

Loan Management System – Project Documentation

This document describes the frontend and backend functionality of the Loan Management System. The project is a full-stack application built using Angular (frontend) and Spring Boot (backend). It implements a complete loan lifecycle with authentication, authorization, KYC, loan processing, and repayments.

Technology Stack

- Frontend: Angular
- Backend: Spring Boot (Microservices)
- Database: MongoDB & SQL (service-specific)
- Security: JWT Authentication & Role-Based Access Control (RBAC)
- Deployment: Docker & Docker Compose

Authentication Pages

Login Page

The login page allows existing users to authenticate using their username and password.

Validations:

- Username is required
- Minimum length validation
- Regex validation for allowed characters
- Password is required with minimum length

On successful login, a JWT token is issued by the backend and stored securely on the client.

Register Page

The registration page enables new users to create an account.

Validations:

- Email format validation
- Username uniqueness and format validation
- Strong password validation (uppercase, lowercase, number, special character)

After successful registration, users can log in to access the system.

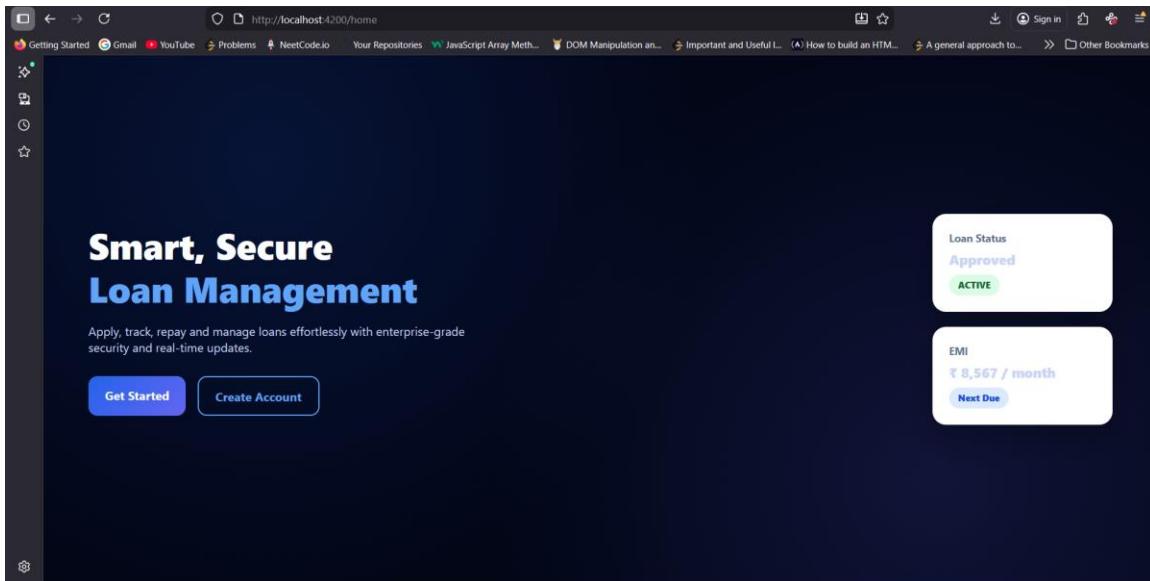
Forgot Password Page

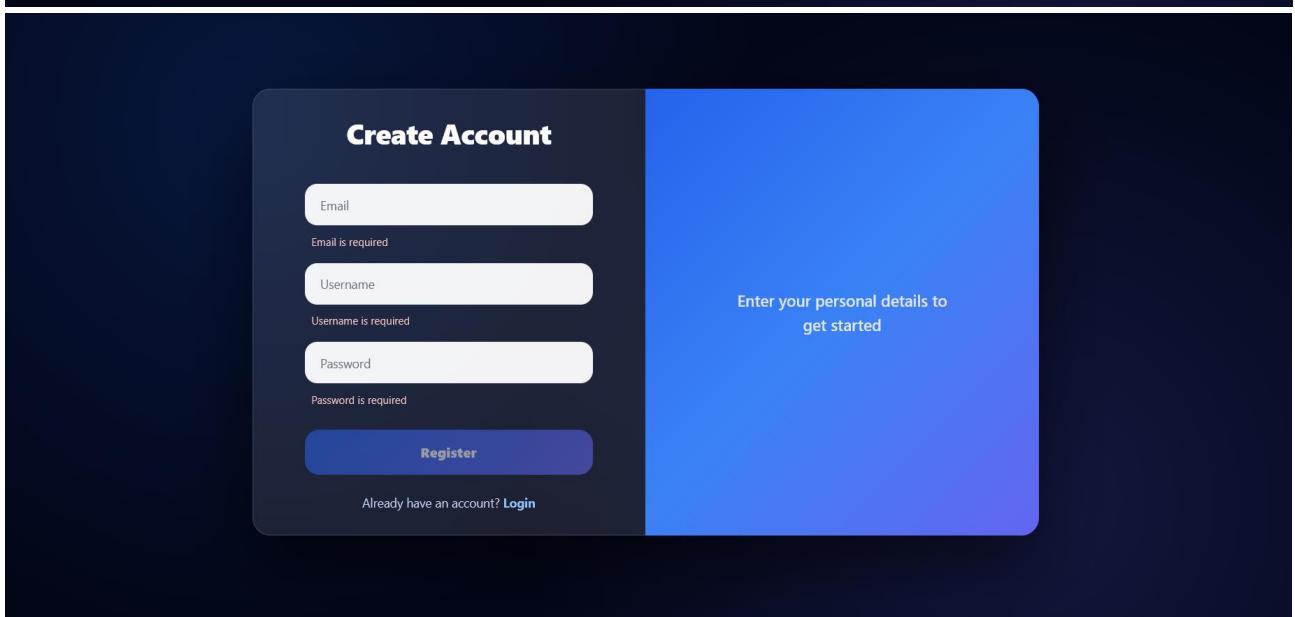
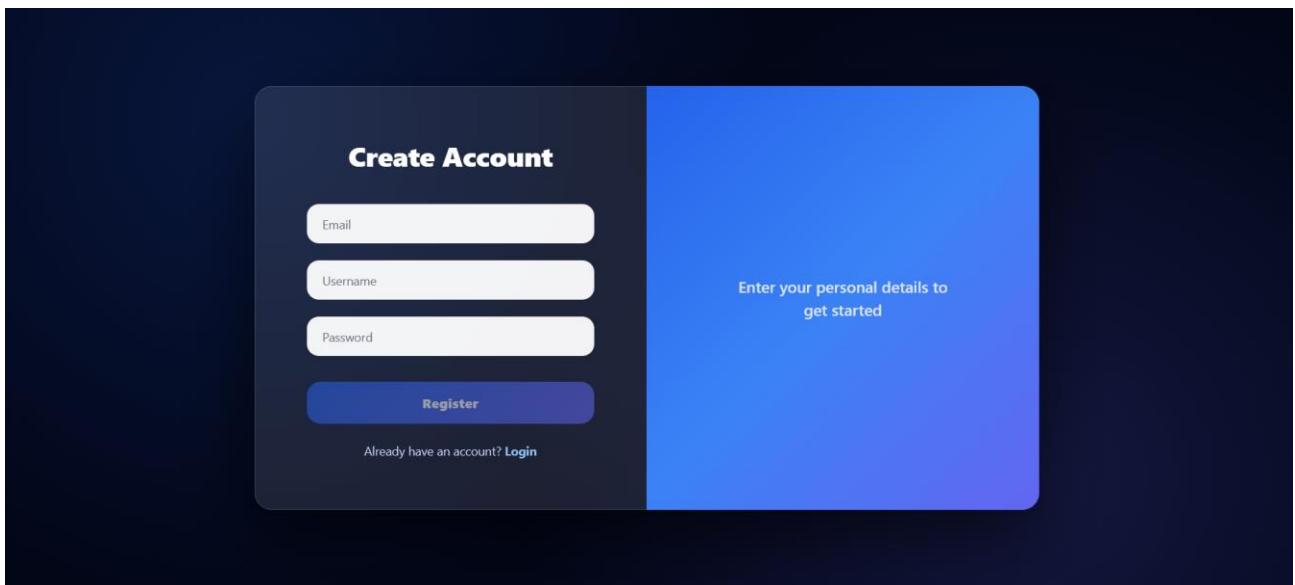
This page allows users to reset their password securely.

Validations:

- Username required
- New password strength validation
- Confirm password match validation

The backend updates the password after validation.





Create Account

akankshya@
Enter a valid email address

aka
Username must be at least 4 characters

Password must be at least 8 characters
Must contain uppercase, lowercase, number & special character

[Register](#)

Already have an account? [Login](#)

Enter your personal details to get started

Login

aka
Username must be at least 4 characters

Password must be at least 8 characters

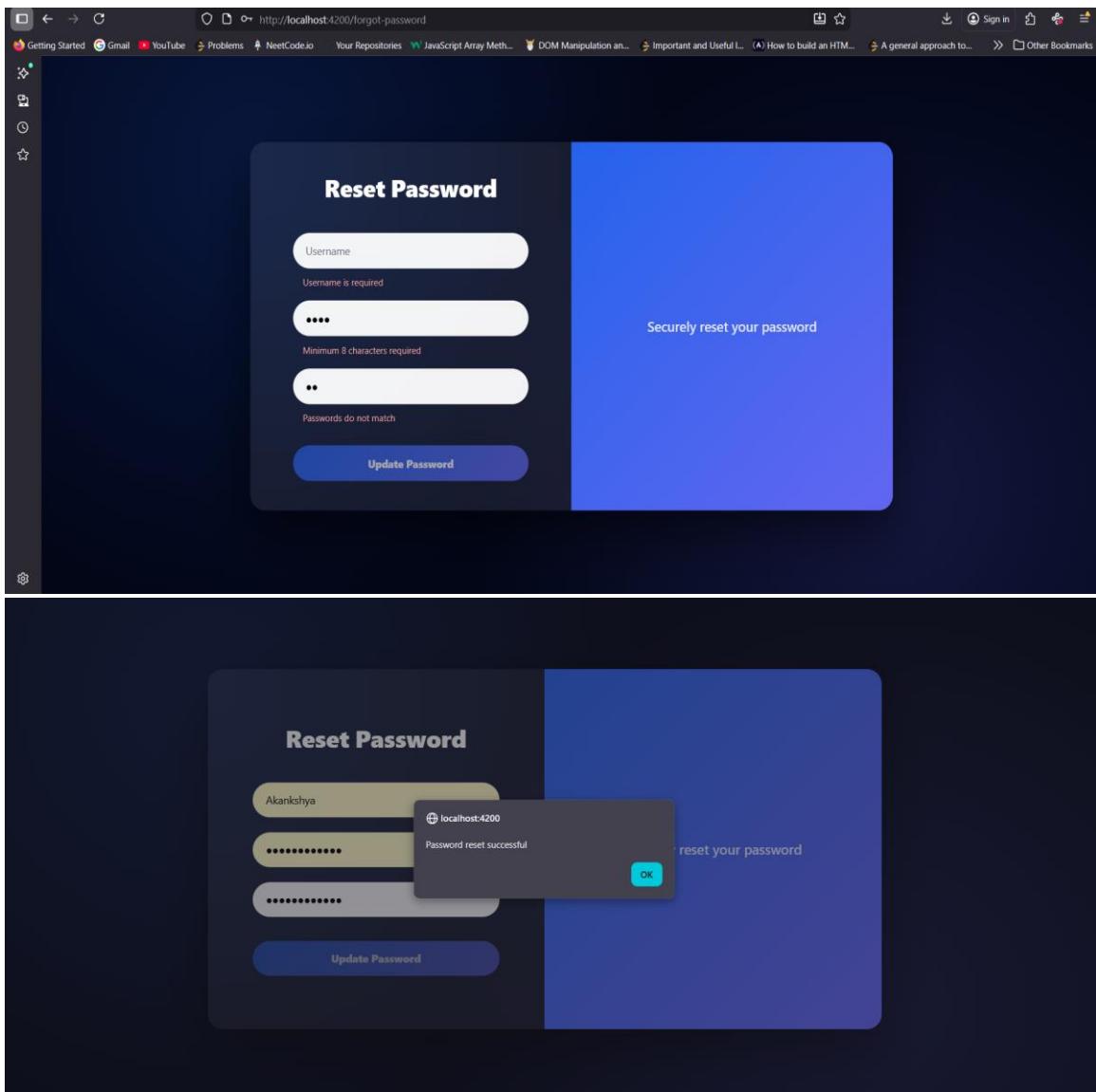
[Login](#)

Don't have an account? [Register](#)

Forgot your password?

http://localhost:4200/login

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The image displays two screenshots of a 'Create Customer Profile' form, likely from a web application running on localhost:4200. The top screenshot shows the initial state of the form, while the bottom screenshot shows the form after some fields have been filled and validation errors are displayed.

Create Customer Profile

Fields (Initial State):

- Full Name: (Input field)
- Email: (Input field)
- Mobile: (Input field)
- Monthly Income: (Input field)

Fields (Filled State - Bottom Screenshot):

- Full Name: (Input field, empty)
- Email: (Input field, value "ds")
- Mobile: (Input field, value "32242")
- Monthly Income: (Input field, value "80000")

Validation Errors (Bottom Screenshot):

- Full Name: ⚠ Full name is required
- Email: ⚠ Enter a valid email
- Mobile: ⚠ Enter a valid 10-digit mobile number

Create Profile

Customer Dashboard

The customer dashboard provides an overview of loan-related information such as active loans, EMI status, and quick navigation to core features like applying for a loan, repayments, and profile management.

Apply Loan Page

This page allows customers to apply for different types of loans.

Features:

- Loan type selection
- Principal, tenure, and interest inputs
- Backend validation and eligibility checks

On submission, the loan application is sent to the loan processing service.

My Loans Page

Displays a list of all loans associated with the logged-in customer.

Details shown:

- Loan type
- Principal amount
- Tenure
- Loan status

Users can click on a loan to view detailed EMI information.

Loan Details & EMI Overview

Shows detailed information of a selected loan including EMI amount, outstanding balance, paid EMIs, pending EMIs, and overdue EMIs.

Data is fetched dynamically from the backend.

Repayments Page

This page displays the EMI schedule for the active loan.

Features:

- EMI number, due date, amount, and status
- Only the next unpaid EMI shows the 'Pay Now' button
- Paid EMIs are marked clearly

Payment requests are processed through the backend payment service.

KYC Upload Page

Allows customers to upload KYC documents such as Aadhaar, PAN, or Address Proof.

Validations:

- Document type selection
- Document number format

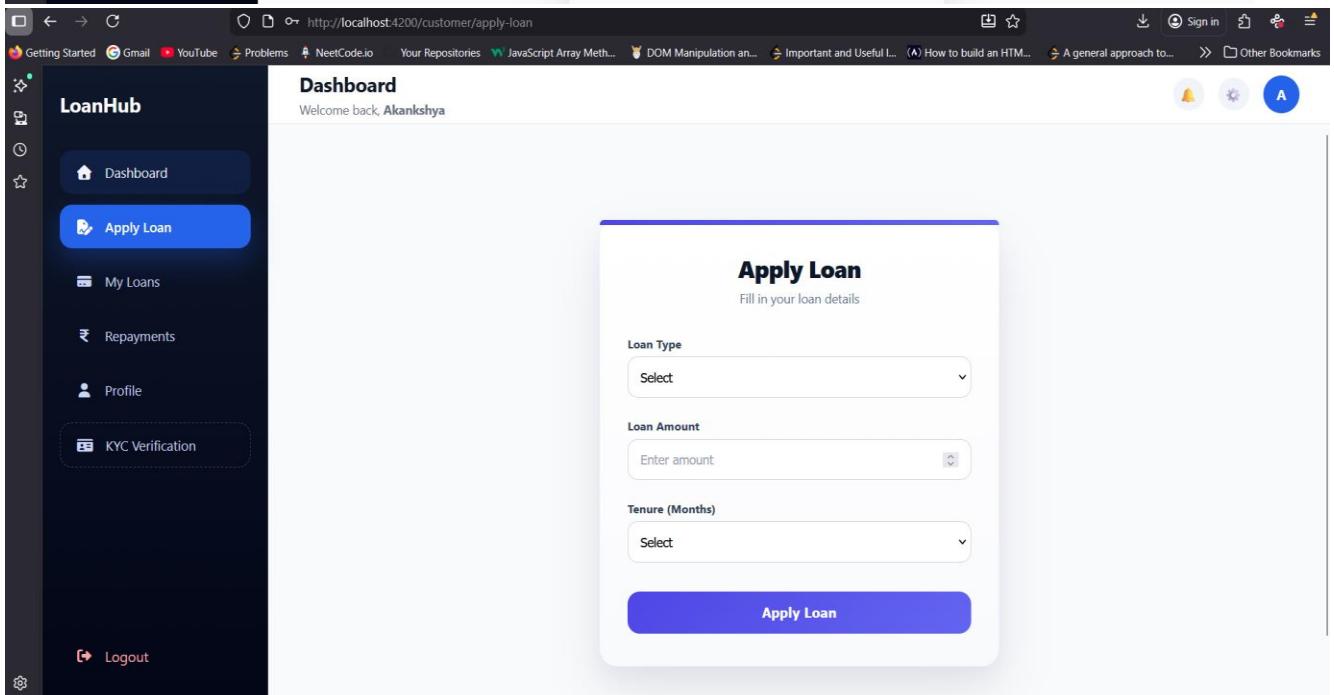
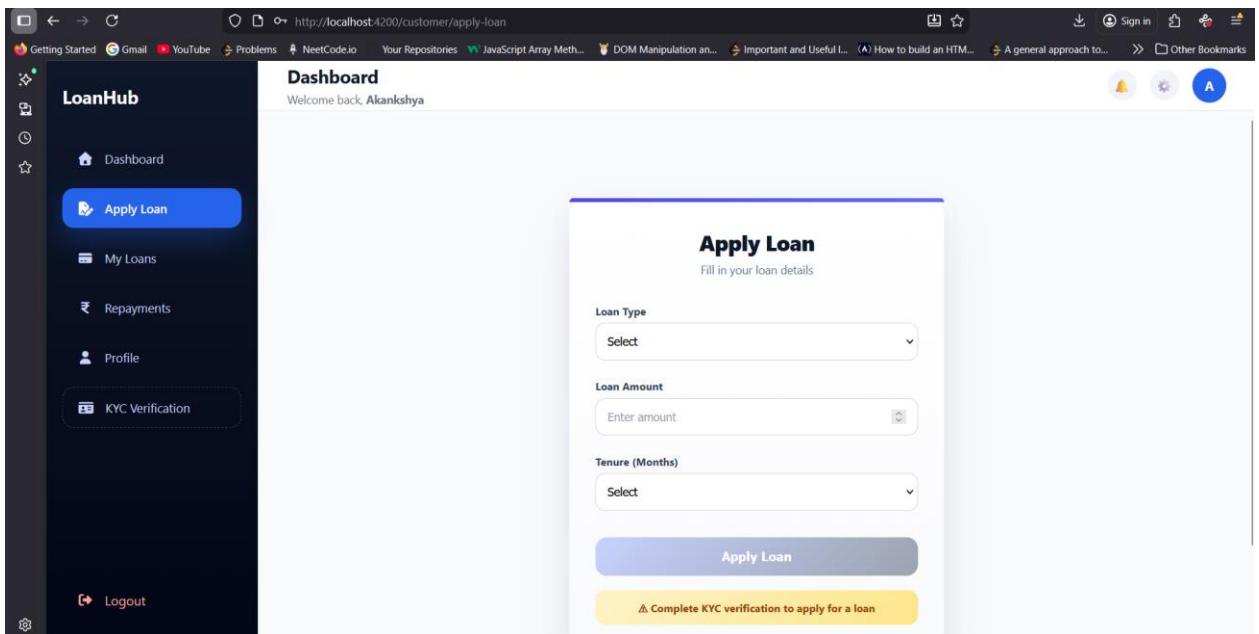
Uploaded documents are sent for admin verification.

Profile Page

Displays customer profile details including personal information, income, credit score, KYC status, and account status.

This data is fetched securely from the customer service.

The image displays two screenshots of the LoanHub application interface, illustrating the KYC verification process. Both screenshots show a dark-themed dashboard with a sidebar containing links for Dashboard, Apply Loan, My Loans, Repayments, Profile, and KYC Verification (which is highlighted in blue). The main area shows a 'Dashboard' header with a welcome message 'Welcome back, Akankshya'. Below this is a 'KYC Verification' section with a sub-header 'Upload documents for verification'. This section contains fields for 'Document Type' (a dropdown menu currently set to 'Select Document') and 'Document Number' (an input field with placeholder text 'Enter document number'). A large blue 'Upload KYC' button is centered below these fields. In the second screenshot, a green success message 'KYC document uploaded successfully' is displayed above the 'My KYC Documents' section. This section lists two documents: 'AADHAAR' (with ID 123) and another 'AADHAAR' (with ID 123456789), each with a status indicator: 'VERIFIED' (green) and 'PENDING' (yellow).



http://localhost:4200/customer/apply-loan

The screenshot shows the LoanHub application interface. On the left, a dark sidebar menu includes 'Dashboard', 'Apply Loan' (highlighted in blue), 'My Loans', 'Repayments', 'Profile', 'KYC Verification' (disabled), and 'Logout'. The main area is titled 'Dashboard' with the message 'Welcome back, Akankshya'. A modal window titled 'Apply Loan' is open, prompting the user to 'Fill in your loan details'. It contains three dropdown fields: 'Loan Type' (set to 'HOME'), 'Loan Amount' (set to '10000'), and 'Tenure (Months)' (set to '12'). A large blue 'Apply Loan' button is at the bottom. Below it, a green success message reads 'Loan application submitted successfully'.

http://localhost:4200/customer/my-loans

The screenshot shows the LoanHub application interface. The sidebar menu is identical to the previous screenshot. The main area is titled 'Dashboard' with the message 'Welcome back, Akankshya'. A modal window titled 'My Loans' is open, displaying a table of loan information. The table has columns: LOAN TYPE, AMOUNT, TENURE (MONTHS), STATUS, and APPLIED ON. One row is shown: 'Home Loan', '₹ 10,000', '12', 'ACTIVE', and 'Jan 7, 2026'. The URL 'http://localhost:4200/customer/apply_loan' is visible at the bottom of the page.

http://localhost:4200/customer/my-loans

Dashboard

Welcome back, Akankshya

My Loans

LOAN TYPE	AMOUNT	TENURE (MONTHS)	STATUS	APPLIED ON
Home Loan	₹ 10,000	12	ACTIVE	Jan 7, 2026

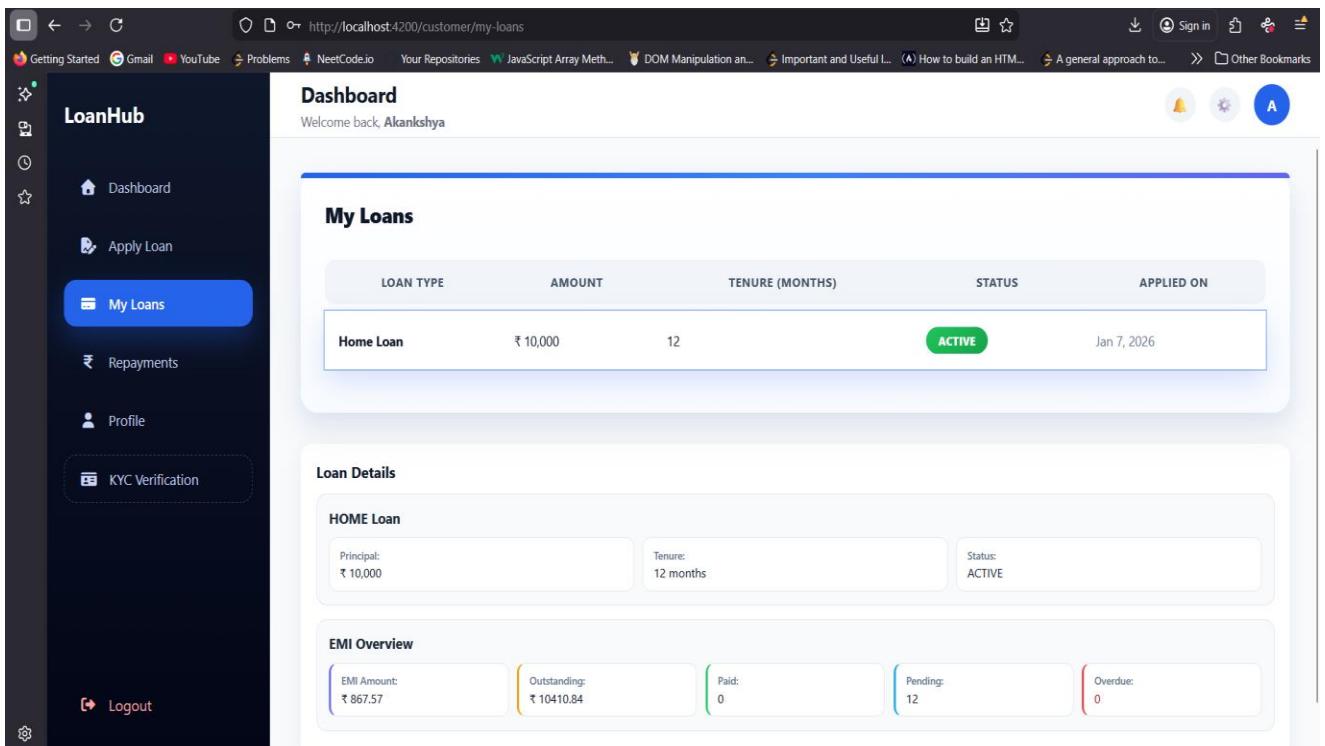
Loan Details

HOME Loan

Principal: ₹ 10,000	Tenure: 12 months	Status: ACTIVE
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EMI Overview

EMI Amount: ₹ 867.57	Outstanding: ₹ 10410.84	Paid: 0	Pending: 12	Overdue: 0
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http://localhost:4200/customer/repayments

Dashboard

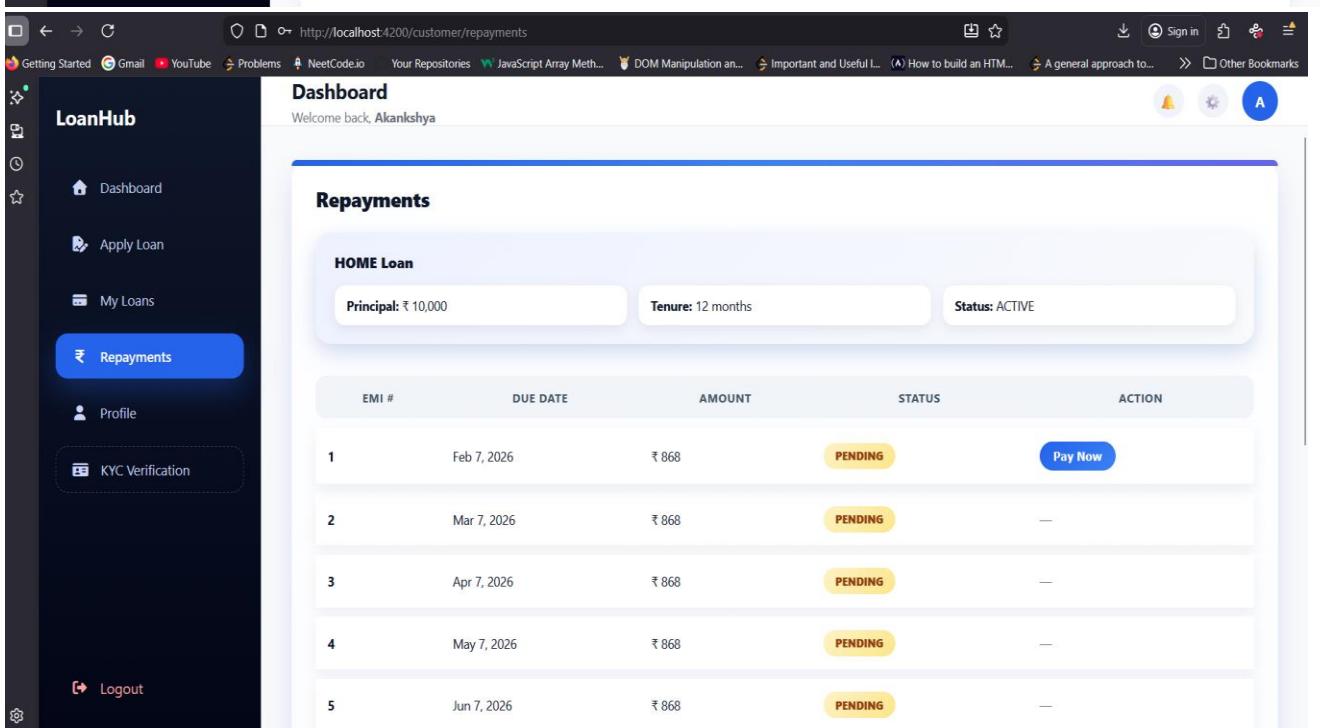
Welcome back, Akankshya

Repayments

HOME Loan

Principal: ₹ 10,000	Tenure: 12 months	Status: ACTIVE
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EMI #	DU DATE	AMOUNT	STATUS	ACTION
1	Feb 7, 2026	₹ 868	PENDING	Pay Now
2	Mar 7, 2026	₹ 868	PENDING	—
3	Apr 7, 2026	₹ 868	PENDING	—
4	May 7, 2026	₹ 868	PENDING	—
5	Jun 7, 2026	₹ 868	PENDING	—



http://localhost:4200/customer/repayments

LoanHub

Dashboard

Welcome back, Akankshya

Repayments

HOME Loan

Principal: ₹ 10,000 | Tenure: 12 months | Status: ACTIVE

EMI #	Date	Amount	Status	Action
1	Feb 7, 2026	₹ 868	PAID	Paid
2	Mar 7, 2026	₹ 868	PENDING	Pay Now
3	Apr 7, 2026	₹ 868	PENDING	—
4	May 7, 2026	₹ 868	PENDING	—
5	Jun 7, 2026	₹ 868	PENDING	—

localhost:4200 Payment Successful

OK PAID

Logout

http://localhost:4200/customer/profile

LoanHub

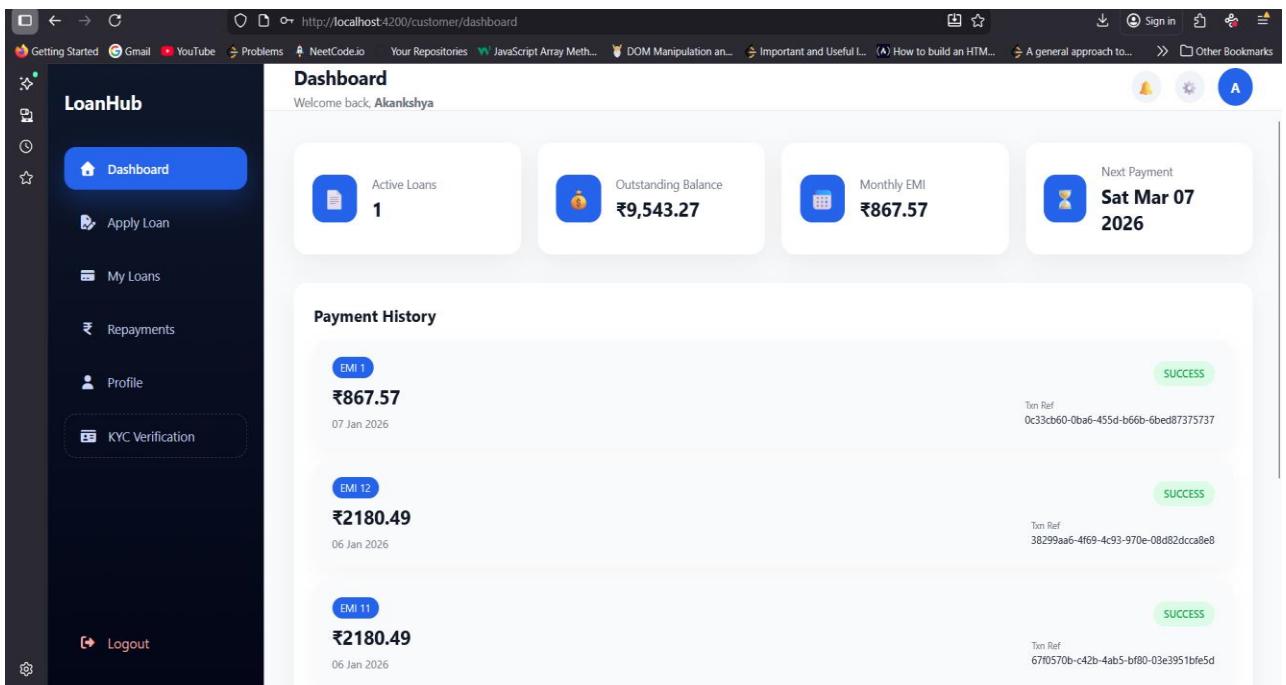
Dashboard

Welcome back, Akankshya

My Profile

FULL NAME	Akankshya Panda
EMAIL	akankshya@gmail.com
MOBILE	9999999999
MONTHLY INCOME	₹ 800000
CREDIT SCORE	650
KYC STATUS	VERIFIED
ACCOUNT STATUS	ACTIVE

Logout



Admin Module

Admins have access to a separate dashboard where they can:

- View and verify KYC documents
- Manage customers
- Approve or reject loan applications

Admin routes are protected using role-based authorization.

The screenshot displays the Admin Panel of the LoanHub application. On the left, a sidebar menu includes 'Dashboard', 'KYC Verification' (which is highlighted in blue), and 'Customers'. The main content area is titled 'Admin Panel' and shows 'Welcome, admin'. Below this, there are four entries, each representing a customer's KYC status:

- Customer ID:** 695cdcb43b25613e7c1bdd5e
Type: AADHAAR
Document No: 123
KYC Status: VERIFIED
Completion: ✓ Completed
- Customer ID:** 695ce92d3b25613e7c1bdd65
Type: AADHAAR
Document No: 1
KYC Status: VERIFIED
Completion: ✓ Completed
- Customer ID:** 695d13ba3b25613e7c1bdd67
Type: AADHAAR
Document No: 12
KYC Status: VERIFIED
Completion: ✓ Completed
- Customer ID:** 695cdcb43b25613e7c1bdd5e
Type: AADHAAR
Document No: 123456789
KYC Status: PENDING
Completion:

The image displays two screenshots of the LoanHub Admin Panel. The top screenshot shows the main dashboard with various metrics and a pie chart. The bottom screenshot shows the 'All Customers' list.

Dashboard Metrics:

- Total Loans: 1240
- Active Customers: 640
- EMI Collected: ₹ 18,250,000
- Approved Loans: 820
- Pending Loans: 260
- Rejected Loans: 160

Loan Status Distribution:

Status	Count
Approved	820
Pending	260
Rejected	160

Loans Overview:

Status	Count
Approved	820
Pending	260
Rejected	160

All Customers List:

Name	Email	ID	Mobile	KYC	Account
John Does	john@gmail.com	ID: 695be3755a675628fb7f0f6	9999999999	NOT_SUBMITTED	ACTIVE
Bill Gates	bill@gmail.com	ID: 695a64b1dd5ecb44cbd7a6c9	8899016871	VERIFIED	ACTIVE
Mukesh Ambani	ambani@gmail.com	ID: 695ade49bc614747143bc34a	8899016871	VERIFIED	ACTIVE
Donald Trump	trump@gmail.com	ID: 695bee30a266bd78eec038df	8899016871	VERIFIED	ACTIVE
Akankshya Panda	akankshya@gmail.com	ID: 695ccbc43b25613e7c1bdd5e	9999999999	VERIFIED	ACTIVE

Additional Highlights

- Secure JWT-based authentication
- Microservices architecture
- Clean, responsive UI
- Production-ready Dockerized deployment
- Real-world financial workflow implementation

This project demonstrates enterprise-level full-stack development skills, covering frontend design, backend architecture, security, and deployment.