**Work Breakdown Structure (WBS)**

**1. Planning & Prototyping**

* 1.1 Requirement Analysis
  + 1.1.1 Conduct stakeholder interviews
  + 1.1.2 Research market competitors (e.g., AnyList, Out of Milk)
  + 1.1.3 Develop feature specification document
* 1.2 Prototyping
  + 1.2.1 Create low-fidelity wireframes
  + 1.2.2 Review wireframes with stakeholders
  + 1.2.3 Design high-fidelity prototypes
* 1.3 Project Setup
  + 1.3.1 Define project timeline and critical paths
  + 1.3.2 Assign team roles and responsibilities
  + 1.3.3 Prepare development environment and tools

**2. Core Development**

* 2.1 Backend Development
  + 2.1.1 Create database schema for user preferences, purchases
  + 2.1.2 Implement AI model to predict user needs
  + 2.1.3 Build APIs for grocery list generation and recipe suggestions
* 2.2 Frontend Development
  + 2.2.1 Design user interface for registration and grocery list
  + 2.2.2 Implement features: list creation, real-time offers, dietary filters
  + 2.2.3 Develop navigation optimization feature for in-store use
* 2.3 Integration
  + 2.3.1 Connect AI prediction engine with frontend UI
  + 2.3.2 Integrate cloud services
  + 2.3.3 Implement payment gateway for premium subscriptions

**3. Testing & Refinement**

* 3.1 Quality Assurance Testing
  + 3.1.1 Perform unit testing for all modules
  + 3.1.2 Conduct integration testing (backend & frontend sync)
  + 3.1.3 Execute stress testing for high user load
* 3.2 User Feedback Collection
  + 3.2.1 Release beta version to 100 users
  + 3.2.2 Collect structured feedback via surveys and in-app ratings
* 3.3 Refinement
  + 3.3.1 Fix identified bugs and performance issues
  + 3.3.2 Enhance UI/UX based on user feedback
  + 3.3.3 Conduct final quality check

**4. Launch & Feedback**

* 4.1 Marketing and Promotion
  + 4.1.1 Develop marketing strategy (social media ads, influencers)
  + 4.1.2 Create promotional content (videos, blogs, banners)
* 4.2 Public Launch
  + 4.2.1 Publish app on iOS and Android app stores
  + 4.2.2 Monitor initial user analytics (downloads, active users)
* 4.3 Continuous Improvement
  + 4.3.1 Respond to initial reviews and feedback
  + 4.3.2 Plan post-launch updates (features, bug fixes)

**Project Milestones**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Planned Date | Description | Deliverable |
| |  | | --- | | **1. Requirements Approved** |  |  | | --- | |  | | |  | | --- | | Week 2, Month 1 |  |  | | --- | |  | | |  | | --- | | Finalize and approve all app features. |  |  | | --- | |  | | |  | | --- | | Feature specification document |  |  | | --- | |  | |
| |  | | --- | | **2. Prototypes Completed** |  |  | | --- | |  | | |  | | --- | | Week 4, Month 1 |  |  | | --- | |  | | |  | | --- | | Develop and approve high-fidelity prototypes. |  |  | | --- | |  | | |  | | --- | | Clickable prototype |  |  | | --- | |  | |
| |  | | --- | | **3. Backend System Ready** |  |  | | --- | |  | | |  | | --- | | Week 2, Month 2 |  |  | | --- | |  | | |  | | --- | | Implement AI model and backend APIs. |  |  | | --- | |  | | |  | | --- | | Working backend APIs |  |  | | --- | |  | |
| |  | | --- | | **4. Frontend Integration** |  |  | | --- | |  | | |  | | --- | | Week 4, Month 3 |  |  | | --- | |  | | |  | | --- | | Connect AI backend to user-facing UI. |  |  | | --- | |  | | |  | | --- | | Functional app prototype |  |  | | --- | |  | |
| |  | | --- | | **5. Beta Testing Begins** |  |  | | --- | |  | | |  | | --- | | Week 1, Month 4 |  |  | | --- | |  | | |  | | --- | | Release beta version for user testing. |  |  | | --- | |  | | |  | | --- | | Beta app and testing report |  |  | | --- | |  | |
| |  | | --- | | **6. App Launch** |  |  | | --- | |  | | |  | | --- | | Week 1, Month 5 |  |  | | --- | |  | | |  | | --- | | Publish app to stores with promotional campaigns. |  |  | | --- | |  | | Live app on iOS and Android stores |

**Acceptance Criteria**

1. Planning & Prototyping

* Detailed feature specifications are signed off by all stakeholders.
* Prototypes are user-friendly, functional, and approved after review sessions.

2. Core Development

* Backend APIs return accurate grocery predictions with at least 85% success.
* Frontend app is visually appealing, responsive, and intuitive to use.
* Integration is seamless, with no major data synchronization issues.

3. Testing & Refinement

* Beta app passes functional, performance, and load tests with no critical issues.
* Feedback indicates at least 80% user satisfaction with usability.

4. Launch & Feedback

* App achieves a minimum of 1,000 downloads in the first month.
* Average user rating on app stores is 4.0 or above.
* Post-launch updates address major feedback points promptly.