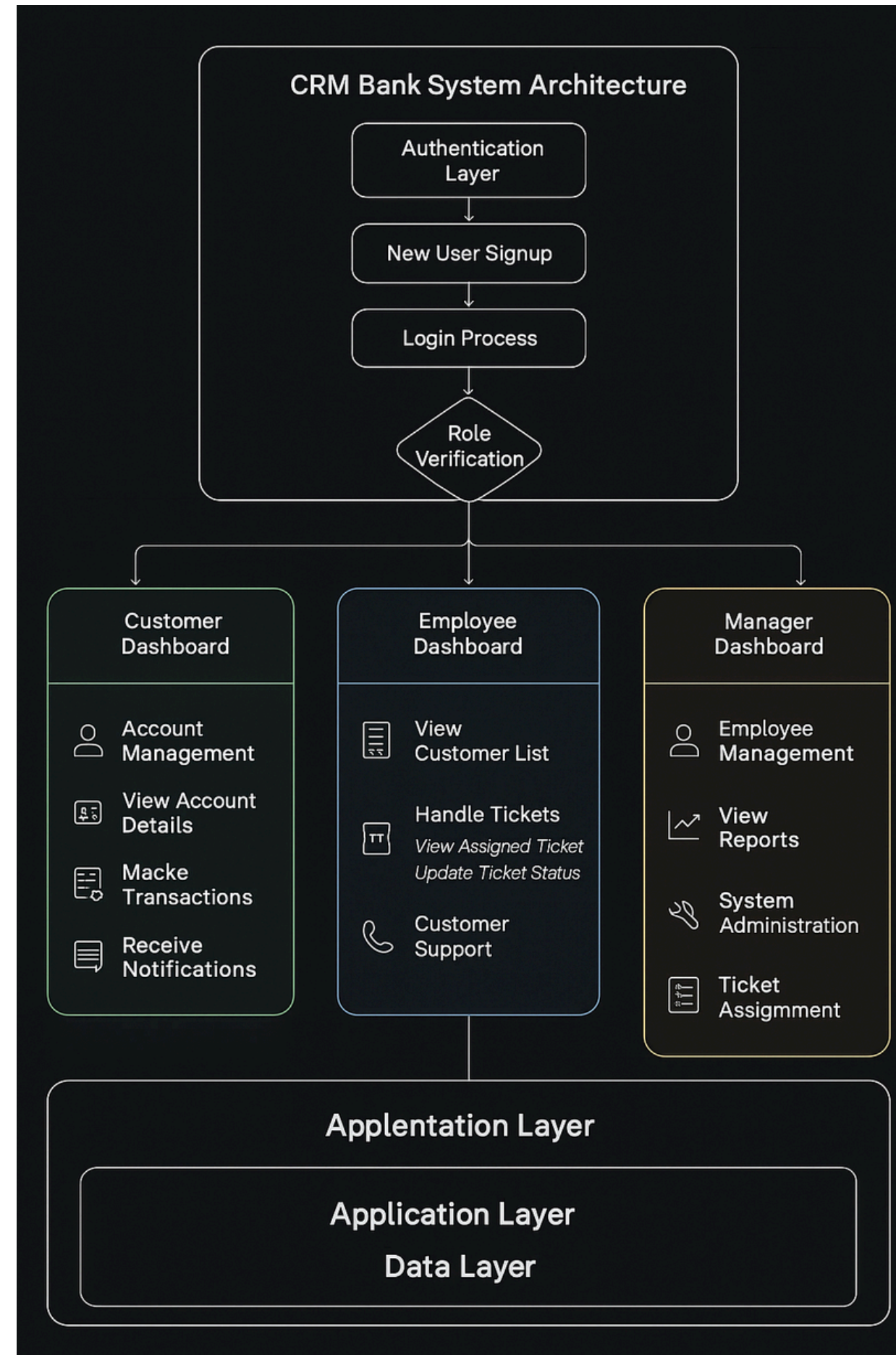
# Technical Stack with Reasoning

## JEPS Stack

Layer	Technology Used	Reasoning
UI Layer	Java AWT & Swing	Lightweight and suitable for desktop-based banking tools.
Middleware	Core Java	Eliminates dependencies on external frameworks; ensures portability.
Database Access	JDBC API + MySQL Connector/J	Enables direct interaction with MySQL using SQL and prepared statements.
Database	MySQL	Reliable, open-source, widely used in banking systems.
Logging	Java java.util.logging / Log4j	Captures system activities for audit trails and debugging.

# Process Flow Diagram of the System

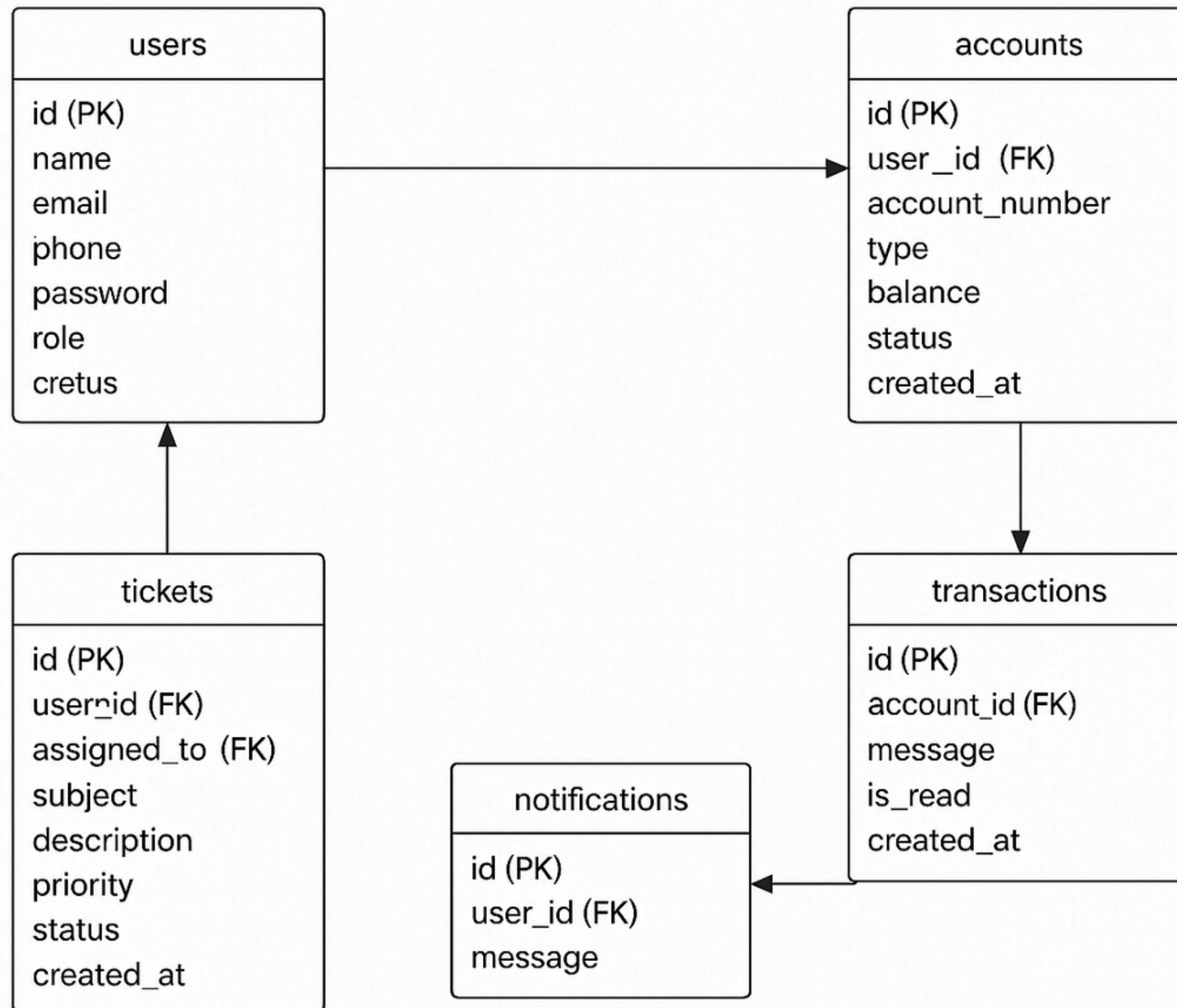
## System Overview-





# Process Flow Diagram of the System

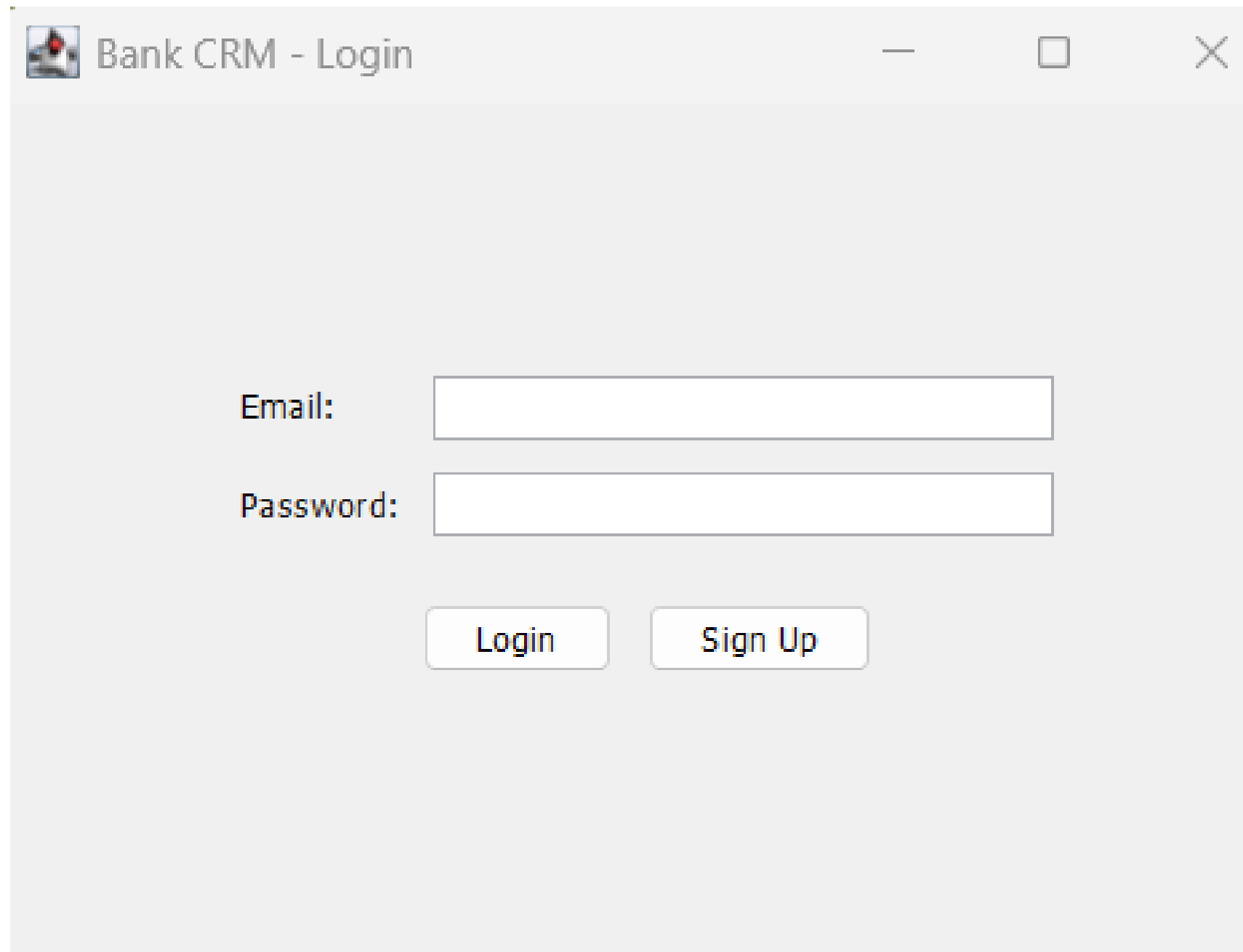
## Database Overview-





# Working Demo

## Application Start (Login) -



A screenshot of a web application login window titled "Bank CRM - Login". The window has a light gray background and a standard window title bar with a minimize button, a maximize button, and a close button. The login form is centered and consists of two input fields: "Email:" and "Password:". Below the input fields are two buttons: "Login" and "Sign Up".

Email:

Password:

# Database Connection -

```
Console ×
Main (8) [Java Application] C:\Users\Krushna\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_23.0.1.v20241024-1700\jre\bin\javaw.exe
Database initialized successfully!
Database connection successful!
```

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

bankcrm

crm\_bank

Tables

accounts

notifications

tickets

transactions

users

Views

Stored Procedures

Functions

employees

movedb

sportscraftdb

sportscrafttournament

store

Administration Schemas

Information

accounts 1 ×

Apply Revert Context

Output

Action Output

#	Time	Action	Message
1	00:47:53	SELECT * FROM cm_bank.accounts LIMIT 0, 1000	2 row(s) returned

Result Grid

id	user_id	account_number	type	balance	status	created_at
1	3	27315747	SAVINGS	1500.00	ACTIVE	2025-04-16 09:40:51
2	5	16443017	CURRENT	55500.00	ACTIVE	2025-04-16 10:01:07
*	NULL	NULL	NULL	NULL	NULL	NULL

Table: accounts

Columns:

id int AI PK

user\_id int

account\_number varchar(50)

type enum('SAVINGS', 'CURRENT')


balance decimal(10, 2)

status enum('ACTIVE', 'INACTIVE')

created\_at timestamp



# Admin Panel -

 CRM Bank - Manager

File

Welcome, Admin Manager

Logout

Employee Management

Customers

Support Tickets

Reports

Add Employee

Edit Employee

Delete Employ...

Refresh

ID	Name	Email	Phone
24	Anuj Pipare	anuj@crm.gmail.com	1122334455
6	Sarvesh Mahajan	sarvesh.crm@gmail.com	1234567890
20	Yogesh	yogesh.crm@gmail.com	123456788

# Customer Page -

CRM Bank - Customer

File

Welcome, Krishna Hitnalikar

Logout

Account Overview

Transactions

Support Tickets

Account Number: 27315747

Account Type: SAVINGS

Balance: \$1500.00

Amount:

Description:

Credit

Debit

Transfer

# Ticket Creation -

CRM Bank - Customer

File

Welcome, Krishna Hitnalikar

Logout

Account Overview Transactions Support Tickets

Create New Ticket

ID	Subject	Created At
2	from ve	2025-04-16 11:52:47.0
1	fees ref	2025-04-16 11:17:15.0

Create Support Ticket

Subject:

Priority:

LOW


Description:

Submit

Cancel



# Employee Page -

 CRM Bank - Employee

File

**Welcome, Sarvesh Mahajan** [Logout](#)

[Customers](#) [Tickets](#)

[Update Status](#) [Refresh](#)

ID	Customer	Subject	Priority	Status	Created At
2	Krishna Hitnalikar	from vendors	HIGH	CLOSED	2025-04-16 11:52:47.0

# Challenges Faced During Development

- 1) Unique Account Number Generation: Ensuring no collisions with existing accounts.**
- 2) UI Design with Swing: Managing complex layouts and responsive behavior.**
- 3) Database Rollbacks: Handling failed transactions to maintain data integrity.**

# **Limitation and Scope of the project with Future Extensions**

## **Limitations**

- **Desktop-only solution (not web-based or mobile-friendly).**
- **No external core banking API integrations (simulated in this project).**
- **Security features like 2FA are not yet implemented.**
- **No Password reset feature.**



# **Limitation and Scope of the project with Future Extensions**

## **Future Extensions**

- **Chat-Bot - To answer Customer Queries faster.**
- **Integration with bank's core systems via APIs for live synchronization.**
- **AI-powered analytics for better insight into customer behavior.**
- **Export reports in pdf/csv/xml format.**
- **Multi-user sessions with advanced access control and 2FA.**
- **Integration with third-party notification services (Email/SMS).**

Student Name	Contribution Area
Krishna Hitnalikar	Handled both the Customer and Manager Dashboards, including functionalities like ticket creation, employee management, ticket assignment, and report generation using <u>JFreeChart</u> .
Rajat Deshpande	Developed the Employee Dashboard with features to view assigned tickets, update ticket statuses, access customer data. Also implemented the login and signup modules.
Yogesh <u>Fayada</u>	Worked on the overall Frontend Design, ensuring a consistent and user-friendly interface using Java Swing components. Also created reusable UI elements and dialogs for form input and notifications
Sarvesh Mahajan	Designed the complete Database Structure, wrote SQL scripts for table creation, and implemented JDBC connectivity for all modules.

# Thank You !!