A PROJECT ON

Online Loan Management System

SUBMITTED IN

FULFILLMENT OF THE REQUIREMENT

FOR THE COURSE OF DIPLOMA IN ADVANCED COMPUTING FROM CDAC

SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY

Hinjawadi

SUBMITTED BY:

Amol Ashok Dangi,

Vaibhav Bhausaheb Kale,

Prajwal Vinodrao Rumale,

Ganesh Hanmant Pawar

UNDER THE GUIDENCE OF:

Mrs. Lalita Shinde

Faculty Member

Sunbeam Institute of Information Technology, Pune

ACKNOWLEDGEMENT

A project usually falls short of its expectation unless aided and guided by the right persons at the right time. We avail this opportunity to express our deep sense of gratitude towards Mr. Nitin Kudale (Center Coordinator, SIIT, Pune) and Mr. Yogesh Kolhe (Course Coordinator, SIIT ,Pune) .

We are deeply indebted and grateful to them for their guidance, encouragement and deep concern for our project. Without their critical evaluation and suggestions at every stage of the project, this project could never have reached its present form.

Last but not the least we thank the entire faculty and the staff members of Sunbeam Institute of Information Technology, Pune for their support.

Amol Ashok Dangi

Vaibhav Bhausaheb Kale

Prajwal Vinodrao Rumale

Ganesh Hanmant Pawar

0824 PG-DAC
SIIT Pune

A PROJECT ON

"Online Loan Management System"

SUBMITTED IN
PARTIAL FULFILLMENT OF THE REQUIREMENT
FOR THE COURSE OF
DIPLOMA IN ADVANCED COMPUTING FROM CDAC

SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY
Hinjawadi

SUBMITTED BY:
Amol Ashok Dangi,
Vaibhav Bhausaheb Kale,
Prajwal Vinodrao Rumale,
Ganesh Hanmant Pawar

UNDER THE GUIDENCE OF:
Mrs. Lalita Shinde
Faculty Member
Sunbeam Institute of Information Technology, PUNE.

CERTIFICATE

This is to certify that the project work under the title **'Online Loan Management System'** is done by Amol Ashok Dangi ,Vaibhav Bhausaheb kale ,Prajwal Vinodrao Rumale ,Ganesh Hanmant Pawar in fulfillment of the requirement for award of Diploma in Advanced Computing Course.

Mr. Yogesh Kolhe

Project Guide

Course Co-Coordinator

Date: 11-02-2025

Table of Contents:

1. INTRODUCTION TO PROJECT

The **Online Loan Management System (OLMS)** is a digital platform designed to streamline and automate the loan application, approval, and repayment processes. It enhances efficiency by allowing customers to apply for loans, track application status, manage repayments, and make online transactions seamlessly. The system provides administrative control for lenders and financial institutions to oversee loan processing, verify borrower details, and ensure secure and efficient loan management. OLMS ensures data integrity, security, and scalability, making loan management more organized and accessible

The **Online Loan Management System** is a comprehensive platform designed to simplify and digitize the loan lifecycle, ensuring seamless coordination between borrowers, lenders, and financial institutions. Traditional loan processing often relies on manual verification and paperwork, which can be time-consuming, inefficient, and prone to errors. This system addresses these challenges by providing an integrated solution that allows customers to apply for loans, upload required documents, track approval status in real-time, and manage repayments efficiently. It also enables financial institutions to verify applications, approve/reject loans, monitor disbursements, and oversee repayment schedules, ensuring smooth financial operations. By centralizing all loan-related processes into a single online system, OLMS enhances productivity, reduces administrative workload, and improves the overall borrower

experience.

OLMS is built with a **role-based access system**, ensuring different functionalities for admins, lenders, and borrowers:

*__Admin:__ Has full control over the platform, manages loan policies, monitors transactions, and oversees system security.

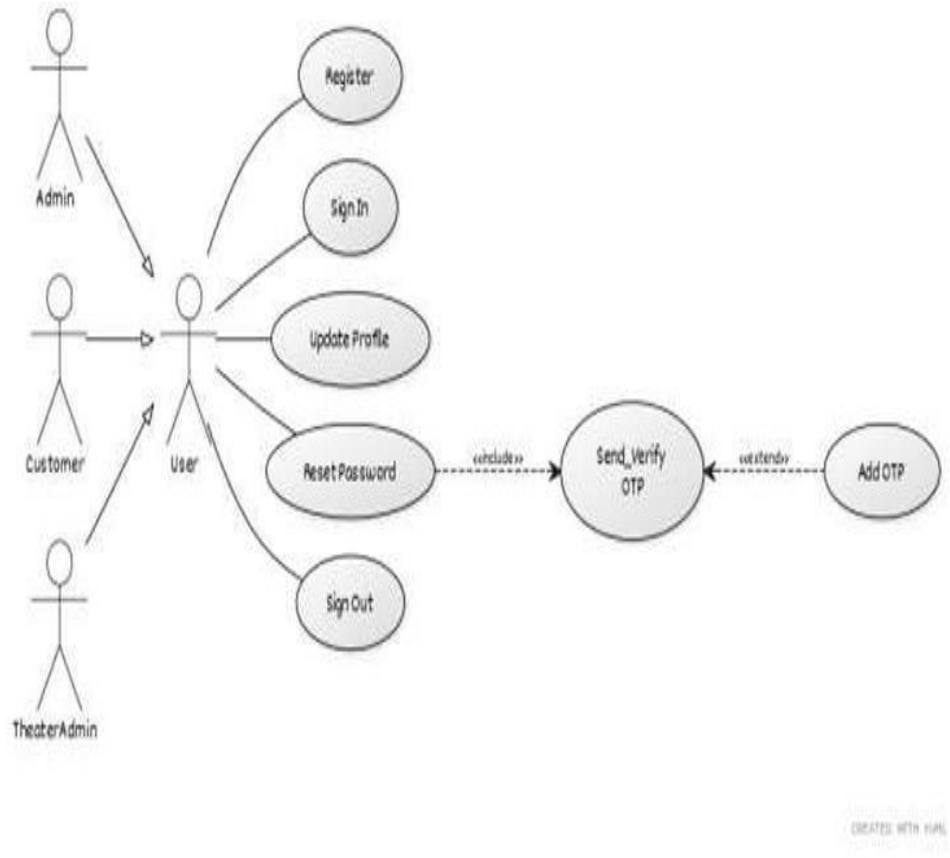
*__Lender (Loan Officer/Financial Institution):__ Reviews applications, verifies documents, approves/rejects loans, and manages disbursements.

*__Borrower (Customer):__ Applies for loans, submits documents, tracks application progress, makes repayments, and receives loan updates.

OLMS is built with a role-based access system, ensuring different functionalities for admins, Users. Admins have full control over the platform. Users can view their Applied Loans. Users benefit from a user-friendly interface where they can manage Applying, make payments, and receive Loans updates.

2. REQUIREMENTS

2.1 FUNCTIONAL REQUIREMENTS



2.1 Users Flow

2.1.1 Home Page

- **Objective:** Provide Users access to event Loan functionalities.
- **Features:**
  - Users can log in to access event-related services. If login credentials are invalid, prompt the user to re-enter credentials.

2.1.2 Loan Apply

- **Objective:** Allow customers to book events with customized services.
- **Features:**
  - Enter Loan information.
  - Select a Loan Type.
  - Choose a Loan Type.
  - Apply for the Loan.

2.1.3 Event Management

- **Objective:** Allow Users to view, edit, and manage their Loans.
- **Features:**
  - Users can edit Loan details after Applying.
  - Users can view all their Applied Loans.

2.1.4 Reports & Logout

- **Objective:** Provide Loan progress updates and allow secure logout.
- **Features:**
  - Users can view Loan detail reports.
  - Logout button to exit the system securely.

3.3 Admin Flow

2.1.5 Home Page

- **Objective:** Allow the admin to access and manage system functionalities.
- **Features:**
  - Admin login verification with valid/invalid credentials

2.1.6 Admin Dashboard

- **Objective:** Allow the admin to access and manage system functionalities.
- **Features:**
  - View and edit Loan information.
  - Manage Loan services.
  - View and edit Loans information.
  - Manage Users details (add, remove users).
  - Access detailed reports on Loans.

2.1.7 Logout

- **Objective:** Securely exit the system.
- **Features:**
  - Clicking "Logout" logs the admin out and redirects to the main screen

2.1.8 Users Dashboard

- **Objective:** Allow Users to view and update Loans.
- **Features:**
  - View assigned Loans.
  - View assigned Loans.
  - View Loans progress reports.

2.1.9 Logout

- **Objective:** Securely exit the system.
- **Features:**
  - Clicking "Logout" logs the employee out and redirects to the main screen.

3. Non-Functional Requirements

3.1 Minimal Interface:

- Interface should be simple and easy for users to adapt to.

3.2 Speed

- The system should maintain performance standards of handling 1000 transactions/inquiries per second.

3.3 Portability

- The system should maintain performance standards of handling 1000 transactions/inquiries per second.

3.4 Portability

- The system should maintain performance standards of handling 1000 transactions/inquiries per second.

3.5 Scalability

- The System should be extendable if required, and adapt to greater number of users. It should be open for more functionalities to be added if required.

3.6 Security

- User data and/or other private details must be kept confidential and only visible to those authorized to view them.

3.7 Data Integrity

- User Data stored should not be compromised, and should be accurate and reliable.

1.1 Other Requirements

1.1.1 Hardware Interfaces

Requirements: Intel Core i5 or higher (or AMD equivalent), 8 GB RAM, 512 GB SSD or larger.

1.1.2 Software Interfaces

- **Operating Systems**: MS Windows 13.
- **Database**: MySqL.
- **Server**: Embedded Tomcat.
- **Browsers**: Compatible with modern web browsers.

2. System Design

2.1 Architecture

- **Front-End**: Developed using React.js.
- **Back-End**: Built with Spring Boot for server-side logic.
- **Database**: MySqL for storing user data, orders, and other system information.
- **Server**: Embedded Tomcat for hosting the application.

4. DESIGN

4.1 Database Design

Table 1 : kyc_details

```
root>desc kyc_details;
+-----------------------------+---------------------------------+------+-----+---------+----------------+
| Field                       | Type                            | Null | Key | Default | Extra          |
+-----------------------------+---------------------------------+------+-----+---------+----------------+
| id                          | bigint                          | NO   | PRI | NULL    | auto_increment |
| aadhaar_card_image_path     | varchar(255)                    | YES  |     | NULL    |                |
| aadhaar_number              | varchar(255)                    | YES  |     | NULL    |                |
| account_type                | varchar(255)                    | YES  |     | NULL    |                |
| annual_income               | double                          | YES  |     | NULL    |                |
| bank_account_number         | varchar(255)                    | YES  |     | NULL    |                |
| correspondence_city         | varchar(255)                    | YES  |     | NULL    |                |
| correspondence_state        | varchar(255)                    | YES  |     | NULL    |                |
| correspondence_street       | varchar(255)                    | YES  |     | NULL    |                |
| correspondence_zip_code     | varchar(255)                    | YES  |     | NULL    |                |
| date_of_birth               | date                            | YES  |     | NULL    |                |
| driving_license_number      | varchar(255)                    | YES  |     | NULL    |                |
| email                       | varchar(255)                    | YES  |     | NULL    |                |
| employer_name               | varchar(255)                    | YES  |     | NULL    |                |
| father_name                 | varchar(255)                    | YES  |     | NULL    |                |
| first_name                  | varchar(255)                    | NO   |     | NULL    |                |
| gender                      | varchar(255)                    | YES  |     | NULL    |                |
| ifsc_code                   | varchar(255)                    | YES  |     | NULL    |                |
| kyc_status                  | enum('NOT_VERIFIED','VERIFIED') | YES  |     | NULL    |                |
| last_name                   | varchar(255)                    | NO   |     | NULL    |                |
| marital_status              | varchar(255)                    | YES  |     | NULL    |                |
| mother_name                 | varchar(255)                    | YES  |     | NULL    |                |
| occupation                  | varchar(255)                    | YES  |     | NULL    |                |
| pan_number                  | varchar(255)                    | YES  |     | NULL    |                |
| passport_image_path         | varchar(255)                    | YES  |     | NULL    |                |
| passport_number             | varchar(255)                    | YES  |     | NULL    |                |
| permanent_city              | varchar(255)                    | YES  |     | NULL    |                |
| permanent_state             | varchar(255)                    | YES  |     | NULL    |                |
| permanent_street            | varchar(255)                    | YES  |     | NULL    |                |
| permanent_zip_code          | varchar(255)                    | YES  |     | NULL    |                |
| phone                       | varchar(255)                    | YES  |     | NULL    |                |
| rental_agreement_image_path | varchar(255)                    | YES  |     | NULL    |                |
| source_of_income            | varchar(255)                    | YES  |     | NULL    |                |
| user_id                     | bigint                          | NO   |     | NULL    |                |
| utility_bill_image_path     | varchar(255)                    | YES  |     | NULL    |                |
| voter_id_number             | varchar(255)                    | YES  |     | NULL    |                |
+-----------------------------+---------------------------------+------+-----+---------+----------------+
36 rows in set (0.42 sec)

root>
```

Table 2 : loan_applications

```
root>desc loan_applications;
+--------------------+-----------------------------------------+------+-----+---------+----------------+
| Field              | Type                                    | Null | Key | Default | Extra          |
+--------------------+-----------------------------------------+------+-----+---------+----------------+
| id                 | bigint                                  | NO   | PRI | NULL    | auto_increment |
| application_status | enum('APPROVED','PENDING','REJECTED')   | NO   |     | NULL    |                |
| interest_rate      | double                                  | YES  |     | NULL    |                |
| loan_amount        | double                                  | YES  |     | NULL    |                |
| loan_period        | int                                     | YES  |     | NULL    |                |
| loan_purpose       | varchar(255)                            | YES  |     | NULL    |                |
| user_id            | bigint                                  | YES  | MUL | NULL    |                |
+--------------------+-----------------------------------------+------+-----+---------+----------------+
7 rows in set (0.17 sec)

root>
```

Table 3 : Loans

```
root>desc loans;
+-----------------+---------------------------------------+------+-----+---------+----------------+
| Field           | Type                                  | Null | Key | Default | Extra          |
+-----------------+---------------------------------------+------+-----+---------+----------------+
| loan_id         | bigint                                | NO   | PRI | NULL    | auto_increment |
| duration_months | int                                   | NO   |     | NULL    |                |
| emi_amount      | double                                | NO   |     | NULL    |                |
| end_date        | date                                  | NO   |     | NULL    |                |
| last_emi_date   | date                                  | YES  |     | NULL    |                |
| loan_amount     | double                                | NO   |     | NULL    |                |
| next_emi_date   | date                                  | YES  |     | NULL    |                |
| paid_emi        | int                                   | NO   |     | NULL    |                |
| remaining_emi   | int                                   | NO   |     | NULL    |                |
| start_date      | date                                  | NO   |     | NULL    |                |
| status          | enum('APPROVED','PENDING','REJECTED') | NO   |     | NULL    |                |
| total_emi       | int                                   | NO   |     | NULL    |                |
| user_id         | bigint                                | NO   | MUL | NULL    |                |
+-----------------+---------------------------------------+------+-----+---------+----------------+
13 rows in set (0.18 sec)

root>
```

Table 4 : Transaction

```
root>desc  transactions;
+--------------------+---------------------------------------+------+-----+---------+----------------+
| Field              | Type                                  | Null | Key | Default | Extra          |
+--------------------+---------------------------------------+------+-----+---------+----------------+
| transaction_id     | bigint                                | NO   | PRI | NULL    | auto_increment |
| amount             | double                                | NO   |     | NULL    |                |
| transaction_date   | date                                  | NO   |     | NULL    |                |
| transaction_status | enum('COMPLETED','FAILED','PENDING') | NO   |     | NULL    |                |
| transaction_type   | varchar(255)                          | NO   |     | NULL    |                |
| user_id            | bigint                                | NO   | MUL | NULL    |                |
| wallet_id          | bigint                                | YES  | MUL | NULL    |                |
+--------------------+---------------------------------------+------+-----+---------+----------------+
7 rows in set (0.09 sec)

root> transactions
```

Table 5 : Users

```
root>desc users;
+--------------+---------------------------------+------+-----+---------+----------------+
| Field        | Type                            | Null | Key | Default | Extra          |
+--------------+---------------------------------+------+-----+---------+----------------+
| user_id      | bigint                          | NO   | PRI | NULL    | auto_increment |
| email        | varchar(100)                    | YES  | UNI | NULL    |                |
| first_name   | varchar(20)                     | YES  |     | NULL    |                |
| last_name    | varchar(20)                     | YES  |     | NULL    |                |
| password     | varchar(500)                    | NO   |     | NULL    |                |
| phone_number | varchar(15)                     | NO   |     | NULL    |                |
| role         | enum('ROLE_ADMIN','ROLE_USER') | YES  |     | NULL    |                |
| wallet_id    | bigint                          | YES  | MUL | NULL    |                |
+--------------+---------------------------------+------+-----+---------+----------------+
8 rows in set (0.10 sec)

root>
```

Table 6 : user

```
D1_87123_Sumedh>desc user;
+----------------+--------------+------+-----+---------+----------------+
| Field          | Type         | Null | Key | Default | Extra          |
+----------------+--------------+------+-----+---------+----------------+
| id             | int          | NO   | PRI | NULL    | auto_increment |
| acc_number     | varchar(18)  | YES  |     | NULL    |                |
| adhar_number   | varchar(12)  | YES  |     | NULL    |                |
| contact_number | varchar(10)  | YES  |     | NULL    |                |
| dob            | date         | NO   |     | NULL    |                |
| email          | varchar(25)  | YES  | UNI | NULL    |                |
| name           | varchar(20)  | YES  |     | NULL    |                |
| password       | varchar(100) | YES  |     | NULL    |                |
| role           | varchar(20)  | YES  |     | NULL    |                |
| salary         | double       | NO   |     | NULL    |                |
+----------------+--------------+------+-----+---------+----------------+
```

Table 7 : Wallet

```
root>desc wallet;
+-----------+--------+------+-----+---------+----------------+
| Field     | Type   | Null | Key | Default | Extra          |
+-----------+--------+------+-----+---------+----------------+
| wallet_id | bigint | NO   | PRI | NULL    | auto_increment |
| balance   | double | NO   |     | NULL    |                |
| user_id   | bigint | NO   | UNI | NULL    |                |
+-----------+--------+------+-----+---------+----------------+
3 rows in set (0.46 sec)

root>
```

CODING STANDARDS IMPLEMENTED :

Below summarizes the naming recommendations for identifiers in Pascal casing is used mainly (i.e. capitalize first letter of each word) with camel casing (capitalize each word except for the first one) being used in certain circumstances.

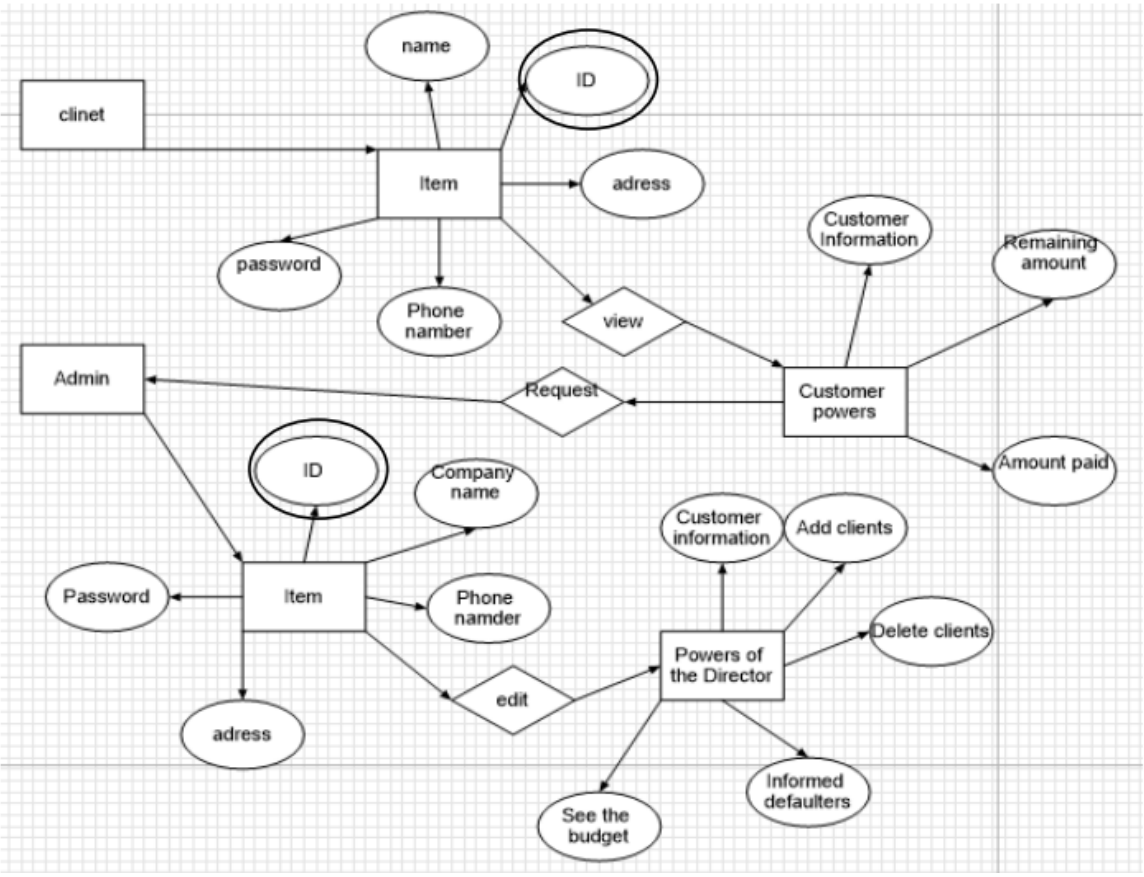
Identifier	Case	Examples	Additional Notes
Class	Pascal	EventController, Menu,Event, Caters	Class names should be based on "objects" or "real things" and should generally be **nouns**. No '_' signs allowed. Do not use type prefixes like 'C' for class.
Method	Camel	getAllCaters, addCaterer, assignCater	Methods should use verbs or verb phrases.
Parameter	Camel	id, menuName, price, date, contactNumber, adharNumber	Use descriptive parameter names. Parameter names should be descriptive enough that the name of the parameter and its type can be used to determine its meaning in most scenarios.
Interface	Pascal with "I" prefix	IMenuServices, IEventServices	Do not use the '_' sign
Annotation	Pascal	SpringBoot Application	Use @ at start of annotation
DTOs	Camel	EventDTO, LoginDTO	Use to transfer data between the processes
Exception Class	Pascal with "Exception" suffix	Event Management Exception	

Comments :

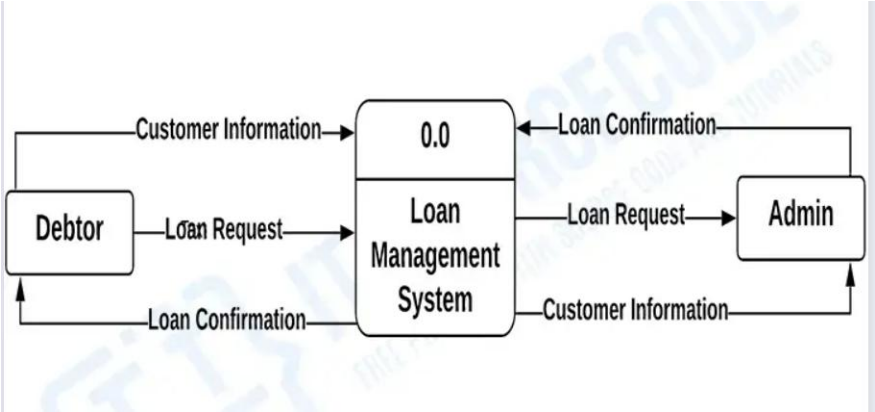
- Comment each type, each non-public type member, and each region declaration.
- Use end-line comments only on variable declaration lines.
  End-line comments are
  comments that follow code on a single line.

- Separate comments from comment delimiters
  (apostrophe) or // with one space.

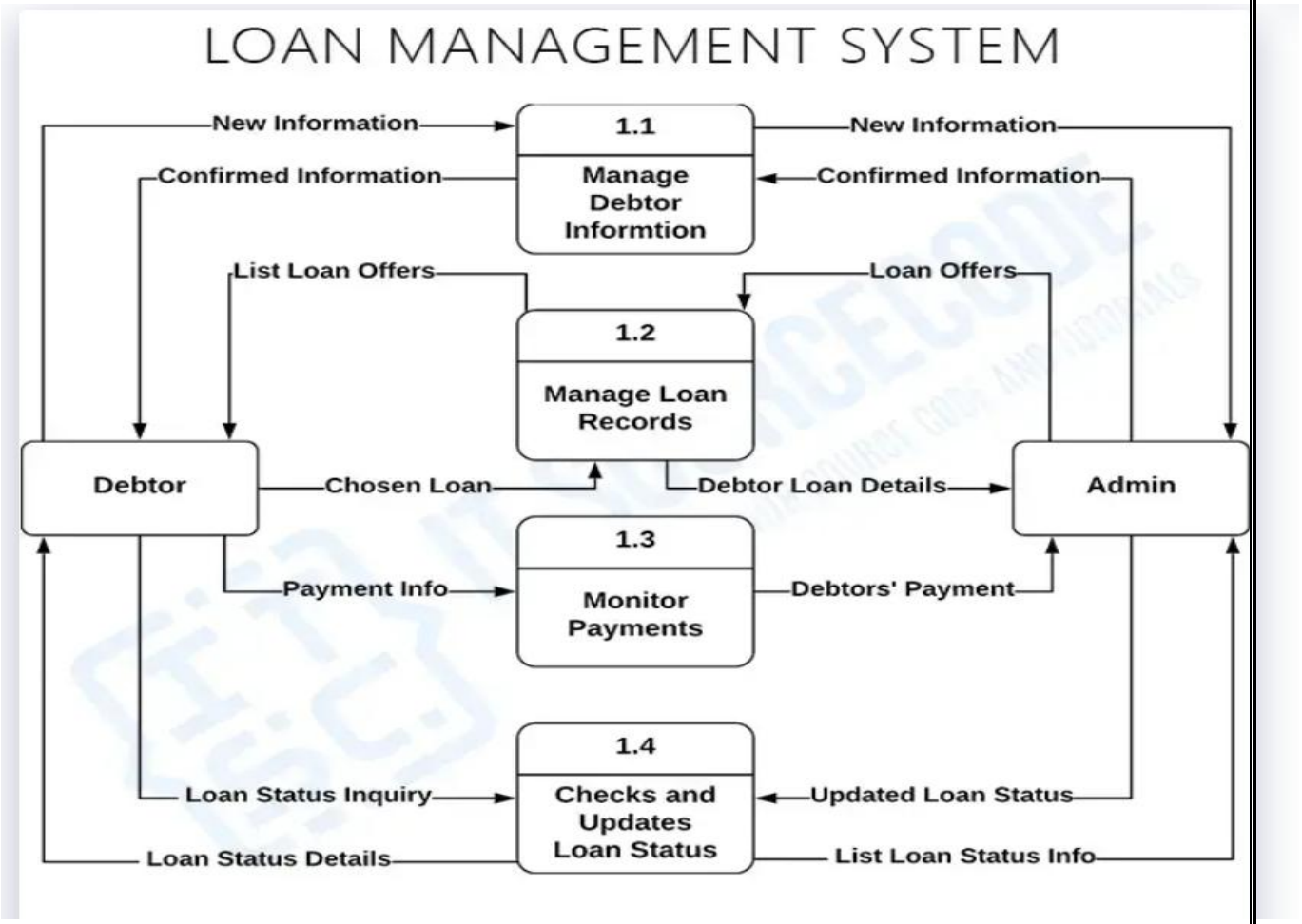
Appendix A
Entity Relationship Diagram



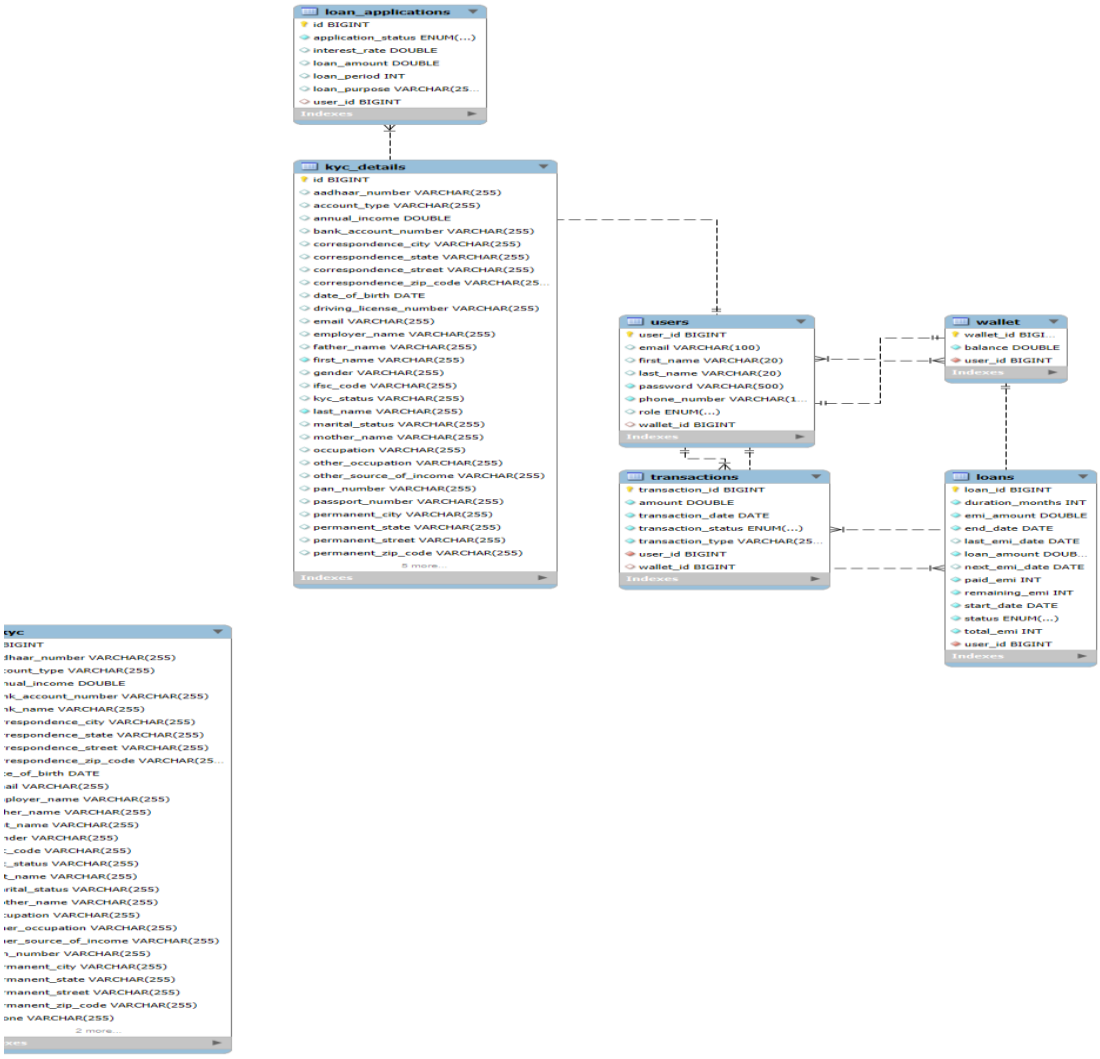
Data Flow Diagram:0 Level



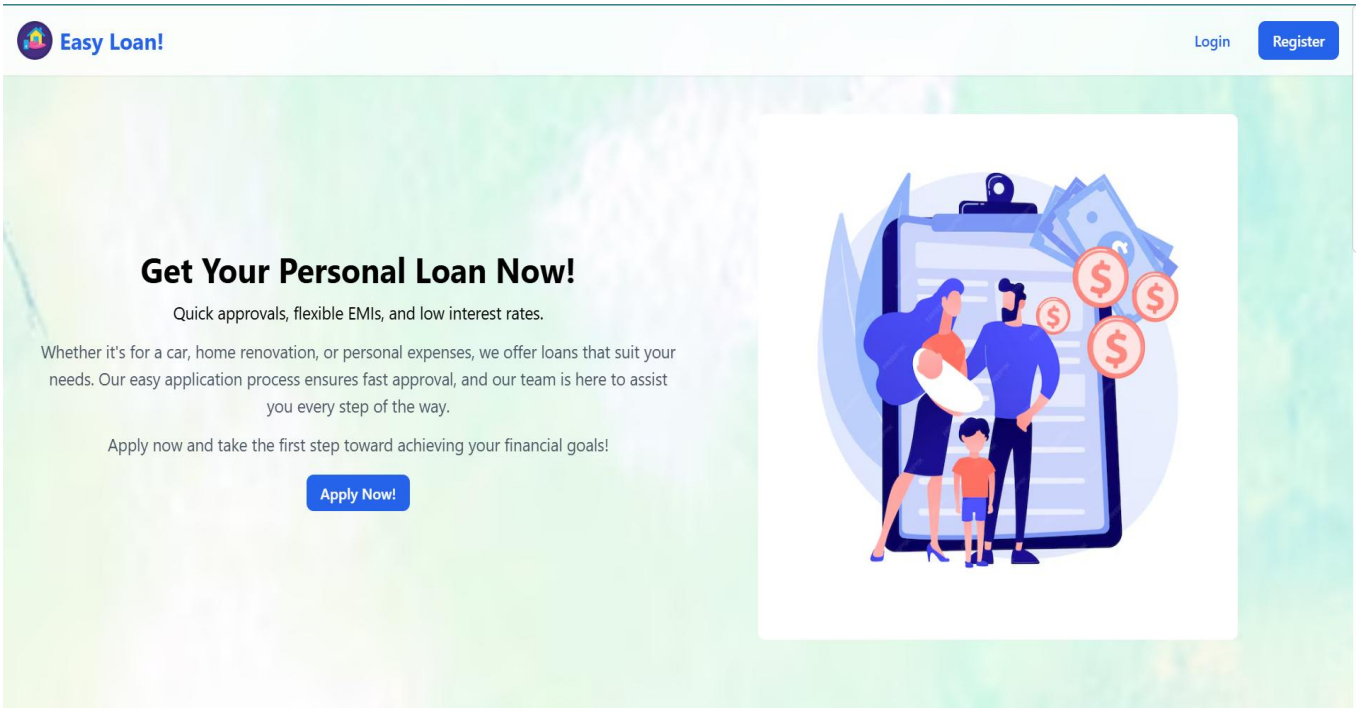
Data Flow Diagram:1 Level:


LOAN MANAGEMENT SYSTEM
New Information
1.1
Manage Debtor Informtion
New Information
Confirmed Information
Confirmed Information
List Loan Offers
Loan Offers
1.2
Manage Loan Records
Debtor
Chosen Loan
Debtor Loan Details
Admin
1.3
Payment Info
Monitor Payments
Debtors' Payment
1.4
Loan Status Inquiry
Checks and Updates Loan Status
Updated Loan Status
Loan Status Details
List Loan Status Info

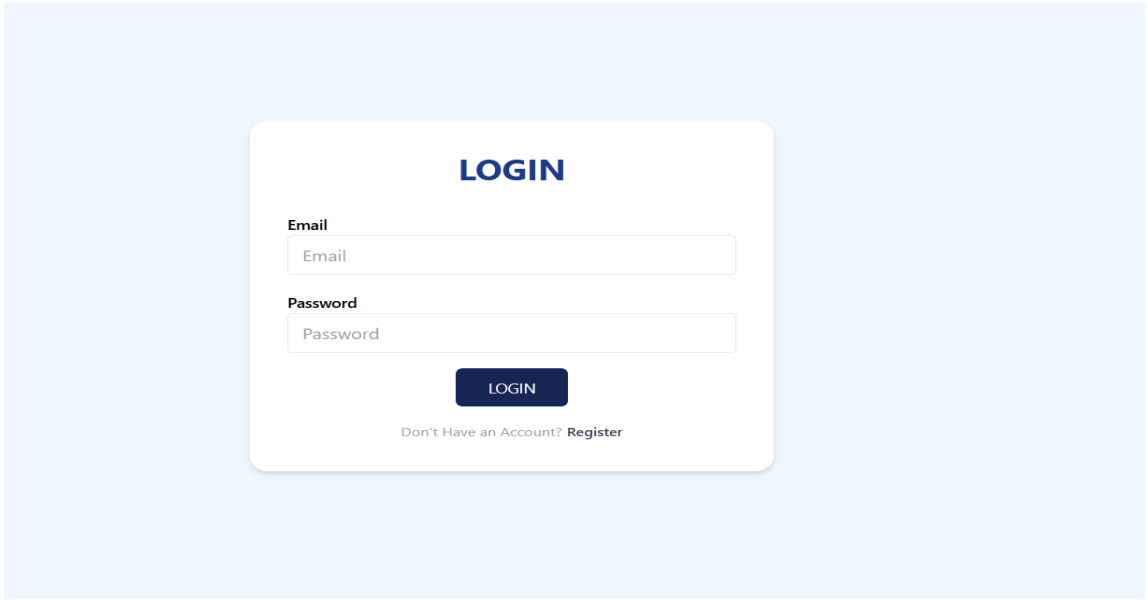
Class Diagram



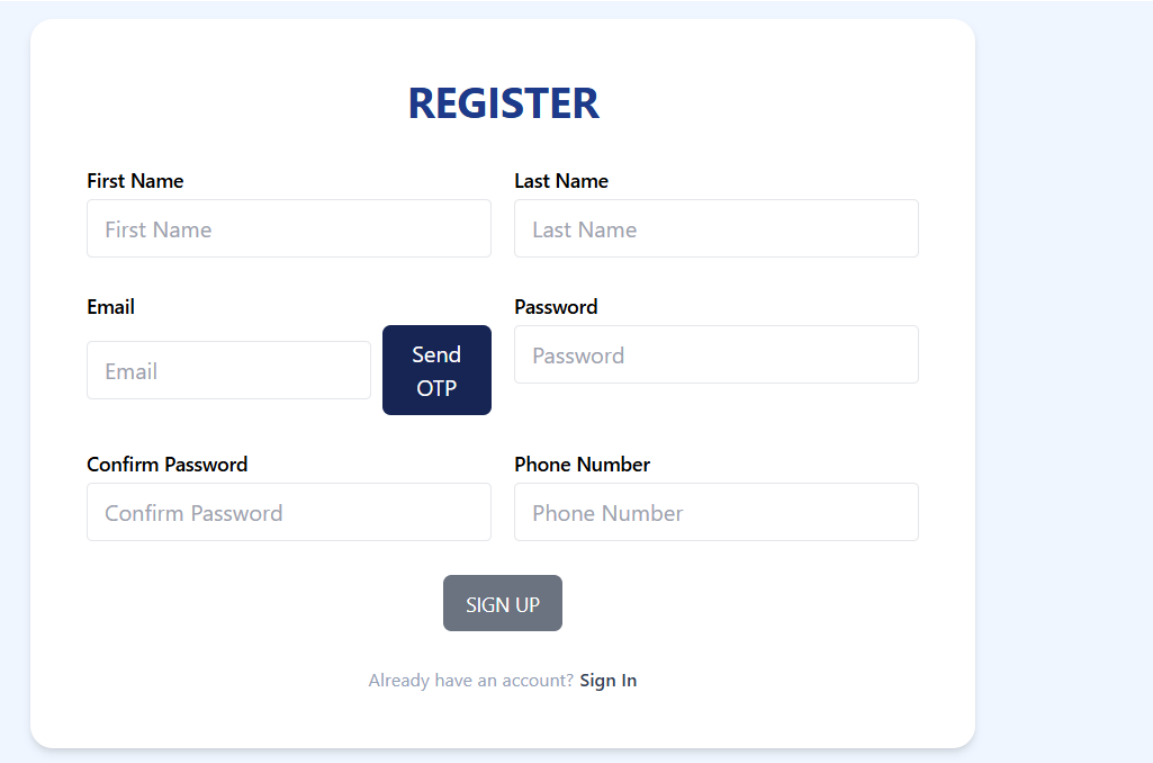
Landing Page:



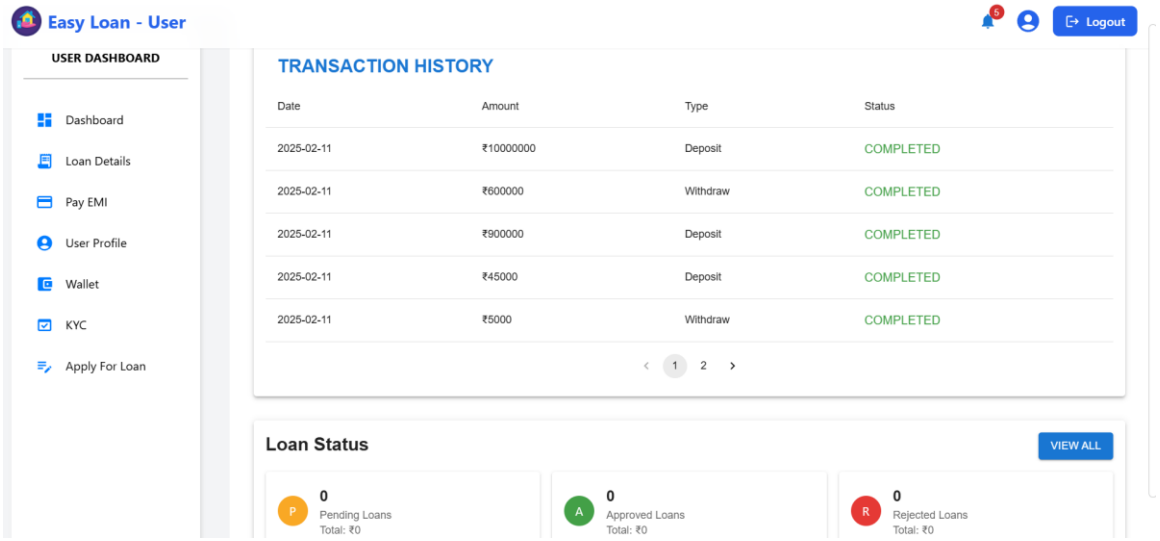
Login Page:



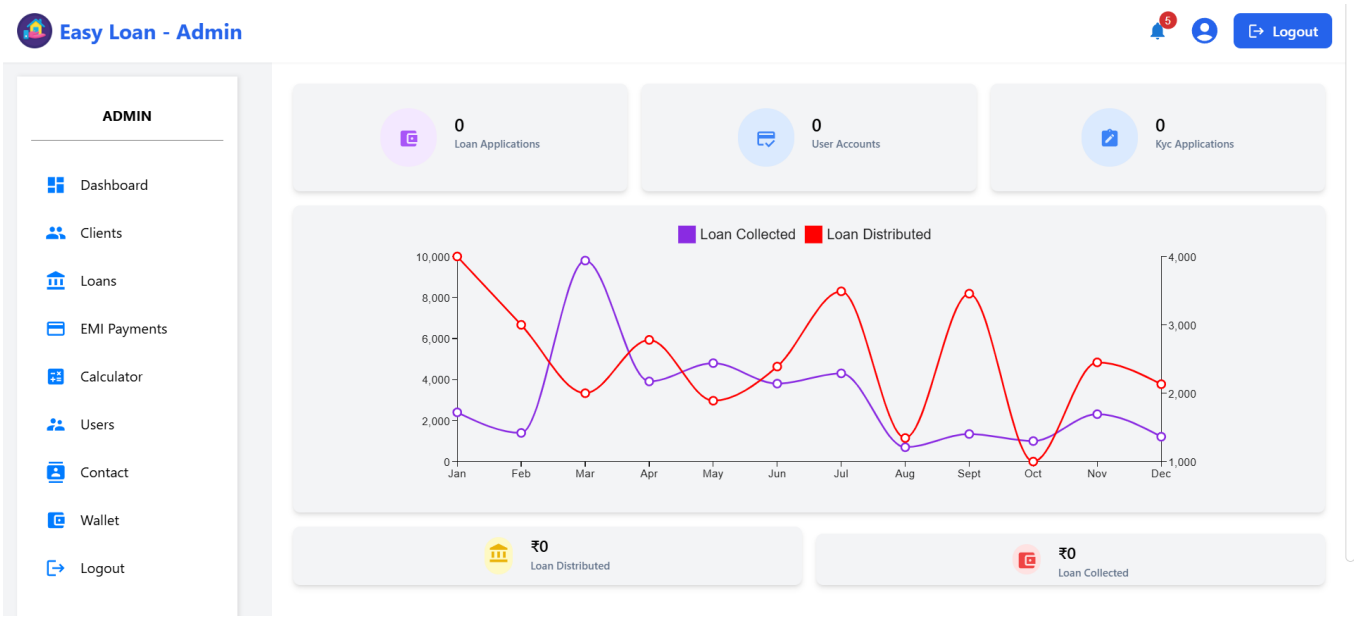
Register:



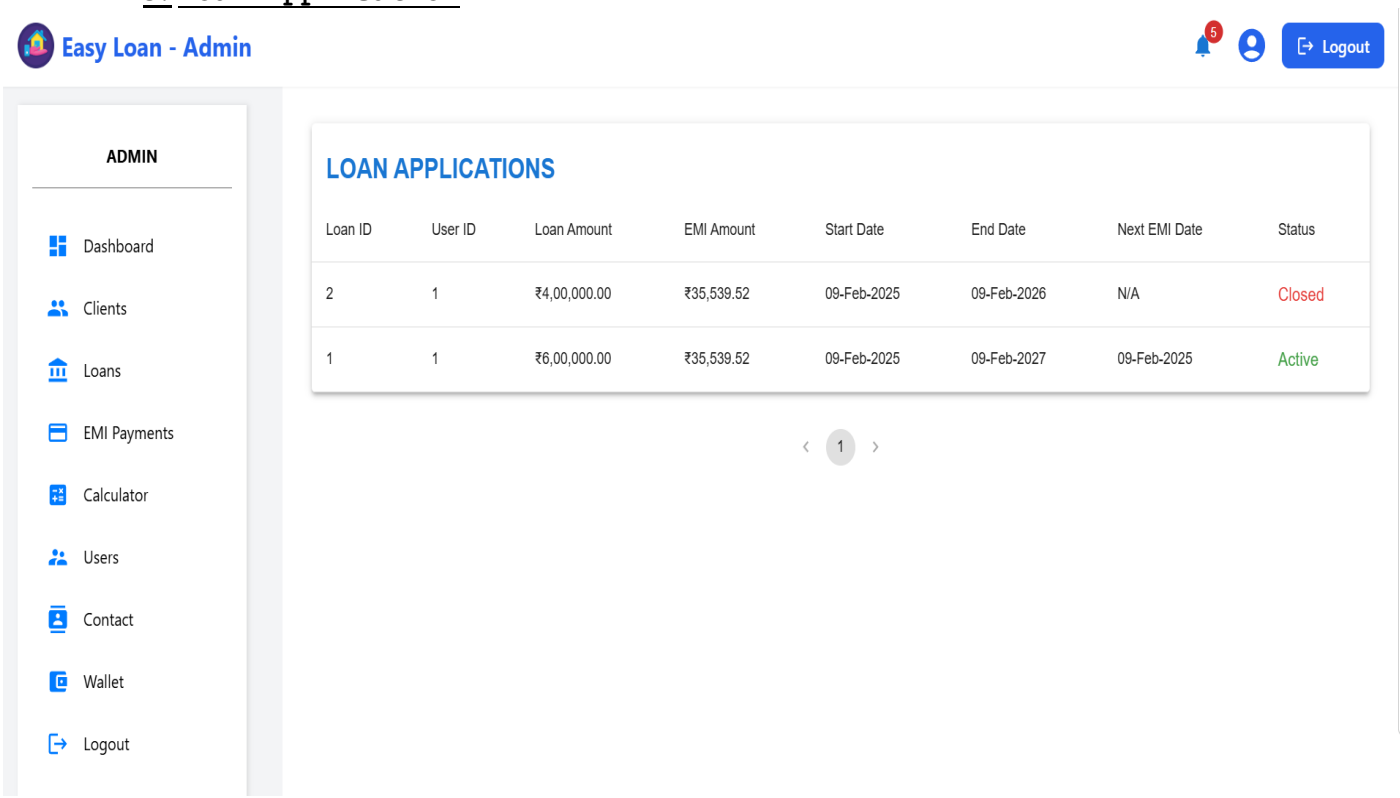
1. **User Dashboard:**



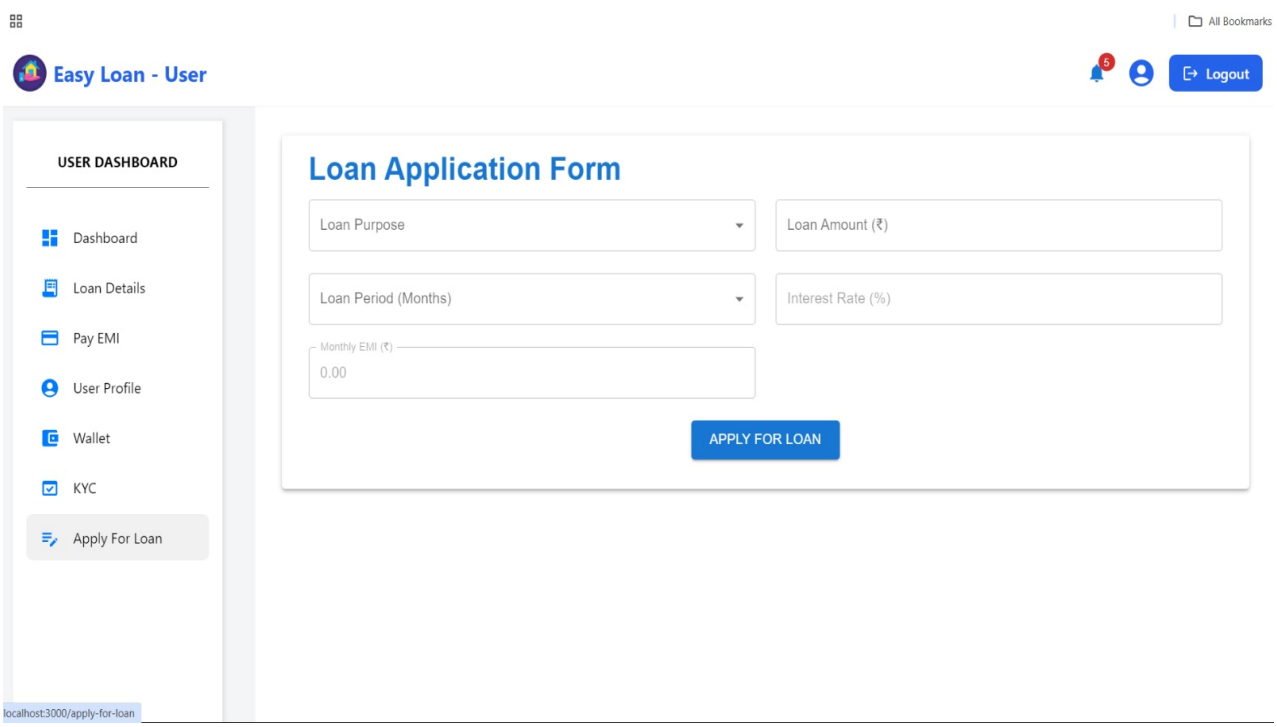
2. Admin Dashboard:



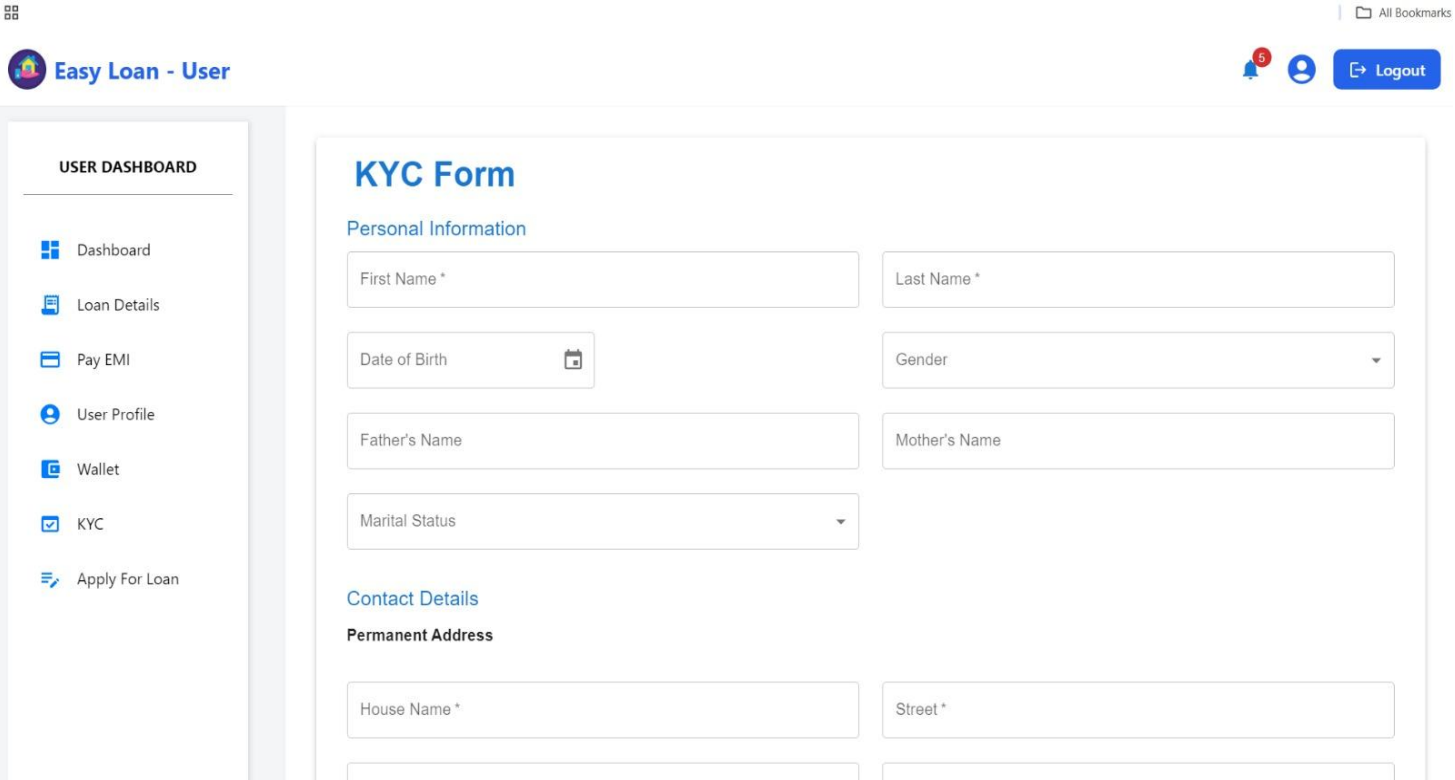
3. Loan Application:



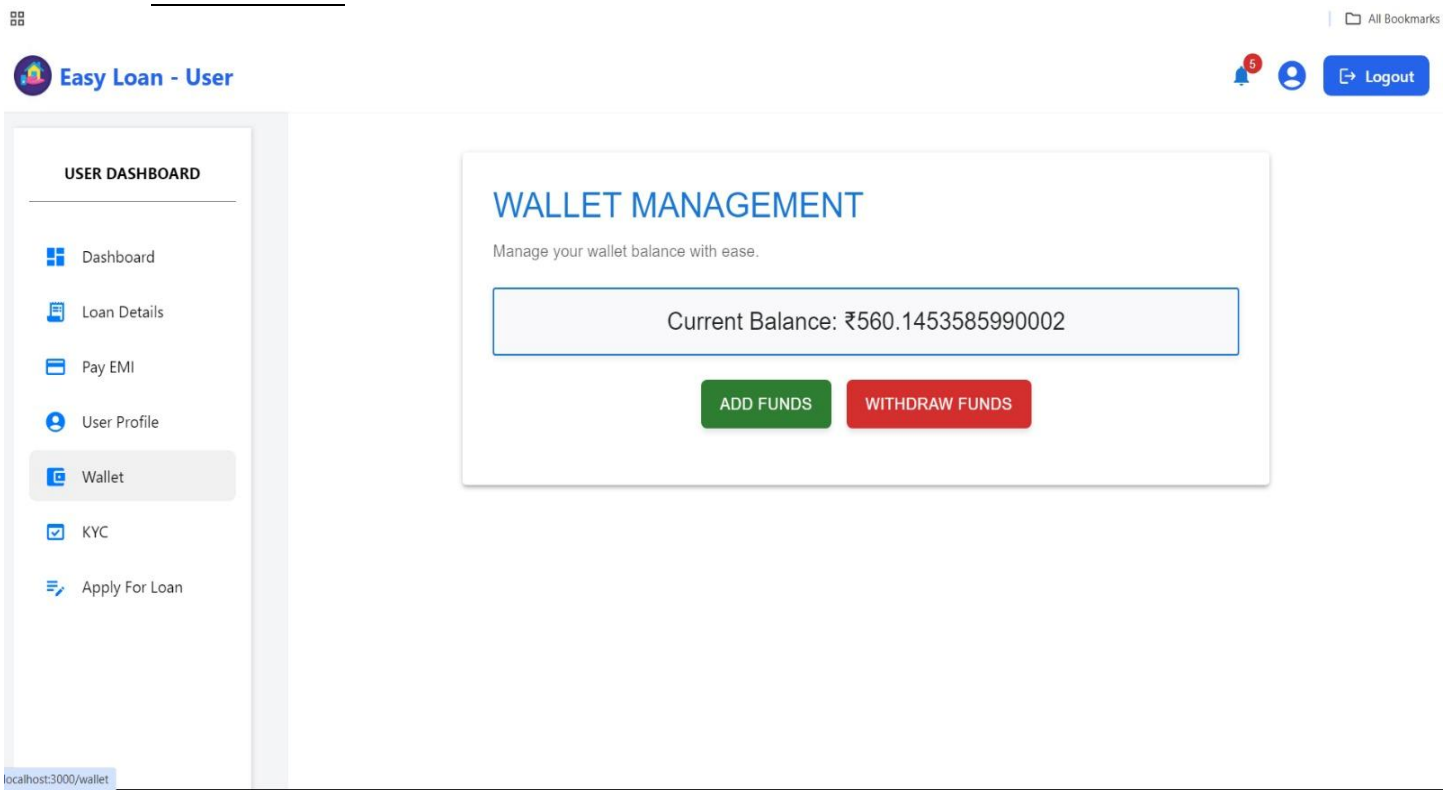
Loan Application:



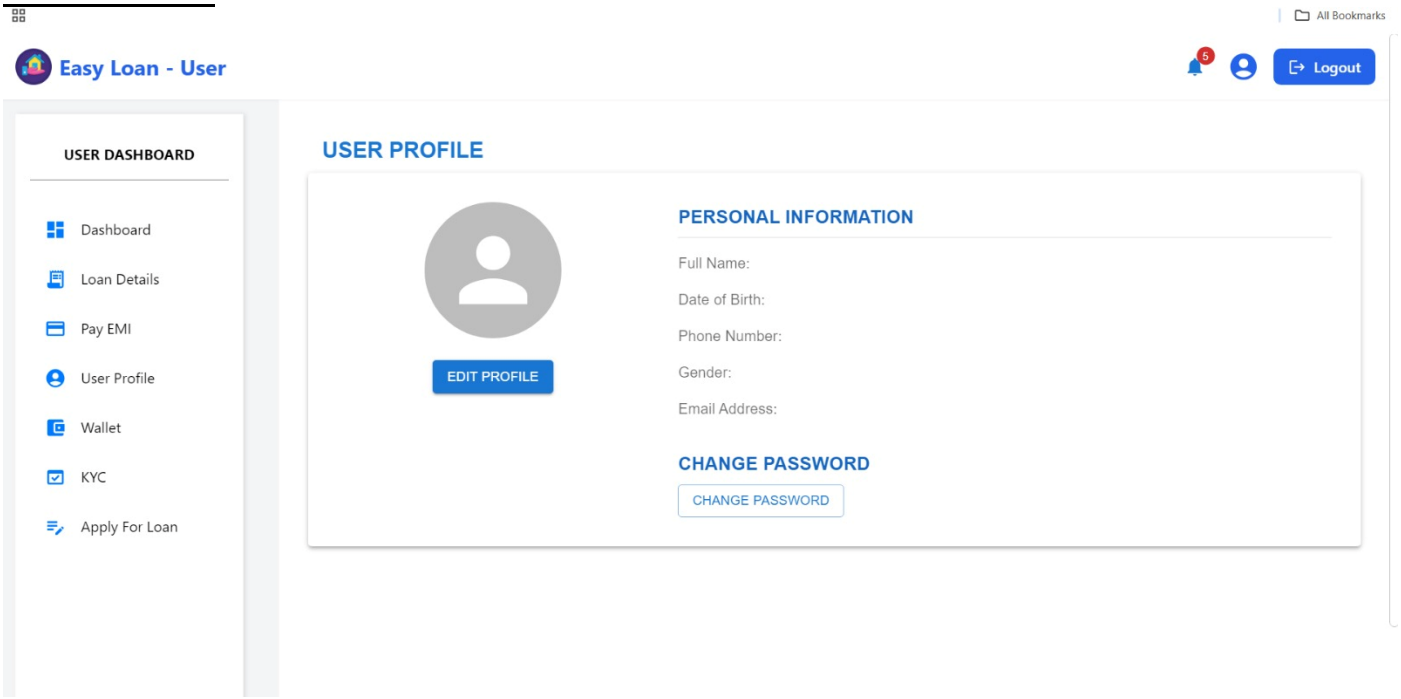
User Kyc Form:



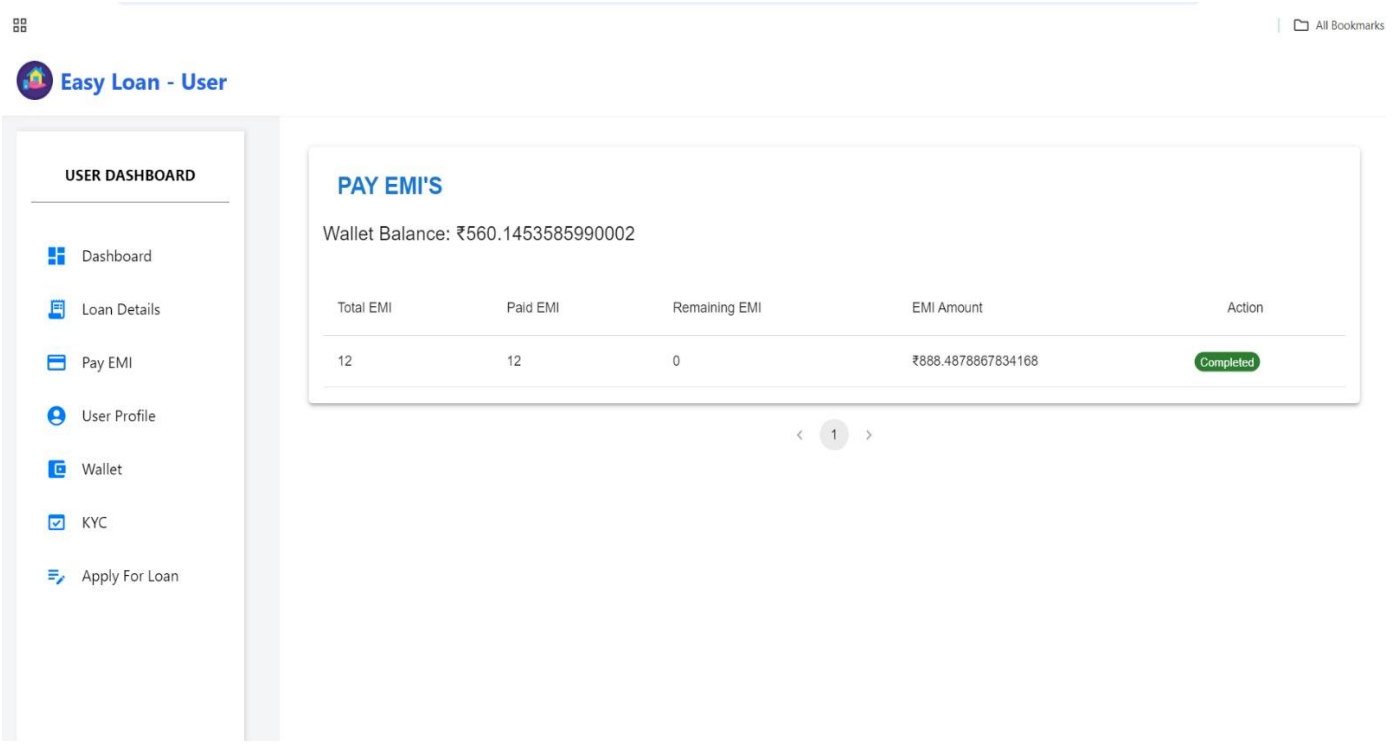
User Wallet:



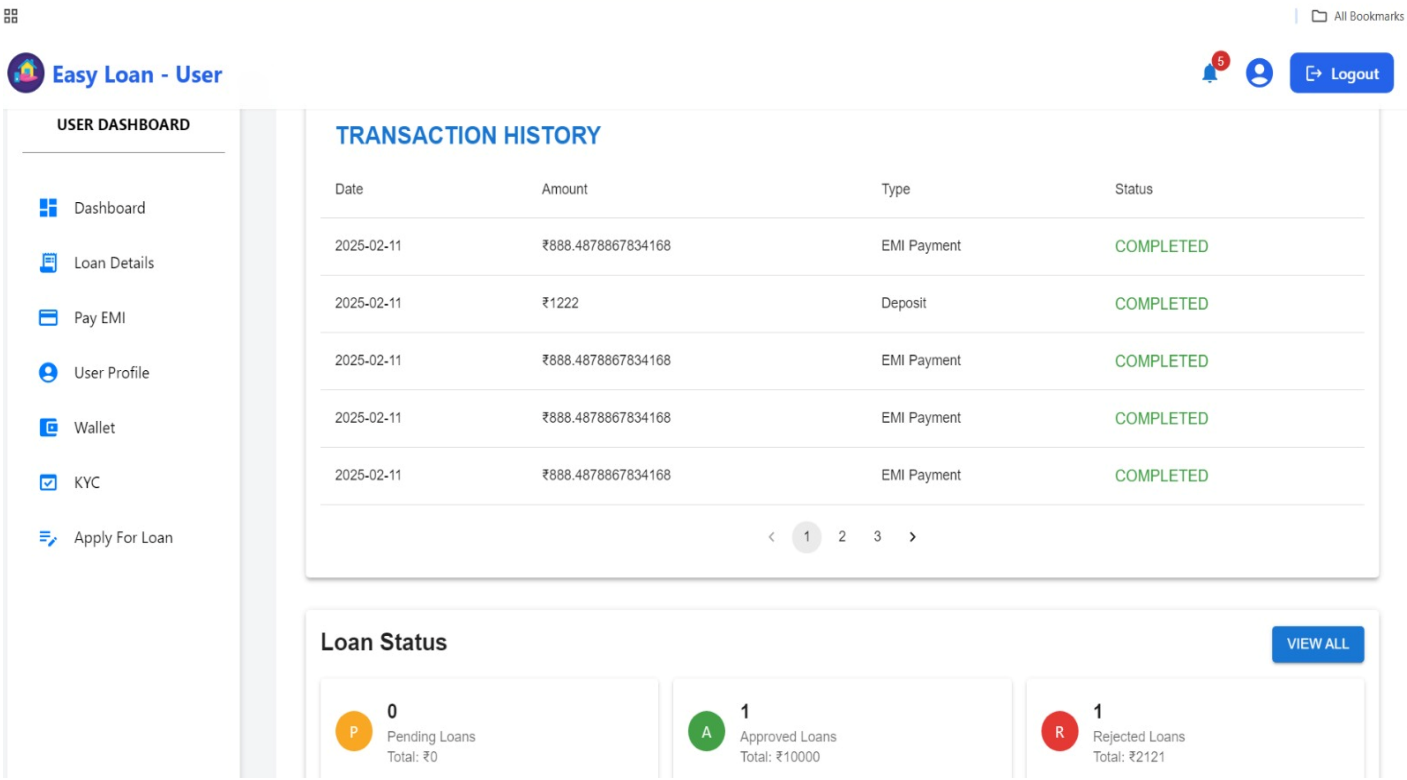
User Profile:



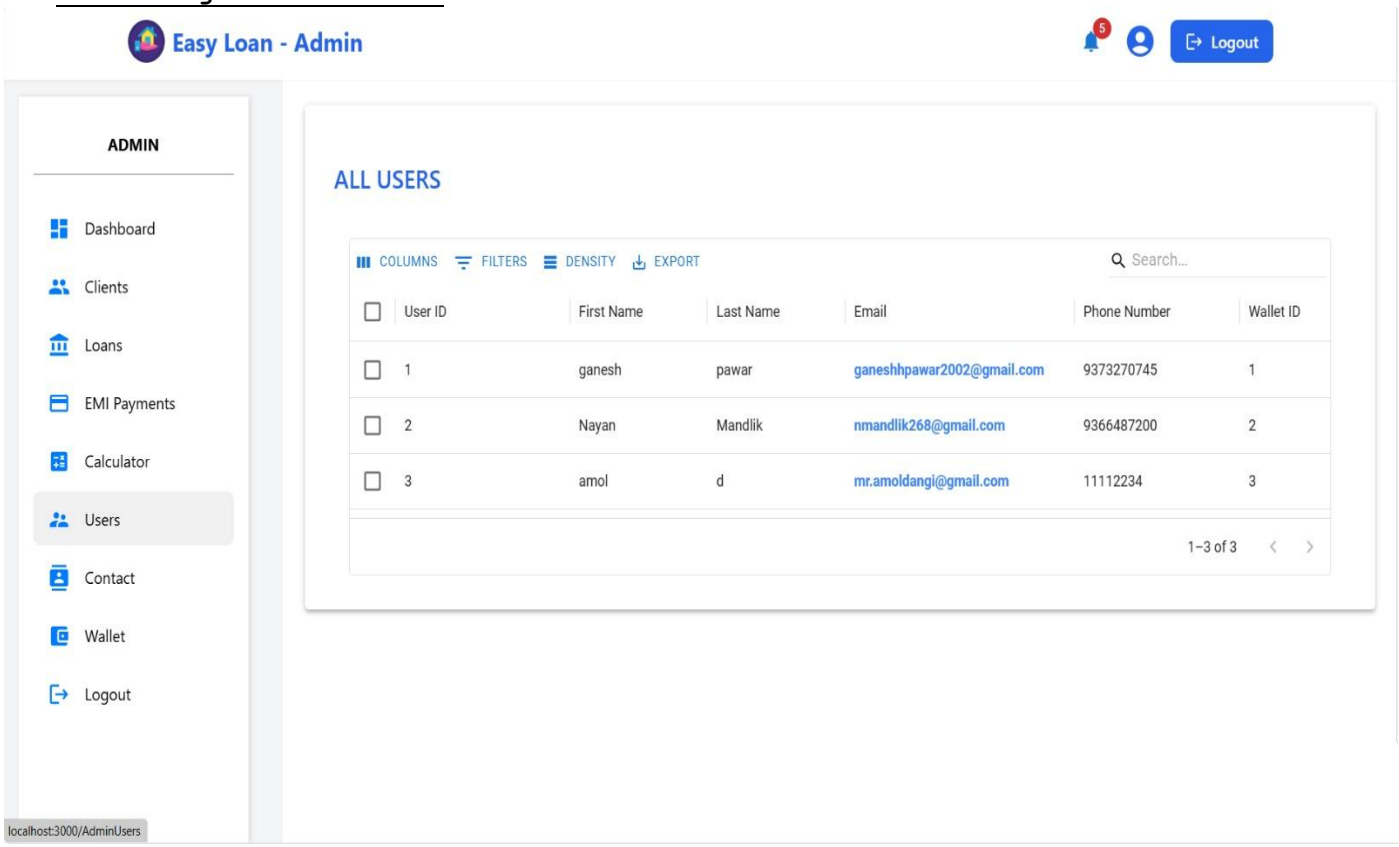
User Pay EMI:



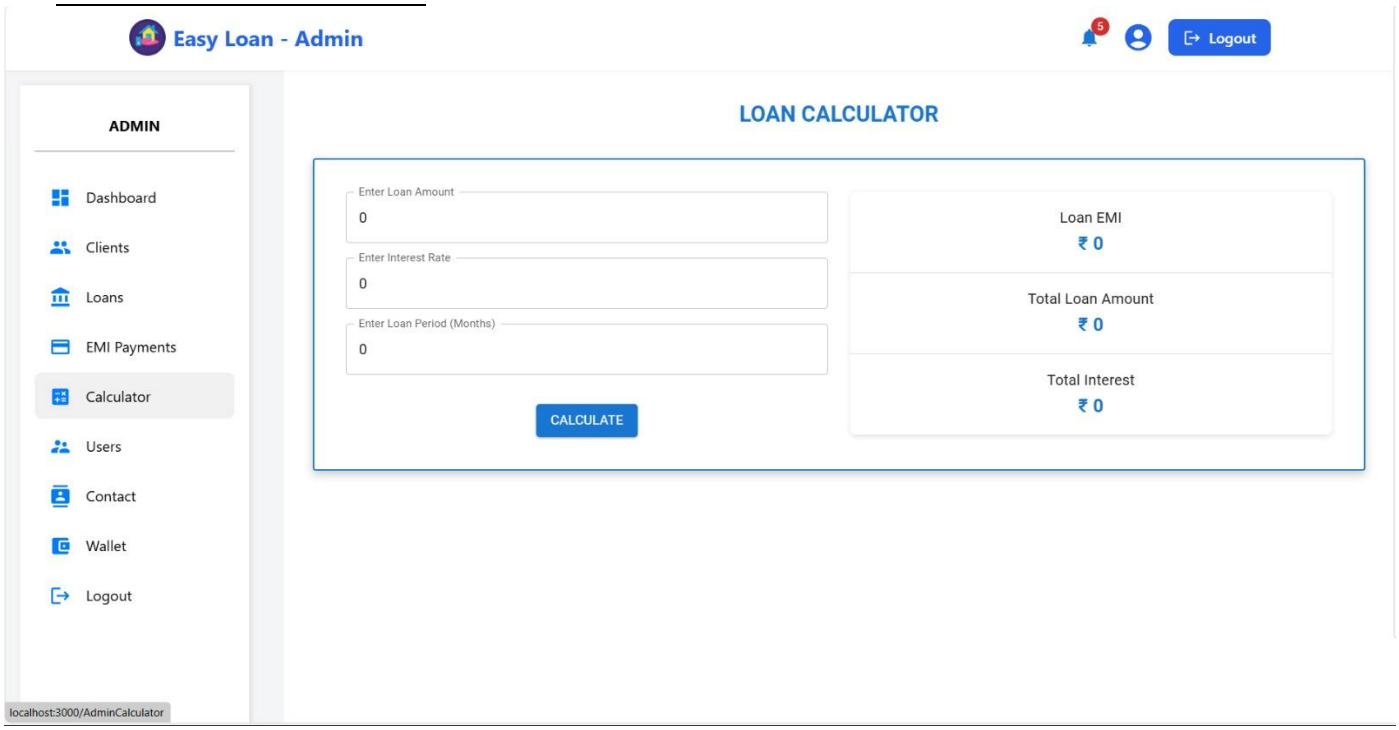
User Transactions:



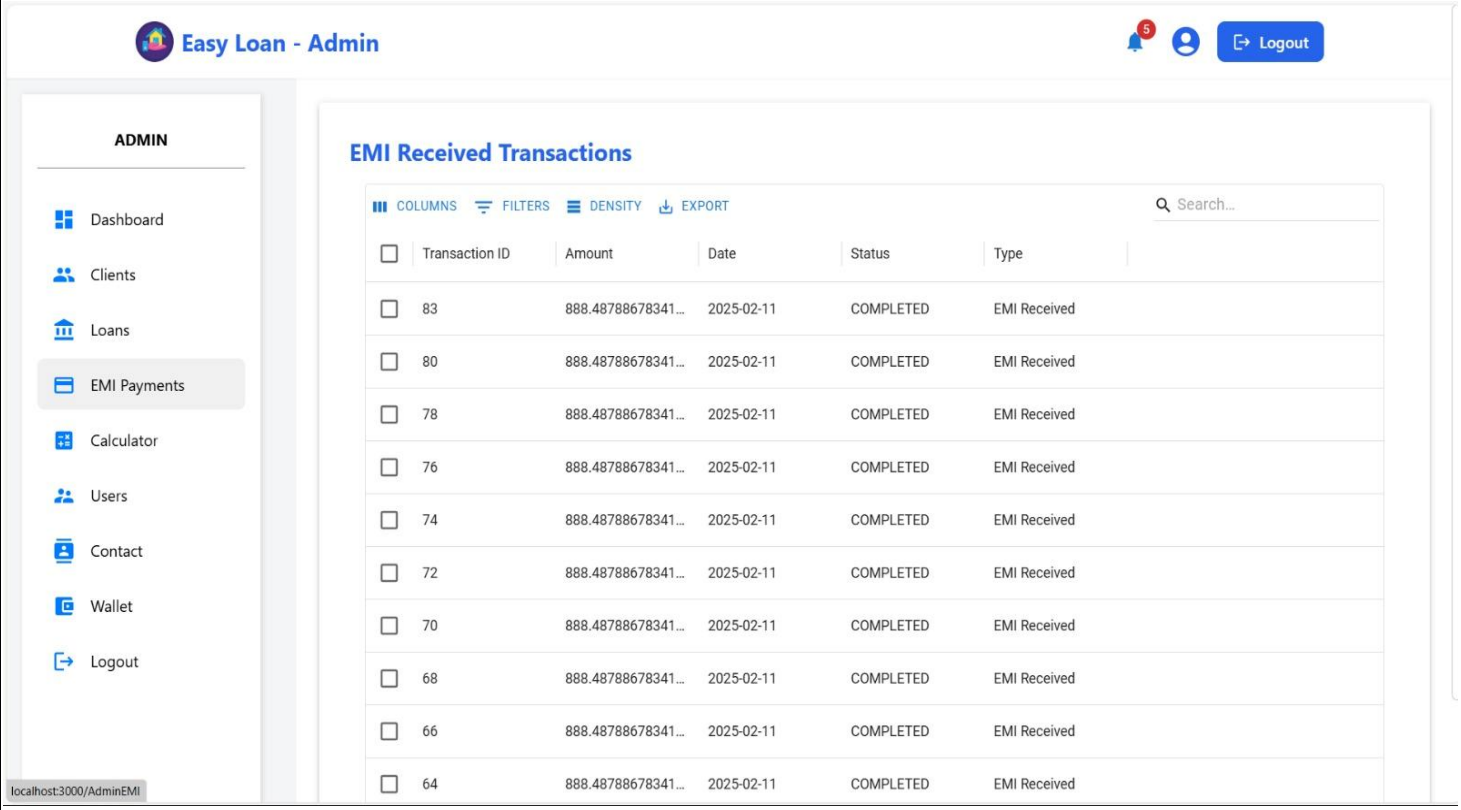
Admin Regsitered Users:



Admin Loan Calculator:



Admin Users History:



Conclusion:

The Online Loan Management System successfully meets the objectives of simplifying and automating the loan management process. With its intuitive interface, secure operations, and robust architecture, the system delivers a seamless experience for users and administrators. Future enhancements may include advanced analytics, machine learning-based credit scoring, and multilingual support.

References

1. Spring Boot Documentation: https://spring.io/projects/spring-boot

2. React Documentation: https://reactjs.org/docs/getting-started.html

3. MySQL Documentation: https://dev.mysql.com/doc/

4. Online Loan Management System Project Reports from academic repositories.