Steps to Start Writing the Code from Scratch

Here's how you can systematically approach building your Task Management System with the JavaScript functionality you've outlined.

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1. Understand the Core Requirements

- **Task Categories**: Organize tasks into 'Pending,' 'In Progress,' and 'Completed.'
- **Task Persistence**: Save tasks to IndexedDB for offline support.
- **Dynamic Rendering**: Display tasks dynamically based on their category.
- **Pagination**: Use generators to implement task pagination.
- **API Integration**: Fetch initial tasks from an external API.
- **Offline Management**: Load and synchronize tasks from IndexedDB.

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2. Plan the Code Structure

Divide your functionality into these core modules:

- **Task Categories**: Manage task arrays for each category.
- **IndexedDB Setup**: Initialize the database and handle task persistence.
- **Rendering Functions**: Update the DOM dynamically to reflect task changes.
- **Task Management**: Add tasks, move tasks between categories, and fetch tasks.
- **Pagination**: Implement generators to manage paginated task views.

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3. Start with Initialization

- Define the `categories` object to store tasks in three arrays: `pending`, `inProgress`, and `completed`.
- Set up IndexedDB with object stores for task persistence.

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4. Handle IndexedDB

- Use `indexedDB.open` to create a database named "TaskManagementDB."
- Create an object store named `tasks` with `id` as the keyPath.
- Write utility functions for:
  - **Saving Tasks**: Add tasks to IndexedDB.

    - **Fetching Tasks**: Retrieve tasks from IndexedDB on page load.

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5. Render Tasks

- Write the `renderTasks` function to update the UI for each task category.
- Use `map` to create HTML templates for tasks and insert them into the DOM.
- Add buttons for moving tasks between categories.

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6. Add and Move Tasks

- Write a function to:
    - Add new tasks to the `pending` category.
    - Save tasks to IndexedDB upon addition.
- Implement the `moveTask` function to:
    - Move tasks between categories.
    - Update their status.
    - Re-render the task list.

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7. Fetch Initial Tasks from API

- Use `fetch` to retrieve tasks from an external API (e.g., JSONPlaceholder).
- Map the retrieved tasks to the `pending` category.
- Render the tasks dynamically.

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8. Implement Pagination

- Write a generator function `paginateTasks` to split tasks into smaller chunks.
- Use this function to implement paginated views for tasks in a category.

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9. Offline Task Management

- Load tasks from IndexedDB on page load.
- Synchronize tasks between the UI and IndexedDB.

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10. Test and Debug

- Test each feature:
  - Adding tasks.
  - Moving tasks between categories.
  - Fetching tasks from the API.
  - Loading tasks from IndexedDB.
- Debug any issues using `console.log` and browser dev tools.

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11. Optimize the Code

- Ensure modularity by dividing functionality into reusable functions.
- Add meaningful comments and proper error handling.

Suggested Order to Write the Code

1. **Initialize Task Categories**
2. **Set Up IndexedDB**
3. **Write Rendering Functions**
4. **Implement Add and Move Task Logic**
5. **Integrate API Fetching**
6. **Handle Offline Task Loading**
7. **Implement Pagination**
8. **Test and Debug**

Tools to Assist

- **Browser DevTools**: Inspect IndexedDB, debug JavaScript, and test API calls.
- **Console Logs**: Debug task addition, movement, and rendering logic.

By following this structured approach, you'll create a robust, maintainable Task Management System that meets both online and offline requirements. Let me know if you need assistance with any specific part!