



Daily Work Update

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Overview

Today I worked on improving the **Aby Inventory Management System** by introducing an **offline-first approach**. The purpose of this update is to make sure the platform remains usable when the internet connection is unavailable, and then automatically syncs data once the connection comes back. This feature is important for ensuring smooth business operations in areas with unstable networks.



Achievements

1. Offline-First Setup

- Built a mechanism that keeps the app running even without internet.
- Users are now able to:
 - Add new inventory data while offline,

- Modify items,
 - Access stock information that was loaded earlier when online.
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2. Data Storage & Synchronization

- Integrated local storage (IndexedDB/LocalStorage) so the app can temporarily save changes made while offline.
 - Added logic for:
 - Saving all offline actions locally,
 - Uploading and merging them with the server database once internet is restored.
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3. Offline Data Viewing

- Made it possible for users to **continue viewing inventory records** that were last fetched before losing connectivity.
 - This ensures the system is still useful for checking stock and preparing transactions during downtime.
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Pending Work

Some parts of the feature are not finalized and still require further work:

- **Conflict resolution:** Handling cases where offline and online updates affect the same record.
- **Background synchronization:** Automating the sync process without requiring manual refresh.

- **System testing:** Making sure the system performs well with a large volume of offline records.



Summary

The **offline-first design** is already functional in the Aby Inventory Management System. Users can add and view data offline, and sync it later with the server. This improves dependability for businesses facing poor internet coverage.

However, the feature is **still under development** — additional testing and conflict management need to be completed before it can be considered fully stable.