BEST B4

GROUP MEMBER: HEET SHAH, MAHIR PATEL, JEET PATEL

INTRODUCTION

CS422 / 522

TEAM ROLES

MEMBERS	RESPONSIBILITES
Heet Shah	Developed authentication system, implemented Core Data model, managed navigation flow between screens.
Mahir Patel	Designed UI/UX in Figma, handled edge case logic, researched OCR integration strategies.
Jeet Patel	Researched APIs for expiration tracking, managed project scope and timeline, coordinated team planning.

APP IDEA & TARGET USERS

Problems Identified

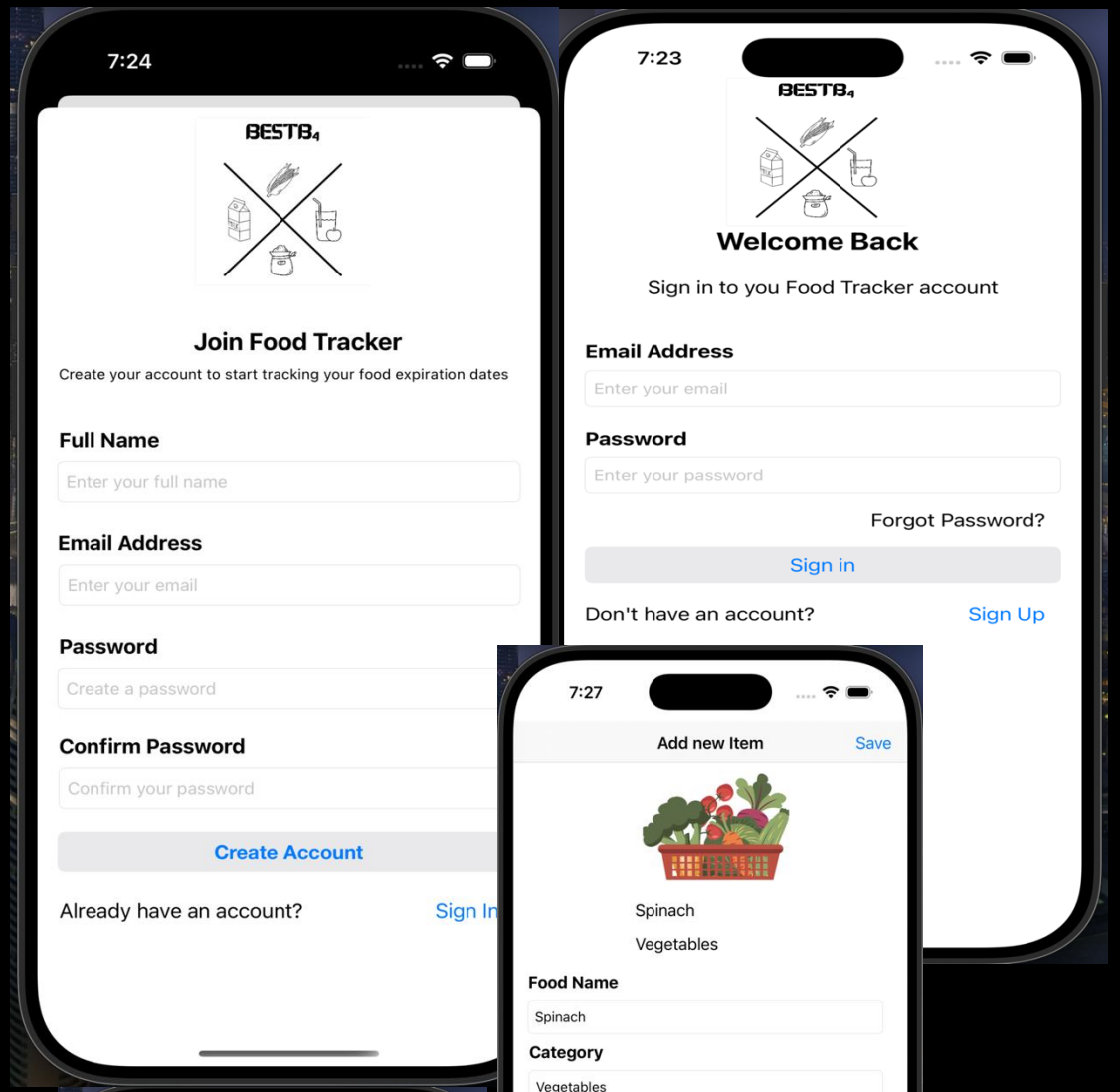
Many users forget expiration dates, leading to food waste and financial loss

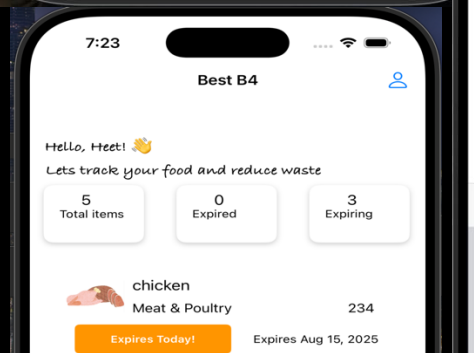
Proposed Solution

A mobile app that tracks food items, categorizes them, and sends alerts before expiration

Target Audience

Students, families, and busy individuals who want to manage their pantry efficiently





CORE FEATURES

- User Authentication: Secure login and sign-up with persistent sessions using Core Data and UserDefaults
- Product Entry: Users can input item name, category, quantity, and expiration date
- Dashboard Display: Scrollable list of items with color-coded status indicators based on expiration proximity
- Notification System: Scheduled alerts that notify users before items expire.

DESIGN PROCESS

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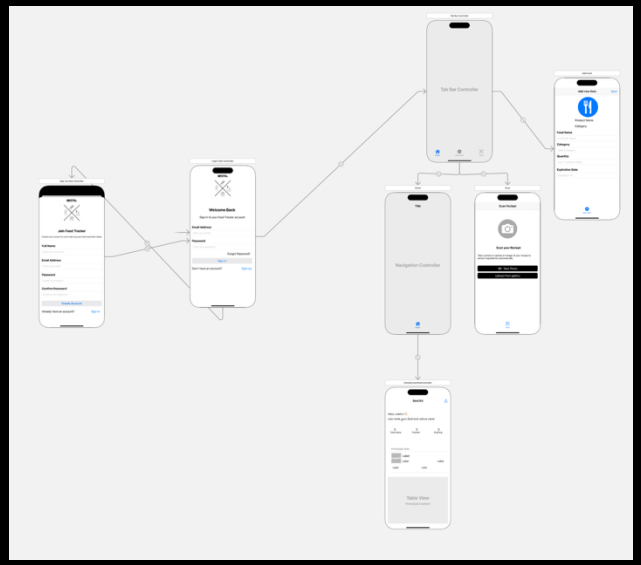
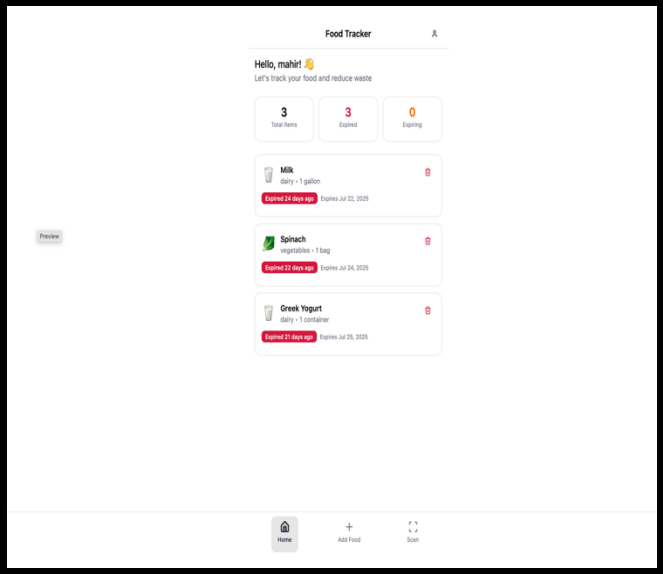
FIGMA PROTOTYPING:
Initial UI layouts and flow diagrams created to visualize user experience

Category & Date Logic:
Implemented logic to prevent invalid date selection and dynamically update UI based on category

Accessibility & Responsiveness:
Ensured the app works across devices and screen sizes, with readable fonts and intuitive controls



UI flow diagram showing navigation between screens



Figma mockups of key screens

TECHNICAL CHALLENGES

Navigation Bugs: Default modal transitions caused UI issues; required custom navigation controller.

Core Data Integration: Initial failures due to misconfigured entity relationships and code generation.

OCR Complexity: No single library met all needs; required multi-library research and planning.

API Limitations: Free APIs lacked reliability or had restrictive terms; forced alternative logic development

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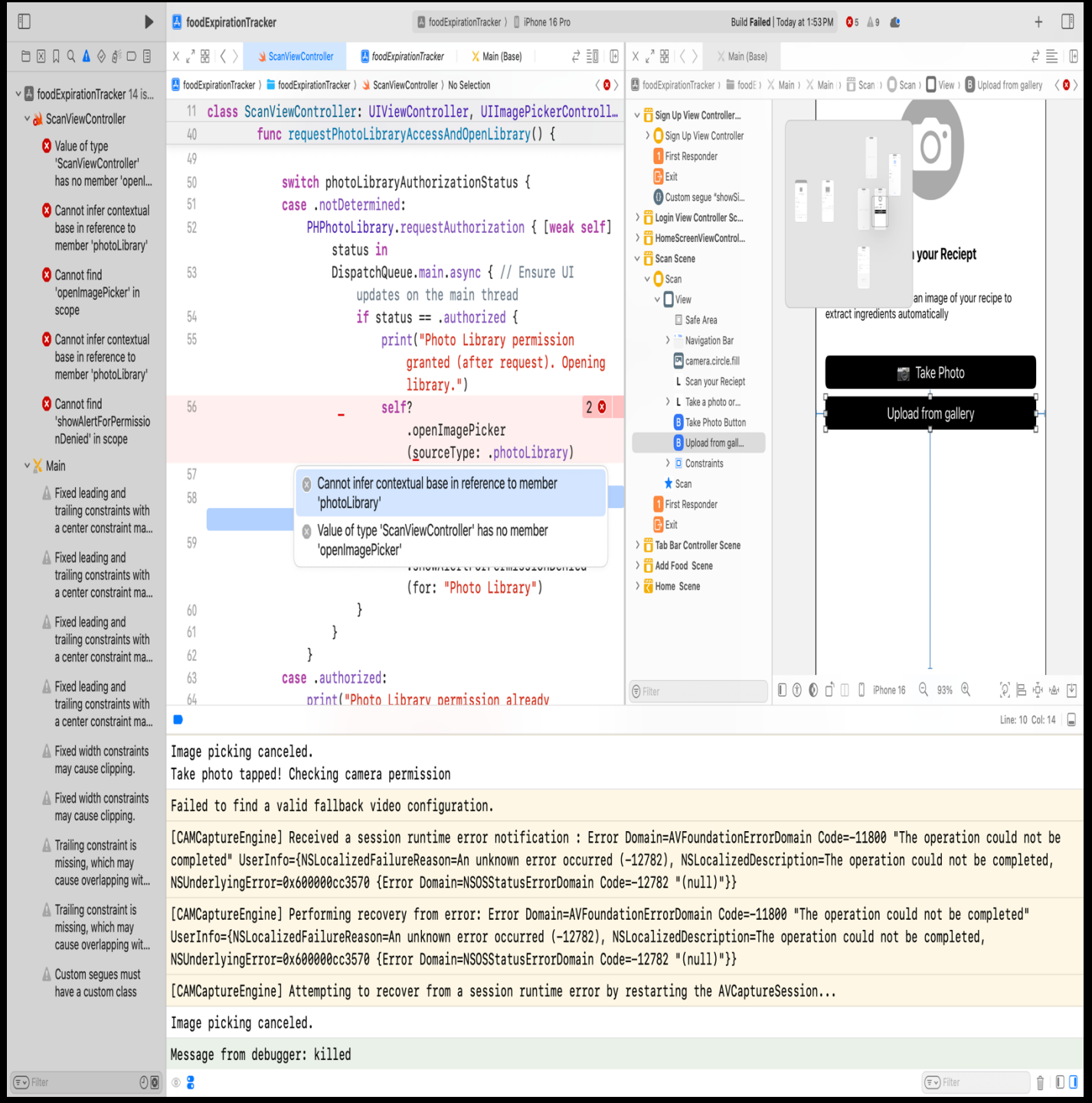


SOLUTIONS & FIXES

Custom Navigation Controller:
Replaced default transitions for smoother screen flow.

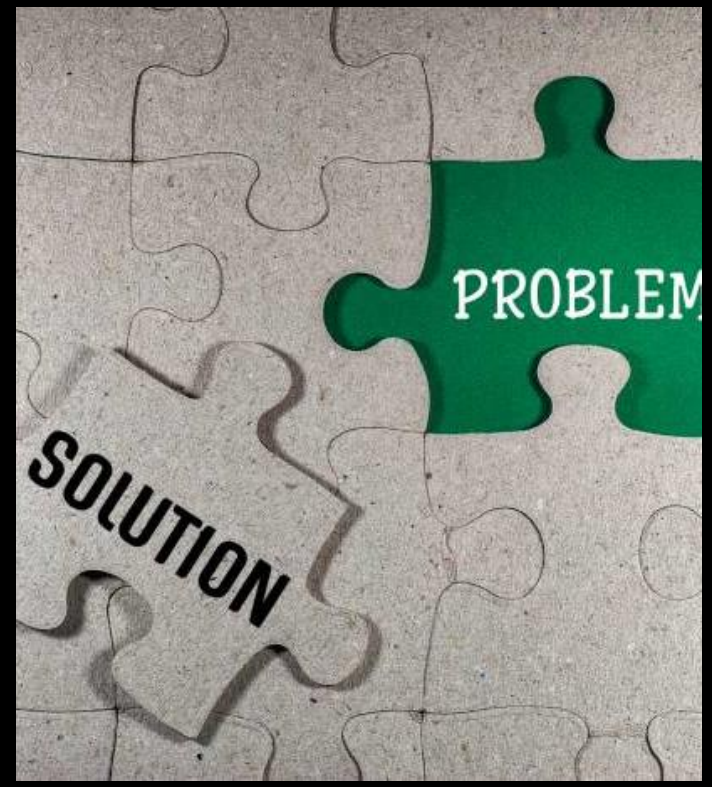
Core Data Restructuring:
Refactored entity relationships and ensured proper data persistence.

OCR Framework Skeleton:
Created a modular plan for future OCR integration using VisionKit and Firebase ML.

Expiration Logic:
Built internal logic to calculate urgency without relying on external APIs

Edge Case Handling:
Added checks for invalid dates, missing fields, and duplicate entries to ensure clean data and smooth user flow.

Notifications:
Scheduled alerts using UNUserNotificationCenter, with unique IDs for easy cancellation and user permission handling.



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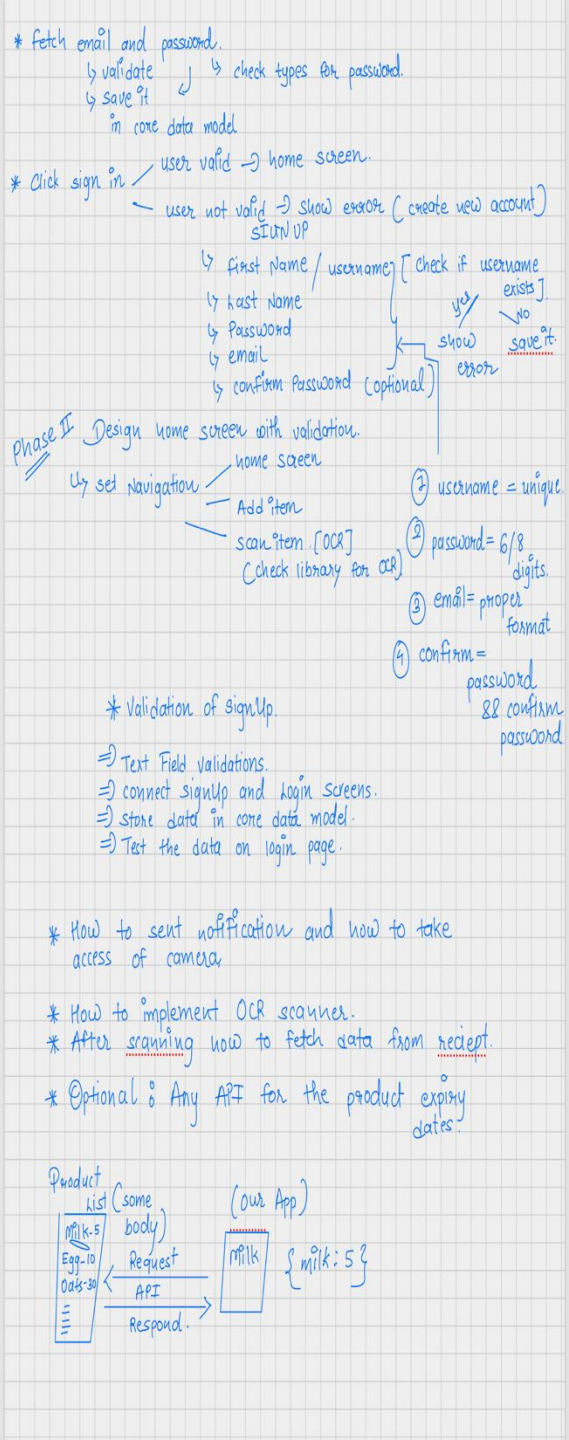

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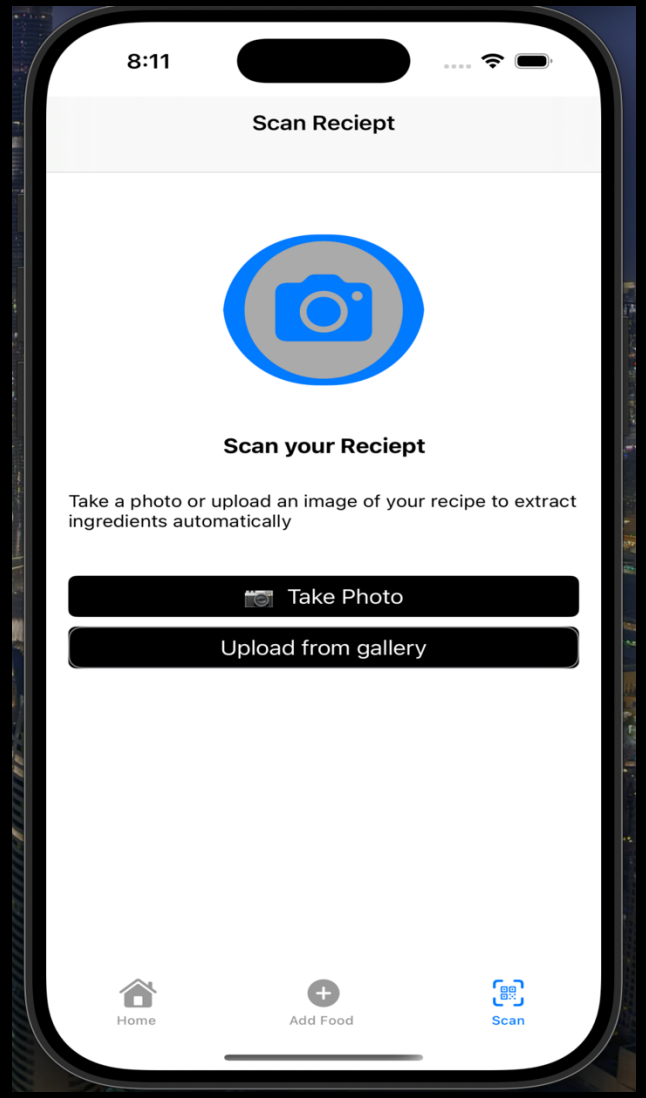
PROJECT EVOLUTION

- **Initial Scope:** Included OCR, barcode scanning, and predictive analytics
- **Final MVP:** Focused on core tracking, notifications, and UI polish.
- **Team Coordination:** Adjusted scope based on team size and timeline; maintained progress through task board and weekly syncs

FUTURE PLANS



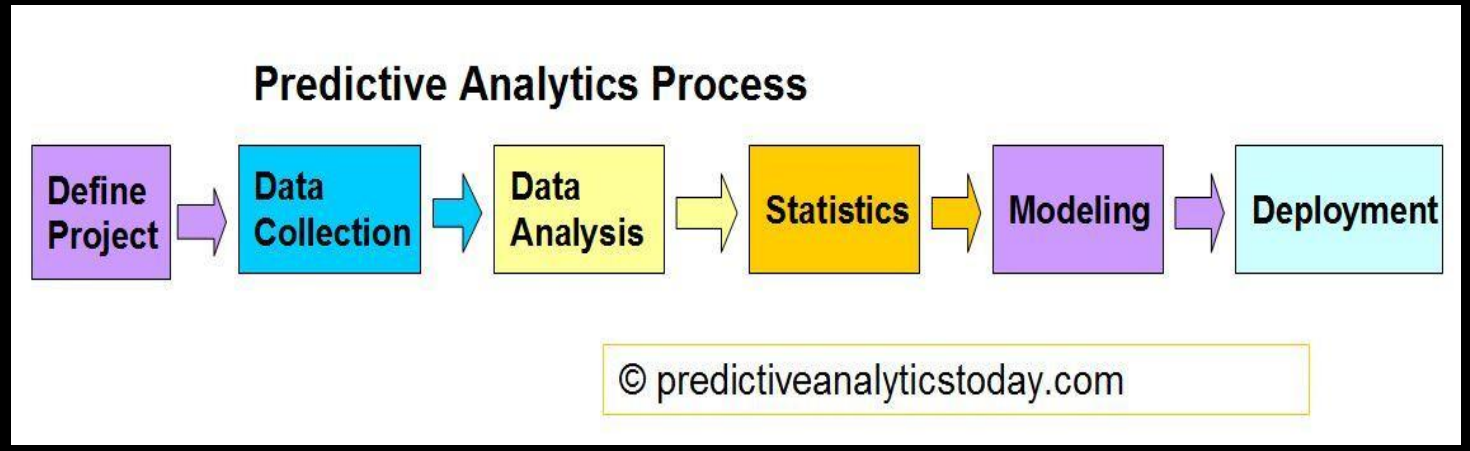
Barcode Scanning:
Enable faster item entry using device camera

OCR Input:
Extract product details from receipts or packaging

Predictive Analytics:
Suggest usage patterns and waste reduction tips

Cloud Sync:
Allow multi-device access and backup

AI Integration:
User will get AI based recommendation of the recipes.



DEMO & CLOSING

LIVE DEMO!

SUMMARY:

Best B4 helps users track food expiry, reduce waste, and stay notified, all through a clean, intuitive app.

We tackled key challenges with smart fixes in navigation, data handling, and notification logic.

Our team collaborated smoothly and built a solid foundation for future features like OCR and cloud sync.

THANK YOU FOR YOUR TIME AND FEEDBACK. WE'RE PROUD OF WHAT WE'VE BUILT AND EXCITED TO KEEP IMPROVING BEST B4!

THANK YOU!

QUESTIONS?

We’d love to hear your thoughts!

Got any questions, feedback, or suggestions?

We’re happy to dive deeper into any part of the app, our process, or future plans.