Mitt Arv Software Engineering Internship Assignment

GitHub Repo: Mitt-Arv-Assignment

Assignment 1: Kanban Board in React.js

Overview: The Kanban Board project is a task management web application built using React.js and Vite. The goal of this project is to create an interactive and responsive task organization system that allows users to manage their workflow efficiently.

Detailed Explanation: A Kanban board is a visual tool that helps users track tasks across different stages of progress. It is widely used in agile project management to enhance productivity by providing a clear overview of ongoing tasks. This project implements a functional Kanban board with the following key components:

1. **Board Structure:**
    - The board consists of multiple columns representing different task statuses: **To Do, In Progress, and Done**.
    - Each column holds task cards that can be moved between statuses.
    - Users can visually see which tasks are pending, in progress, or completed.
2. **Drag-and-Drop Functionality:**
    - Users can move tasks across columns using a smooth drag-and-drop interaction.
    - Implemented using React's **drag-and-drop** capabilities, ensuring a seamless user experience.
    - This feature enhances the intuitive nature of the board, allowing for easy prioritization and task reassignment.
3. **Task Management Features:**
    - **Create New Tasks:** Users can add new tasks to the "To Do" column by entering task details.
    - **Delete Tasks:** Users can remove tasks when they are no longer needed, ensuring a clutter-free workspace.
4. **Local Storage for State Management:**
    - Instead of using an external database or Redux, the application leverages **local storage** to retain task data.
    - Tasks persist even after page refresh, ensuring that user progress is not lost.
    - This approach simplifies state management while keeping the application lightweight.
5. **User Experience Enhancements:**

- The Kanban board provides **real-time updates** whenever a task is added, moved, or deleted.
- **Accessibility Features:** Keyboard shortcuts allow users to quickly add, move, or delete tasks without relying solely on a mouse.

6. **Responsive Design:**
   - The UI is optimized for both **mobile and desktop** users.
   - Uses **CSS Flexbox and Grid** for a structured layout that adjusts to different screen sizes.
   - The board scales dynamically to accommodate different numbers of tasks and columns.
7. **Tech Stack:**
   - **React.js** (with Vite for fast development and performance optimization)
   - **HTML, CSS** (for styling and responsiveness)
   - **JavaScript** (for interactivity and state management)
   - **React DnD Library** (for handling drag-and-drop functionality)

Assignment 3: Mitt Arv App Security Bug Bounty

Overview: The Mitt Arv Security Bug Bounty project involved security testing of the Mitt Arv Android application to identify critical vulnerabilities and usability issues. Through **Usage Testing** and **Vulnerability Testing**, multiple security flaws were discovered, including authentication errors and database vulnerabilities.

Key Findings:

- **Login Glitch:** Incorrect validation prevents users from signing in successfully.
- **Password Reset Issue:** Security questions do not validate correctly, leading to unnecessary lockouts.
- **SQL Injection Risk:** The application uses raw SQL queries, making it vulnerable to attacks.

Recommendations:

- Implement **parameterized queries** to prevent SQL injection.
- Improve **input validation** and **encryption** to enhance security.
- Ensure proper **backend logic** for authentication and account recovery.

By applying these fixes, the application can significantly improve both security and user experience, preventing potential breaches and data leaks.