# Task Management Application

This is a responsive Task Management application built with **React** and **Firebase** for user authentication. It empowers users to create, manage, and track their tasks with ease, while providing advanced features like categorization, sorting, task history, drag-and-drop functionality, and more. The application supports an intuitive user interface and is designed to be responsive on all screen sizes, ensuring an optimal experience on mobile, tablet, and desktop devices.  
  
URL: https://to-do-tasks-f4fa9.web.app/

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## Features

### 1. ****User Authentication****

* Google Sign-In using **Firebase Authentication**.
* Users can manage their profiles after authentication.

### 2. ****Task Management****

* Create, edit, and delete tasks.
* Categorize tasks (e.g., Work, Personal).
* Tag tasks for better organization.
* Set due dates for tasks.
* **Drag-and-drop functionality** for task reorganization.
* Sort tasks based on due dates (ascending/descending).

### 3. ****Batch Actions****

* Perform batch actions such as:
  + Mark multiple tasks as complete.
  + Delete multiple tasks at once.

### 4. ****Task History and Activity Log****

* Track changes made to tasks, including creation, edits, and deletions.
* View an activity log for each task for improved traceability.

### 5. ****File Attachments****

* Attach files or documents to tasks for additional context.
* Display the attached files in the task detail view.

### 6. ****Filter Options****

* Filter tasks by tags, category, or date range.
* Search tasks by their title for quick access.

### 7. ****Board/List View****

* Switch between a **Kanban-style board view** and a **list view** for task management.

### 8. ****Responsive Design****

* Fully responsive design for a seamless user experience across mobile, tablet, and desktop.

## Technologies Used

* **React** – Frontend framework.
* **Firebase Authentication** – User sign-in with Google and profile management.
* **React Query** – Data fetching and state management.
* **React DnD** – Drag-and-drop functionality for task rearrangement.
* **Material-UI** – UI components for building a modern and responsive interface.
* **Styled-components** – For scoped styling and better component reusability.
* **Firebase Firestore** – For real-time database for tasks and user data.
* **React Router** – Routing between pages and views (task lists, task details, etc.).

## Installation Instructions

1. **Clone the repository:**

bash

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git clone https://github.com/kannanmadhavan/CRUD-Tasks

1. **Navigate to the project folder:**

bash

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cd CRUD-Tasks-main

1. **Install dependencies:**

bash

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npm install

**Setup Firebase:**

* + Create a Firebase project at Firebase Console.
  + Enable Google Sign-In authentication in the Firebase Authentication section.
  + Create a Firestore database for storing tasks.
  + Add your Firebase configuration details in src/firebase-config.js.

**Run the application locally:**

bash

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npm start

Your app should now be running at http://localhost:3000.

## Usage

1. **Sign in** using Google authentication via Firebase.
2. **Manage your tasks:**
   * Create tasks by clicking the "Add Task" button.
   * Edit or delete tasks directly from the task list.
   * Use drag-and-drop to reorder tasks within the board/list view.
   * Attach files to tasks for additional context.
3. **Switch Views:**
   * Toggle between **Kanban-style board view** and **list view** using the view selector in the top bar.
4. **Sort Tasks:** Sort tasks based on their due date (ascending or descending).
5. **Filter and Search:**
   * Use the filter options to narrow down tasks by tag, category, or due date range.
   * Search for specific tasks by title in the search bar.
6. **Track Task History:**
   * View the activity log for any changes made to tasks.

## Authentication

* Users can sign in using **Google** authentication via Firebase Authentication.
* Once signed in, users can access their task lists, create new tasks, and manage their existing tasks.
* Users' data is stored in **Firestore** to enable real-time updates.

## Task Management Features

* **Task Creation and Editing**: Users can create and update tasks, including adding tags, categories, and due dates.
* **Task History**: Every modification to tasks (add, edit, delete) is logged and can be viewed in the task's activity log.
* **Drag-and-Drop Sorting**: Tasks can be reordered easily using the drag-and-drop functionality.
* **Batch Actions**: Users can perform batch actions such as deleting or marking multiple tasks as complete at once.
* **File Attachments**: Users can attach files or documents to each task, which can be viewed or downloaded.

## Responsive Design

The app is designed with a mobile-first approach, ensuring that it works seamlessly on mobile, tablet, and desktop devices. The layout adapts dynamically based on screen size, with the following features:

* Mobile: Compact view with a task list or board that fits well on small screens.
* Tablet: A more spacious layout that accommodates both list and board views.
* Desktop: A wide layout that allows users to view tasks with more information and allows for easier drag-and-drop interactions.

## License

This project is licensed under the MIT License – see the LICENSE file for details.

### Notes:

* The task management functionality is built to support a real-time experience. Changes to tasks are immediately reflected across all instances of the app.
* All user data and tasks are securely stored in **Firestore**, and all authentication is handled via **Firebase**.