# Goal and Motivation

- **Comprehensive kitchen tracking**: Manage ingredients from the freezer, fridge, cabinet, and pantry in one place.

- **Recipe matching**: Find recipes based on the ingredients a user currently has on hand.

- **Cost estimation**: Calculate the cost of recipes based on available ingredients and provide purchase options for missing items.

- **All-in-one solution**: Consolidates features found in multiple apps into a single, convenient platform.

# Key Features

**Inventory Tracking** - Manage your kitchen inventory by location (Freezer, Fridge, Pantry) with the option to set minimums for items. Track perishables and get notifications for low stock, expiration dates, or items needing to be used soon. Easily add items via barcode or receipt scanning.

**Recipe Manager And Sharing** - Organize and store your recipes in one place, accessible anywhere. Upload, share, and get feedback on recipes. Filter by dietary preferences (vegan, keto, etc.) and sort by time, cost, or complexity. Recipe cards include prep time, ingredients, and equipment, with recommendations for pairings and substitutions.

**Meal Planning** - Plan meals up to two weeks in advance, organizing recipes by prep and cook times. Share meal plans with family members, and deduct ingredients from your kitchen inventory as you cook.

**Shopping Aid** - Create shopping lists based on recipes or store preferences, with real-time price comparisons across local stores. Customize lists to exclude certain stores and tag ingredients for preferred locations. Share lists with family, and track price per serving for better cost management.

**Admin Web Backend** - Admins can seed recipes, remove invalid entries or inappropriate reviews, and ensure the recipe database remains clean and accurate. Usernames can be moderated for appropriateness.

# Novel Features

Many kitchen apps only have a fraction of features compared to this app or lock these features behind expensive paywalls. This app provides all of these features (tracking inventory, sharing and discovering recipes, shopping aids, meal planning) without any major paywalls.

Our application will also allow a user to see the cost of a recipe based on what they have and where they can purchase the remaining ingredients; for example the cost of a recipe will be based on the cost of the remaining ingredients the user needs to buy.

# Algorithms and Tools

Tesseract for OCR of the receipts images

Barcode Lookup for getting product names of individual items

Open Food Facts to get the data on nutrition of ingredients

# Technical Challenges

- Getting the prices from online websites that are accurate to the price shown in store. Almost every store doesn't have a public api that we can access. We will need to do a weekly webscrape of the websites when new deals are updated.
- Getting the prices from stores like costco and other bulk/clubs that require a sign in
- Being able to take the image of a receipt and scan it and get just the food items. We can use tesseract to process the image of a recipe to parse all the data in the image and then filter it out for what we need such as food items from non food items.

# Milestone 1

- Compare and select technical tools for Tesseract, Barcode Lookup, and Open Food Facts
- Provide small ("hello world") demo(s) to evaluate the tools for Tesseract, Barcode Lookup, and Open Food Facts
- Resolve technical challenges: Retrieving accurate prices, retrieving prices from stores that require a sign in, and scanning images from a receipt
- Compare and select collaboration tools for software development, documents/presentations, communication, task calendar
- Create Requirement Document
- Create Design Document
- Create Test Plan

# Milestone 2

- Implement inventory management system along with the subsystems of scanning a receipt and barcode to manage what a user has on hand and where it is.
  - Demo of Bar code and Recipe scanning
  - Demo Moving Items to different storage locations
  - Demo Tagging items
  - Demo List Creation and Sharing
- Implement Recipe organizing system and Sharing
  - Demo Recipe Card Creation from user imputed recipe
  - Demo Recipe Filters and Tags
  - Demo Recipe Sharing
  - Demo Review System
  - Demo Recipe Nutrition breakdown

# Milestone 3

- Implement Meal Planner
  - Demo Planning two weeks of meals
  - Demo Nutrient totals for each day
  - Demo Menu Sharing
  - Demo Meal Cooking and Ingredient deduction
- Implement Shopping Companion
  - Demo List creation based on Store filters
  - Demo Store Filters and Tags
  - Demo Store Sign in process like club stores
  - Demo Price per serving based on available store prices

# Task Matrix

|  | David | Chris | Tyler |
|---|---|---|---|
| Technical Tool Comparison | Tesseract | Barcode Lookup | Open Food Facts |
| Tool Demos | Tesseract | Barcode Lookup | Open Food Facts |
| Resolve Technical Challenges | Retrieving prices from stores requiring sign-ins | Scanning images from receipts | Retrieving accurate prices |
| Collab Tools | Documentations/presentation | Software development | Communications and task calendar |
| Requirement Doc | Writes 35% | Writes 50% | Writes 15% |
| Design Doc | Writes 45% | Writes 30% | Writes 25% |
| Test Plan | Writes 25% | Writes 25% | Writes 50% |

# Questions?