CEBU INSTITUTE OF TECHNOLOGY
UNIVERSITY

IT342-G5
SYSTEMS INTEGRATION AND ARCHITECTURE 1

FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Project Title: Attendance Tracking System

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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

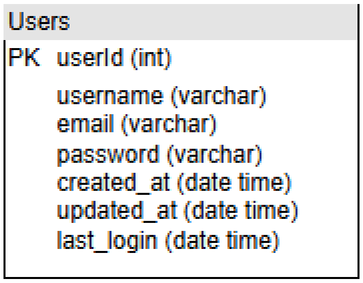
4. Non-Functional Requirements

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)

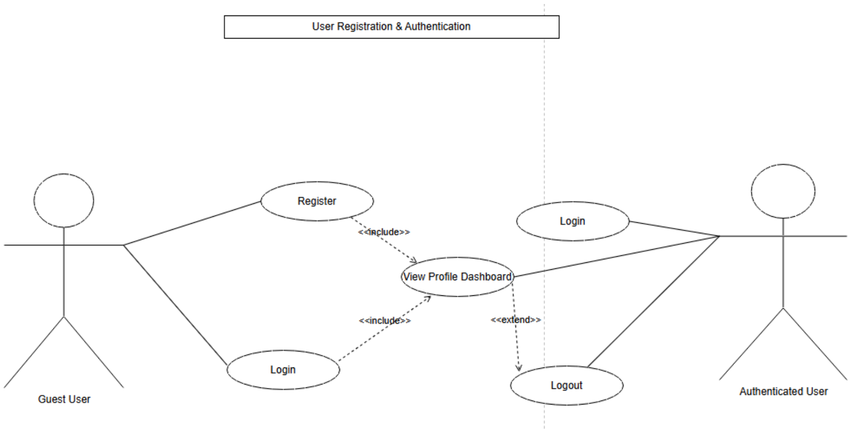
Insert the necessary diagrams for the system:

5.1. ERD

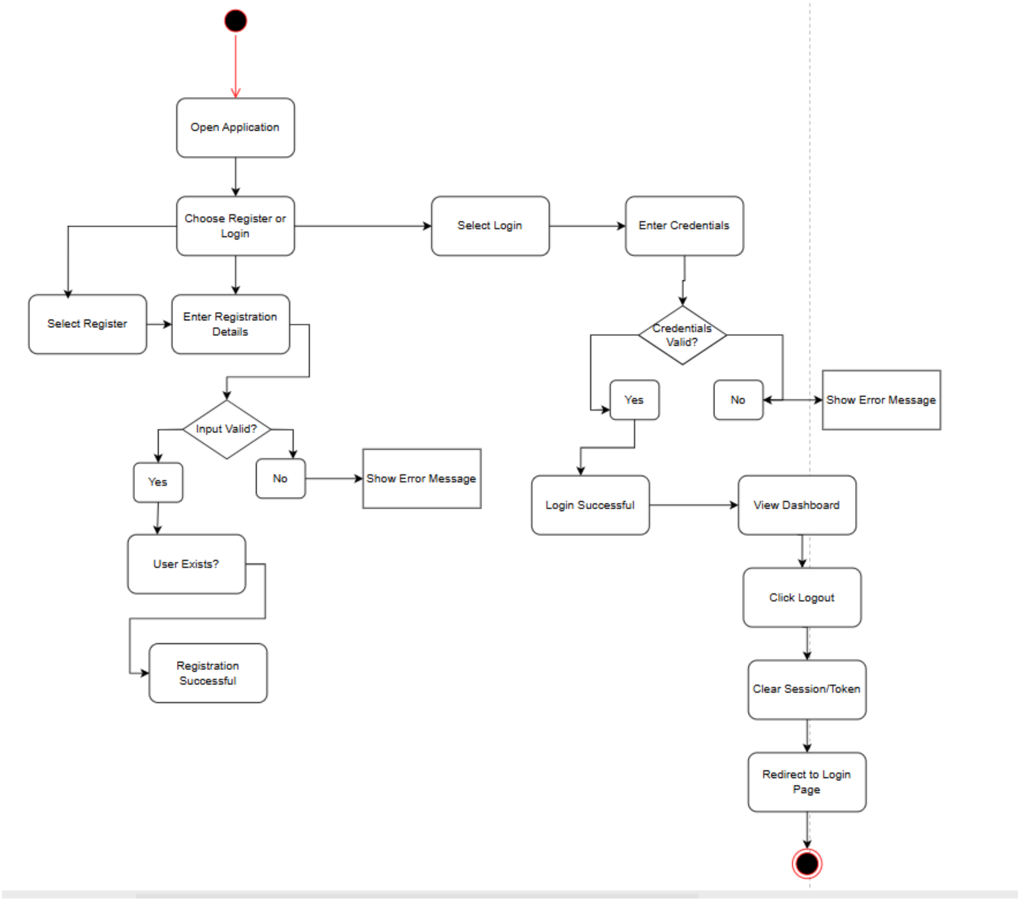


Users	
PK	userId (int)
	username (varchar) email (varchar) password (varchar) created_at (date time) updated_at (date time) last_login (date time)

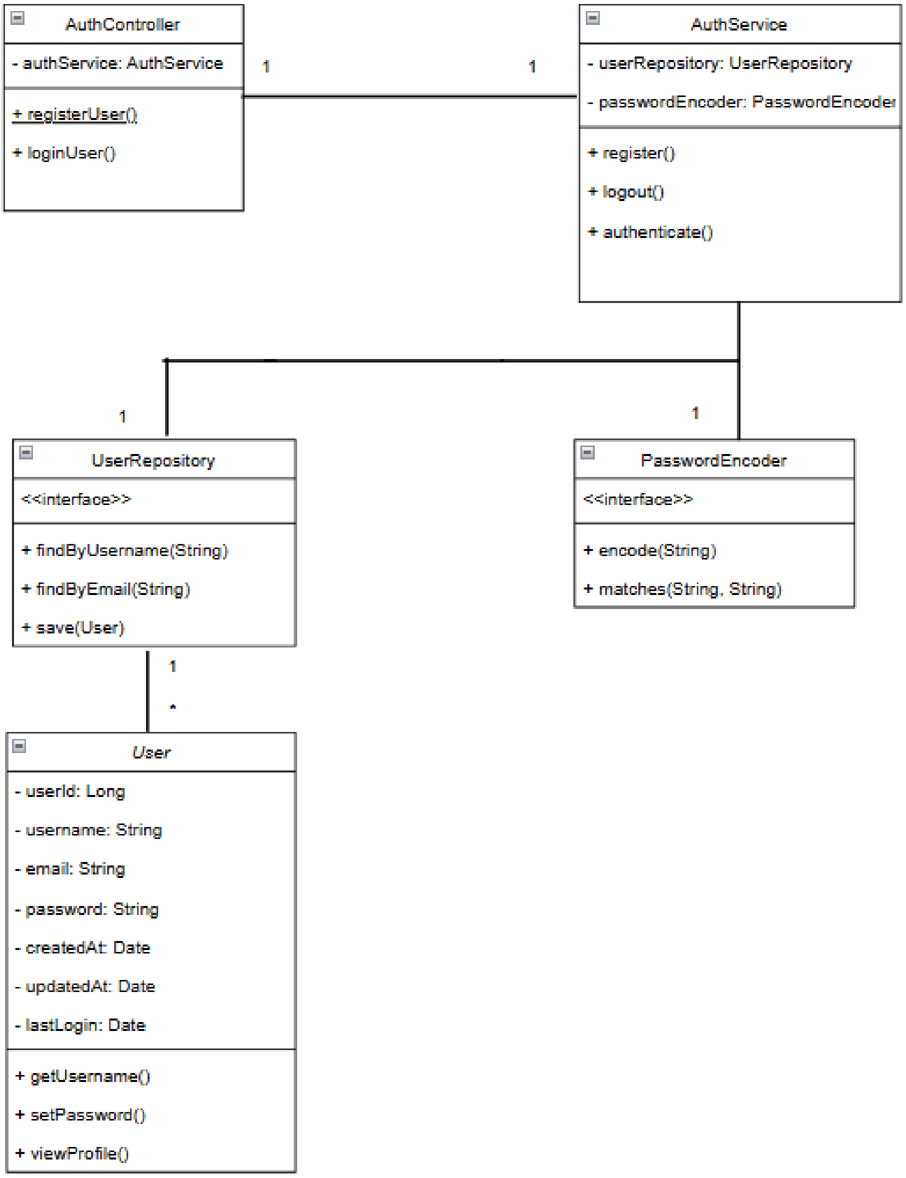
5.2. Use Case Diagram



5.3. Activity Diagram

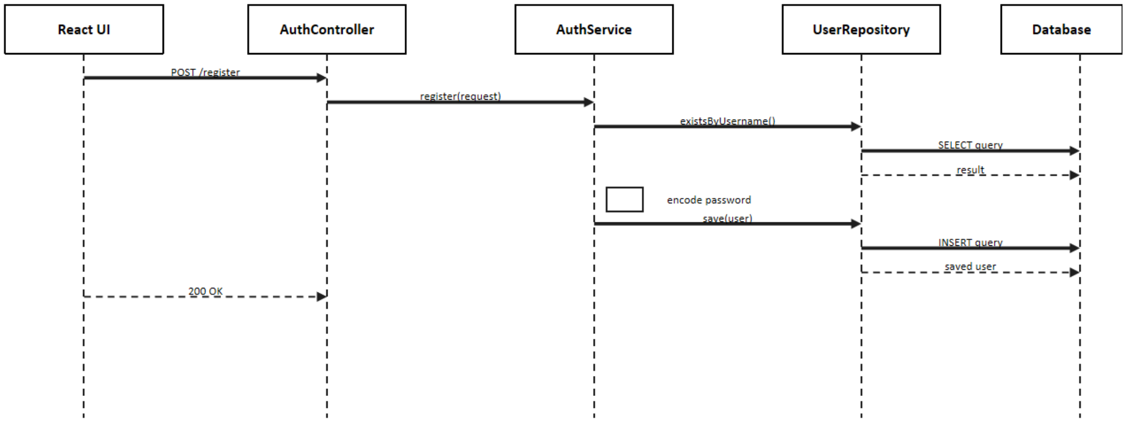


5.4. Class Diagram

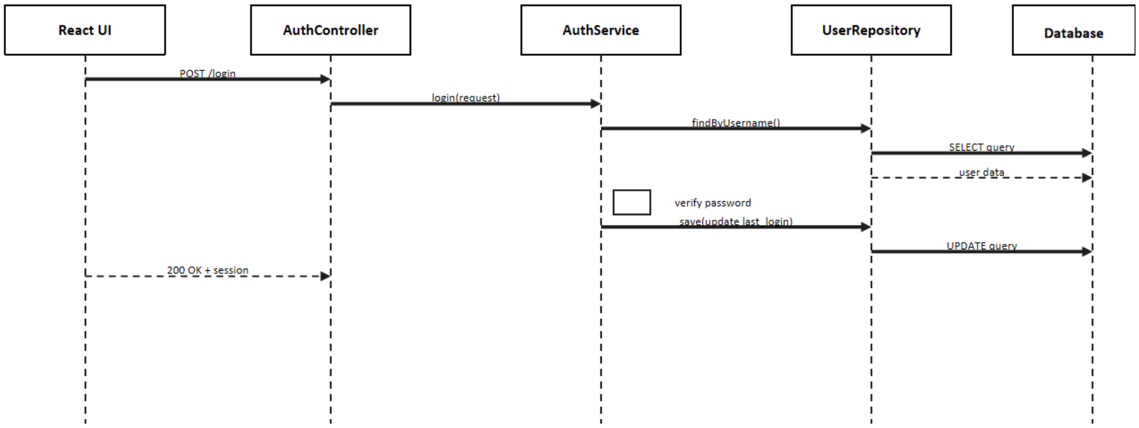


5.5. Sequence Diagram

Register/Login



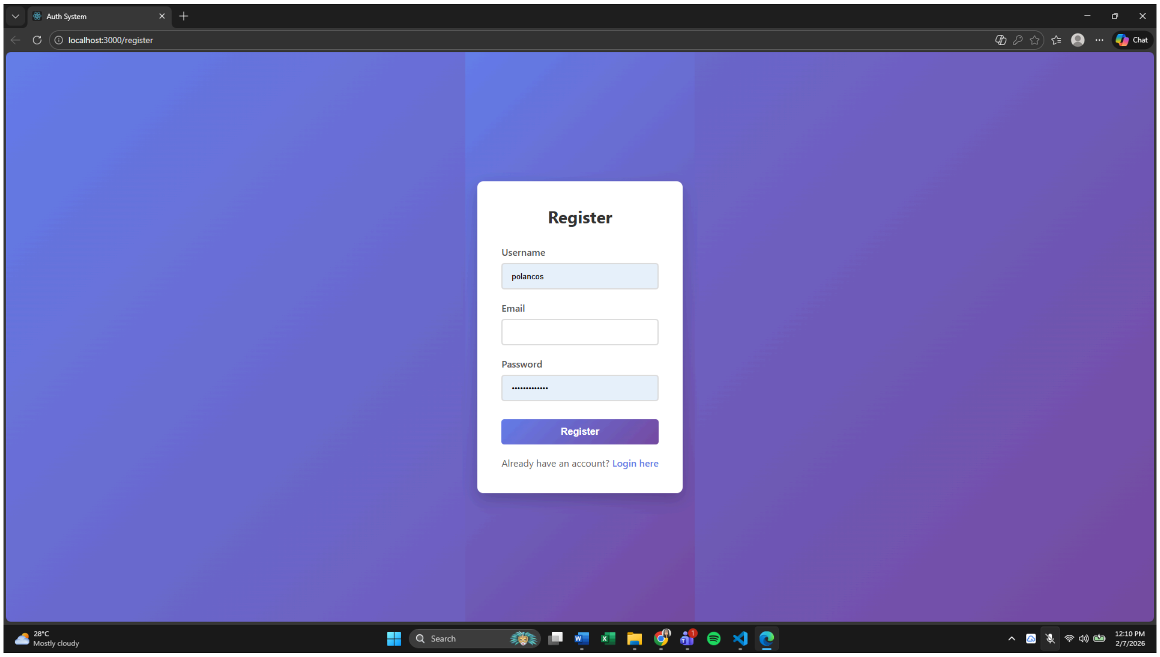
Login Flow



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



localhost:3000/register

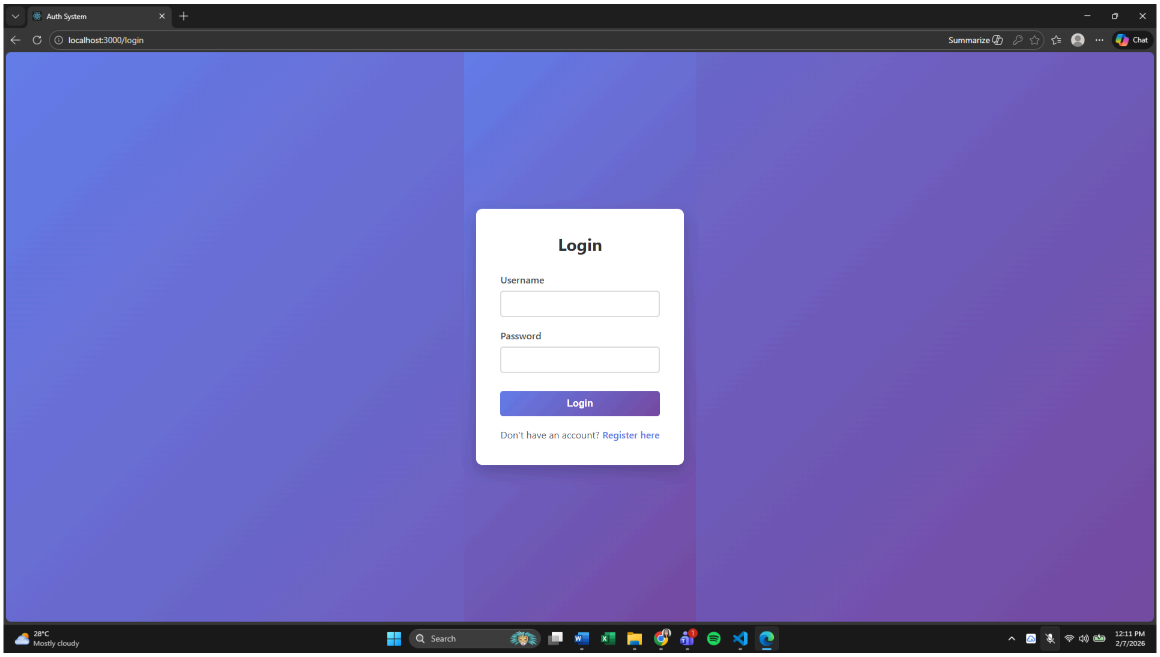
Register

Username: polancos

Email:

Password: ••••••••••••••

Already have an account? Login here



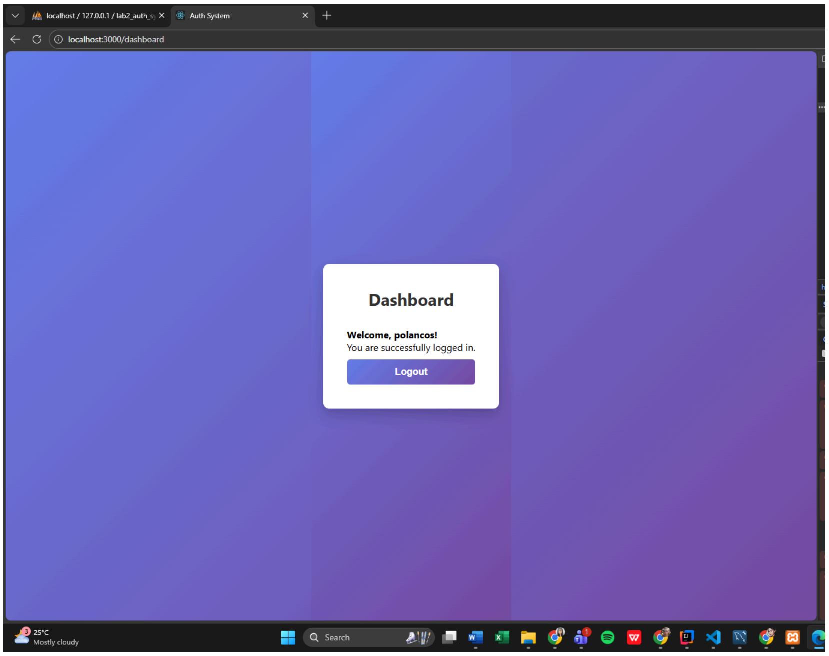
localhost:3000/login

Login

Username:

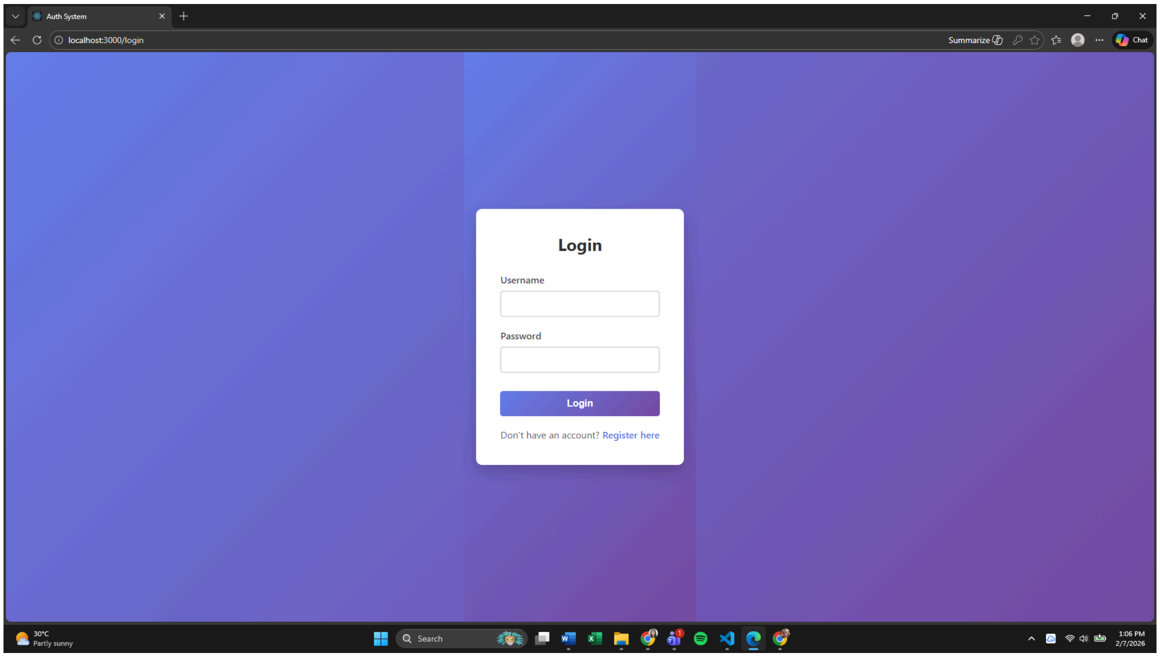
Password:

Don't have an account? Register here



Dashboard

Welcome, polancos!
You are successfully logged in.



Login

Username

Password

Don't have an account? Register here