ONLINE BANKING SYSTEM

BATCH 8 GROUP 6

Table of Contents

- Project Overview
- Functionalities
- Application architecture
- Database Schema
- Technologies used
- Endpoints
- ValidationS
- User Interface
- Challenges faced
- Custom error handling
- Future perspectives

Project Overview

An online banking system, also known as internet banking or e-banking, is a digital platform that allows customers to conduct various financial transactions and manage their accounts over the internet. It has become an integral part of modern banking, offering convenience, accessibility, and a wide range of services.

Key features:
JWT Authentication
Custom Exception Handling
Pagination
Unit Testing
Search Functionality
Limited unauthorised Login attempts allowed
Protected Routes
Frontend and Backend validations
Used Toastfiy for showing custom notifications

Functionalities

Dashboard with user details, balance and transaction history

New user registration with all sorts of validation

Admin approval for account creation

Fund transfer to registered users with necessary validations
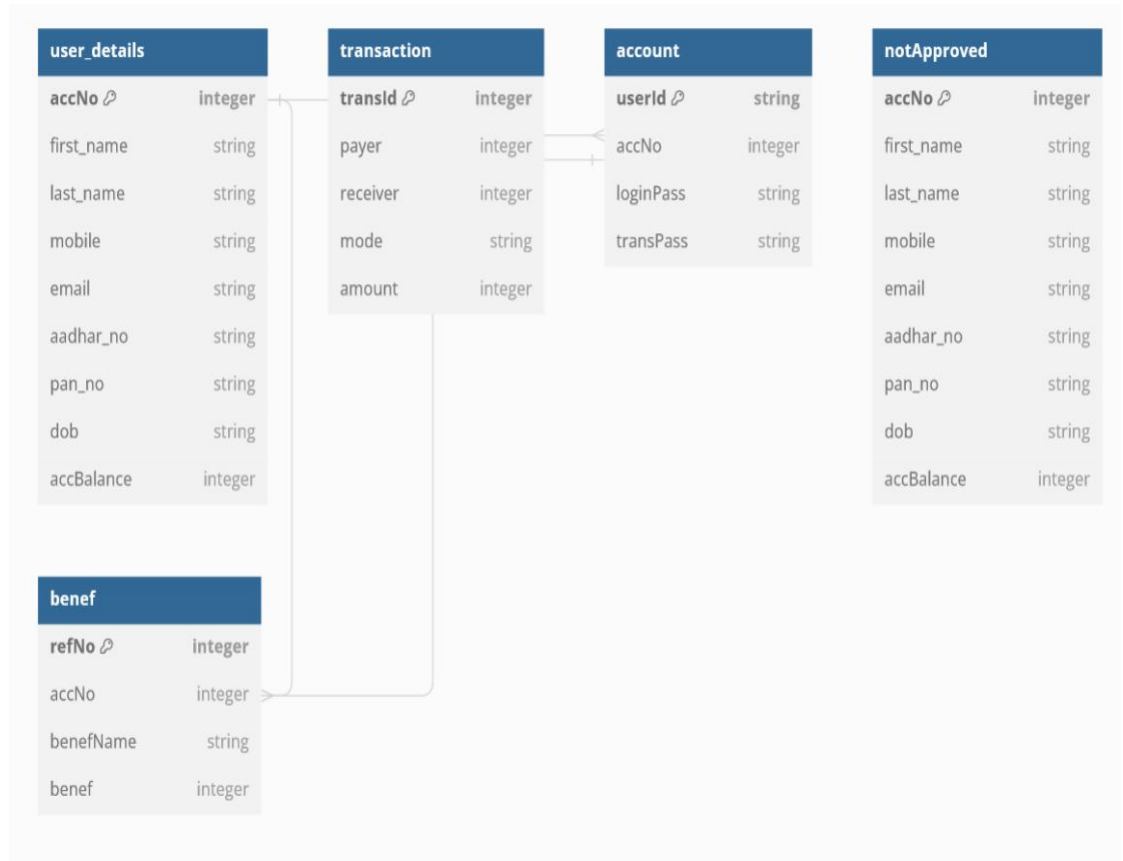
Functionalities

Secure Login with JWT authentication

Functionalities
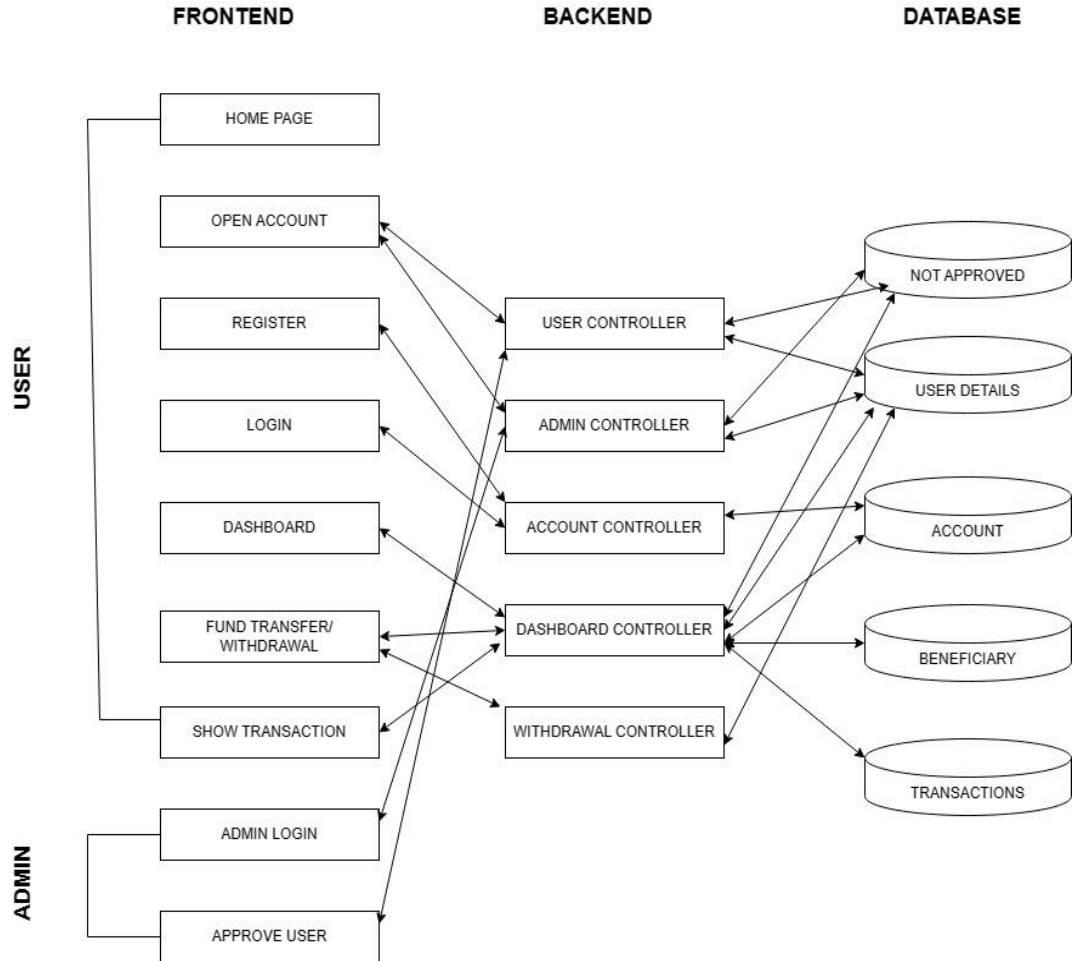Smooth navigation between
pages on the frontend

Unit and
Integration testing

Error handling with custom
exceptions at Backend

Database Schema

user_details

accNo 🔑	integer
first_name	string
last_name	string
mobile	string
email	string
aadhar_no	string
pan_no	string
dob	string
accBalance	integer

transaction

transId 🔑	integer
payer	integer
receiver	integer
mode	string
amount	integer

account

userId 🔑	string
accNo	integer
loginPass	string
transPass	string

notApproved

accNo 🔑	integer
first_name	string
last_name	string
mobile	string
email	string
aadhar_no	string
pan_no	string
dob	string
accBalance	integer

benef

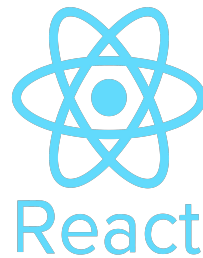| refNo 🔑	integer
accNo	integer
benefName	string
benef	integer

Application Architecture

TECHNOLOGIES USED

FRONTEND:

- React
- React Router
- Yup
- Javascript
- Axios
- Material UI
- React Hot Toast
- Tailwind CSS

TECHNOLOGIES USED

BACKEND:

- Spring Boot
- Maven
- Hibernate
- Java
- MariaDB
- Spring Security
- Lombok
- Spring REST API
- Spring Data JPA

Endpoints

User

-> /api/openaccount
POST : Post details to not approved table

Admin

->/api/admin/userlist_requested
GET : List of user account that needs approval.

->/api/admin/userlist_approved
GET : List of user account that are approved.

->/api/admin/userlist_requested
POST : List of user account that needs approval.

->/api/admin/userlist_requested/{userId}
DELETE : Delete the user record of given userId.

Endpoints

Account

-> /api/login

-> /api/register
POST: Post details to user details table.

User Dashboard

-> /api/userDashboard/{userId}
GET: To get the details of user.

->/api/userDashboard/fundTransfer/{userId}
POST: Fund transfer detail to table .

->/api/userDashboard/showTransactions/{userId}
GET : To get the transactions details.

->/api/userDashboard/addBeneficiary/{userId}
POST: To beneficiary table.

->/api/userDashboard/showBeneficiary/{userId}
GET: To get beneficiary details.

Validations

FRONTEND

- Password at least 8 characters with one special character
- Email regex to match the format abc@mail.com
- Mobile number validation
- Aadhar number validation
- Pan Card number validation

BACKEND

- Null and type checks in database
- Valid request check for all the endpoints
- Balance and account checks for transactions

User UI

Internet Banking System

LOGIN TO YOUR ACCOUNT

Enter User ID *

Enter Login Password *

LOGIN

First time User? Register
Forgot UserID?
Forgot Password?

Internet Banking System

OPEN A NEW ACCOUNT

First Name *

Last Name *

Mobile Phone *
+91

Email *

Aadhar Number *

PAN Number *

dd-mm-yyyy

OPEN

Internet Banking System

REGISTER FOR NET BANKING

Account Number *

Set User ID *

Set Login Password *

Confirm Login Password *

Set Transaction Password *

Confirm Transaction Password *

☐ I Agree to MyBank Terms and Privacy Policy *

REGISTER

☰ Hello! Rishab@123   ₹ SHOW BALANCE

Account Information

Full Name: Rishab Purkayastha
User ID: Rishab@123
Account Bal: 430
Account Number: 2
Aadhar Number: 1123456789123456
Mobile Number: 08787507415
Email: abc@gmail.com
PAN Number: GPEPP67890

User UI

Payer	Payee	Mode of Payment	Transaction ID	Amount Transferred
2	1	NEFT	1	100
1	2	RTGS	2	11
1	2	NEFT	52	10
1	2	NEFT	53	100
1	2	NEFT	54	9

ADD NEW BENEFICIARY

Your Account Number *
2

Beneficiary Name *

Beneficiary Account Number *

Re-enter Account Number *

ADD BENEFICIARY

SHOW BENEFICIARIES

Activate Windows
Go to Settings to activate Windows

Beneficiary Name	Beneficiary Account Number	Reference ID
Rudra Pujara	1	1

User UI

Admin UI

LOGIN AS ADMIN

Enter Admin User ID *

Enter Login Password *

LOGIN

Bank Admin Dashboard

Show Pending Requests

These users have not been approved by the admin yet.

SHOW

Show Approved Users

These users have been approved and have a acc in our bank

SHOW

Admin UI

Admin UI

Bank Admin Dashboard

Search by Account No.

Account Number | Acc Balance

1 | 178

2 | 411

3 | 500

✓ **Sucess**

Matching User Found!

Account Number: 2

First Name: Rishab

Last Name: Purkayastha

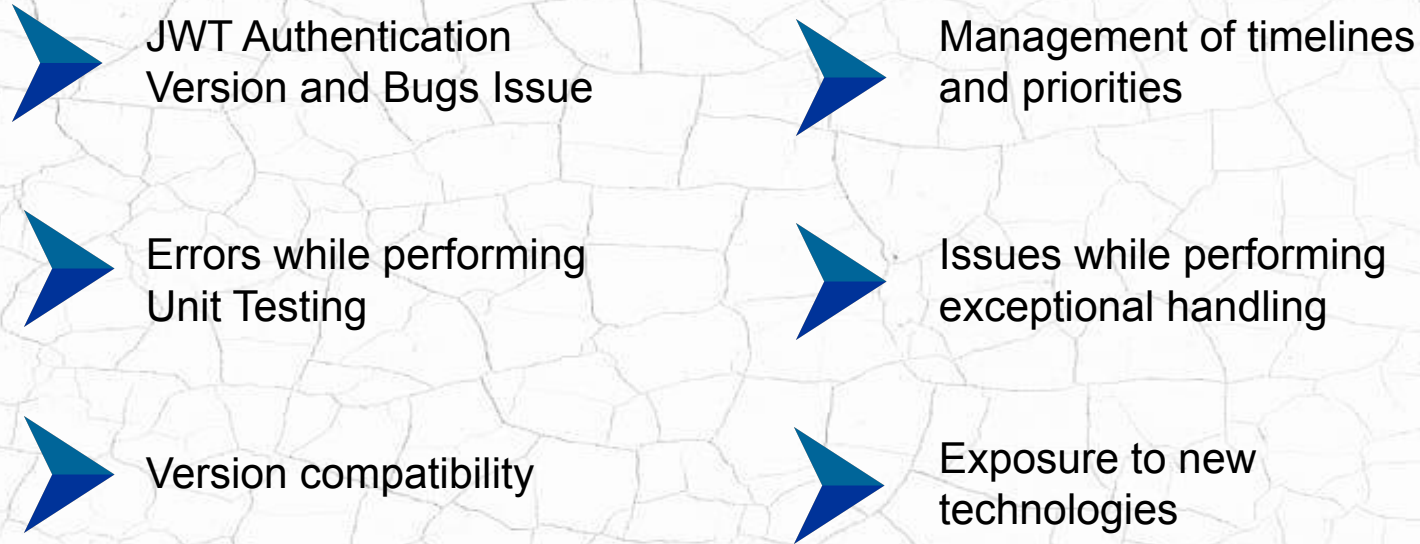**Account Bal:** 411

Aadhar Number: 1123456789123456

PAN Number: GPEPP6789O

Email: abc@gmail.com

Mobile: 08787507415

Challenges Faced

JWT Authentication Version and Bugs Issue

Management of timelines and priorities

Errors while performing Unit Testing

Issues while performing exceptional handling

Version compatibility

Exposure to new technologies

- Custom Error Exception Handling

1. Not able to register if account number previously exists.
2. You cannot make transaction unless you add it in your beneficiary and added beneficiary must be admin approved.
3. Aadhar card , user id , mobile number , pan number , email should be unique and not present previously .
4. For a successful transaction the Acc Balance>=transaction amount.