CEBU INSTITUTE OF TECHNOLOGY
UNIVERSITY

IT342-Section SYSTEMS INTEGRATION AND ARCHITECTURE 1

FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Project Title: Mini App – User Registration & Authentication

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Version: 4.0

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1. Introduction

1.1. Purpose

The purpose of this document is to define the functional requirements of the **Mini App – User Registration & Authentication** system. This document is intended for students, instructors, and developers who need to understand how the system works before implementation.

1.2. Scope

The system allows users to create an account, log in, view their profile or dashboard, and log out securely. It also ensures that protected pages cannot be accessed unless the user is authenticated. This project focuses only on basic authentication features and does not include advanced modules such as payment or admin management.

1.3. Definitions, Acronyms, and Abbreviations

List and define important terms used in this document.

2. Overall Description

2.1. System Perspective

The system is a web-based application composed of a **React frontend**, a **Spring Boot backend API**, and a **database**. The frontend communicates with the backend to process authentication requests with a fully integrated process, while the backend handles validation, security, and data storage.

2.2. User Classes and Characteristics

Identify the different types of users and their characteristics.

2.3. Operating Environment

- Client: Web browser (Chrome, Edge, Microsoft)
- Frontend: React
- Backend: Spring Boot
- Database: MySQL / PostgreSQL
- Tools: draw.io / diagrams.net

2.4. Assumptions and Dependencies

- Users have internet access
- The backend server is available
- Password encryption and token-based authentication are implemented
- The database is properly configured

3. System Features and Functional Requirements

Describe each major feature of the system and its functional requirements.

3.1. Feature 1:

Description: This feature allows a guest user to create a new account by providing valid personal information.
Functional Requirements:
- The system shall allow users to register using a valid email and password
- The system shall validate user input before saving data
- The system shall prevent duplicate email registrations
- The system shall encrypt the password before storing it in the database

3.2. Feature 2:

Description: This feature allows registered users to log in, access protected pages, and log out securely.
Functional Requirements:
- The system shall allow users to log in using email and password
- The system shall authenticate user credentials
- The system shall allow access to the dashboard only when logged in
- The system shall invalidate the session or token upon logout

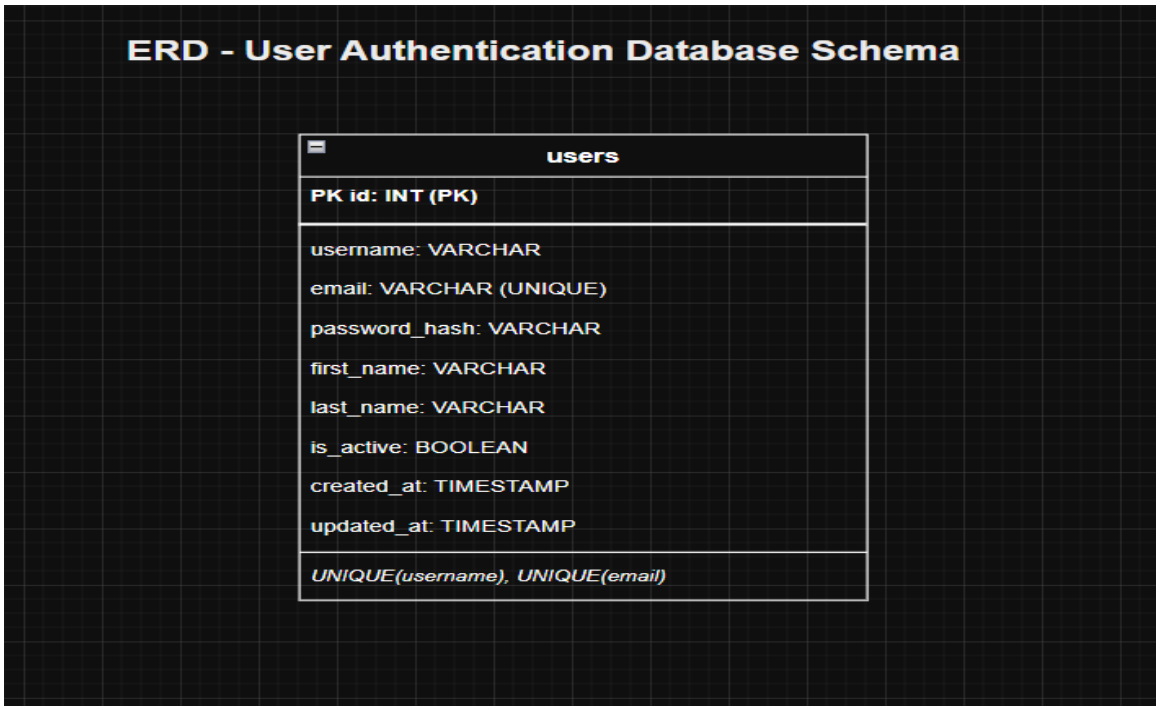
4. Non-Functional Requirements

Security: Passwords must be encrypted and protected pages must require authentication
Performance: The system should respond to login and registration requests within a few seconds
Usability: The system should be easy to use and user-friendly
Reliability: The system should handle invalid login attempts properly

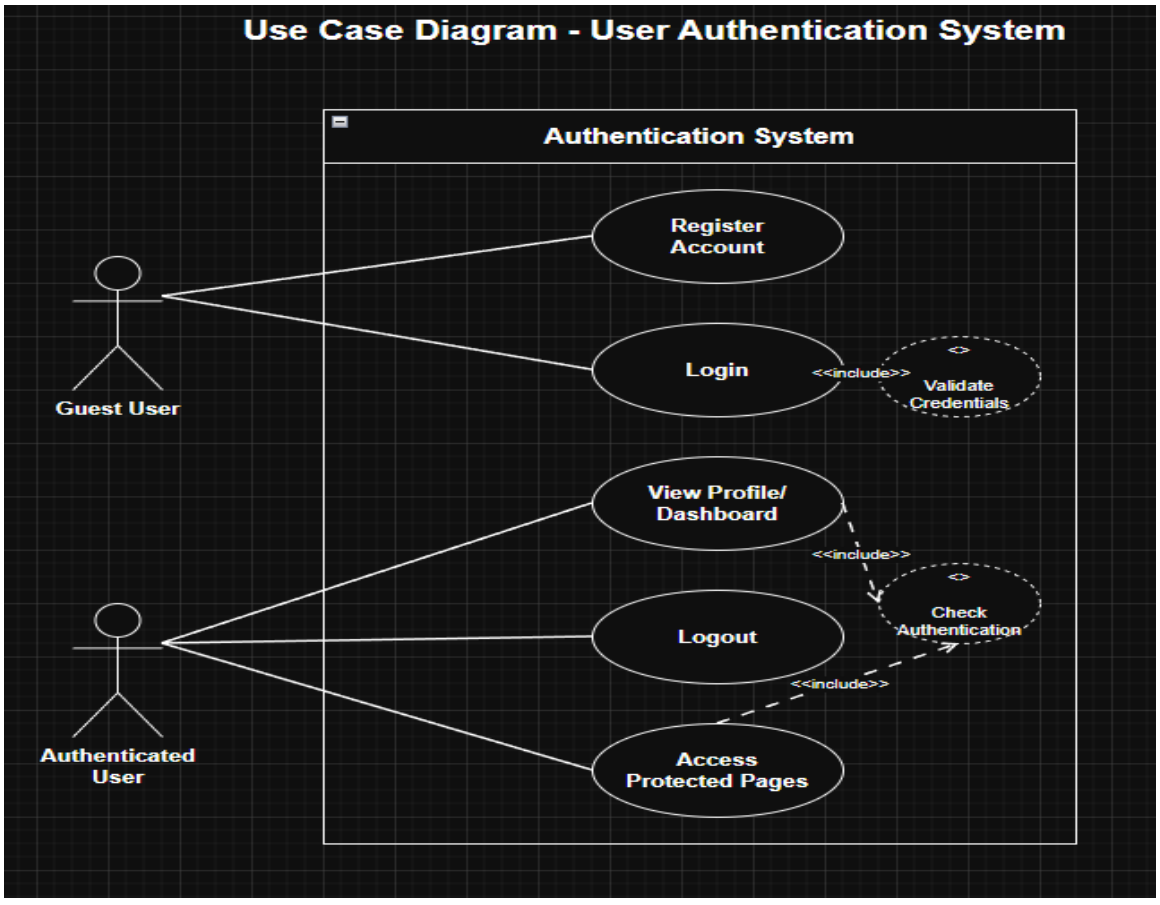
5. System Models (Diagrams)

Insert the necessary diagrams for the system:

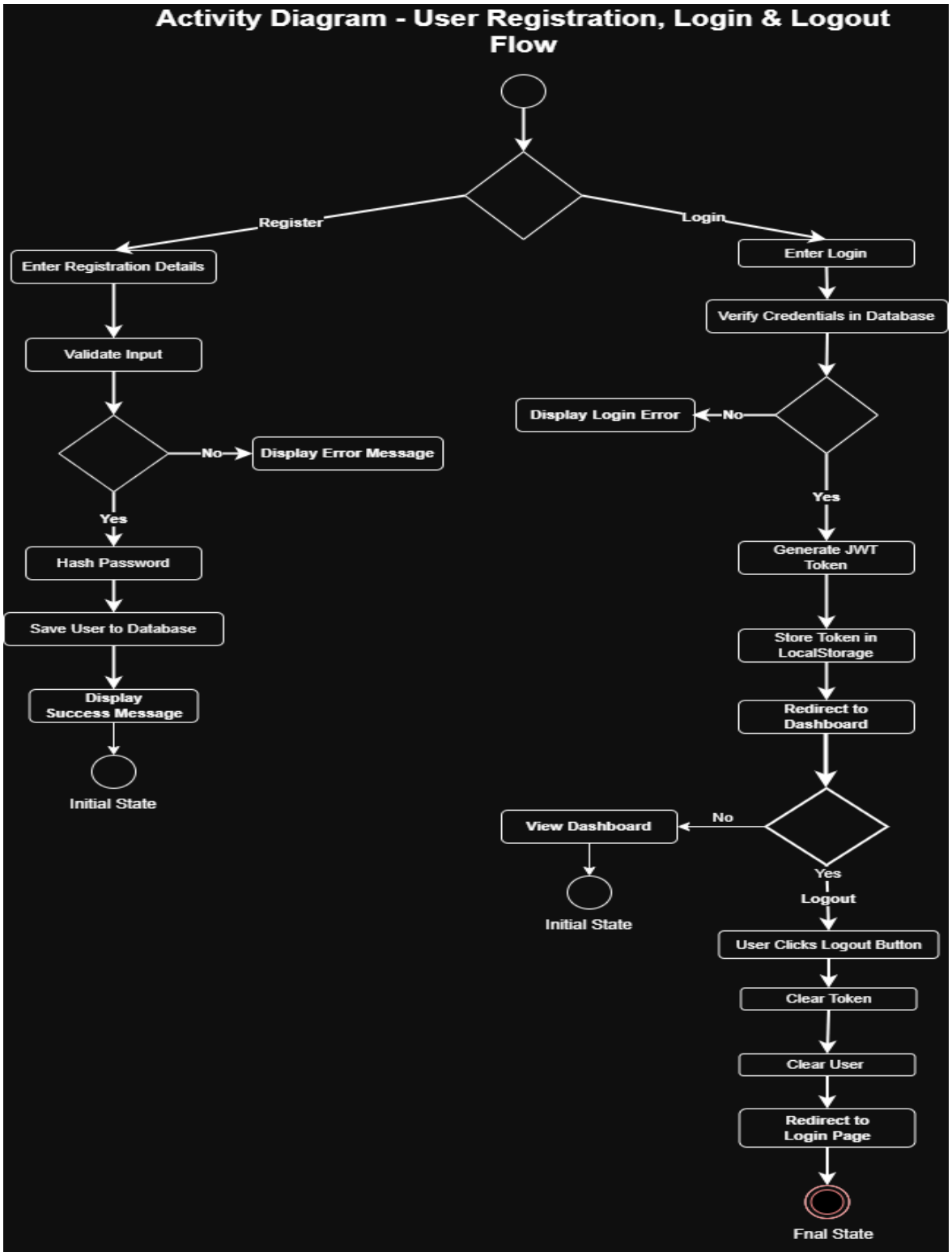
5.1. ERD



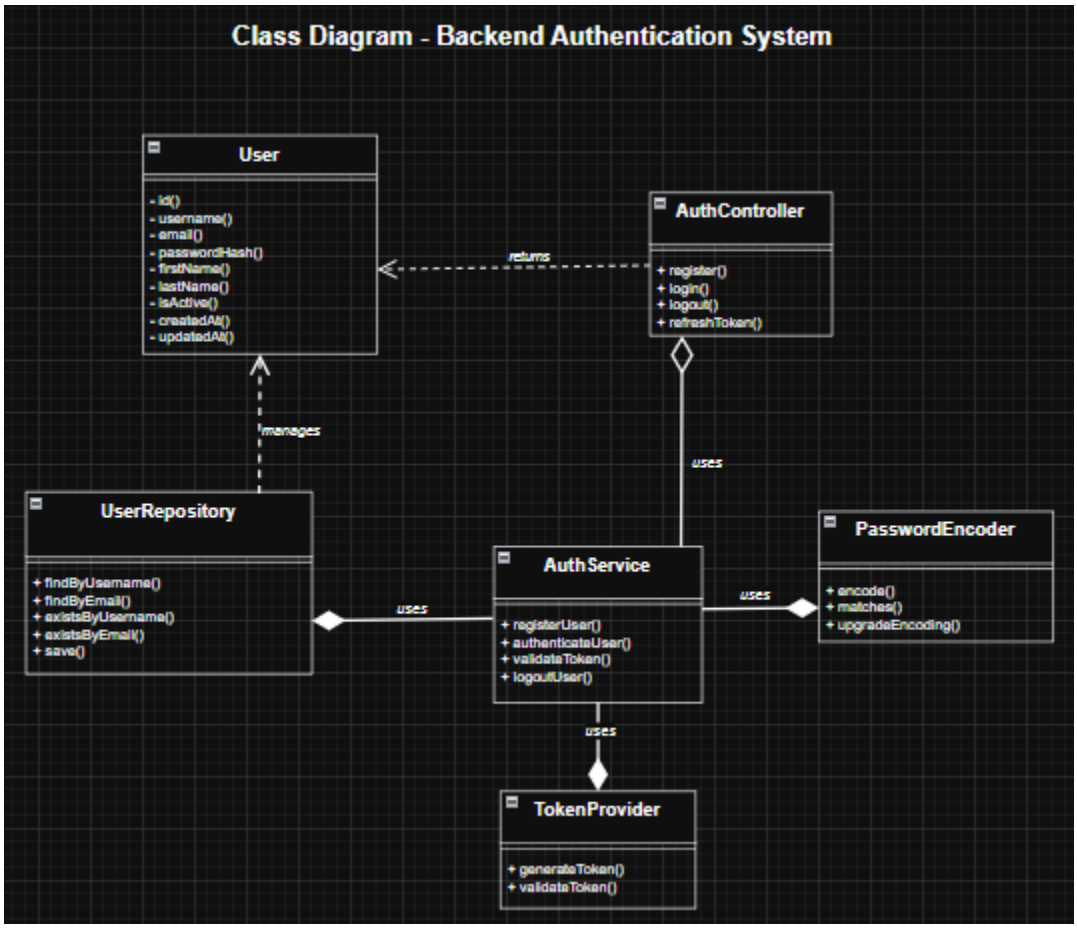
5.2. Use Case Diagram



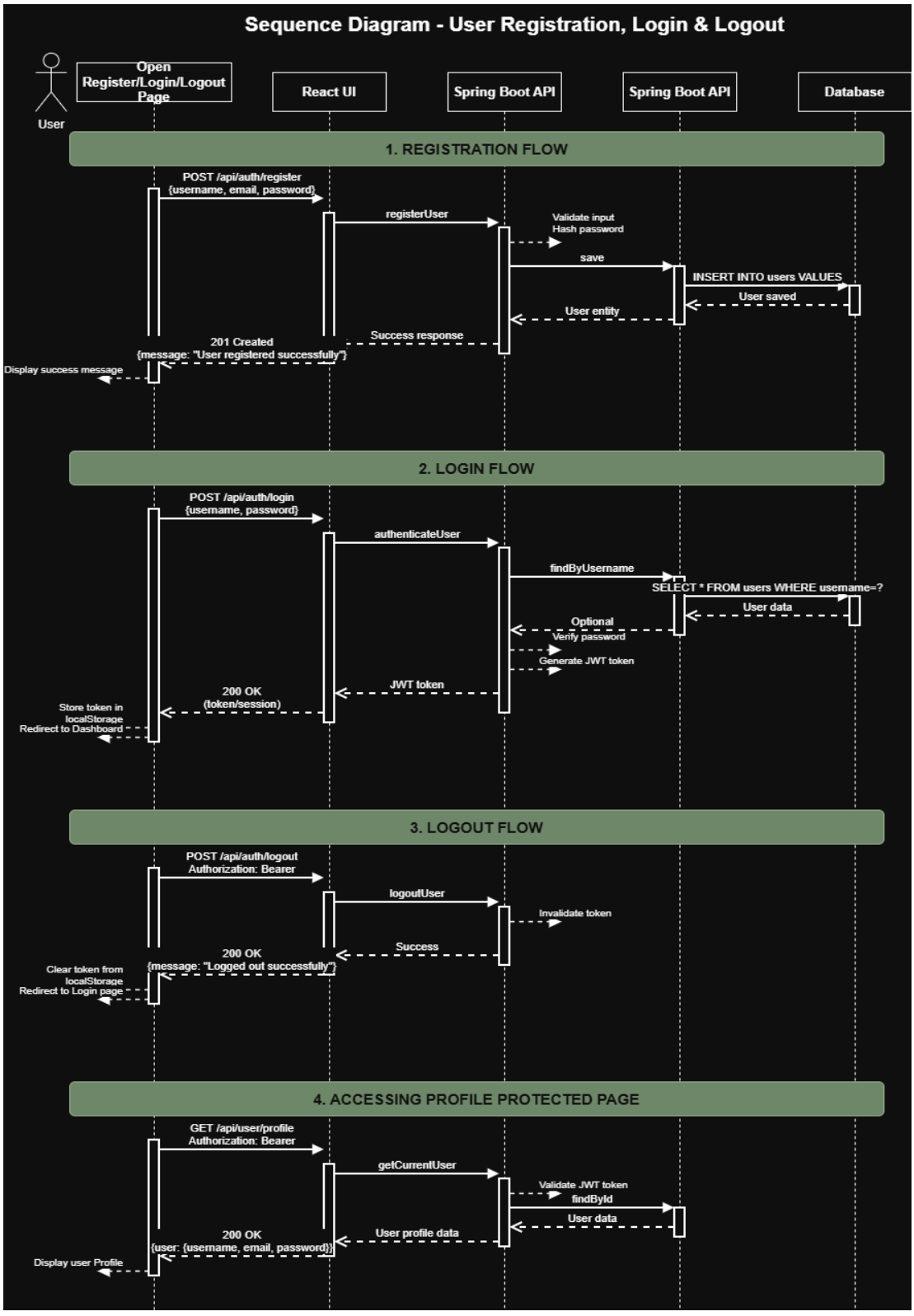
5.3. Activity Diagram



5.4. Class Diagram



5.5. Sequence Diagram



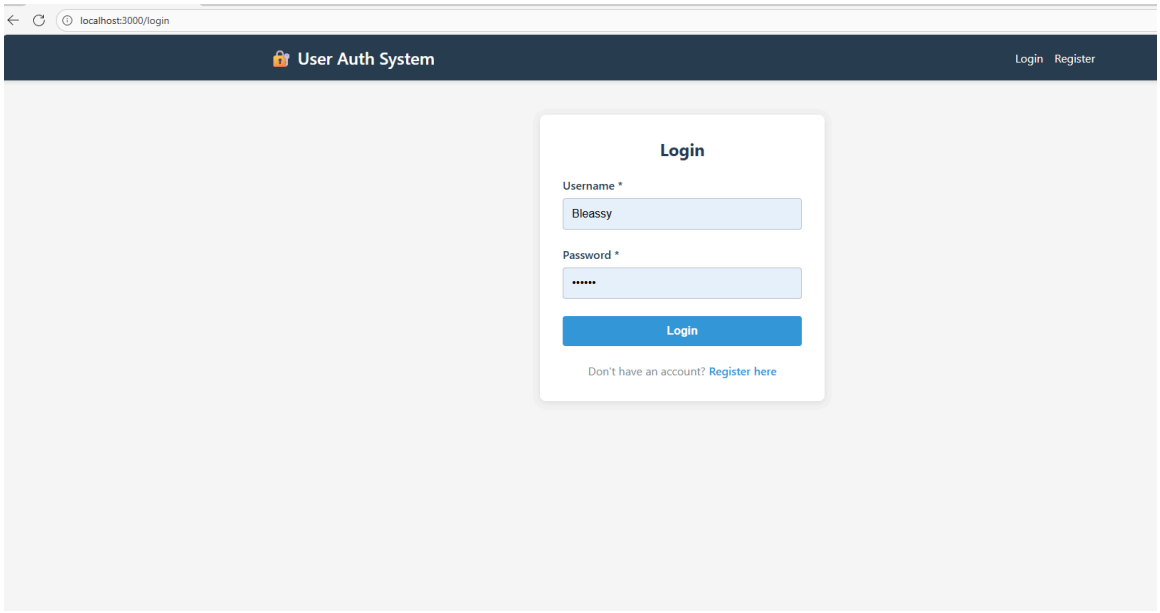
6. Appendices

Include any additional information, references, or support materials.

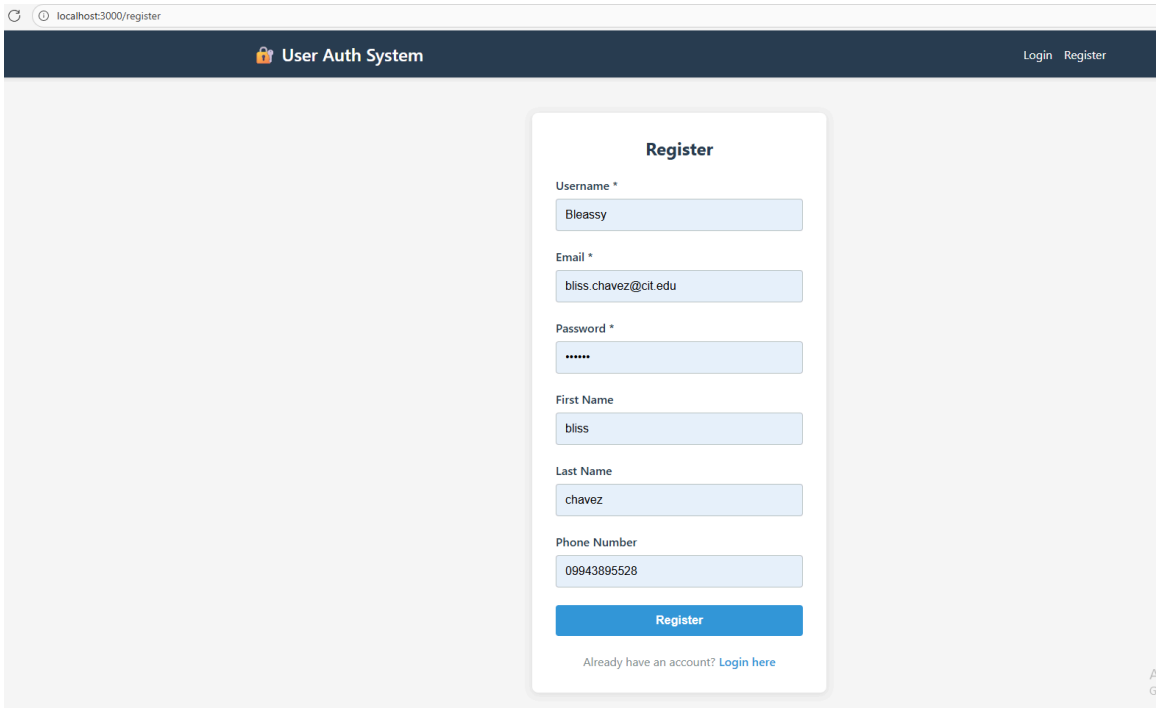
- https://www.geeksforgeeks.org/system-design/unified-modeling-language-uml-activity-diagrams/
- https://www.geeksforgeeks.org/dbms/introduction-of-er-model/
- https://www.geeksforgeeks.org/system-design/use-case-diagram/
- https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-activity-diagram/
- https://www.geeksforgeeks.org/system-design/unified-modeling-language-uml-class-diagrams/
- https://www.geeksforgeeks.org/system-design/unified-modeling-language-uml-sequence-diagrams/

7. Screenshot of the Web UI

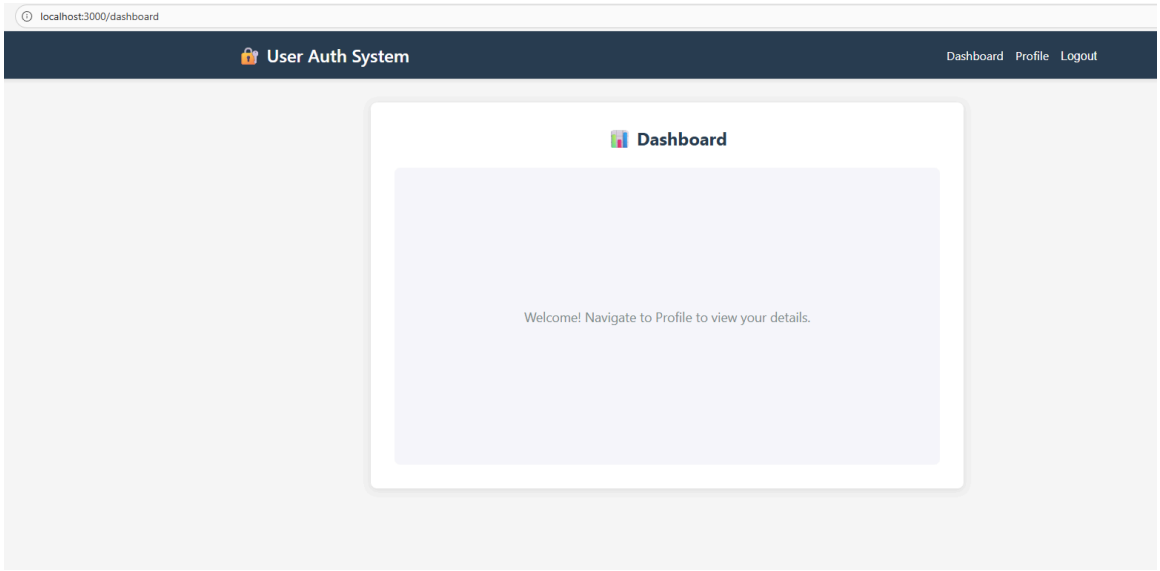
7.1 Login



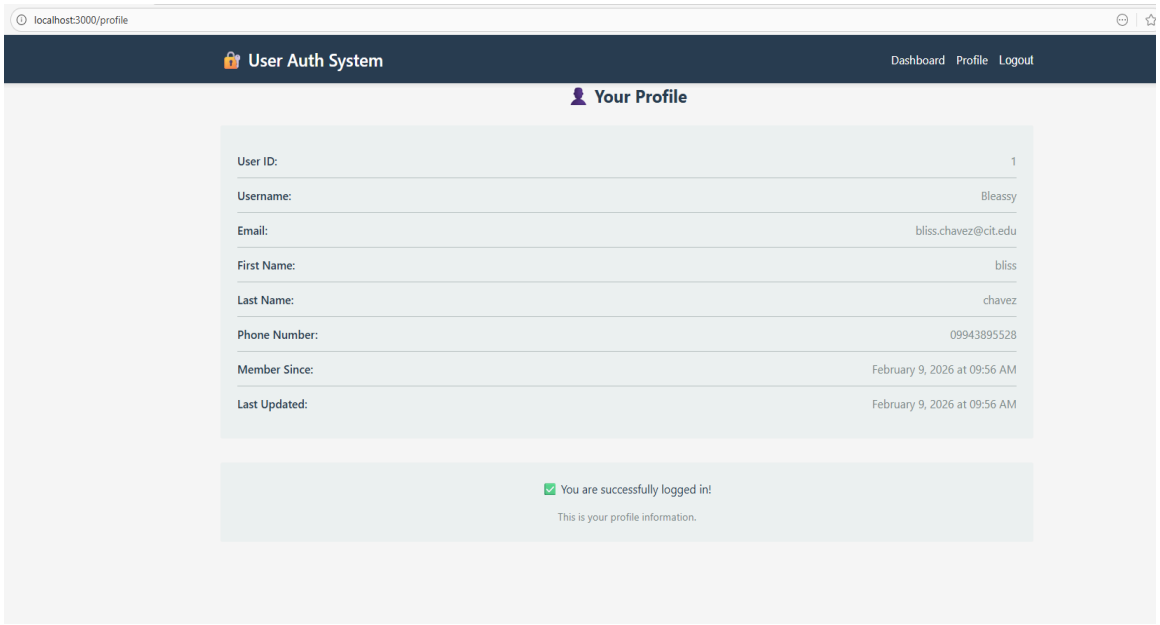
7.2 Registration



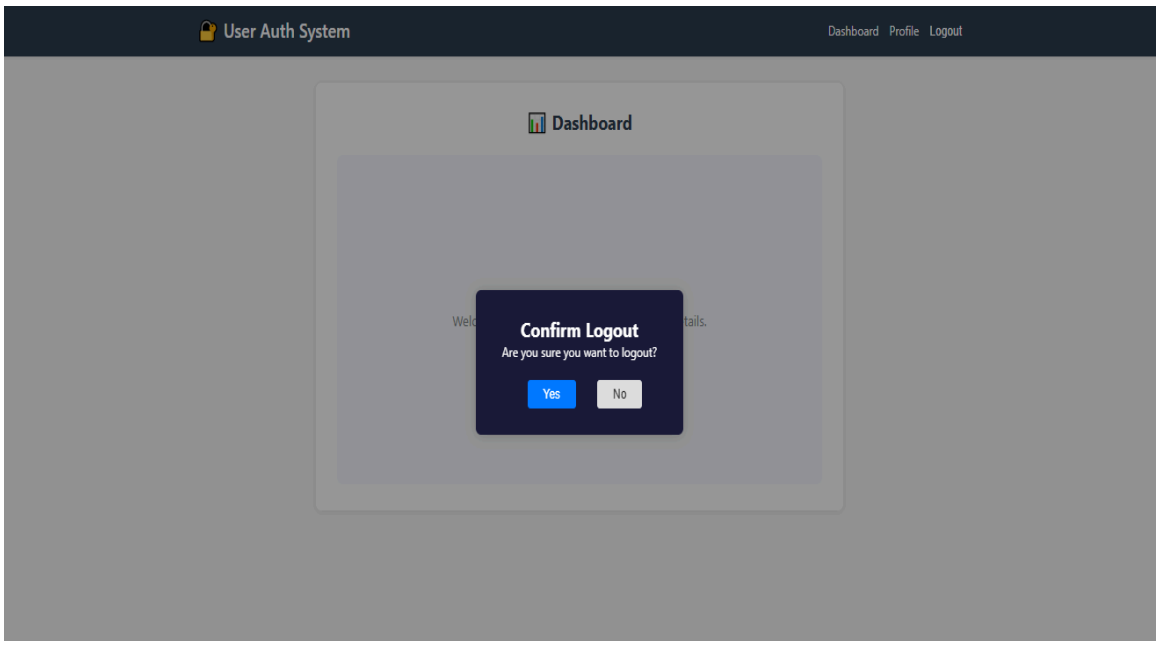
7.3 Dashboard



7.4 Profile



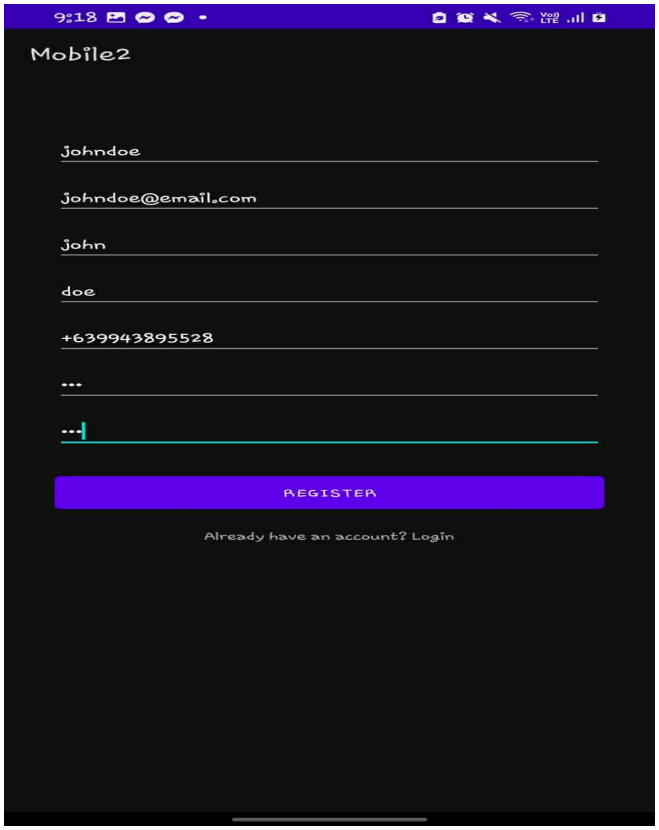
7.5 Logout

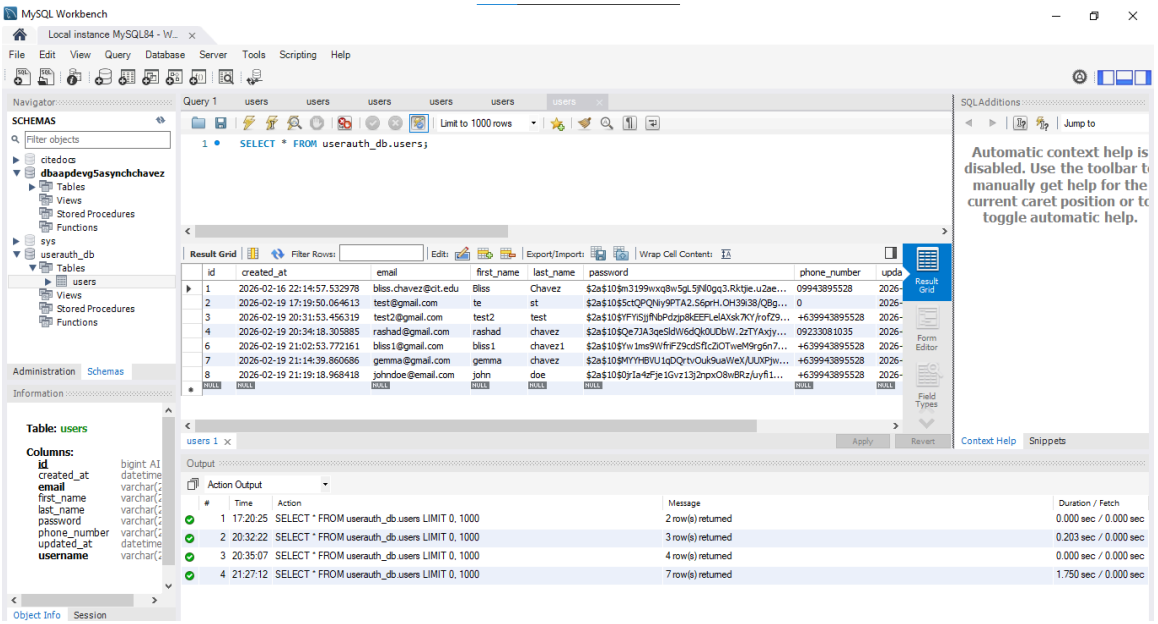


Mobile Application

Login

Registration


9:18
Mobile2
Johndoe
Johndoe@email.com
John
doe
+639943895528
...
REGISTER
Already have an account? Login


MySQL Workbench
Local instance MySQL84 - W...
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
citedocs
dbaapdevg5asynchchavez
Tables
Views
Stored Procedures
Functions
sys
userauth_db
Tables
users
Views
Stored Procedures
Functions
Administration Schemas
Information
Table: users
Columns:
id bigint AI
created_at datetime
email varchar(
first_name varchar(
last_name varchar(
password varchar(
phone_number varchar(
updated_at datetime
username varchar(
Object Info Session
Query 1 users users users users users users users
Limit to 1000 rows
1 SELECT * FROM userauth_db.users;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
id created_at email first_name last_name password phone_number upda
1 2026-02-16 22:14:57.532978 bliss.chavez@cit.edu Bliss Chavez $2a$10$m3199wxq8w5gL5jN0gq3.Rktjie.u2ae... 09943895528 2026-
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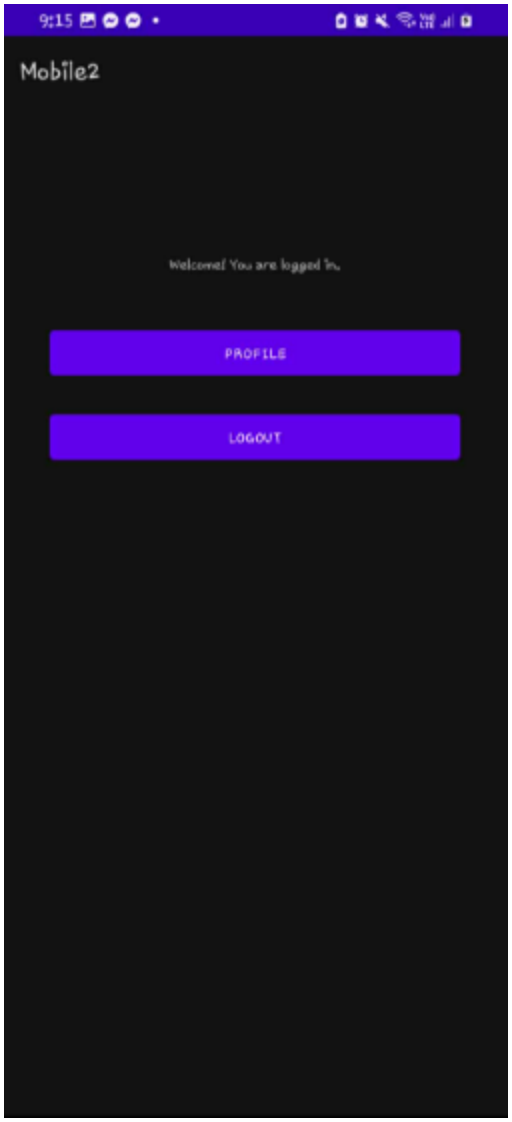
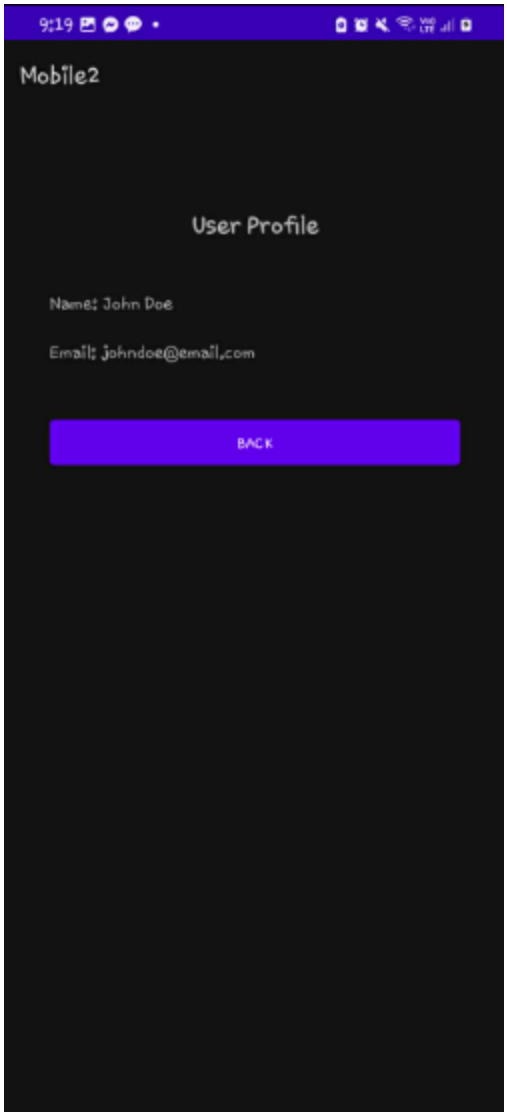
Result Grid Form Editor Field Types
users 1
Apply Revert
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 17:20:25 SELECT * FROM userauth_db.users LIMIT 0, 1000 2 row(s) returned 0.000 sec / 0.000 sec
2 20:32:22 SELECT * FROM userauth_db.users LIMIT 0, 1000 3 row(s) returned 0.203 sec / 0.000 sec
3 20:35:07 SELECT * FROM userauth_db.users LIMIT 0, 1000 4 row(s) returned 0.000 sec / 0.000 sec
4 21:27:12 SELECT * FROM userauth_db.users LIMIT 0, 1000 7 row(s) returned 1.750 sec / 0.000 sec

Dashboard



Profile


9:19
Mobile2
User Profile
Name: John Doe
Email: johndoe@email.com
BACK