

Assignment 3 Documentation

1. Technologies Used

- Frontend:
 - React: A JavaScript library for building user interfaces, used for frontend development.
 - Mantine: A React component library for building modern web applications, utilized for UI components.
 - Axios: A promise-based HTTP client for making API requests from the browser.
- Backend:
 - Spring Boot: A Java-based framework used to create microservices and standalone applications.
 - Spring Data JPA: Part of the Spring Data project, provides easy implementation of data access layers for JPA-based data stores.
 - Hibernate: An object-relational mapping (ORM) framework for mapping Java objects to database tables.
 - MySQL: An open-source relational database management system.
 - Maven: A build automation tool for Java projects, used for managing dependencies and building the project.

2. Implemented Pages/Components

- Frontend:
 - HeaderMegaMenu Component: Renders a navigation menu at the top of the page. Utilizes Mantine's components for styling and layout.
 - NavbarNested Component: Renders a nested navigation menu. Similar to the HeaderMegaMenu but with different styling and functionality.
 - NewQuestionModal Component: A modal component for creating or editing questions. Includes input fields for title, text, picture URL, and question tags.
 - Questions Page: Displays a list of questions fetched from the backend. Allows users to upvote/downvote questions, create/edit questions, and delete questions.
 - Answers Page: Displays a list of answers fetched from the backend. Allows users to create/edit answers and delete answers.
- Backend:
 - User Repository: Implements methods for retrieving, creating, and updating user data from the database.
 - Question Repository: Implements methods for retrieving, creating, and updating question data from the database.



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- Answer Repository: Implements methods for retrieving, creating, and updating answer data from the database.
- User Service: Contains business logic for user-related operations such as user authentication and password encryption.
- Question Service: Contains business logic for question-related operations such as fetching questions by tag or username.
- Answer Service: Contains business logic for answer-related operations such as fetching answers for a question.

3. Functionality

- User Authentication: Users can register and login using their username and password. Passwords are encrypted for security.
- Question Management: Users can create, edit, and delete questions. Questions can be filtered by tag or username.
- Answer Management: Users can create, edit, and delete answers. Answers are associated with specific questions.
- Voting System: Users can upvote/downvote questions and answers. The voting system affects the visibility and ranking of questions and answers.