



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

IT342-G5 SYSTEMS INTEGRATION AND ARCHITECTURE 1

FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Project Title: User Registration and Authentication

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1. Introduction

1.1. Purpose

The purpose of this document is to describe the functional and non-functional requirements for the **Authentication System**. It provides a clear guide for developers, students, and instructors to understand how the system should work and how it will be implemented.

1.2. Scope

The system allows users to **register a new account**, **log in with credentials**, **access a protected dashboard**, and **log out securely**. The system ensures that only authenticated users can access protected pages. This document focuses on system requirements, documentation, and diagrams for the authentication workflow.

1.3. Definitions, Acronyms, and Abbreviations

FRS – Functional Requirements Specification

ERD – Entity Relationship Diagram

UI – User Interface

API – Application Programming Interface

Attendance Record – A single log of user attendance for a date

2. Overall Description

2.1. System Perspective

The system is a **full-stack web application** for user authentication and session management. It consists of:

2.2. User Classes and Characteristics

Guest User

- Can access registration and login pages
- Cannot access protected dashboard
- No authentication required

Authenticated User

- Must have valid username and password
- Can access protected dashboard
- Can log out to terminate session

2.3 Operating Environment

2.3. Operating Environment

Web browser (Chrome, Edge, Firefox)

Frontend: React

Backend: Spring Boot

Database: MySQL or other relational database

Diagram Tool: draw.io / diagrams.net

2.4. Assumptions and Dependencies

Users have internet access

Database server is running properly

System depends on authentication services for login and session management

3. System Features and Functional Requirements

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

3.1. Feature 1: User Authentication

Description: Allows new users to create an account by providing username, email, and password.

Functional Requirements:

- The system shall allow users to log in with a valid username and password
- The system shall prevent access to attendance pages if the user is not authenticated
- The system shall allow users to log out and terminate their session

3.2. Feature 2:

Description: Allows users to mark their daily attendance and view past attendance records.

Functional Requirements:

FR-1.1: The system shall allow users to register with a unique username, valid email, and password/

FR-1.2: The system shall validate that username and email are unique in the database

FR-1.3: The system shall hash passwords using BCrypt before storing in the database

FR-1.4: The system shall display error messages for invalid input or duplicate usernames/emails

FR-1.5: Upon successful registration, the system shall redirect users to the login page

4. Non-Functional Requirements

Security: Passwords must be encrypted, and sessions must be protected

Usability: The system should be simple and user-friendly

Performance: Login, marking attendance, and viewing records should respond quickly

Reliability: The system should handle errors gracefully and prevent data loss

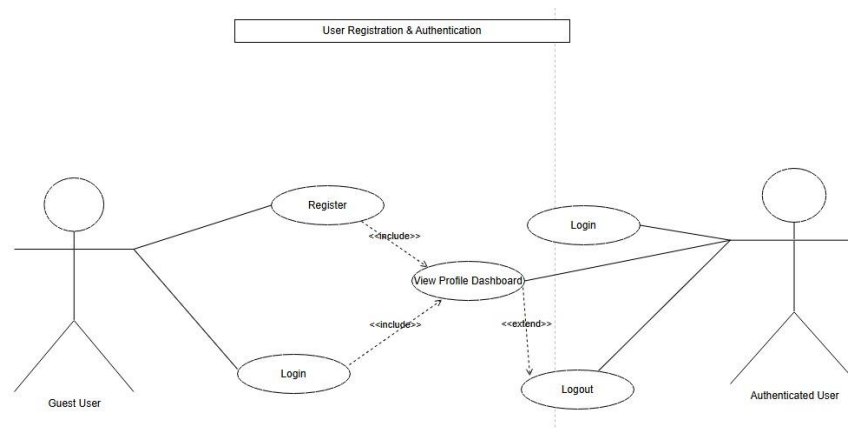
5. System Models (Diagrams)

Insert the necessary diagrams for the system:

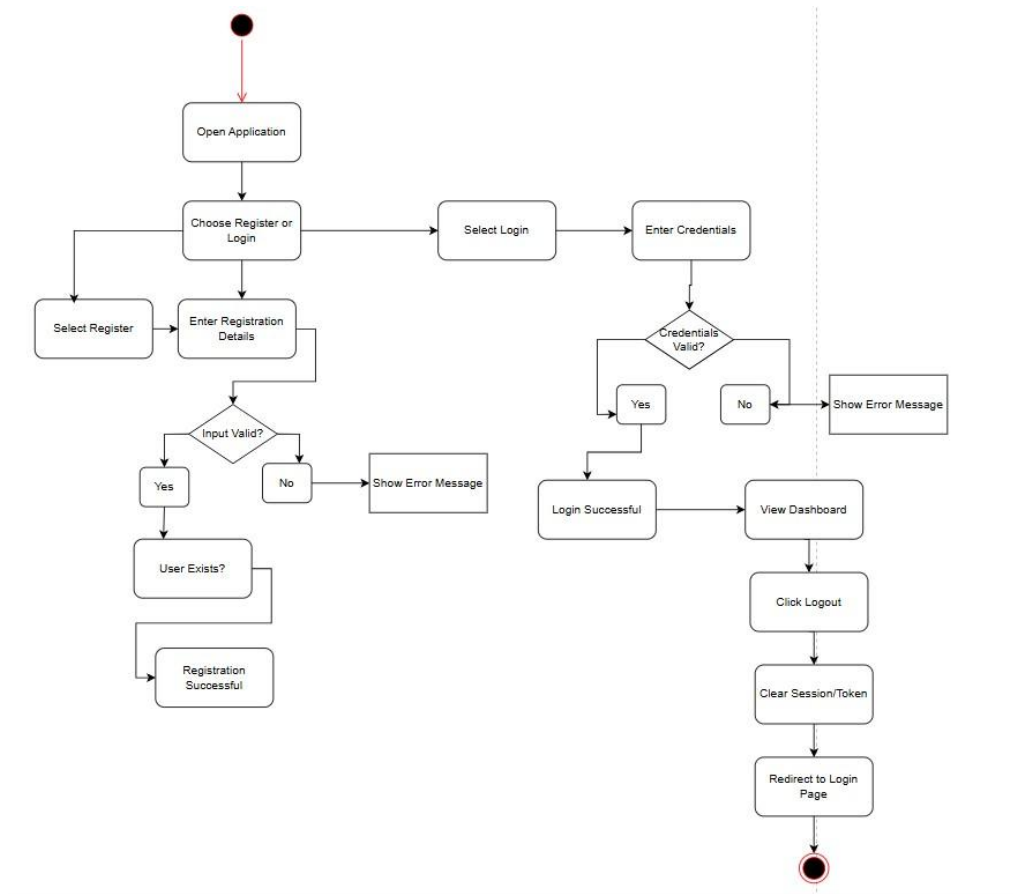
5.1. ERD

Users	
PK	userId (int)
	username (varchar)
	email (varchar)
	password (varchar)
	created_at (date time)
	updated_at (date time)
	last_login (date time)

5.2. Use Case Diagram

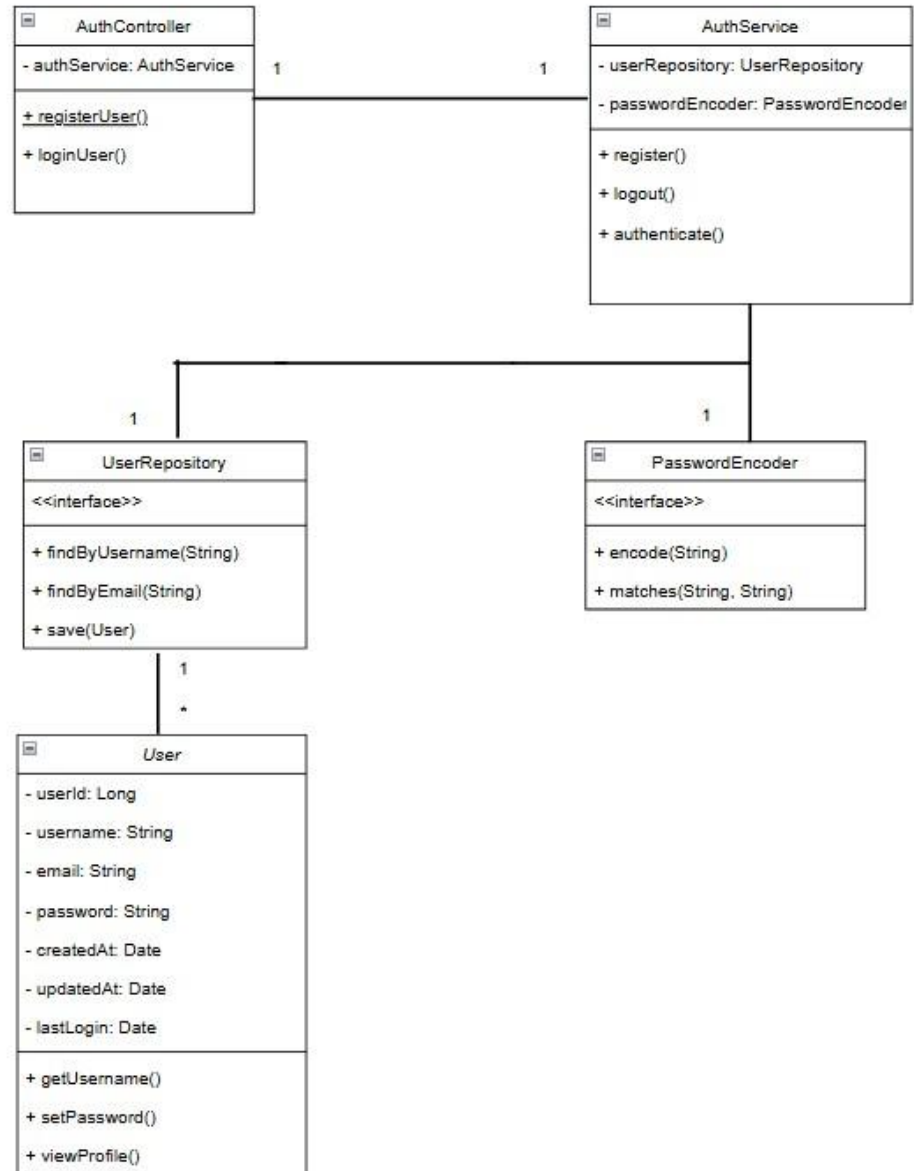


5.3. Activity Diagram



Class Diagram

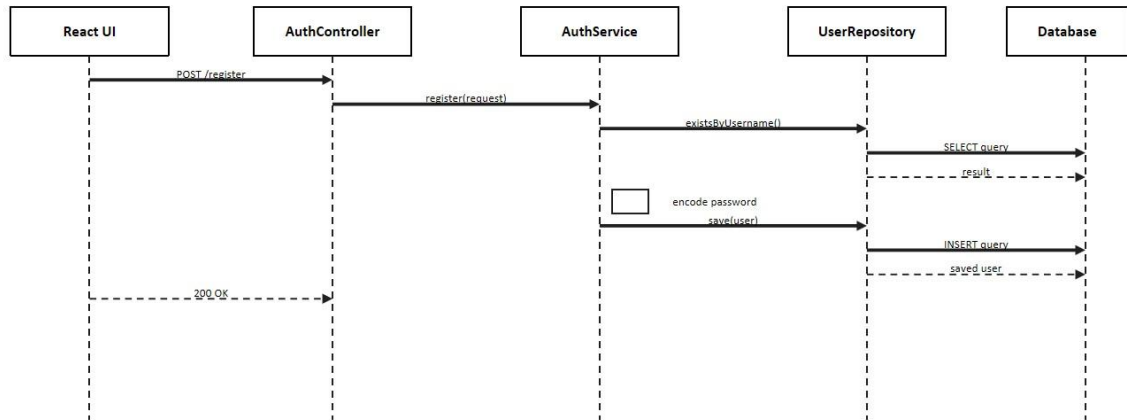
5.4.



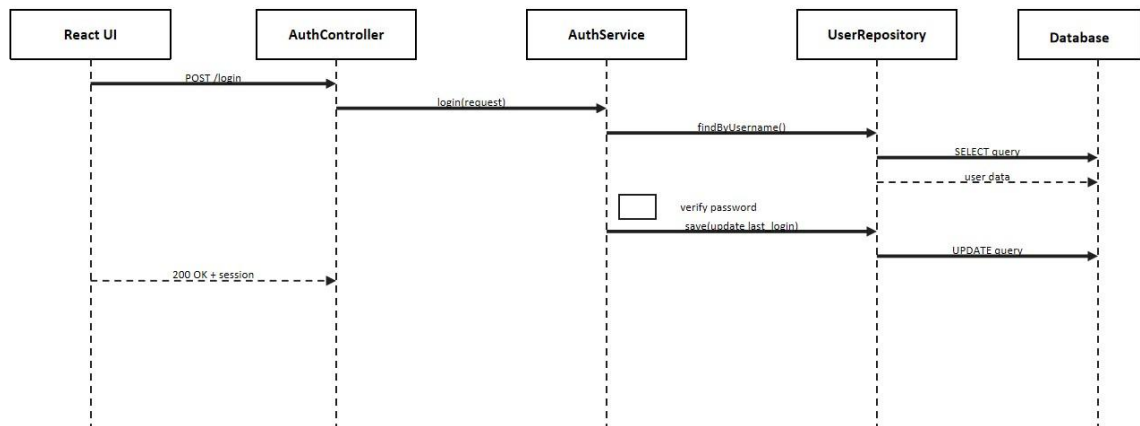
5.5.

Sequence Diagram

Register/Login



Login Flow

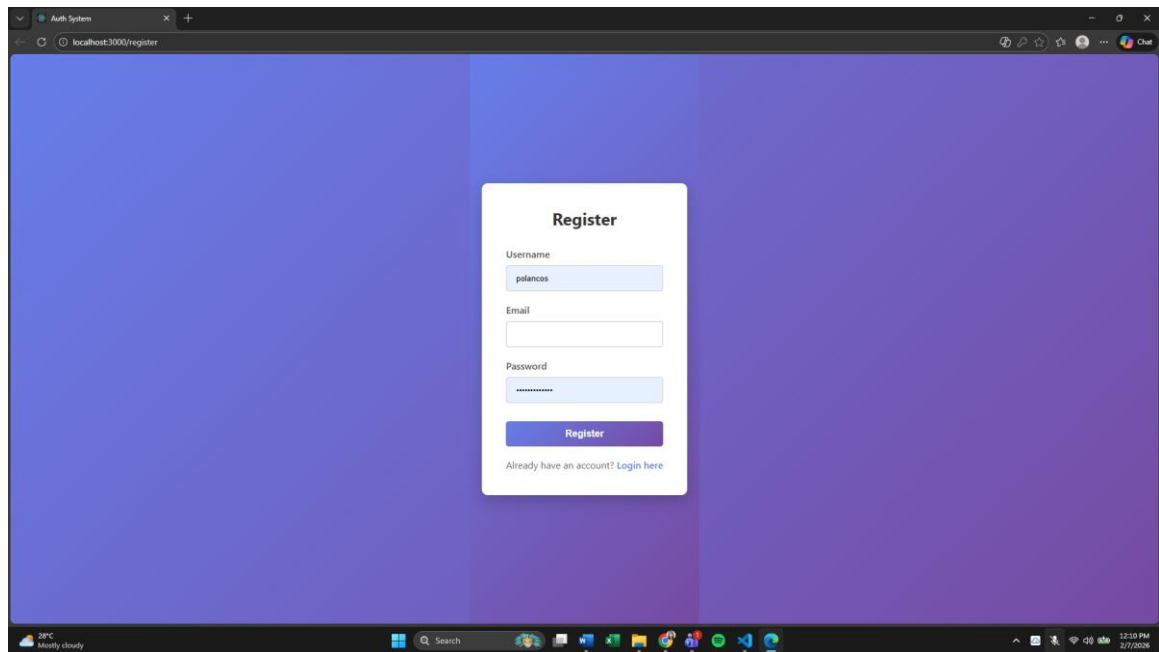


5.6.

6. Appendices

This FRS serves as a guide for coding the system in the next session. All diagrams included will be used as reference for implementation.

Web UI



A screenshot of a web browser window showing the 'Register' page of an 'Auth System'. The browser's address bar displays 'localhost:3000/register'. The page has a purple gradient background. A white registration form is centered, containing fields for 'Username' (with 'palancos' entered), 'Email', and 'Password' (masked with dots). A purple 'Register' button is at the bottom of the form, followed by a link 'Already have an account? Login here'. The Windows taskbar at the bottom shows the date as 3/7/2024 and the time as 12:10 PM.

Auth System

localhost:3000/register

Register

Username
palancos

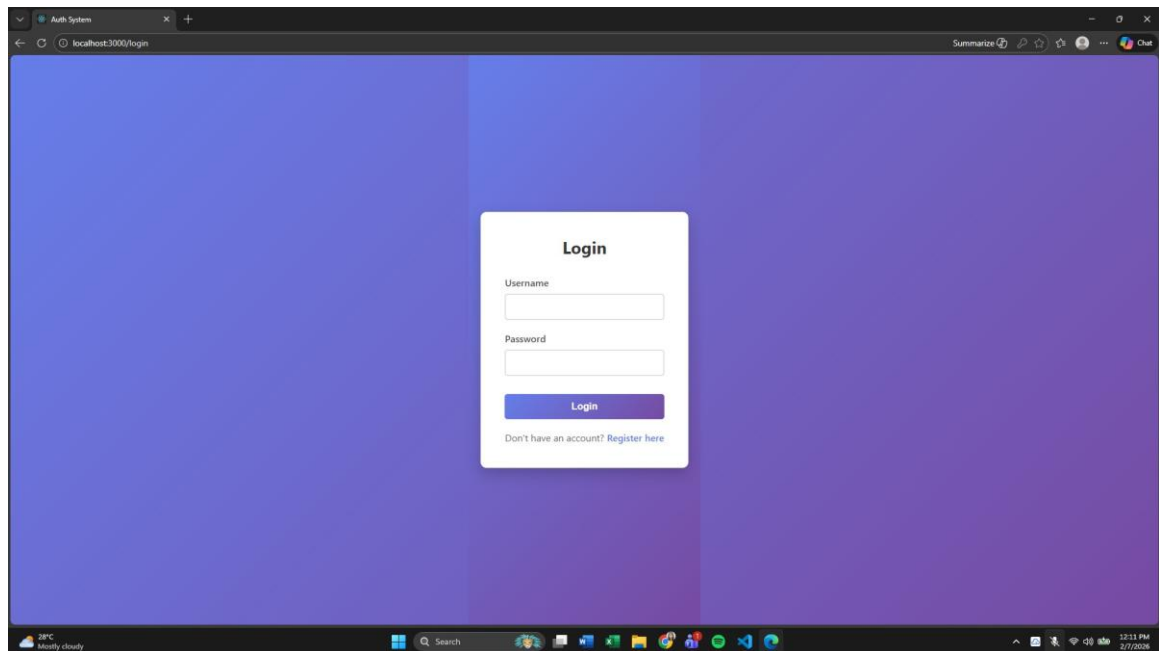
Email

Password
.....

Register

[Already have an account? Login here](#)

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A screenshot of a web browser window showing the 'Login' page of an 'Auth System'. The browser's address bar displays 'localhost:3000/login'. The page has a purple gradient background. A white login form is centered, containing fields for 'Username' and 'Password'. A purple 'Login' button is at the bottom of the form, followed by a link 'Don't have an account? Register here'. The Windows taskbar at the bottom shows the date as 3/7/2024 and the time as 12:13 PM.

Auth System

localhost:3000/login

Login

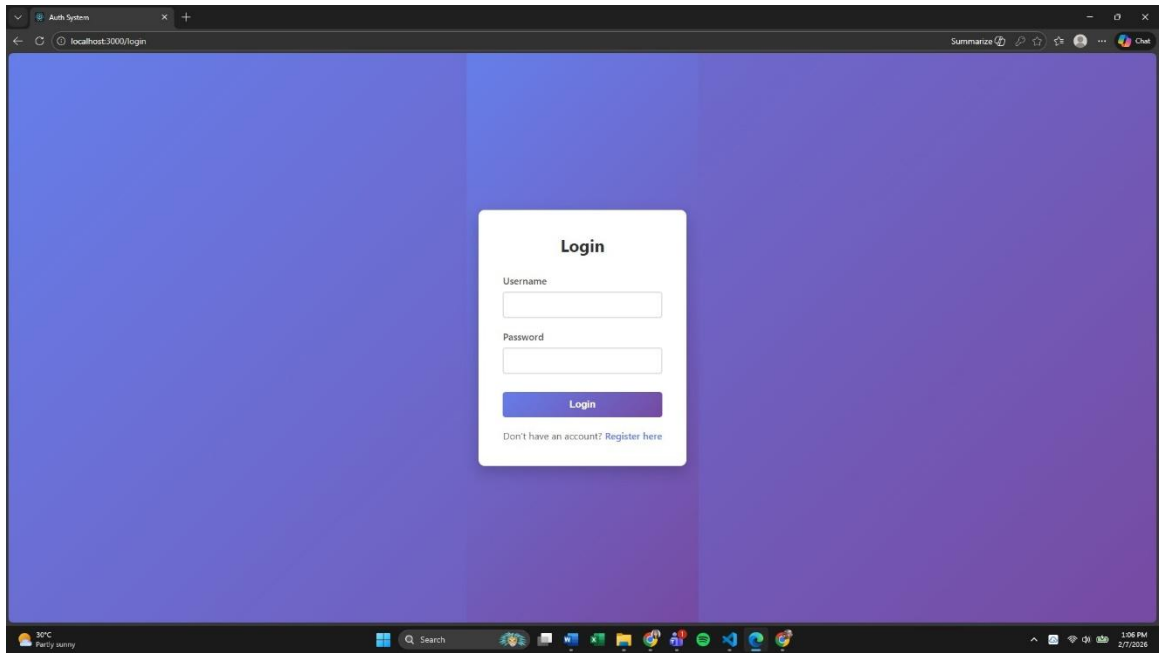
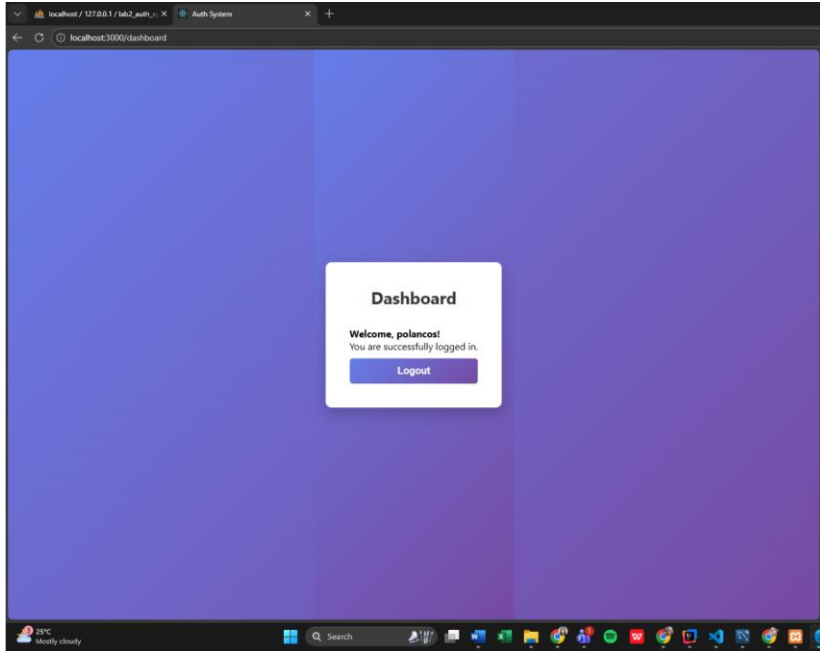
Username

Password

Login

[Don't have an account? Register here](#)

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Mobile UI

