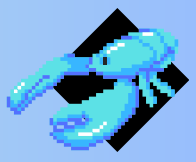
DigitalDiners presents

Sola // Orion // Josh // Luke



# PantryPro

| Date: 20 / 07 / 2023 | | |
|---|---|---|
| **COSC345** | **Project Overview** | **PantryPro** |

## Summary

Over the course of the semester, we will deliver several releases of our all-in-one meal planner, recipe finder, and cost-analyzing software, PantryPro. After an initial project pitch, we will first develop the core features for an alpha release, then flesh out these features for the beta release, then finalize the overall design and extended features for the final release.

## The Team

| Sola | Orion |
|---|---|
| **Coordinator & Front-end Developer** | **Back-end Developer** |
| Product developer and motivated learner | Motivated and adaptable developer |
| **Josh** | **Luke** |
| **DBA & Back-end Developer** | **Full-stack Developer & Tester** |
| Database design, management, and security | Developer, fast learner, testing lead |

Sola Woodhouse - 9262382:

> *Although I have no previous experience with C++, I am experienced with product development and possess a strong life-science background. In this team I'll be contributing as a coordinator, and UX/ UI developer/ designer,*

*while also taking the opportunity to enhance my programming skills through C++.*

Orion Soti - 6059652:

*I have skills in Java and Python, and while I'm still learning the ropes of C++, I'm eager to learn more. My coding experience leans toward backend development, but I'm flexible and ready to take on any task necessary for the project. In this team, I'll be focusing on supporting backend development.*

Josh Lawson - 2278933:

*I plan to focus on back-end development and database design and management in this project. I will leverage my experience in JDBC programming to ensure efficient and secure database interactions and create queries to interact with the datasets that we have chosen. Although I have not had previous experience with C++, I am keen to develop my programming skills throughout this project by learning new languages, tools and frameworks.*

Luke Webb - 5297811:

*In this project, my focus is on advancing my C++ programming skills. I'll contribute to UI/UX design, feature development, GitHub maintenance, and conduct thorough application testing. With a background in graphic design, I'll ensure a harmonious blend of aesthetics and functionality, delivering an exceptional end product.*

# Project Overview

**The Software:** All-in-one weekly meal planning, recipe finding, ingredient tracking, and pricing app.

Reviews For Each Recipe

# Over Half a Million Recipes

## A Way to Find the Best Price

### The Data

Data included in the research and development, one recipe dataset contains 522,517 recipes and includes details such as ingredients, serving quantities, cooking times, descriptions. Our second dataset contains 1,401,982 reviews from 271,907 different users. Both these datasets are sourced from Kaggle and are provided from Food.com.

As an added feature, we will access the Google Shopping API to deliver details on pricing and products to our users.

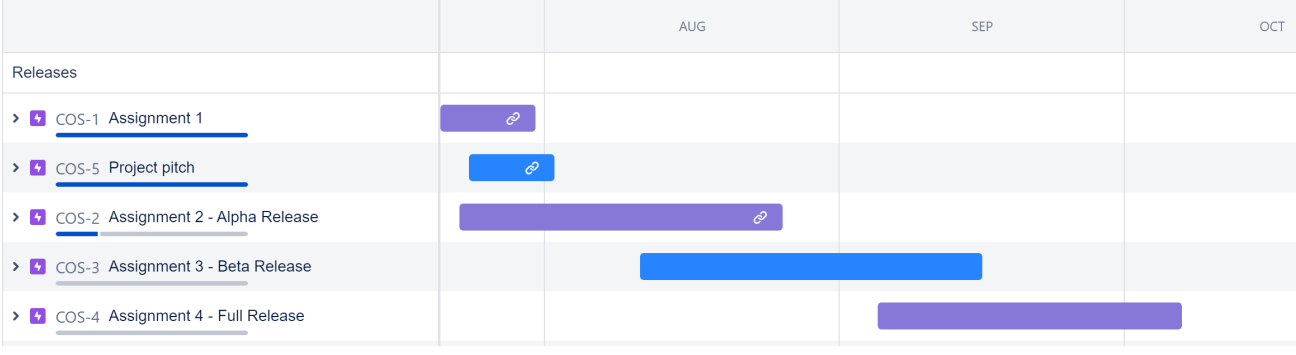
Other additional datasets we may implement as stretch goals include general health data to provide health tips and advice based on our user's plan, and more in depth nutritional information.

### Why the datasets work together

Together these datasets will be combined to help Kiwis organize their weekly groceries and budget better while maintaining a focus on their health, and of course, eating excellent meals.

By pairing reviews to the data on recipes, we can show our users recipes that are the crème of the crop.

# The Plan



## Timeline:

Following the details outlined in the Assignment brief, we will deliver working releases of the PantryPro app. These releases come in 3 stages, Alpha, Beta, and Final, due on 25/08, 15/09, and 06/10 respectively.

Workloads and development of features will be coordinated using the Jira software by Atlassian.

Alpha:

- All core requirements implemented.
- Documentation of source code.

Beta:

- Improve core features where needed.
- Known bugs fixed.
- Possible stretch goals implemented.

Final:

- Clean and aesthetic GUI finished.
- Working and polished final product, ready to release.

# Requirements:

| Functional | Non-functional |
| --- | --- |
| • **Intuitive GUI.**<br>  ○ Easily navigate, organize, and search in our software.<br>• **Recipe searching.**<br>  ○ Instantly return recipes to the user.<br>• **Weekly meal plans.**<br>  ○ Manage and view custom meal plans.<br>• **Ingredients tracking.**<br>  ○ System for keeping track of user's supply of ingredients.<br>• **Access to reviews.** | • **Qt library for the GUI of the application.**<br>• **C++ programming language.**<br>  ○ Implements the majority of features.<br>• **Tests written for every feature and interaction.**<br>  ○ CI pipeline in GitHub to run tests regularly or automatically.<br>• **Documentation.**<br>  ○ Use Doxygen to simplify and streamline writing source code documentation. |

- **Integration of Google Shopping API.**
  - Access and show the user the best pricing for ingredients.
- **Deliverable deadlines.**
  - Manage time, workload and team resources to effectively deliver Alpha, Beta and final releases.

## Available Resources:

Many resources are available for us to use online, some of which include: *Food.com Datasets for Recipes and Reviews, Google Shopping API, C++, VS Code and other IDEs, Qt libraries and Qt Creator, Git and GitHub for version control and continuous integration, Doxygen for source code documentation, Jira for planning and coordination, Catch2 for unit testing and test documentation.*


## Detailed Requirements Specifications:

### Recipe Search:

- The app will allow the user to search for recipes based on their available ingredients and preferences, such as dietary requirements.
- Users will also be able to search for specific recipes.
  - As a stretch goal, users will be able favorite and add custom recipes.

### Meal Planning:

- User will be able to create and manage weekly meal plans.
  - This means users can assign meals to certain times of day, such as breakfast, lunch and dinner.
- A breakdown of basic nutritional information will be provided for each day of the week, and for each recipe.
  - Nutritional details include calories, protein, fat and carbohydrate content as a percentage of the daily intake. Allergen info will be available when selecting and searching for recipe.

Ingredient Tracker:

- Include a system for keep track of a user's pantry inventory.
  - This inventory will directly influence the search results when finding recipes.

Find Pricing:

- Integration with Google Shopping API.
  - The app will make use of Google Shopping API to provide real-time pricing information for ingredients.

Performance:

- The app must be able to process search results in a reasonable time (less than 2 seconds).

Usability:

- The final graphical user interface must be intuitive and aesthetically pleasing.
  - Alpha and Beta GUI implementation will be modest, facilitating only their required interactions. E.g. a plain search bar and buttons.

## Risk Analysis:

We're prepared to navigate potential risks to maintain project progression and focus on delivering a quality product to our users.

Unforeseen circumstances:

- We acknowledge that life happens, and team members might face personal challenges that affect their contributions. In such cases, we'll be ready to redistribute tasks to support the affected individual, ensuring the project progresses smoothly. If external circumstances like a new pandemic and subsequent lockdowns occur, we'll adapt by using online communication tools and remote work strategies.

Feature Prioritisation:

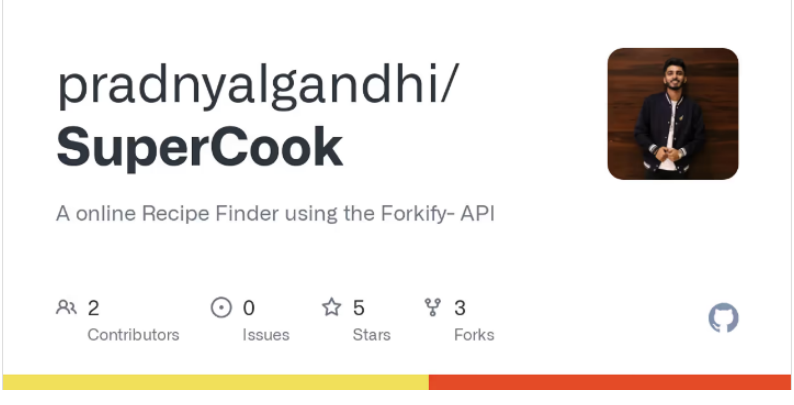
- We recognise that some features might be more time-consuming to implement than others. Our strategy will be to prioritise features based on their importance to the core functionality of the program. This way, we ensure that we develop the key aspects of the app first, keeping development time and complexity in check.

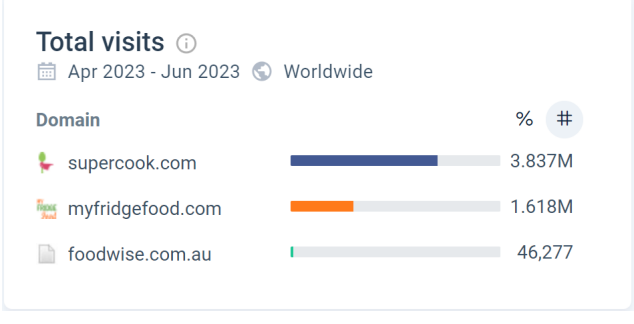
## Similar Software:

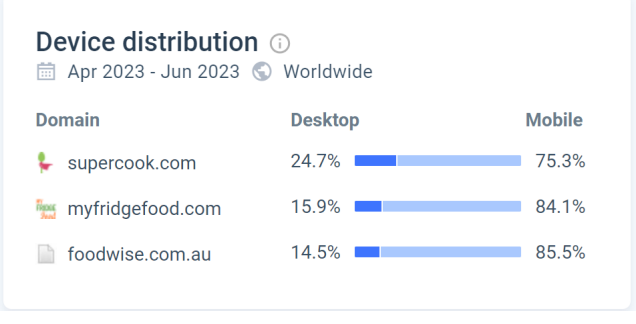
Several web based projects of similar design exist. For example, Supercook, EmptyMyFridge, Pantrywizard, Budget Bytes, EatWell, Meal Planner and the list goes on. Each of these uses a unique variant of accessing and searching for recipes and ingredients, managing an inventory of ingredients and presenting price data. Our software will be set apart by encompassing the most important features for integration into a single application.

## Evidence of Customer Interest:

Signs of customer interest in PantryPro are evident in everyday student life. Many students start and then cancel meal kit subscriptions like HelloFresh due to cost, while others resort to less nutritious meals due to lack of time or planning. Meanwhile, the high download rates of similar meal planning apps show that users are seeking help in this area. Yet, these apps often only provide one or two functions, revealing a clear demand for an all-in-one solution like PantryPro. These factors all indicate a strong customer interest in a comprehensive, easy-to-use, and budget-friendly meal planning app.




# Supplementary Information

## Sources:

### Food.com datasets, recipes and reviews, from Kaggle:
https://www.kaggle.com/datasets/irkaal/foodcom-recipes-and-reviews?resource=download

### Nutritional values for common foods extra dataset:
https://www.kaggle.com/datasets/trolukovich/nutritional-values-for-common-foods-and-products

### Website traffic analytics from Similarweb:

https://www.similarweb.com

## Closing remarks:

For questions or clarifications, don't hesitate to reach out to our team at anytime.

### Credits:

ChatGPT 3.5 by OpenAI was used to clarify and modify the language used in some portions of this report.