



CEBU INSTITUTE OF TECHNOLOGY
UNIVERSITY

IT342-Section SYSTEMS INTEGRATION AND ARCHITECTURE 1

FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Project Title: User Registration and Authentication System

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Date of Submission: 2/6/2026

Version: 1

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1. Introduction

1.1. Purpose

The purpose of this document is to describe the functional and non-functional requirements of the User Registration and Authentication System. This document is intended for students, instructors, and developers involved in designing or evaluating the system.

1.2. Scope

The system provides secure user registration, login, access to protected pages, and logout functionality. It ensures that only authenticated users can access restricted features of the application.

1.3. Definitions, Acronyms, and Abbreviations

- Authentication – Process of verifying user identity
- Authorization – Granting access to protected resources
- User – An individual who registers and logs into the system
- FRS – Functional Requirements Specification

2. Overall Description

2.1. System Perspective

The User Registration and Authentication System is a standalone application module that can be integrated into larger systems such as mobile or web applications. It manages user credentials and access control.

2.2. User Classes and Characteristics

- Guest User – Can access public pages but cannot access protected features
- Authenticated User – Registered users who can access protected pages after login

Users are expected to have basic knowledge of using mobile or web applications.

2.3. Operating Environment

- Android device or web browser
- Android OS or modern web browser
- Internet connection for authentication

2.4. Assumptions and Dependencies

- Users have valid internet access
- User credentials are stored securely

- The system depends on an authentication service or database

3. System Features and Functional Requirements

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

3.1. Feature 1: User Registration

Description: Allows new users to create an account.

Functional Requirements:

- The system shall allow users to register with valid credentials
- The system shall validate user input during registration
- The system shall store user information securely

3.2. Feature 2: User Login

Description: Allows registered users to log into the system.

Functional Requirements:

- The system shall authenticate users using stored credentials
- The system shall deny access for invalid login attempts
- The system shall redirect authenticated users to a dashboard

3.3. Feature 3: Access Control

Description: Restricts access to protected pages for unauthenticated users.

Functional Requirements:

- The system shall prevent guest users from accessing protected pages
- The system shall maintain user login sessions
- The system shall redirect logged-out users to the login page

3.4. Feature 4: User Logout

Description: Allows users to securely end their session.

Functional Requirements:

- The system shall terminate the user session upon logout
- The system shall clear session data
- The system shall return the user to the login screen

4. Non-Functional Requirements

- **Security:** Passwords must be encrypted and stored securely
- **Performance:** Login and registration should respond within 2 seconds

- **Usability:** The interface should be simple and user-friendly
- **Reliability:** The system should handle multiple users without failure

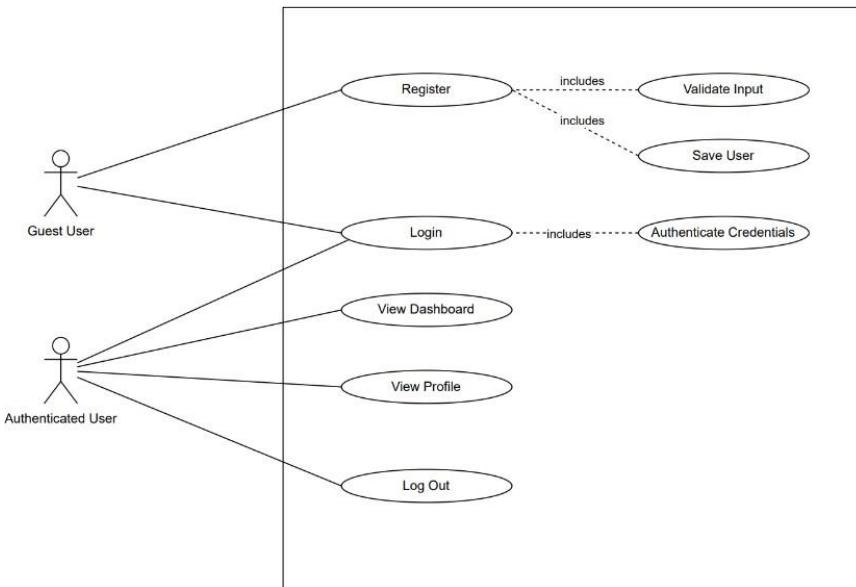
5. System Models (Diagrams)

Insert the necessary diagrams for the system:

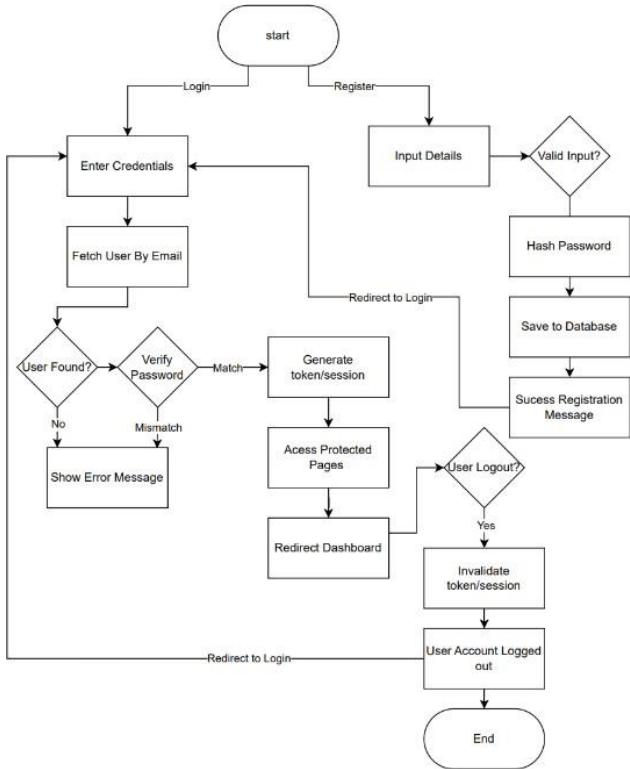
5.1. ERD

USERS		
PK	user_id	integer
	full_name	varchar
	email	varchar
	username	varchar
	password_hash	varchar
	created_at	timestamp
	is_active	boolean

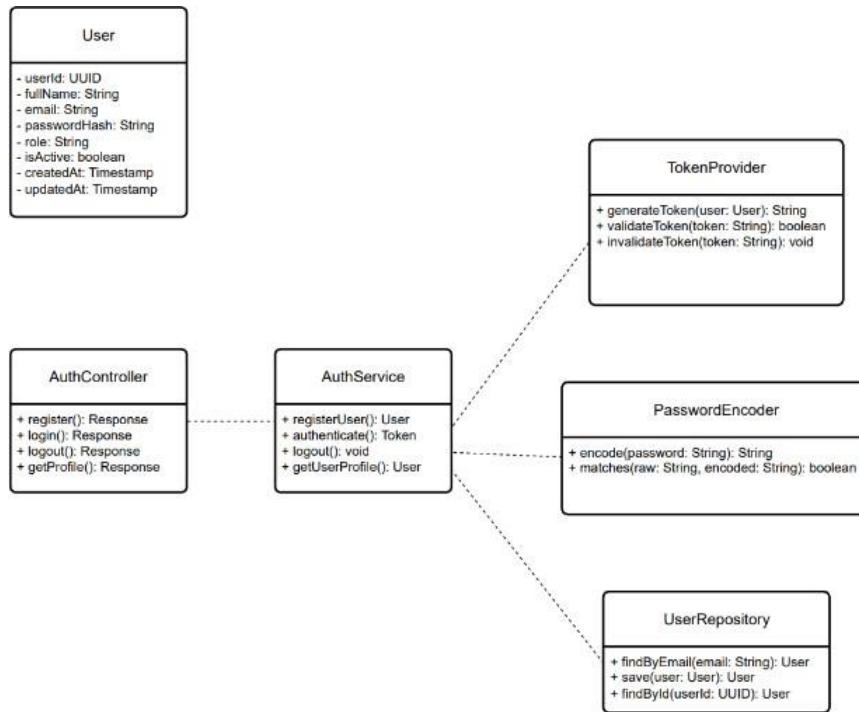
5.2. Use Case Diagram



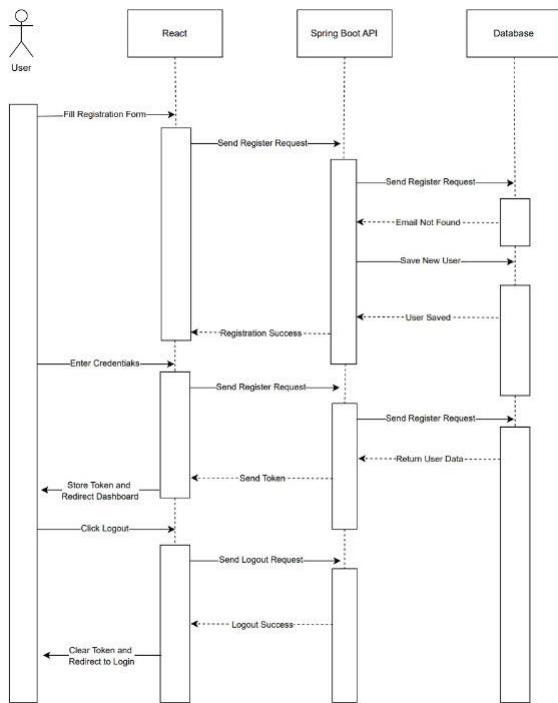
5.3. Activity Diagram



5.4. Class Diagram



5.5. Sequence Diagram



6. Appendices

Appendix A: References

- Sommerville, I. (2016). *Software Engineering*
- Pressman & Maxim. (2020). *Software Engineering: A Practitioner's Approach*
- OWASP Authentication Guidelines

Appendix B: Sample Use Cases

- User Registration
- User Login
- Access Protected Page
- User Logout

Appendix C: Future Enhancements

- Forgot password feature
- Two-factor authentication
- Admin user management

WEB APP:

The image displays three screenshots of a web-based authentication application, likely built with Node.js and EJS, showing the login, registration, and dashboard pages.

1. Login Page:

The title bar shows "Auth App" and the URL "localhost:3000/login". The header includes "Login" and "Register" links. The main content area has a blue background with a white card titled "Welcome Back". It says "Sign in to your account" and contains fields for "Email" and "Password", followed by a "Login" button. Below the button is a link "Don't have an account? Register".

2. Create Account Page:

The title bar shows "Auth App" and the URL "localhost:3000/register". The header includes "Login" and "Register" links. The main content area has a blue background with a white card titled "Create Account". It says "Join us today and get started" and contains fields for "Username", "Email", and "Password", followed by a "Create account" button. Below the button is a link "Already have an account? Login".

3. Dashboard Page:

The title bar shows "Auth App" and the URL "localhost:3000/dashboard". The header includes "Dashboard" link. The main content area has a blue background with a white card titled "Welcome to Dashboard". It says "Your profile information" and shows a summary: "Username: frank" and "Email: 123@123.com". At the bottom is a pink "Logout" button.