

Lab 1 → project idea Oana Gog

1. A short description.

The Task Management Mobile App helps users easily see, track, and manage their tasks. Users can create new tasks, update existing ones, and delete tasks once they're completed or no longer needed. Tasks can be prioritized to keep users organized and focused. Even if users are offline, they can still manage their tasks, and the app will automatically sync with the server when the connection is restored.

2. Domain details.

Entity: Task

1. **Title:** Title of the task. It helps users identify what needs to be done. (example: "Soup for lunch")
2. **Description:** A more detailed explanation of the task (example: "Use the vegetables from the fridge for the soup").
3. **Priority Level:** Indicates how important the task is. (example: "Low, Medium, High")
4. **Completion Status:** A simple indicator to show if the task is completed or not.
5. **Due date:** The deadline by which the task needs to be completed.

3. CRUD.

Create

- **Description:** Allows users to add a new task to their task list.
- **How it works:**
 - The user clicks on the "Plus" button, which opens a new page where they can enter details such as the title, description, due date, and priority level.
 - By default, new tasks are marked as "incomplete"
 - Users click an "Add" button to save the task, which will then appear on their homepage.

Read

- **Description:** Allows users to view tasks in their list.
- **How it works:**
 - Users can see a list of all tasks with titles and priority levels.
 - When selecting a task, on a different page, the users can see more details such as description, due date, completion status, and priority and a button for editing.

Update

- **Description:** Allows users to modify an existing task.
- **Operation:**
 - When selecting a task, on a different page, the users can see its details (description, due date, completion status and priority level) and a button “Edit”
 - Upon pressing that button, a separate page will allow users to update all the task details, such as the title, description, due date, priority level, or completion status.
 - After making changes, they press the button “Update” and the updated version appears on the homepage.

Delete

- **Description:** Allows users to remove a task from their list.
- **Operation:**
 - Users will select a task they wish to delete
 - The task will be permanently removed and will not be shown on the homepage anymore
 - Once deleted, the tasks cannot be recovered.

4. Persistence details

- **Create Operation:**
 - When creating a task, it will be stored locally in the mobile app's database.
 - Once online, the task is sent to the server and stored in the server-side database.
- **Read Operation:**
 - Tasks are loaded from the local storage, allowing users to see their tasks even when offline.
 - If online, the app will also pull the most recent tasks from the server, merging and synchronizing any changes.
- **Update Operation:**
 - When a task is updated, the changes are first saved locally, then synced with the server when online.

- **Delete Operation:**

- Deleted tasks are removed from the local storage and then also deleted from the server when online.

5. Details on what is happening when the device is offline.

Create Operation (Offline)

- **What Happens:**

- The task is stored locally in the device's database.
- Once the app detects an internet connection, it automatically syncs and sends the newly created task to the server.

Read Operation (Offline)

- **What Happens:**

- The app fetches the task list from the local database.
- Users can still see and interact with their tasks based on the most recent data stored on the device.

Update Operation (Offline)

- **What Happens:**

- The updates are stored in the local database.
- When the app goes online, it syncs the updates with the server, ensuring that the server data matches the local changes.

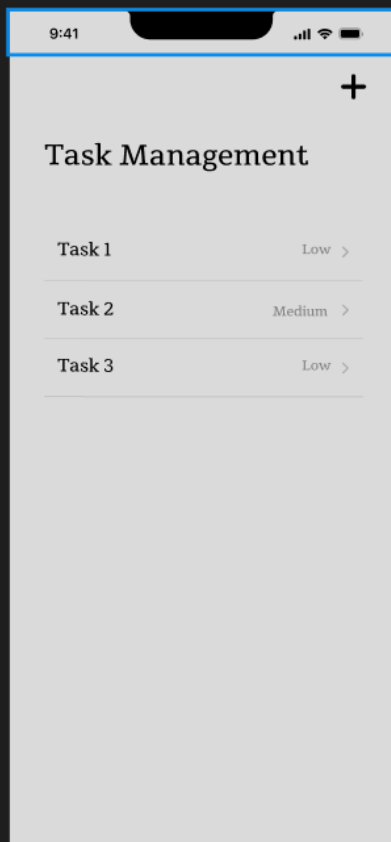
Delete Operation (Offline)

- **What Happens:**

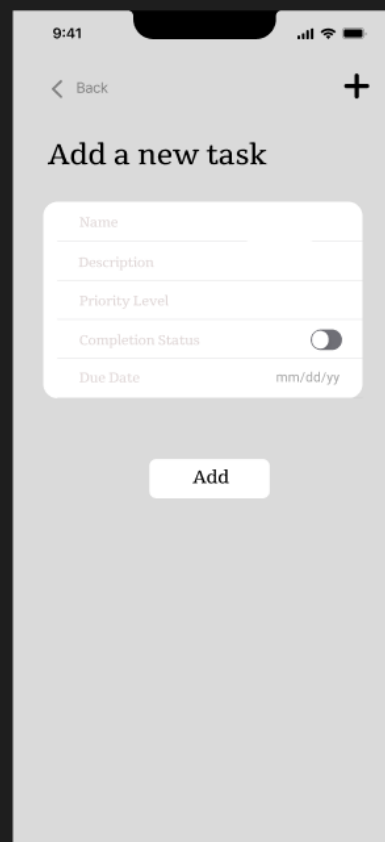
- The task is marked for deletion in the local database.
- When the device reconnects, the app automatically syncs the deletion with the server, removing the task from the server's database.

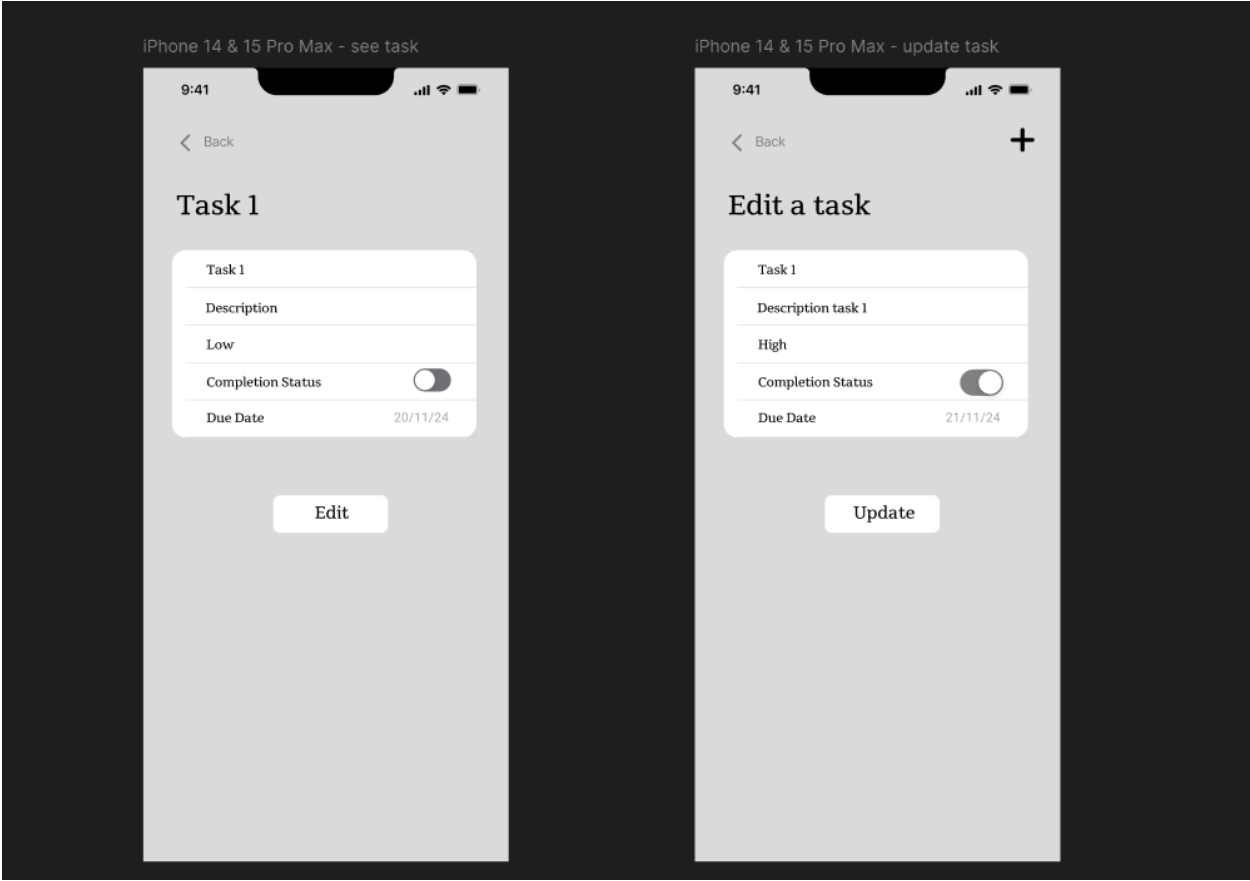
6. App mockup

iPhone 14 & 15 Pro Max - main layout

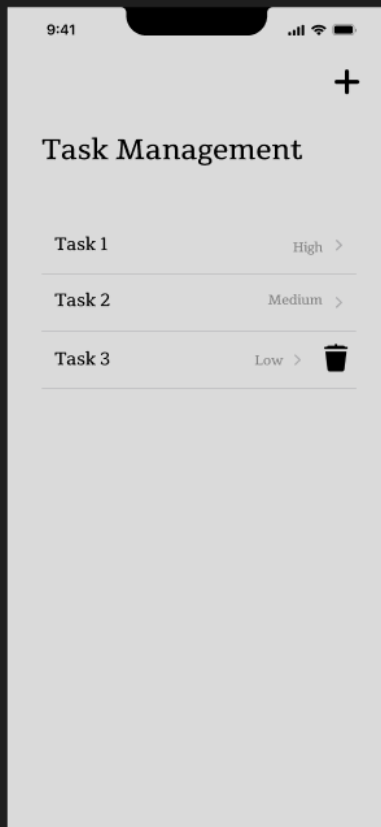


iPhone 14 & 15 Pro Max - add task





iPhone 14 & 15 Pro Max - delete task



iPhone 14 & 15 Pro Max - after delete task

