


Day 6 CC5: React Coding Challenge: State Management & Progressive Web Apps

Problem Statement

Develop a **Personal Notes Application** with the following functionalities:

1. **State Management using Context API or Redux.**
2. **Hooks for Managing State and Side Effects.**
3. **PWA Implementation with Service Workers for Offline Support.**
4. **Persist Data using LocalStorage or IndexedDB.**

 **Time Limit: 120 Minutes**

User Stories

- ✓ **As a user**, I should be able to add, edit, and delete notes.
 - ✓ **As a user**, my notes should persist even after refreshing the browser.
 - ✓ **As a user**, I should be able to access the app offline (PWA).
 - ✓ **As a user**, I should experience smooth UI updates when adding or editing notes.
 - ✓ **As a user**, I should see my notes **instantly** without manually refreshing the page.
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Hints

- Use **React Context API or Redux** for managing notes state.
 - Use **Hooks** (`useState`, `useEffect`) to update and track data.
 - Implement **Service Workers** for offline support.
 - Store notes in **LocalStorage or IndexedDB** for persistence.
 - Add a **manifest.json** file to enable PWA functionality.
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Suggested File Structure

```
bash
CopyEdit
/personal-notes-app
├── /src
```

```
|
| |
| | | /components
| | | |
| | | | | Navbar.js
| | | | | NoteList.js
| | | | | NoteItem.js
| | | | | AddNote.js
| | |
| | | /pages
| | | |
| | | | | Home.js
| | | | | Notes.js
| | |
| | | /context (If using Context API)
| | | |
| | | | | NotesContext.js
| | |
| | | /redux (If using Redux)
| | | |
| | | | | store.js
| | | | | actions.js
| | | | | reducers.js
| | |
| | | /pwa
| | | |
| | | | | serviceWorker.js
| | | | | manifest.json
| | |
| | | App.js
| | | index.js
|
| package.json
| README.md
```

Expected Outcome

- ✓ Users can **add, edit, and delete notes** using Redux or Context API.
 - ✓ App **remains functional offline** using a Service Worker.
 - ✓ Data **persists across page reloads** via LocalStorage or IndexedDB.
 - ✓ App **updates the UI in real-time** when notes are modified.
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Bonus Tasks (Optional Enhancements)

- ◆ Enhance UI with Tailwind CSS or Bootstrap.
- ◆ Add Dark Mode using Context API.
- ◆ Enable Push Notifications for Reminders.