

Assignment: Building a Simple Social Media Website

Overview

This assignment involves creating a simple social media website, gradually introducing more complex functionalities in phases. The project will start with basic user management and progress to more sophisticated features such as posting content and interacting with other users' content.

Phase 1: Basic User Management

Objective: Create a simple backend for user registration and authentication.

1. Setup Spring Boot Project

- Initialize a new Spring Boot project using Spring Initializr.
- Include dependencies: Spring Web, Spring Data JPA, H2 Database, Spring Security.

2. Create User Entity and Repository

- Define `User` entity with fields: `id`, `username`, `password`, `email`.
- Create `UserRepository` interface extending `JpaRepository<User, Long>`.

3. User Registration Endpoint

- Create `UserController` with a `POST /register` endpoint.
- Implement a service to handle user registration, including password hashing.

4. User Authentication

- Configure Spring Security for basic authentication.
- Implement `POST /login` endpoint to authenticate users.

Phase 2: User Profile Management

Objective: Allow users to create and manage their profiles.

1. Extend User Entity

- Add profile-related fields to `User` entity: `firstName`, `lastName`, `bio`, `profilePicture`.

2. User Profile Endpoint

- Create `GET /users/{id}` to retrieve user profiles.
- Create `PUT /users/{id}` to update user profiles.
- Implement the necessary services and controllers.

Phase 3: Posting Content

Objective: Enable users to post content.

1. Create Post Entity and Repository

- Define `Post` entity with fields: `id`, `content`, `timestamp`, `user`.
- Create `PostRepository` interface extending `JpaRepository<Post, Long>`.