

Software Requirements Specification

Cooking Companion Web Application

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Team GCC

Computer Science Dept/CSUN

Edmund Dantes

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1. INTRODUCTION

1.1. Purpose

The purpose of this software design document is to describe the structure of our program, which takes an input of dietary restrictions/possibilities and displays an output of potential recipes for the user. This document is intended for software engineers, and anyone who is interested in improving their nutrition.

1.2. Scope

The purpose is to create a cooking web application that allows users to cook homemade meals with the ingredients they may already have at home. Users can also filter recipes based on food intolerances, allergies, dietary restrictions, and caloric values. Users also have the freedom to search for recipes regardless of any restrictions.

2. System Overview

Our web application is designed to help users search for recipes easily. Using the built in “My-Pantry”, users will be able to see recipes they are able to make using the ingredients they have lying around the house. The idea is to make the software as simple and easy to use for the user. The design will be straightforward and simplistic, guiding the user as they navigate our application.

3. System Architecture

3.1. Architectural Design

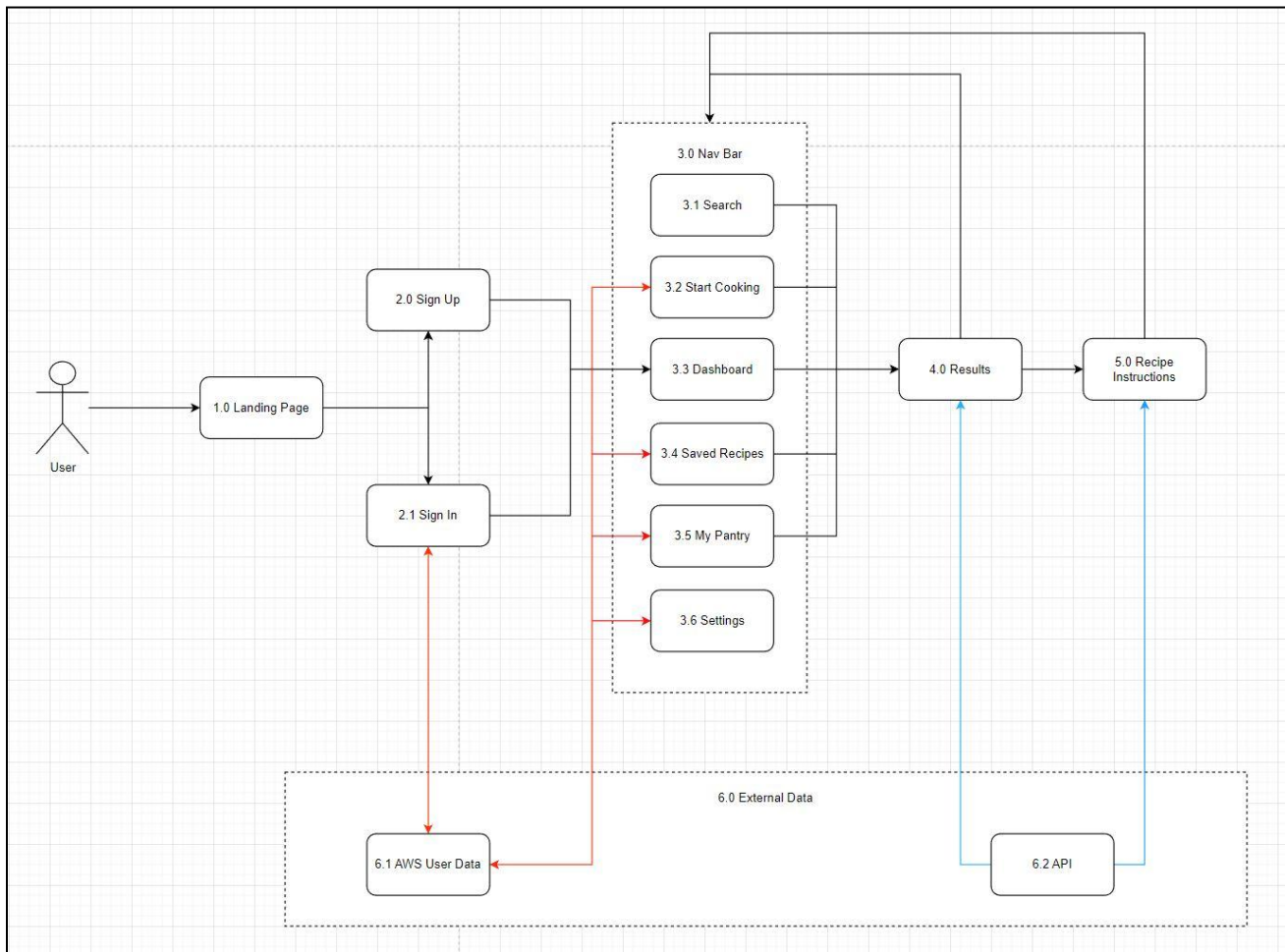


Figure 1 Website Architecture & Data Flow Map

3.2. Interface Design

Our website pages can be grouped into 6 sections:

Section 1: Landing Page

Section 2: Sign in/up

Section 3: The Core pages / Nav Bar Accessible pages

3.1 search

3.2 Start Cooking

3.3 Dashboard

3.4 Saved Recipes

3.5 My Pantry

3.6 Settings

Section 4: Results

Section 5: Recipe Instructions

Section 6: External Data

3.2 Interface Design Continued

The user will first be taken to the landing page, from which they will go to the sign in/up page. Once they complete the prompts they will be sent to the dashboard where they can access the all pages from Section 3 - section 5 using the nav bar which is available at all times. External Data which is the API database we are using and the AWS our own custom database we are using to store user data will be used to populate the Start Cooking, Dashboard, Saved Recipes, My Pantry and Settings pages.

3.3. Design Rationale

From the very start the idea was to make our product as straightforward as possible. We initially wanted to use Daisy UI components since they were very simple and looked very appealing, however, we learned that these components were only aesthetic and had no functionality. Whereas Angular material components already had built in functionality and they were easy to customize with css. Because of these reasons we resorted to begin designing our project with Angular material while maintaining a simple and easy to use user interface.

4. Component Design/Detailed Design

4.1. Class Diagrams

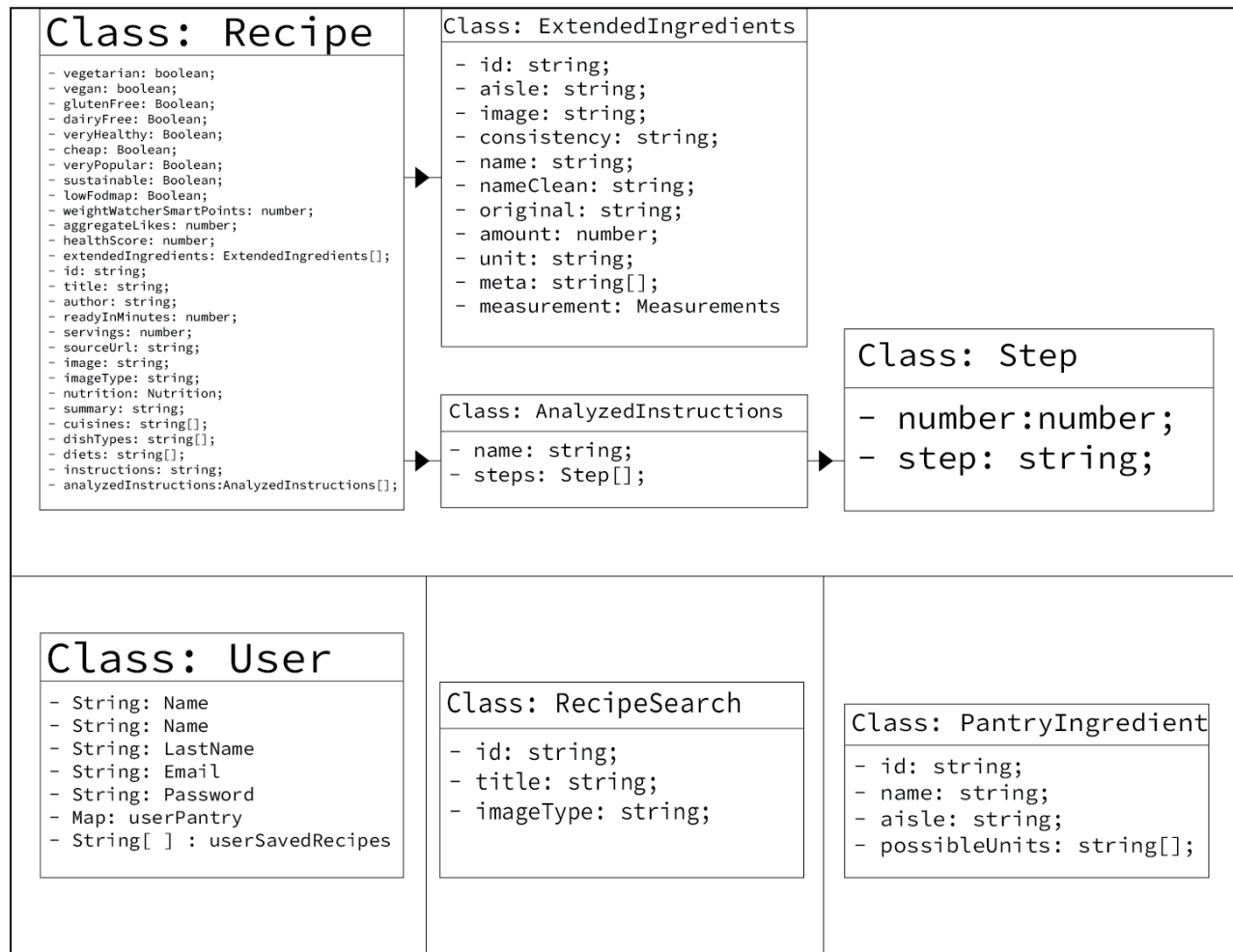


Figure 2 Class Diagrams for Recipe, User, RecipeSearch, PantryIngredient

5. Human Interface Design

5.1. Overview of User Interface

The most central part of our product is the user pantry, upon making an account with us the user will be immediately prompted to fill in as much data they can about their personal pantry of ingredients at home. After completing the pantry user will be redirected to the dashboard which will showcase many recipes the user may choose from and begin cooking. The virtual pantry will also be editable at any time and the results will reflect changes made to the pantry. Alongside the ability to cook using exclusively their pantry, users will be able to search for recipes of a specific dish they may want to cook. Finally to make the user experience as personal as possible, we plan to use AWS to save user data like, last visited recipes, favorite recipes, and pantry ingredients, which will be used throughout the site.

5.2. Screen Images

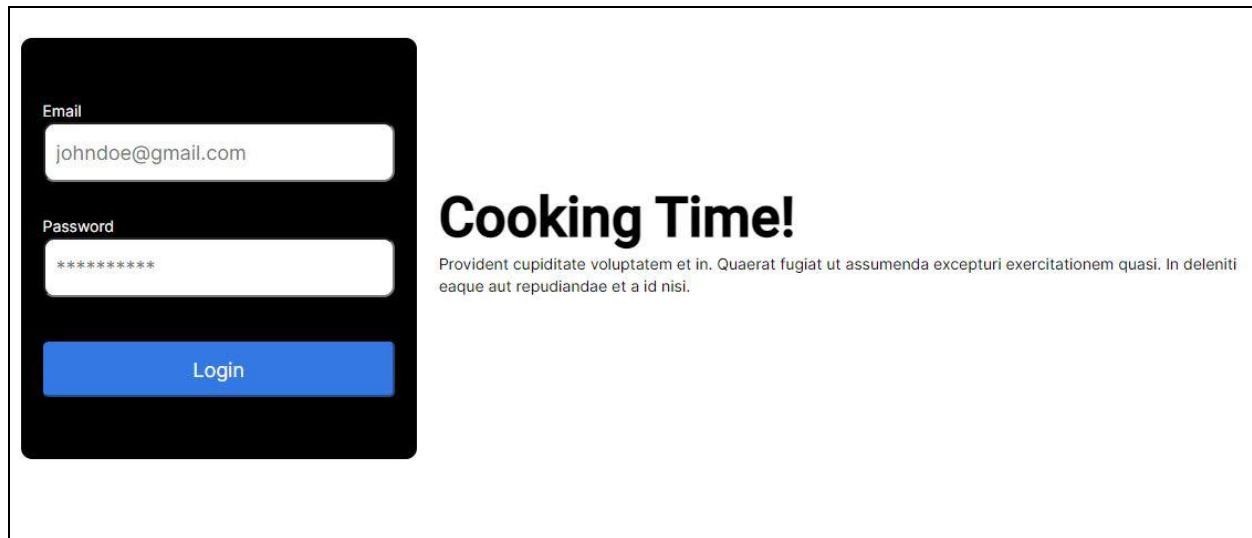


Figure 3 Sign-In Page

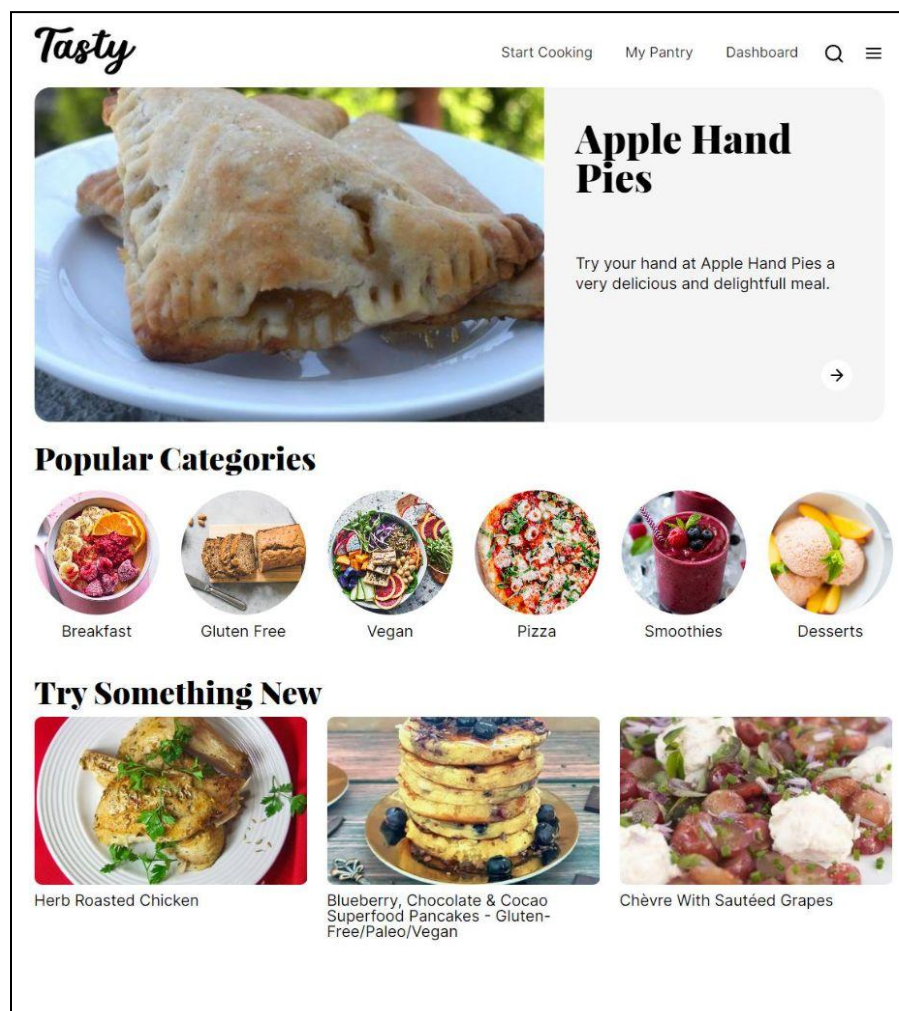


Figure 4 Dashboard

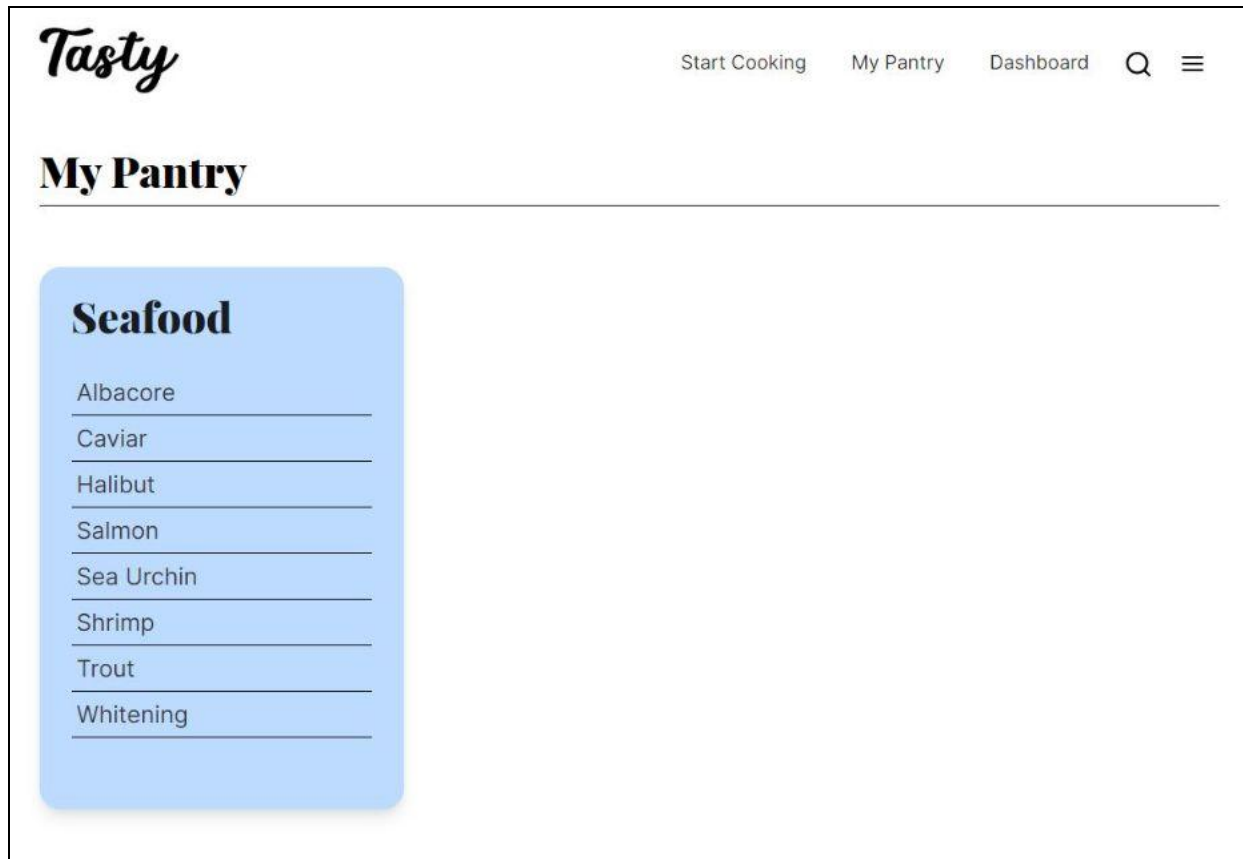


Figure 5 My-Pantry

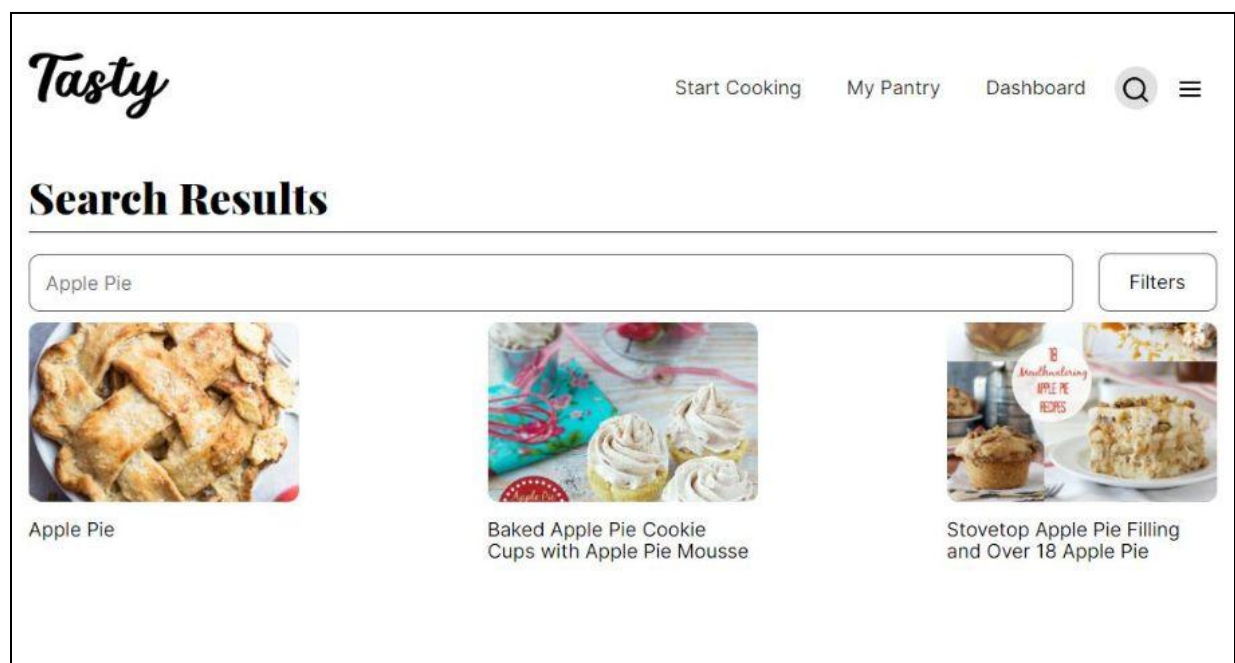


Figure 6 Search-Results

Tres Leches de Ron con Chocolate (Chocolate Rum Tres Leches Cake)



Nutrition Label

Calories	724.7 kcal
Fat	41.1 g
Saturated Fat	24.9 g
Carbohydrates	72.9 g
Net Carbohydrates	70 g
Sugar	54.7 g
Cholesterol	181.9 mg
Sodium	322.7 mg
Alcohol	3.5 g

Ingredients

- ☐ 2 teaspoons baking powder
- ☐ 1/2 teaspoon baking soda
- ☐ Butter, for coating the pans
- ☐ 1 3/4 cups cake flour, plus more for dusting the pans
- ☐ 3/4 teaspoon cream of tartar
- ☐ 1/2 cup dark rum
- ☐ 8 large egg whites
- ☐ 5 large egg yolks
- ☐ 1 (12-ounce) can evaporated milk (not nonfat)
- ☐ 1 1/4 cups granulated sugar
- ☐ 1 cup half-and-half
- ☐ 3 cups very cold heavy cream

Instructions

- 1 For the cake:1
- 2 Heat the oven to 325F and arrange a rack in the middle. Coat the sides and bottoms of 2 (9-inch) cake pans with butter.
- 3 Cut 2 rounds of parchment paper and place in the bottoms of the pans. Butter the tops of the parchment and dust the pans with flour, tapping out the excess; set aside.2
- 4 Place the water in a small saucepan and bring to a boil over high heat.
- 5 Remove from the heat, add the instant coffee, and stir until dissolved.
- 6 Place the cocoa powder in a medium heatproof bowl and whisk in the hot coffee until there are no lumps.
- 7 Let cool slightly, about 15 to 20 minutes.3Sift the measured flour, baking powder, baking soda, 1/2 teaspoon of the salt, and 1/2 cup plus 2 tablespoons of

Figure 7 Recipe Instructions page

5.3. Screen Objects Actions

Figure 3 Sign-in Page

- Sign in page is for logging in and will send the user to Dashboard.
- Users must put in email and passwords.

Figure 4 Dashboard

- Here Users are shown a showcase recipe at the very beginning.
- Users are also given a list of popular categories to pick from.
 - Clicking a category sends users to search results with the selected category.
- Users can choose from the “Try Something New” section.
- Users can choose from the “Previously Viewed” section.
- Users can choose from the “Saved Recipes” section.
- Users can choose from the “Make Something Now” section.
- From the Nav bar Users can go to.
 - “Start Cooking”
 - “My Pantry”
 - “Search”, by pressing the magnifying glass in the right corner.
 - “Settings”, by pressing the three lines in the right corner.

Figure 5 My Pantry

- Users can add or remove ingredients from all the sections by clicking on the checklist
- From the Nav bar Users can go to.
 - “Start Cooking”
 - “Dashboard”
 - “Search”, by pressing the magnifying glass in the right corner.
 - “Settings”, by pressing the three lines in the right corner.

Figure 6 Search Results

- Users can click the title or image of the desired search result and view the recipe with instructions and ingredient lists.
- From the Nav bar Users can go to.
 - “Start Cooking”
 - “Dashboard”
 - “My Pantry”
 - “Settings”, by pressing the three lines in the right corner.

Figure 7 Recipe Instructions

- From the Nav bar Users can go to.
 - “Start Cooking”
 - “Dashboard”
 - “My Pantry”
 - “Search”, by pressing the magnifying glass in the right corner.
 - “Settings”, by pressing the three lines in the right corner.

6. Requirements Matrix

6.1. Overview of User Interface

Requirement #	Requirements	Module Design Component #	Data Information
ID: FR_1	Users shall be prompted to enter name, email, and password for the sign up process.	1.0 Landing Page	N/A
ID: FR_2	User shall be prompted to enter at home pantries of existing ingredients.	2.1 Sign In	Sent to 6.1 AWS
ID: FR_3	User shall be prompted to enter special diets, food intolerances, and food allergies.	2.1 Sign In	Data sent to 6.1 AWS
ID: FR_4	User shall be prompted to enter email and password for the sign in process.	2.1 Sign In / 2.0 Sign Up	Data Sent to 6.1 AWS
ID: FR_5	User shall be taken to the dashboard page after completing the sign up process.	3.3 Dashboard	N/A
ID: FR_6	User shall be able to login / logout from the navbar.	3.0 Nav Bar	N/A
ID: FR_7	User shall be given a navigation bar at the very top of the screen to navigate between: Dashboard, My Recipes, My Pantry	3.0 Nav Bar	N/A
ID: FR_8	User shall be able to search for specific recipes anytime using the search bar on the navigation bar.	3.0 Nav Bar / 3.1 Search	Data read from 6.2 API

ID: FR_9	User shall be able to view recipe instructions after clicking title/image of desired, each individual page will display the following information Recipe Title Short recipe description, Button to save to save to "My Recipes", Image or video (if available), Prep Time, Serving size, Nutrition label, Button to convert measurements to imperial or metric system, Recipe instructions, Check list of ingredients that can be checked/unchecked, Option to print page recipe.	3.2 Start Cooking / 3.3 Dashboard / 3.4 Saved Recipes,	Data read from 6.2 API
ID: FR_10	User shall have the ability to discover new recipes at the bottom of each individual recipe page	5.0 Recipe Instructions	Data read from 6.2 API
ID: UIR_1	User shall see an image of the dish, ingredient list, and instructions inside the selected item page.	5.0 Recipe Instructions	Data read from 6.2 API
ID: UIR_2	User shall see an introduction with a brief explanation about the software service on the landing page.	1.0 Landing Page	N/A
ID: UIR_3	From "Dashboard" user shall be given a personalized page with options to choose from: Recipes the user can make with the ingredients they have, Already saved recipes / Suggestions (for new users), Popular food categories, Search bar.	3.3 Dashboard	Data read from 6.1 AWS , Data read from 6.2 API
ID: SIR_1	Product shall request recipe data from Spoonacular Api	5.0 Recipe Instructions	Data read from 6.2 API
ID: SIR_2	Product shall send user login information for authentication before logging in the user.	2.1 Sign In	Data read from 6.1 AWS

ID: SEC_1	Product shall send user login information to AWS for authentication before logging in the user.	2.1 Sign In	Data sent to 6.1 AWS
ID: SEC_2	Lambda function in the back end will encrypt the user passwords through a hash function, so that passwords cannot be accessed by unauthorized users.		
ID: CAP_1	All data not coming from Spoonacular shall be stored on AWS	3.6 Settings	Data sent to 6.1 AWS
ID: COMP_1	The web application shall be available to anyone with internet access. It is also assumed that they will use a browser equipped with HTML 5.	1.0 Landing page	N/A
ID: SCA_1	For the purposes of this project we shall support two users at the same time.	N/A	N/A
ID: USA_1	User shall be given an overview of our product from the “Landing Page”, which shall be viewable by anyone even if they don't have an account.	1.0 Landing Page	N/A