

# React Assignment

## Overview

The task involves building a full-stack task management application with React frontend, database integration, and API implementation.

## Time Allocation

Take-home portion: 24 hours

## Project: Task Management Application

### Core Requirements

Create a React application that allows users to:

- Register and log in with email/password
- View their tasks
- Add new tasks
- Mark tasks as complete
- Delete tasks
- Filter tasks by status (All, Active, Completed)

### Data Structure

Each task should have:

- Unique ID
- Title (text)
- Description (text)
- Status (complete/incomplete)
- Priority (Low, Medium, High)
- Creation date
- User ID (associated with the creator)

### Technical Requirements

- Use functional components with React Hooks
- Implement proper state management

- Create RESTful API endpoints to handle CRUD operations
- Implement user authentication (JWT or Token or similar)
- Set up a database (SQL or NoSQL) to store users and tasks
- Create appropriate data models and relationships
- Handle API requests/responses with proper error handling
- Include basic CSS styling (can use CSS modules, styled components, or Tailwind)
- Add appropriate prop validation
- Include at least one custom hook

## **Submission Instructions**

1. Create a new GitHub repository for your project
2. Implement the application according to the requirements
3. Include a README.md with:
  - Setup instructions (for both frontend and backend)
  - Brief explanation of your technical choices and architecture
  - Database schema description
  - How to run the application locally
4. Include seed data for testing (at least 2-3 test users with sample tasks)
5. Share the repository link by [deadline]

## **What We'll Be Looking For**

- Clean, maintainable code organization
- Secure implementation of user authentication
- Effective API design and error handling
- Intuitive user interface
- Proper data management between frontend and backend

Note: Feel free to use any open source tools or frameworks within the application. For APIs you can choose the language/framework you are comfortable with. The UI has to be in React. Nextjs, Vite, etc... can be used along with react.