



**CEBU INSTITUTE OF TECHNOLOGY**  
**U N I V E R S I T Y**

# **IT342-G5**

# **SYSTEMS INTEGRATION**

# **AND ARCHITECTURE 1**

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## **FUNCTIONAL REQUIREMENTS**

## **SPECIFICATION (FRS)**

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Project Title: Mini App - User Registration & Authentication

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## 1. Introduction

### 1.1. Purpose

The purpose of this system is to design and document the user authentication flow for a mini application. This includes user registration, login, profile/dashboard access, and logout, with proper access control to protected pages.

### 1.2. Scope

#### **In Scope:**

The system will:

- Allow a guest user to register an account
- Allow a registered user to log in
- Allow authenticated users to view protected pages (profile/dashboard)
- Prevent unauthenticated users from accessing protected pages
- Allow authenticated users to log out

#### **Out of Scope:**

The system does not include:

- Actual deployment

### 1.3. Definitions, Acronyms, and Abbreviations

List and define important terms used in this document.

## 2. Overall Description

### 2.1. System Perspective

The mini application is a user authentication module that operates as part of a larger mini application.

It follows a client-server architecture, where:

- The frontend (React) handles user interaction.
- The backend (Spring Boot) processes authentication logic.
- The database stores user credentials and profile information.

### 2.2. User Classes and Characteristics

#### **1. Guest User**

- Has not logged in
- Can register a new account
- Can attempt to log in

## 2. Authenticated User

- Has successfully logged in
- Can access protected pages (profile/dashboard)
- Can log out

### 2.3. Operating Environment

- Frontend: React.js
- Backend: Spring Boot (Java)

### 2.4. Assumptions and Dependencies

List any assumptions and external dependencies that may affect the system.

## 3. System Features and Functional Requirements

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

### 3.1. Feature 1: User Registration

Description: Allows a guest user to create a new account by providing required personal and login information.

Functional Requirements:

- The system shall allow users to register using a unique username and email.
- The system shall validate user input before account creation.
- The system shall store passwords in encrypted form.
- The system shall prevent duplicate user accounts.

### 3.2. Feature 2: User Login

Description: Allows registered users to authenticate and access protected pages.

Functional Requirements:

- The system shall allow users to log in using valid credentials.
- The system shall verify credentials against stored data.
- The system shall deny access for invalid credentials.

### 3.3. Feature 3: View Profile / Dashboard

Description: Allows authenticated users to view their personal information and dashboard.

Functional Requirements:

- The system shall restrict access to authenticated users only.

- The system shall display user-specific information.
- The system shall redirect unauthenticated users to the login page.

### 3.4. Feature 4: Logout

Description: Allows authenticated users to end their session securely.

Functional Requirements:

- The system shall allow users to log out at any time.
- The system shall redirect users to the login page after logout.

## 4. Non-Functional Requirements

Specify system quality attributes such as performance, security, usability, reliability, etc.

## 5. System Models (Diagrams)

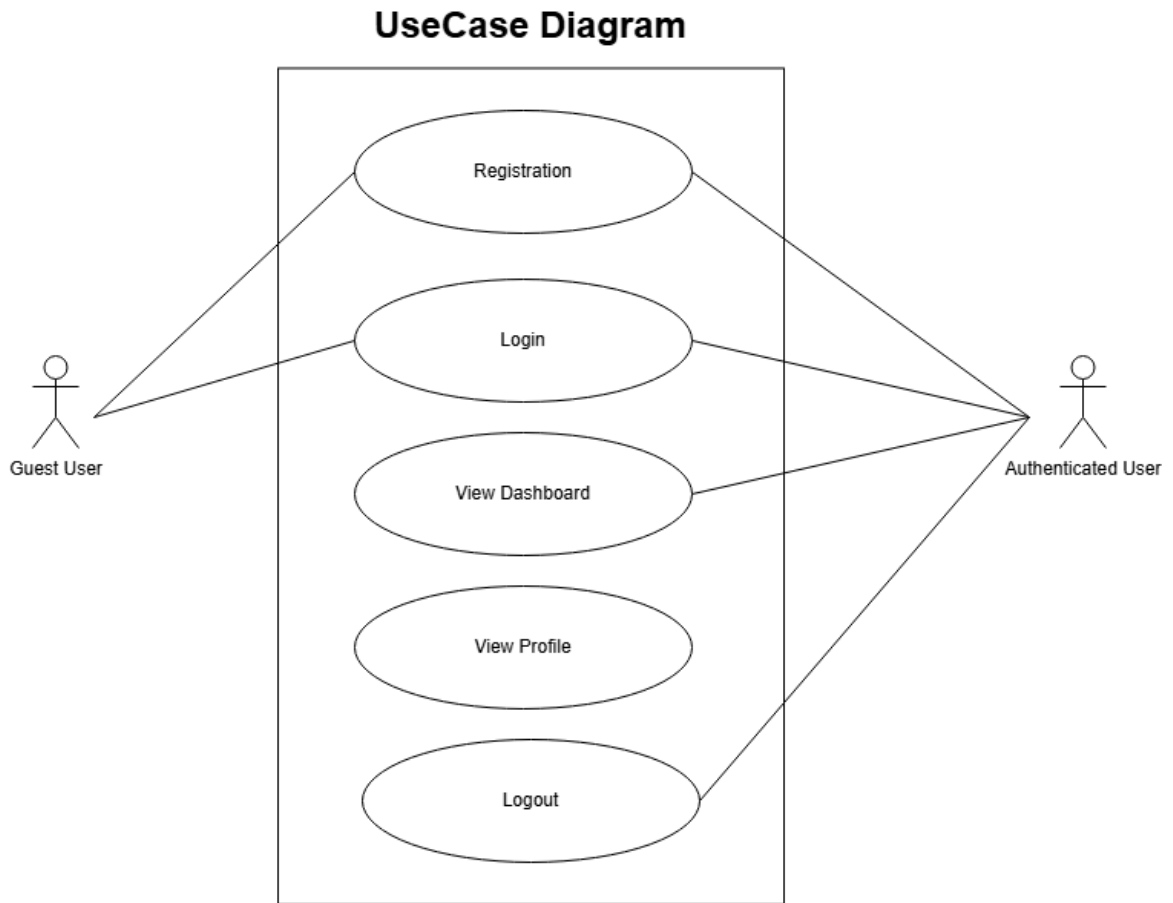
*Insert the necessary diagrams for the system:*

### 5.1. ERD

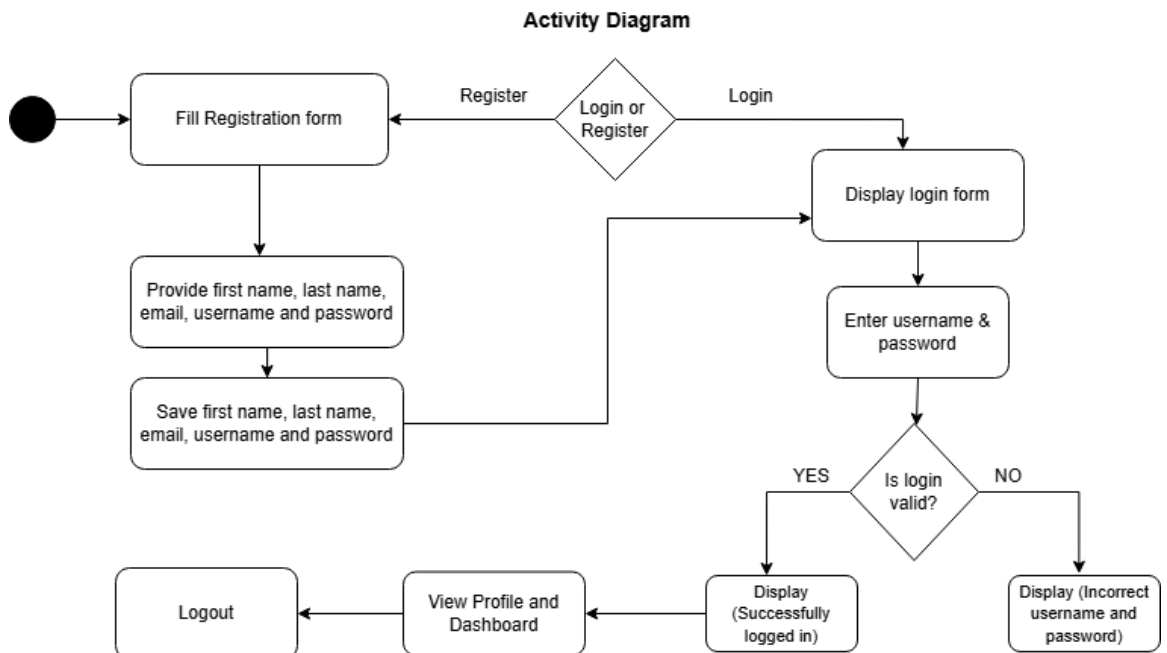
*Insert ERD here*

Users	
PK	<u>userId int, auto increment,</u>
	userName varchar(50) unique not null, email varchar(255), unique not null, password_hash varchar(255), not null, firstName varchar(50), not null, lastName varchar(50), not null, is_active boolean default true, token_version int default 1, created_at timestamp default current_timestamp

## 5.2. Use Case Diagram



## 5.3. Activity Diagram



## 5.4. Class Diagram

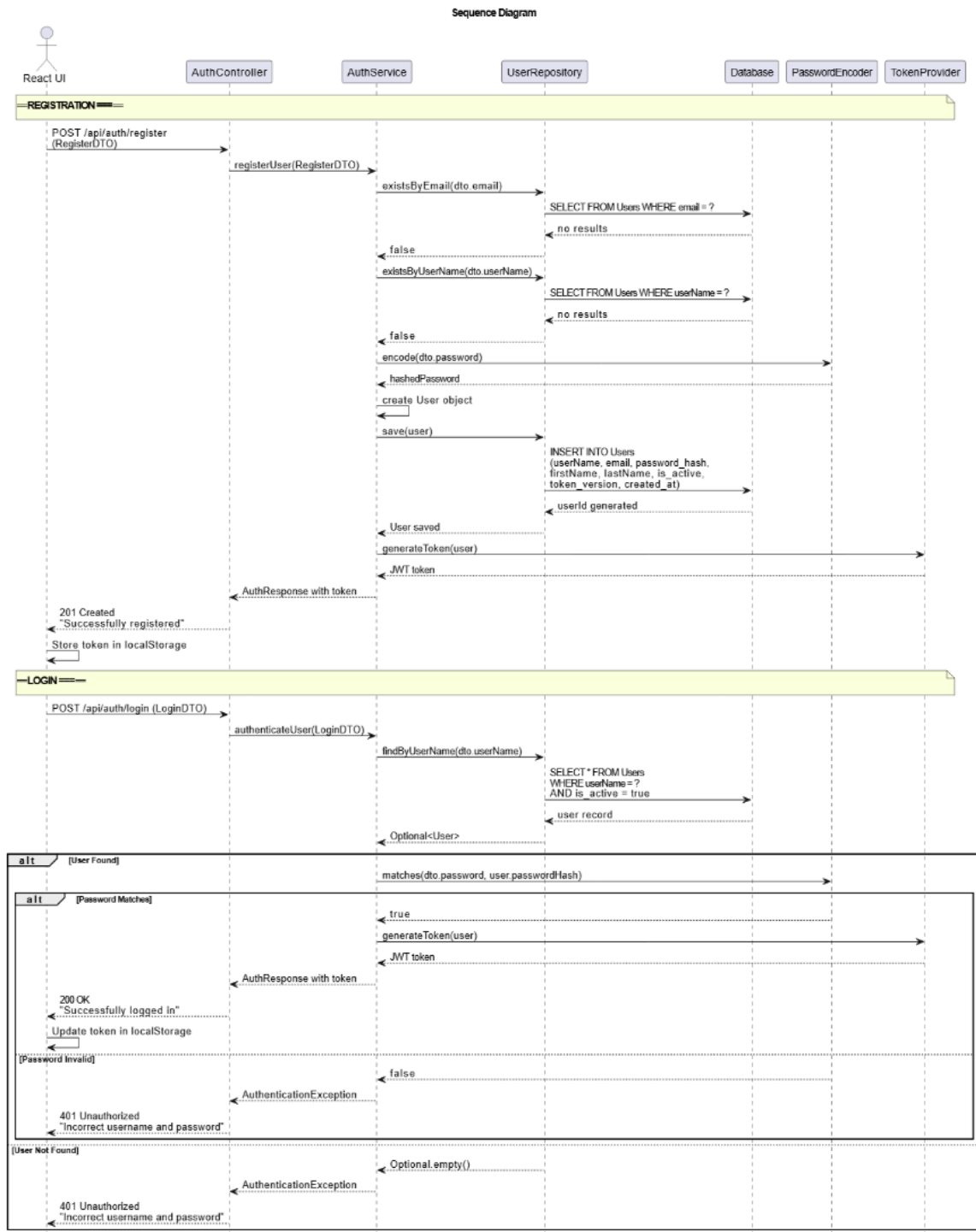
Insert ERD here

### CLASS DIAGRAM

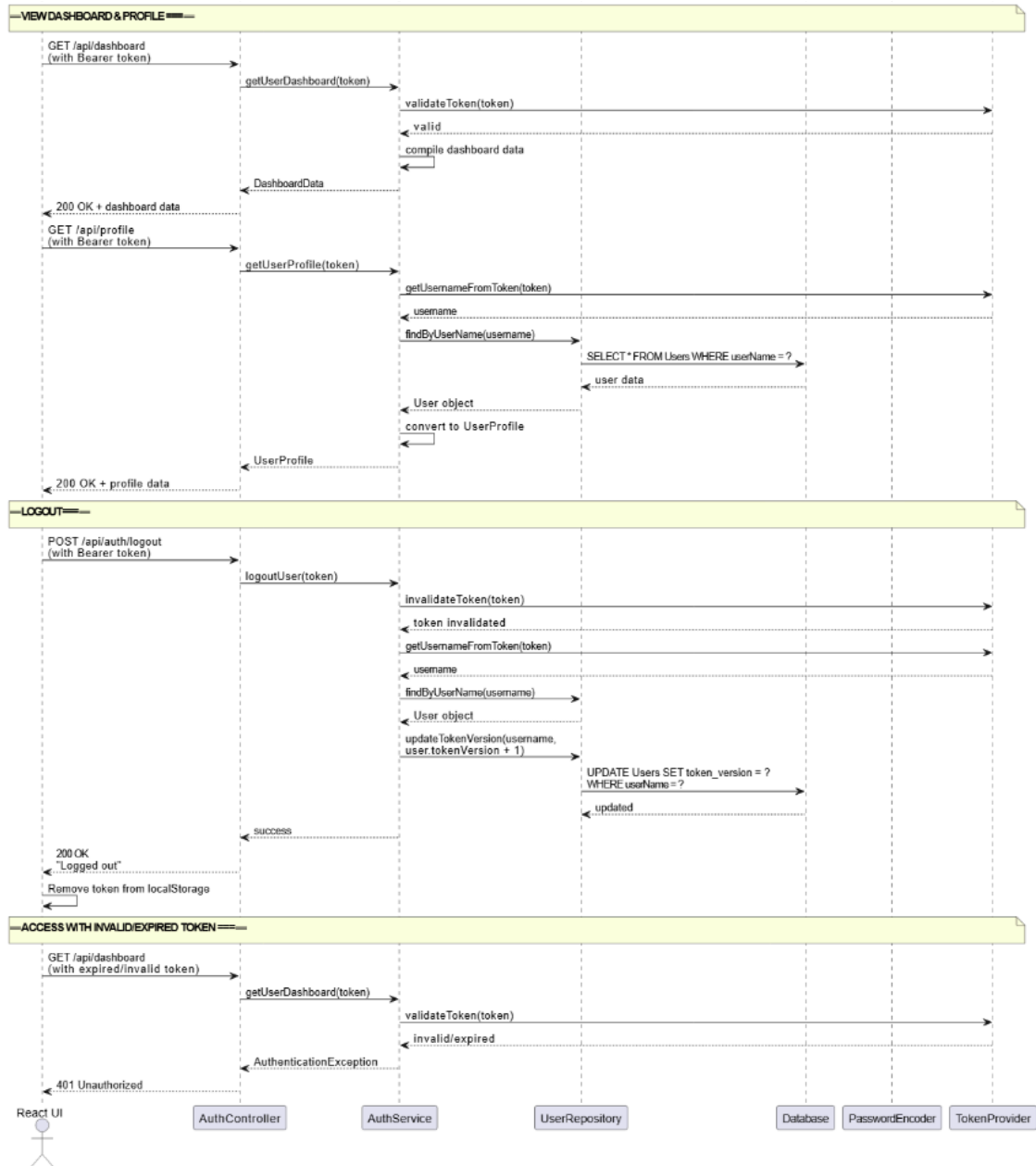


## 5.5. Sequence Diagram

Insert ERD here







## 6. Appendices

Include any additional information, references, or support materials.

## Screenshots:

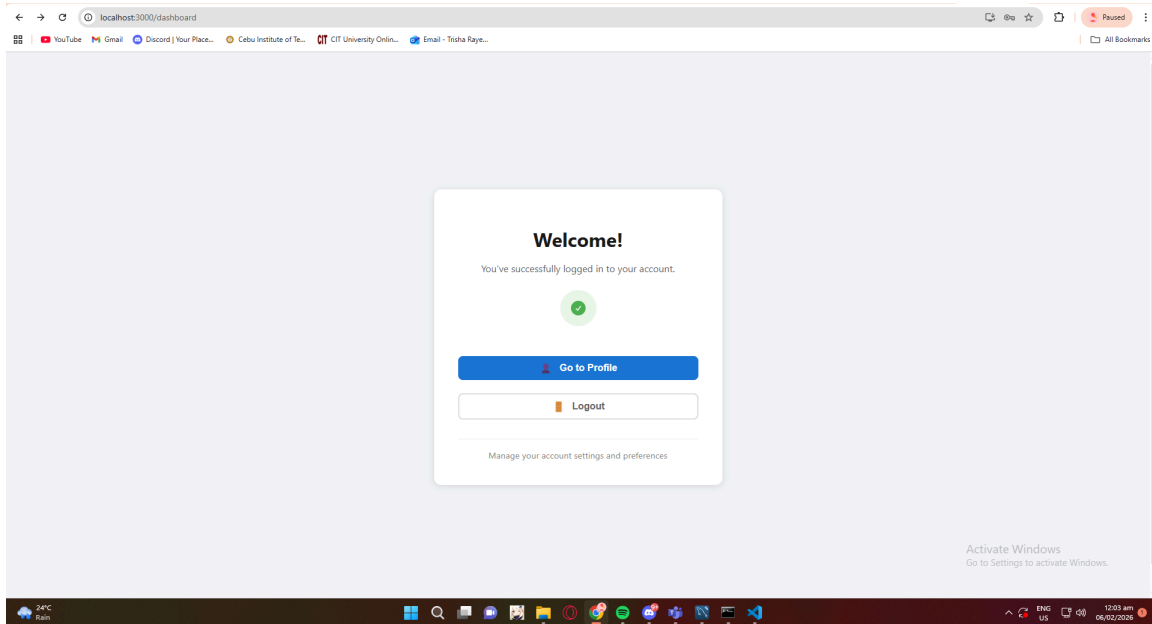
### Register:

A screenshot of a web browser displaying a registration form. The browser's address bar shows 'localhost:3000'. The page has a light gray background. In the center, there is a white card with a gray border and a subtle shadow. The card is titled 'Register' in bold black text. Below the title, there are six input fields: 'First Name', 'Last Name', 'Username', 'Email', 'Password', and 'Confirm Password'. Each field has a light gray border and a small downward arrow on the right. Below the input fields, there is a blue button with white text that says 'Create Account'. Underneath this button, the word 'OR' is centered in a small, light gray font. At the bottom of the card, there is a white button with a blue border and blue text that says 'Back to Login'. The browser's taskbar at the bottom shows a Windows logo, a search icon, and several application icons. The system tray on the right shows the date and time as '11:39 pm 03/02/2020'.

### Login:

A screenshot of a web browser displaying a login form. The browser's address bar shows 'localhost:3000/login'. The page has a light gray background. In the center, there is a white card with a gray border and a subtle shadow. The card is titled 'Login' in bold black text. Below the title, there are two input fields: 'Username' and 'Password'. Each field has a light gray border and a small downward arrow on the right. Below the input fields, there is a blue button with white text that says 'Sign In'. Underneath this button, the word 'OR' is centered in a small, light gray font. At the bottom of the card, there is a white button with a blue border and blue text that says 'Don't have an account? Register'. The browser's taskbar at the bottom shows a Windows logo, a search icon, and several application icons. The system tray on the right shows the date and time as '11:40 pm 03/02/2020'.

## Dashboard:



## Profile:

