Capstone Project Outline

CODE:YOU – Web Development Pathway

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# Objective

I propose to build a “ticketing system” type web application, in the vein of Trello/Jira. Users will be able to track bugs, tasks, and project progress in a kanban style dashboard. The app will provide an intuitive, drag/drop dashboard in which users and administrators can create, assign, edit, and manage tasks. This app will, hopefully, offer a practical, accessible tool for improving personal productivity and team collaboration.

# Application Overview

The user should be able to navigate to the home address and be presented with a login/create account screen. From here, assuming they do not have a preexisting account, they can choose to create an account and be redirected to a form that will require user information. They will be asked to provide a username, password, email and a few other credentials. Once the form is submitted, they will receive an email for confirmation. At this point they should be able to return to the login page and successfully login with their new account credentials. Upon successful login, the user will be redirected to their kanban style dashboard. The dashboard will include the following functionality:

# Role-Based Access Control

## User Account

• View and manage their own task cards  
• Drag and drop cards between statuses  
• Add comments to tasks  
• Filter and sort tasks by priority, status, or due date  
• Access the app on mobile and desktop devices (responsive design)

## Administrator Account

• Assign tasks to any user  
• Create, update, and delete tasks  
• Manage the backlog and task lifecycle  
• Modify user permissions and roles  
• Send system-wide notifications

# Technologies Utilized

|  |  |
| --- | --- |
| Category | Tools/Technologies Used |
| Frontend | React (SPA), React Router, Bootstrap, CSS3 |
| Backend | Node.js, Express.js |
| Authentication | Firebase |
| Email Verification | EmailJS API |
| Form Validation | Regex |
| Database | SQLite with raw SQL (ORM may be explored) |
| Version Control  IDE | Git (via terminal), GitHub  VSCode |
| Deployment (Optional) | AWS |

# Capstone Requirements Satisfied

|  |  |  |
| --- | --- | --- |
| Requirement | Status | Details |
| Responsive Design | ✅ | Mobile & desktop via Bootstrap/CSS |
| Third-Party API | ✅ | EmailJS for email verification |
| Modern JS Framework | ✅ | React used as the frontend framework |
| Regex Validation | ✅ | User input is validated on forms |
| Interactive UI Features | ✅ | Kanban board with drag-and-drop |
| Node.js + Express Server | ✅ | Full backend server |
| SQLite Persistence | ✅ | Data storage for users and tasks |

# Notes for Reviewers & Presentation

\*Please be aware, AI assistance was utilized in the formatting of this document\*

- The project will be tested across multiple screen sizes for responsiveness.  
- At least 10 distinct Git commits will be made via the terminal to demonstrate development progress.  
- A thorough README file will accompany the repository, including:  
 • Project overview  
 • Setup instructions  
 • Description of core features  
 • Notes on any AI-assisted code  
- Clear instructions will be provided to run the project locally with SQLite.