

Assignment - 6

- Milestones List:

Milestone	Description
1. Project Setup & Tech Stack • (Sept 2025)	Finalize project scope, set up React Native/Flutter frontend and Python Flask backend, create Git repository, and define SQL schema framework.
2. System Architecture & Design Docs • (Sept – Oct 2025)	Produce D0-D2 design diagrams and data flow models detailing how mobile app, backend, and AI modules connect.
3. Core Backend & Database Development • (Oct – Nov 2025)	Develop and test database schemas for users, chores, bills, and inventory along with REST API endpoints for CRUD operations.
4. Frontend UI Development • (Oct – Nov 2025)	Design and implement mobile UI layouts for login, dashboard, and feature screens in React Native/Flutter.
5. Feature Integration Phase I • (Dec 2025 – Jan 2026)	Link Chore Manager, Bill Splitter, and Inventory Tracker modules to the backend; enable user authentication and AI predictions.
6. App Testing & Stabilization • (Feb 2026)	Conduct end-to-end testing to deliver a fully functioning app (without hardware) by the end of February 2026.
7. Hardware Integration • (Mar 2026)	Set up Raspberry Pi weight sensors and connect sensor data pipeline to Inventory Tracker module.
8. Validation & Enhancements (Mar – Apr 2026)	Validate sensor data, refine AI predictions, and optimize user experience and notifications.
9. Documentation & Final Presentation • (Apr 2026)	Complete final documentation, testing reports, and presentation materials for the Capstone Expo.

- Table 1. Timeline:

Task	Responsible	Start Date	End Date	Milestone Ref.
System Setup & Stack Selection	Both	Sept 10, 2025	Sept 20, 2025	#1
Backend Server & Database Setup	Aditya	Sept 21, 2025	Oct 20, 2025	#3
Frontend UI Design & Prototyping	Neha	Sept 21, 2025	Oct 20, 2025	#4
User Authentication Module	Both	Oct 21, 2025	Nov 5, 2025	#3 and #4
Chore Manager Module	Aditya	Nov 6, 2025	Nov 25, 2025	#5
Bill Splitter Module	Neha	Nov 6, 2025	Nov 25, 2025	#5
Inventory Tracker Module	Aditya	Nov 26, 2025	Dec 15, 2025	#5
OCR Receipt Scanning	Neha	Dec 1, 2025	Dec 20, 2025	#5
AI Prediction Engine Development	Aditya	Dec 10, 2025	Jan 15, 2026	#5
Push Notifications & Reminders	Neha	Jan 5, 2026	Jan 25, 2026	#5
Full App Integration & Testing	Both	Jan 20, 2026	Feb 20, 2026	#6
Raspberry Pi Hardware Setup	Neha	Mar 1, 2026	Mar 20, 2026	#7
Sensor Data Integration Pipeline	Aditya	Mar 15, 2026	Apr 5, 2026	#7 and #8

AI Validation & System Optimization	Both	Apr 1, 2026	Apr 20, 2026	#8
Documentation & Final Presentation	Both	Apr 10, 2026	Apr 30, 2026	#9

- Table 2. Effort Matrix:

Task	Aditya Anand (%)	Neha Lenin (%)	Comments
System Setup & Stack Selection	50	50	Joint setup of dev environment and repo.
Backend Server & Database Setup	60	40	Aditya leads schema and API. Neha tests integration.
Frontend UI Design & Prototyping	40	60	Neha leads UX. Aditya handles UI-API linking.
User Authentication Module	50	50	Shared between frontend and backend parts.
Chore Manager Module	60	40	Backend logic by Aditya. UI flow by Neha.
Bill Splitter Module	40	60	Expense UI by Neha, backend by Aditya.
Inventory Tracker Module	55	45	Shared work on inventory data views and API.
OCR Receipt Scanning	45	55	Neha focuses on camera module. Aditya handles parsing.

AI Prediction Engine	60	40	Aditya builds logic. Neha tests output in app.
Push Notifications & Reminders	40	60	Frontend UX tuning by Neha. Backend trigger by Aditya.
Full App Integration & Testing	50	50	Joint effort for QA and bug fixes.
Raspberry Pi Hardware Setup	40	60	Neha leads hardware and sensor configuration.
Sensor Data Integration Pipeline	60	40	Aditya handles data transfer logic.
AI Validation & System Optimization	50	50	Joint testing and fine-tuning.
Documentation & Final Presentation	50	50	Collaborative write-up and slide prep.