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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1. Introduction

1.1. Purpose

To clearly define the functional and non-functional requirements for the **Mini App - User Registration & Authentication** system. It serves as a formal agreement between the stakeholders and the development team, outlining the system's objectives, features, and constraints. The intended audience includes system developers, testers, project managers, and business stakeholders who need a comprehensive understanding of the system's expected behavior.

1.2. Scope

The system, **Mini App - User Registration & Authentication**, is primarily designed to manage user identities and access control. The scope of this system include:

- **User Registration**: Allowing new users to create an account by providing necessary information.
- **User Authentication (Login/Logout)**: Verifying the identity of returning users and managing their session access.
- **Password Management**: Functionality for users to securely reset or change their passwords.
- **Data Validation**: Ensuring that all input during registration and authentication meets defined security and format requirements.

1.3. Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
FRS	An acronym for Functional Requirements Specification.
Mini App	The target application being built, which will integrate the User Registration & Authentication system.
User	Any individual who successfully registers and uses the Mini App.
Authentication	The process of verifying a user's identity (e.g., through a username and password).
Registration	The process by which a new user creates an account within the system.
System	The User Registration & Authentication component.

2. Overall Description

2.1. System Perspective

The User Registration & Authentication System will be an embedded component or subsystem within a larger Mini App framework. It is the initial and crucial entry point for all users, handling identity verification and session management. It functions as a security and access layer, decoupled from the Mini App's core business logic but providing validated user IDs and tokens for the rest of the application to operate. It is not a standalone application but integrates with the Mini App's frontend (user interface) and backend (database/API services).

2.2. User Classes and Characteristics

The primary and currently sole user class is the **Registered User**.

Characteristics: Individuals who require access to the Mini App. They must be able to perform basic computer operations, navigate a web/mobile interface, and provide personal information (e.g., email address, password) accurately during registration and login. They expect a seamless, secure, and intuitive experience.

Needs: To register quickly, log in securely, retrieve/reset a forgotten password, and maintain a protected account session.

2.3. Operating Environment

The system will operate in a multi-tiered architecture:

Client Side (Frontend): Accessible via modern web browsers (Chrome, Firefox, Safari, Edge) on desktop and mobile devices. A potential future native mobile application (iOS/Android) should also be considered in the design.

Server Side (Backend): Will run on a scalable, secure cloud platform (e.g., AWS, GCP, Azure). It will utilize a web server (e.g., Node.js, Apache, Nginx) and communicate with the database via secured API endpoints.

Database: A relational (SQL) or non-relational (NoSQL) database is required to store user credentials, profiles, and associated metadata.

2.4. Assumptions and Dependencies

A-1: Internet Connectivity: It is assumed that all users have reliable access to the internet to use the system.

A-2: Unique Identifiers: All users will have a unique email address or username that serves as their primary identifier.

D-1: Security Standards: The system is dependent on following industry-standard security and encryption protocols (e.g., hashing passwords with salts, using HTTPS).

3. System Features and Functional Requirements

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

3.1. Feature 1: User Registration

Description: This feature allows a new user to create an account within the Mini App system by providing required personal information and a secure password. It is the initial gateway to the application.

Functional Requirements:

- The System **SHALL** present a registration form requesting, at minimum: Email Address (as the unique identifier), Password, and Password Confirmation.

- The System **SHALL** validate the format of the Email Address to ensure it is a legitimate email structure.

- The System **SHALL** enforce a minimum password complexity rule (e.g., minimum 8 characters, at least one uppercase, one lowercase, one number, and one special character).

3.2. Feature 2: User Authentication (Login/Logout)

Description: This feature provides the mechanism for returning users to securely verify their identity to gain access to the Mini App, and a method to securely terminate their session.

Functional Requirements:

- The System **SHALL** present a login interface requesting the user's Email Address (or Username) and Password.

- The System **SHALL** verify the provided credentials against the stored user data using the secure hashing algorithm.

- The System **SHALL** grant the user a secure, session-based token (e.g., JWT) upon successful login.

4. Non-Functional Requirements

- **Performance**: Response time for login/registration (e.g., within 2 seconds).
- **Reliability**: High availability (e.g., 99.9% uptime).
- **Usability**: Clear error messages, intuitive flow, mobile responsiveness.

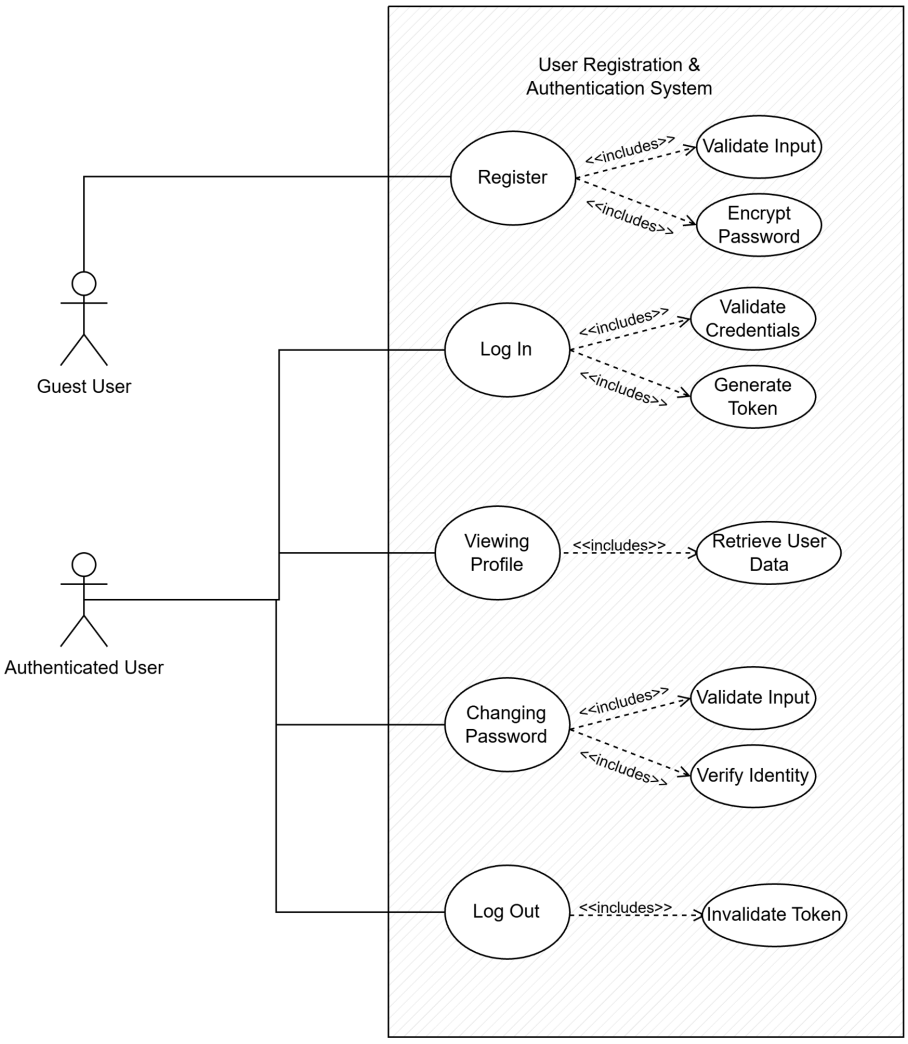
5. System Models (Diagrams)

Insert the necessary diagrams for the system:

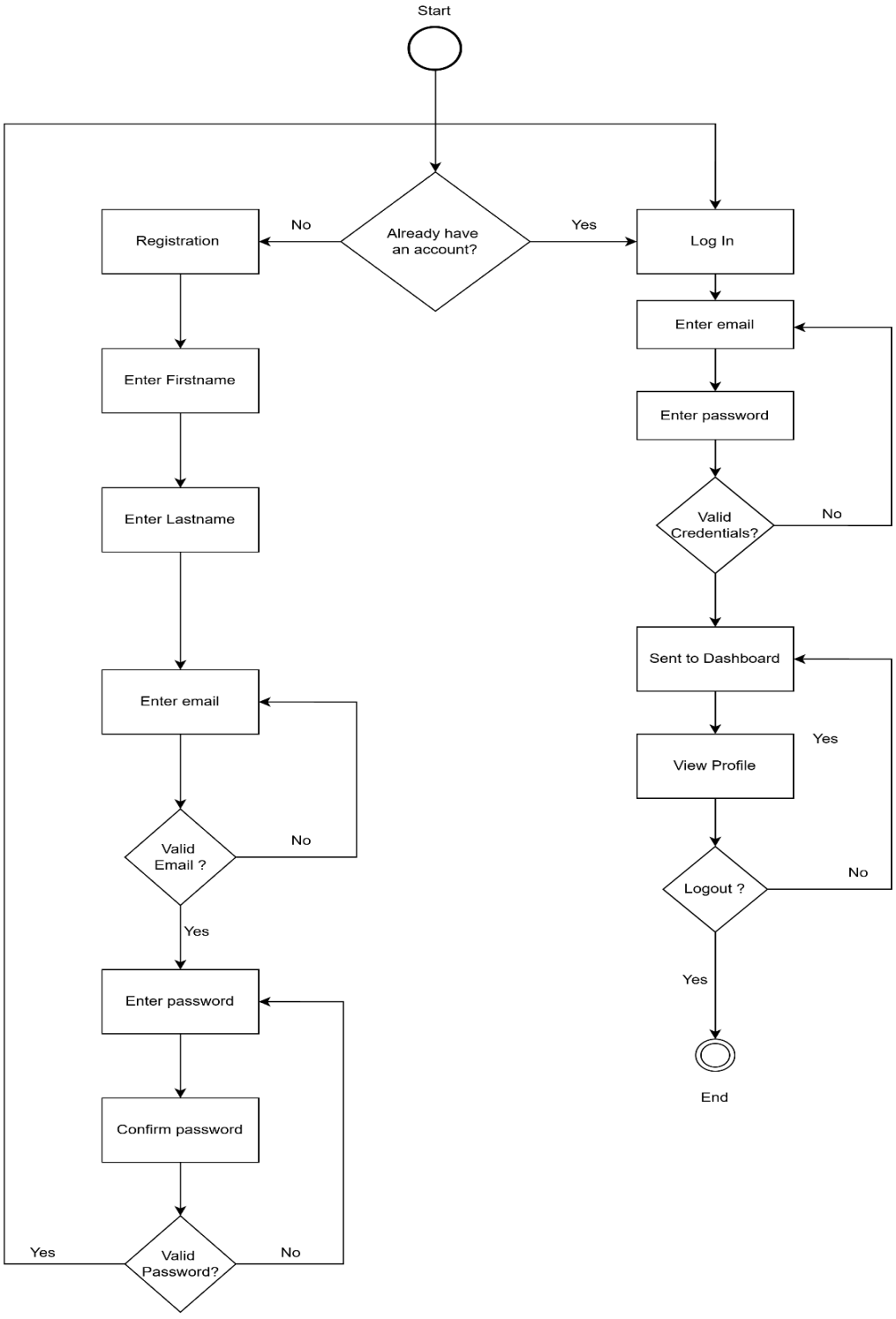
5.1. ERD

User	
PK	**userID**
	firstName
	lastName
	email
	password

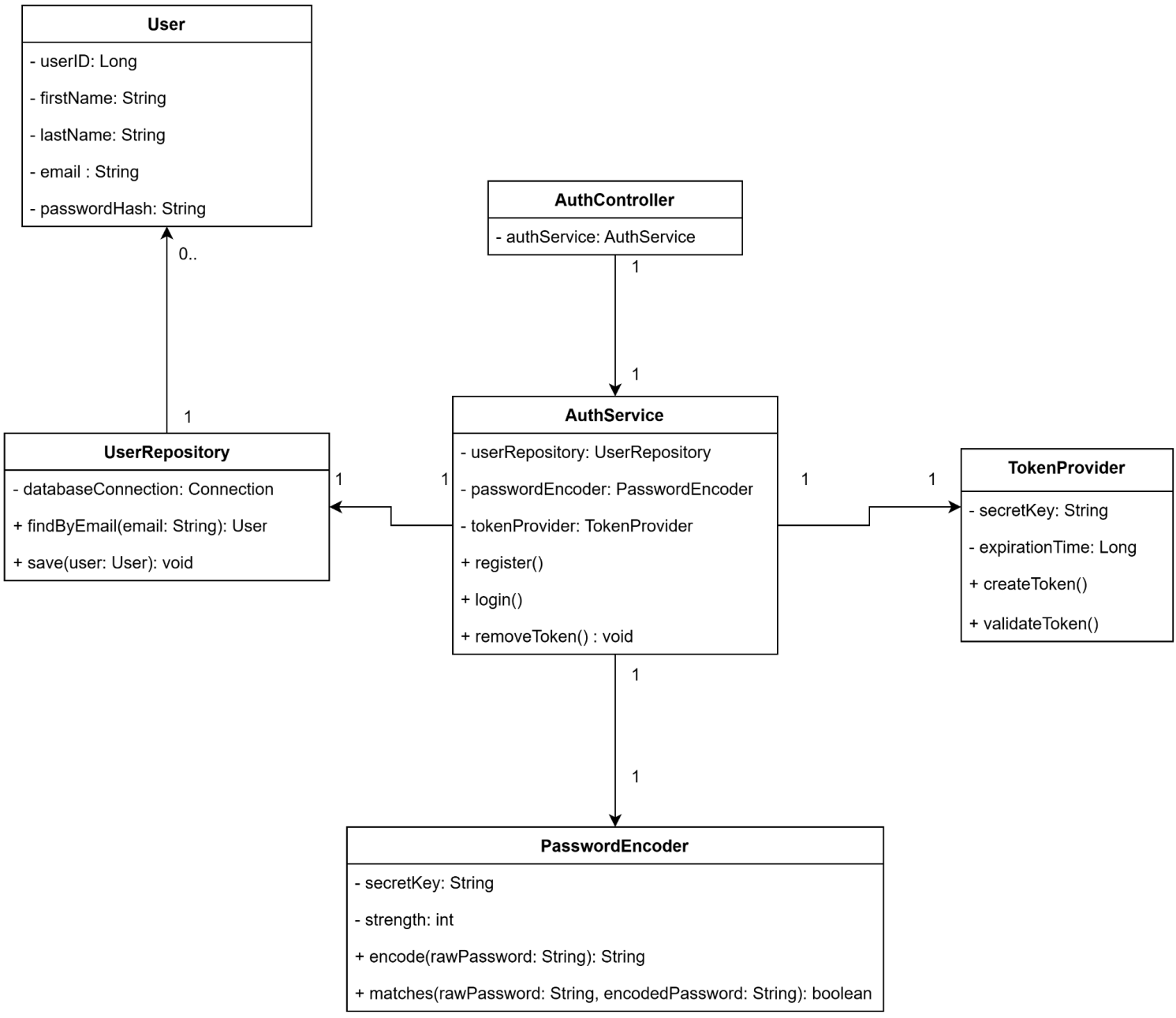
5.2. Use Case Diagram



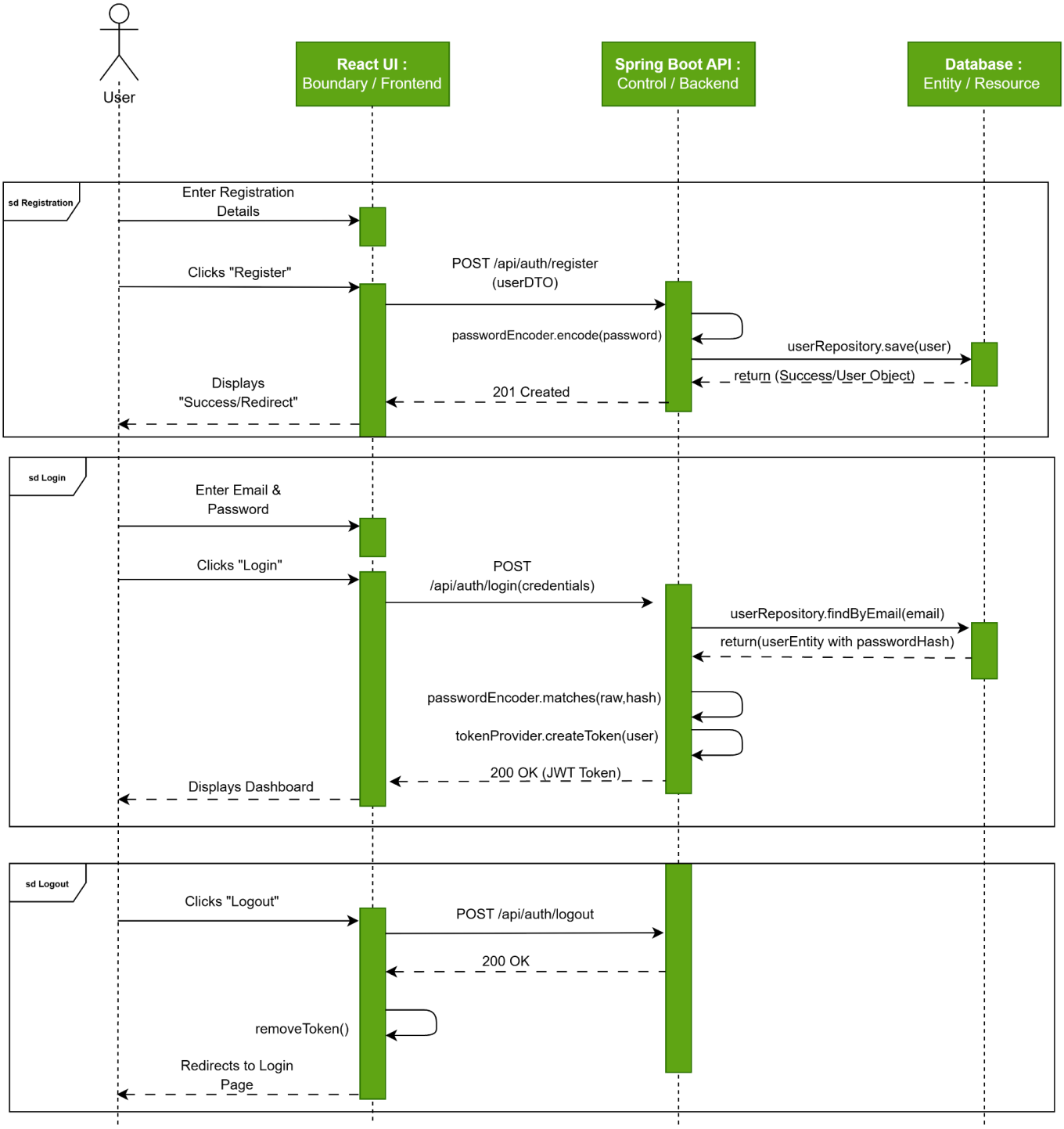
5.3. Activity Diagram



5.4. Class Diagram



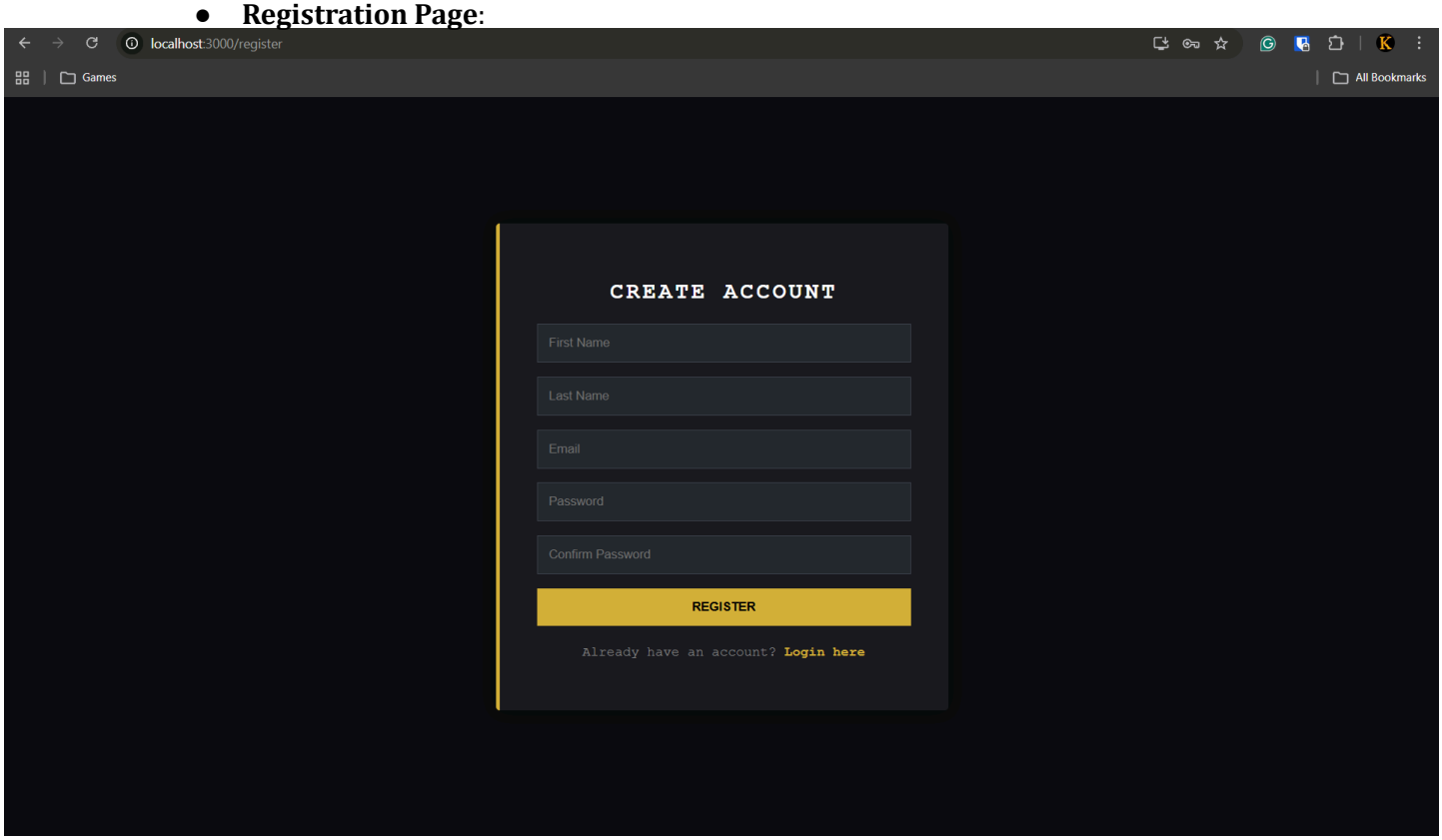
5.5. Sequence Diagram



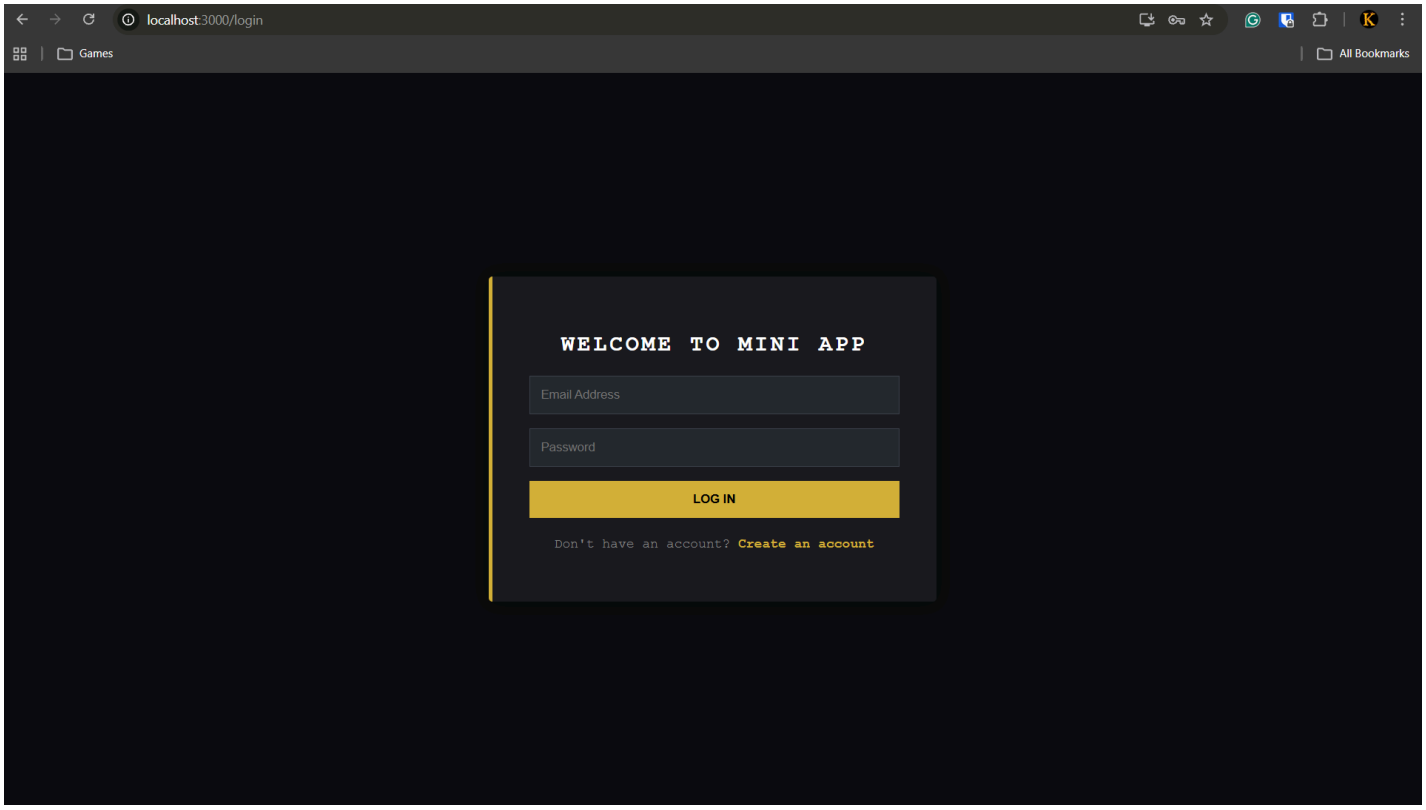
6. Appendices

Include any additional information, references, or support materials.

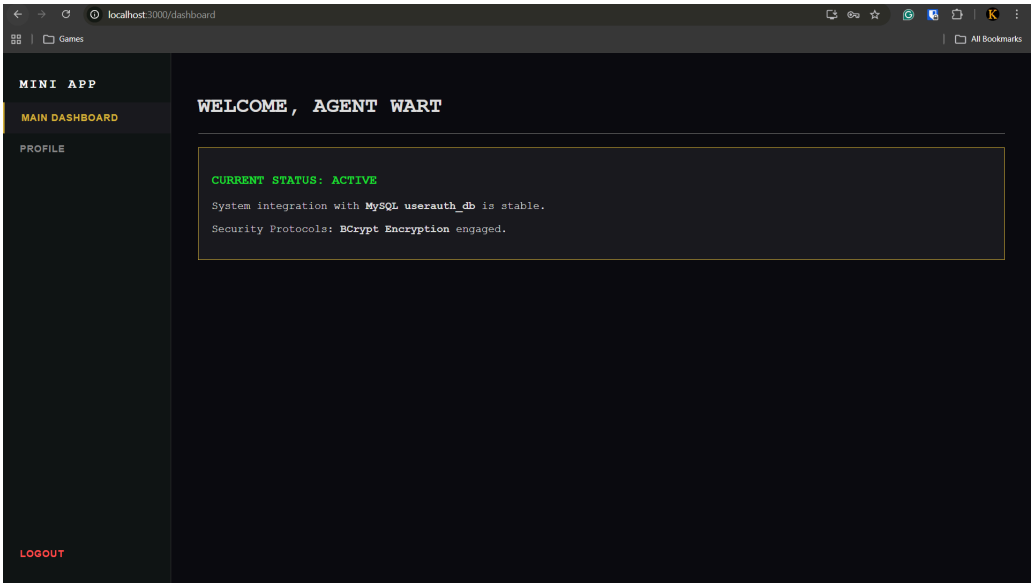
- **Registration Page**:



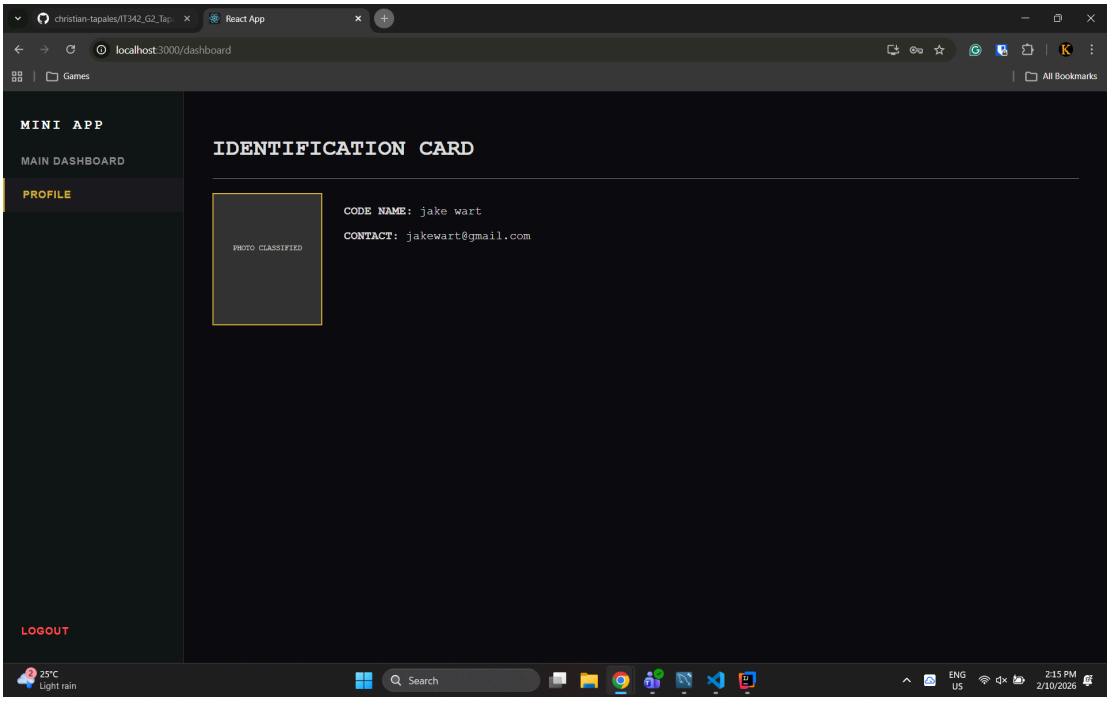
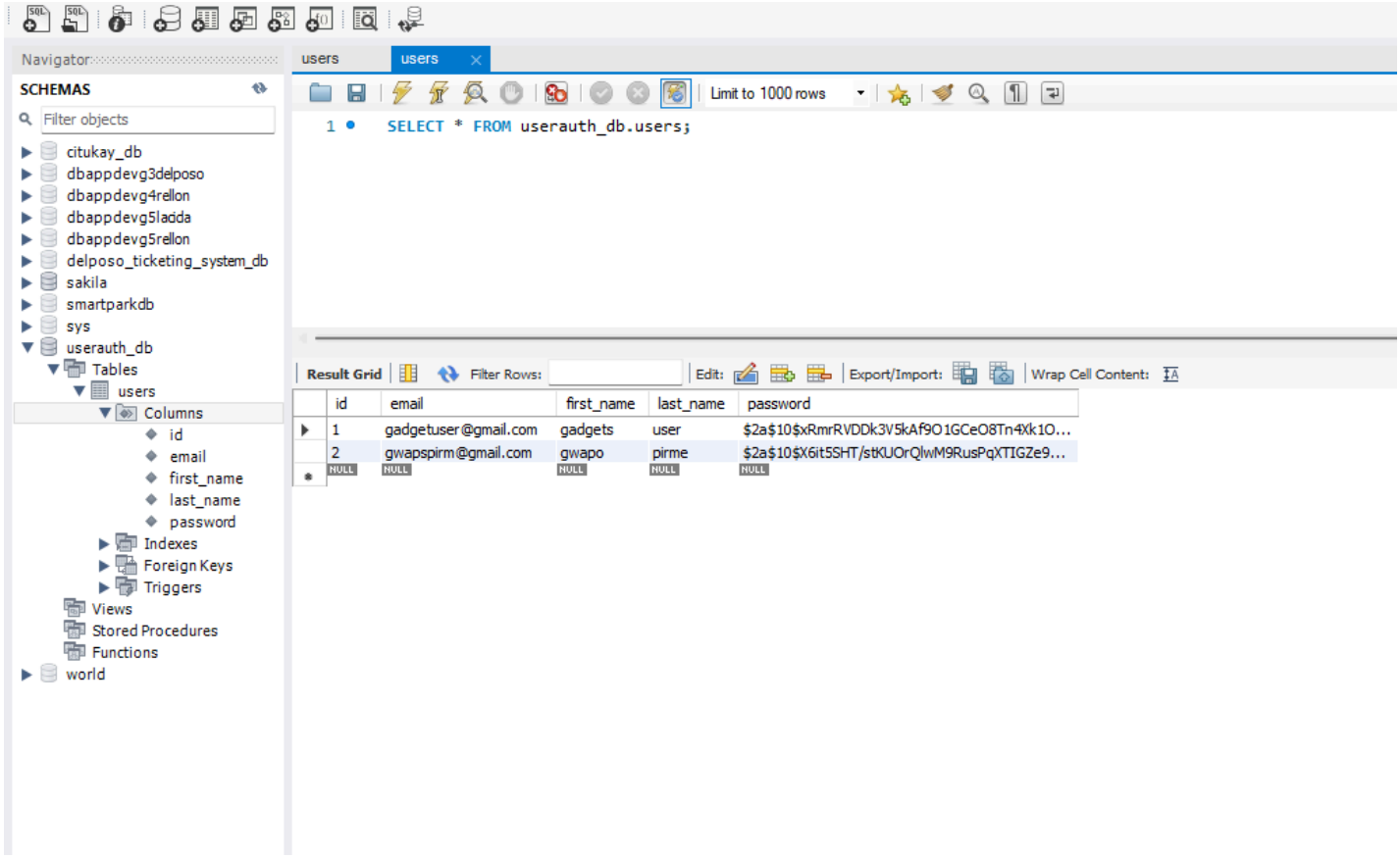
- **Login Page**:



- **Dashboard**:



- **Profile**:



- **Database Evidence (To prove "No Plain Text")**: