

System Test Plan

for

Glucose Genie

Version – 2.0

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1 Introduction

1.1 Purpose

This System Test Plan document defines the testing objectives, resources, testing plans, approaches, schedule, exit criteria and associated risks for the Glucose Genie software application. It ensures that the system is thoroughly evaluated and meets its intended requirements before release.

1.2 Definitions and Acronyms

- API – Application Programming Interface
- AWS – Amazon Web Services
- UI – User Interface
- SRS – System Requirements Specification

1.3 Scope of Testing

1.3.1 In Scope

The scope of this System Test Plan includes functional and nonfunctional testing of both the UI and backend/API components of the Glucose Genie mobile application. The focus will be on verifying functionality and integration of the following features:

- Account creation
- Recipe search
- Individual recipe display
- Weekly meal plan creation
- Nutrient tracker
- Language switching (English and Spanish)
- Grocery store list generation and display
- Grocery store map locator based on user location

The UI of these features will be tested through functional and integration testing. The API and backend implementations of these features will be verified through functional and integration testing.

1.3.2 Out of Scope

The System Test Plan considers unit testing out of scope and thus will not be documented. Additionally, the team will **not** test the following features due to time constraints and lower priorities in regard to the Glucose Genie SRS:

- Notification options

1.4 Intended Audience

This document is intended for use by developers, QA testers, project managers and stakeholders involved with the creation and release of the Glucose Genie application. Developers will use it as reference to how their code will be tested, QA testers will use it to design and implement tests for the system, project managers will use it to ensure the testing plans are executed as per schedule and finally stakeholders will use it to confirm that features are being tested in accordance with their requirements and get insight into the readiness of the system for deployment.

2 References

- SRS - <https://github.com/fjcu256/glucose-genie/tree/main/docs/Requirements/SoftwareRequirementsSpec>

3 Testing Approach

3.1 UI Testing

The UI testing will fall under two categories: functional testing and integration (non-functional) testing.

3.1.1 Functional Testing

The functional tests for our UI will include two main scenarios: if the correct information is displayed properly on each view component and if the expected result is displayed when the user interacts with the component.

In order to separate integration concerns from the functional features, we will use test data, which will include a set of mock recipes and nutritional facts. This set of test data will be stored locally on each of our machines and integrated through our version control system. This will ensure that all functional tests of the UI will focus solely on how data is displayed and will not rely on any external data sources or APIs.

Since most of our UI displays lists of continuous data, we will create two categories of test data for functional testing: no data, and more than one unit of data. The set of no data will include a test where there is no data given to our UI. This will test our expectations of how the UI should look in the event that no data is given. The other set of test data for UI functional testing will include a list of data that has more than one unit of data. This will test the most common condition of having more than one item of data displayed on the different UI pages. For our purposes, a unit of test data means a single recipe; this includes a name, image, description, nutritional data, etc. So, each set of test data should be able to be used for multiple different functional tests to be most efficient.

3.1.2 Integration Testing

The integration tests for our UI will evaluate the interactions between the user and the frontend that result in database changes in the backend. Some of these tests will be able to be performed on the development version of the application; for example, testing that when a user creates an account it is stored in the AWS database. Most of the tests, however, will have to be performed on the production version of the application because they require API calls and responses. These will be manually tested and checked on our backend database.

3.2 API Testing

The API testing will fall under two categories: functional testing and integration (non-functional) testing.

3.2.1 Functional Testing

The functional tests for the APIs will include testing all valid responses as well as expected error responses from our APIs. This will ensure that queries and input data that is requested from the APIs is in the correct format.

We will create mock queries to the APIs to test that they return either the correct format of data, or an error if that is what should be expected. We are making the assumption that the format in which the data is returned in the response does not change. If this were to change, we would need to make edits to our unit tests and to the application itself.

3.2.2 Integration Testing

There will be no formal API integration tests performed for our application that test that the APIs work correctly. Since the entire application, and thus our other integration and unit tests, depend on the functionality of the APIs, the performance of the APIs will be validated through the other integration tests that are performed successfully. So, all of our integration tests regarding the APIs will be testing the performance, security, and scalability of the of the application. For example, this will include timing the speed of an API request starting from an interaction with the UI to when the correct information is displayed on the screen.

4 Testing Environment

The Glucose Genie application will be tested locally using several integrated parts. The tools are described below. We will use XCTest as the core testing framework to write and run both unit and UI tests. Glucose Genie is built in test configuration and runs inside the iOS simulator during

testing. For API testing, we will inject API clients instead of making real server requests. For UI testing we will use XCUITest along with the possibility of ViewInspector for more specific testing. Our app is configured to use temporary memory in the simulator so that no real user data is affected.

5 Testing Tools

- XCTest
 - Apple's first-party framework for testing. Contains sub-frameworks for specific testing such as mocking APIs.
- XCUITest
 - Sub-framework of XCTest for specifically UI automation tests. This will require no changes in the application.
- ViewInspector
 - Third-party package that works with XCUITest that allows us to inspect the runtime state of views and perform actions like pressing buttons.

6 Test Cases

Below is a listing of all of the test cases associated with the Glucose Genie system in the scope of this document. Each test case has an associated Test ID, Test Name, Description, Pre-Conditions, list of Steps to Take, Post-Conditions, Test Status, a test Creator and Tester. Each test case also has an assigned date for which the test must be completed by and in be in a SUCCESSFUL test state by. For reference a test status key is also provided below.

Test Status Key:

| | |
|--------------------|--|
| UNTESTED | The test has not yet been executed. |
| IN_PROGRESS | Testing is in progress. |
| SUCCESSFUL | All steps and post-conditions have been met successfully as described in the test case. |
| FAILED | The test case has not passed. The issue must be documented with a description of which step failed in the test case and what the results are. Bug fixing and retesting is necessary. |

7.1 UI Test Cases

Tests for Account Creation

| | | | |
|------------------------|--|------------------------|--|
| Test ID | GLUC-004-001 | Test Name | User prompted to Login or Create Account |
| Description | Opening the Glucose Genie application prompts the user to either login or create an account. | | |
| Pre-Conditions | User is connected to the internet and on the home page of their device. | | |
| Steps | 1. Click the “Glucose Genie” application from the home screen of the device. 2. Observe the application open. | | |
| Post-Conditions | User should be prompted to login to AWS or to make an account. | | |
| Test Status | UNTESTED | | |
| Creator | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/07/2025 |

Tests for Main Page

| | | | |
|------------------------|--|------------------------|------------------------------|
| Test ID | GLUC-011-001 | Test Name | Main Page Navigation Buttons |
| Description | Verify that each button on the Main Page navigates correctly to the corresponding page and can navigate back to the Main Page. | | |
| Pre-Conditions | -User is logged into their account. -User is on the Main Page. | | |
| Steps | 1. Ensure that all of the following buttons are clearly visible on the Main Page: - “Recipe Search” - “Weekly Meal Planner” - “Grocery List” - “Grocery Store Locator” - “Nutrient Tracker” - Settings gear icon 2. For each of the buttons: 2.1 Click the button. 2.2 Verify that the button opens the corresponding page. 2.3 Navigate back to the Main Page using the backwards arrow at the top of the screen. | | |
| Post-Conditions | Each button from the main page navigates to the appropriate page and back. | | |
| Test Status | UNTESTED | | |
| Creator | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 5/29/2025 |

Tests for Recipe Search

| | | | | |
|-----------------|--------------|--|---|-----------|
| Test ID | GLUC-013-001 | Test Name | Initial Recipe Search Display with Data | |
| Description | | Opening the recipe search page displays a scrollable list of all recipes to the user’s screen. Each recipe will be marked in a box with the following information: -Recipe Name -Recipe Image if it exists, otherwise a placeholder image -Calories -Carbohydrates | | |
| Pre-Conditions | | -User is connected to the internet. -User is logged in to their account. -User is on the Main Page | | |
| Steps | | 1. Click “Recipe Search” button on the Main Page. 2. Observe the Recipe Search page open and load all recipes. 3. Scroll to the bottom of the screen to see loaded recipes ensuring each recipe has the 4 required pieces of information. | | |
| Post-Conditions | | Recipe Search displays a scrollable list of unfiltered recipes. Each recipe box should display the recipe name, image/placeholder, calorie and carbohydrate information. | | |
| Test Status | | UNTESTED | | |
| Creator | | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | | Jared Jackson | Date to Test by | 5/29/2025 |

| | | | | |
|-----------------|--------------|--|--|------------|
| Test ID | GLUC-013-002 | Test Name | Initial Recipe Search Display without Data | |
| Description | | Opening the recipe search page displays a blank page with a message that there are no recipes to display. | | |
| Pre-Conditions | | -User is on the Main Page | | |
| Steps | | 1. Click “Recipe Search” button on the Main Page. 2. Observe the Recipe Search page open and present a message that there are “No recipes available” to load. | | |
| Post-Conditions | | Recipe Search displays no recipes to the screen and a message that there are no recipes. | | |
| Test Status | | UNTESTED | | |
| Creator | | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | | Jared Jackson | Date to Test by | 05/25/2025 |

| | | | | |
|----------------|--------------|------------------|---|--|
| Test ID | GLUC-013-003 | Test Name | Click Recipe Box to View Individual Recipe Page | |
|----------------|--------------|------------------|---|--|

| | | | |
|------------------------|---|------------------------|-----------|
| Description | Clicking on a recipe opens that particular recipe's individual recipe display page. | | |
| Pre-Conditions | -User is connected to the internet. -User is logged into their account. -User is on the Recipe Search Page. | | |
| Steps | 1. Locate a random recipe from the recipe search page. 2. Click on the recipe image. 3. Observe that the selected recipe's individual display page opens. | | |
| Post-Conditions | Individual recipe display page is opened for the selected recipe. | | |
| Test Status | UNTESTED | | |
| Creator | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 5/25/2025 |

| | | | | |
|-----------------|--------------|---|--------------------------|-----------|
| Test ID | GLUC-013-004 | Test Name | Recipe Search by Keyword | |
| Description | | Searching for a recipe using keywords filters the display to recipes correctly. | | |
| Pre-Conditions | | -User is connected to the internet. -User is logged into their account. -User is on the Recipe Search Page. | | |
| Steps | | 1. Click on the search bar and type in a keyword (ex. “chicken”, “salad”, etc). 2. Click search. 3. Wait until the new recipes are loaded and observe the results. 4. Ensure that each recipe that is displayed after the search has some affiliation with the entered keyword. If it is not clear based on recipe name and image, click the recipe to see its detailed view and extra information. 5. Repeat steps 1-4 with different keywords at least 3 times. | | |
| Post-Conditions | | Only recipes matching the search keyword are displayed. | | |
| Test Status | | UNTESTED | | |
| Creator | | Krisi Hristova | Date Created | 4/27/2025 |
| Tester | | Francisco Cruz-Urbanc | Date to Test by | 5/25/2025 |

Tests for Recipe Individual Display

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|----------------|--------------|------------------|--------------------------------------|
| Test ID | GLUC-003-001 | Test Name | Display Recipe Information Correctly |
|----------------|--------------|------------------|--------------------------------------|

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|------------------------|--|------------------------|------------|
| Description | When a user clicks on a recipe from the search results, the individual recipe page should display the recipe's full information. | | |
| Pre-Conditions | User is logged in and has app open on search page with available recipes. | | |
| Steps | <ol style="list-style-type: none"> 1. Search for a recipe 2. Tap on a recipe image from results 3. Observe the individual recipe page that loads. | | |
| Post-Conditions | The page displays recipe name, image (or placeholder), meal type, ingredients list, instructions, and nutritional information. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/27/2025 |

| | | | |
|------------------------|--|------------------------|------------------------|
| Test ID | GLUC-003-002 | Test Name | Recipe Page Navigation |
| Description | User can navigate back to the search results page after viewing an individual recipe page. | | |
| Pre-Conditions | User is on the individual recipe page after selecting a recipe. | | |
| Steps | 1. Click the back button on the recipe page. | | |
| Post-Conditions | User is returned to the search results page without app crash or loss of search results. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Thomas Capro | Date to Test by | 05/27/2025 |

| | | | |
|------------------------|--|------------------------|----------------------------------|
| Test ID | GLUC-003-003 | Test Name | UI Responsiveness of Recipe Page |
| Description | Verify that the individual recipe page displays properly on different device sizes (e.g., iPhone SE, iPhone 14 Pro Max). | | |
| Pre-Conditions | App running in iOS Simulator with different device profiles. | | |
| Steps | <ol style="list-style-type: none"> 1. Open the individual recipe page on a small device. 2. Verify no overlapping/cut-off elements. 3. Open and repeat the same page on a large device. | | |
| Post-Conditions | All elements are visible, readable, and not distorted across devices. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Thomas Capro | Date to Test by | 05/27/2025 |

| | | | |
|------------------------|---|------------------------|----------------------------|
| Test ID | GLUC-003-004 | Test Name | Scroll Through Recipe Page |
| Description | Users can scroll through a long recipe without glitches. | | |
| Pre-Conditions | Recipe page is open with a long recipe. | | |
| Steps | 1. Open a recipe with long instructions or many ingredients. 2. Scroll from top to bottom. | | |
| Post-Conditions | All content scrolls smoothly and is accessible. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/27/2025 |

Test for Recipe Saving

| | | | |
|------------------------|--|------------------------|--------------------------------|
| Test ID | GLUC-010-006 | Test Name | Tap Save Button on Recipe Page |
| Description | Verify that tapping the “Save” button on a recipe triggers the save action visually. | | |
| Pre-Conditions | User is logged in and viewing an individual recipe page. | | |
| Steps | 1. Tap on a recipe from the search page. 2. Tap the “Save” button. 3. Look for any immediate UI change | | |
| Post-Conditions | UI reflects that the save action has been triggered (before backend confirmation). | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Thomas Capro | Date to Test by | 05/27/2025 |

Tests for Weekly Meal Planner Page

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|------------------------|--|------------------------|---------------------------|
| Test ID | GLUC-014-001 | Test Name | Weekly Meal Planner Dates |
| Description | When a user opens the weekly meal planner page, the dates on the page should match the current week. | | |
| Pre-Conditions | User is logged in and has the app open on the home screen | | |
| Steps | 1. The user clicks on the “Weekly Meal Planner” button to open the weekly meal planner 2. When the page opens, the current week’s month and dates should appear along with their corresponding days of the week | | |
| Post-Conditions | - | | |
| Test Status | UNTESTED | | |
| Creator | Jared Jackson | Date Created | 04/26/2025 |
| Tester | Thomas Capro | Date to Test by | 05/16/2025 |

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|-----------------|--------------|--|----------------------------------|------------|
| Test ID | GLUC-014-002 | Test Name | Weekly Meal Planner Current Date | |
| Description | | When a user opens the weekly meal planner page, the current date should be highlighted differently compared to the other days of the week (currently blue font and sun icon). | | |
| Pre-Conditions | | User is logged in and has the app open on the home screen | | |
| Steps | | 1. The user clicks on the “Weekly Meal Planner” button to open the weekly meal planner 2. When the page opens, the current week’s month and dates should appear along with their corresponding days of the week 3. When the user scrolls to the current date, the date’s section title should be highlighted | | |
| Post-Conditions | | - | | |
| Test Status | | UNTESTED | | |
| Creator | | Jared Jackson | Date Created | 04/26/2025 |
| Tester | | Francisco Cruz-Urbanc | Date to Test by | 05/16/2025 |

| | | | | |
|-----------------|--------------|--|-------------------------------|------------|
| Test ID | GLUC-014-003 | Test Name | Weekly Meal Planner Add Meals | |
| Description | | When a user has the weekly meal planner page open, they should be able to add meal recipes to the planner. They should be able to add recipes to any day of the current week for any meal time. | | |
| Pre-Conditions | | User is logged in and has the app open on weekly meal planner page | | |
| Steps | | 1. The user clicks on an empty meal time for one of the days of the week 2. The user then goes through the process of selecting a recipe to add to the meal planner 3. After the user selects a recipe, it should appear on the weekly meal planner page at the desired date and meal time | | |
| Post-Conditions | | The selected meal recipe is visible on the weekly meal planner page in the desired date and time slot | | |
| Test Status | | UNTESTED | | |
| Creator | | Jared Jackson | Date Created | 04/26/2025 |
| Tester | | Krisi Hristova | Date to Test by | 05/16/2025 |

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|----------------|--------------|------------------|----------------------------------|--|
| Test ID | GLUC-014-004 | Test Name | Weekly Meal Planner Remove Meals | |
|----------------|--------------|------------------|----------------------------------|--|

| | | | |
|------------------------|--|------------------------|------------|
| Description | When a user has the weekly meal planner page open, they should be able to remove meal recipes from the planner. They should be able to remove recipes from any day of the current week for any meal time. | | |
| Pre-Conditions | User is logged in and has the app open on weekly meal planner page | | |
| Steps | <ol style="list-style-type: none"> 1. The user clicks and holds on an occupied meal time for one of the days of the week 2. A menu should pop up giving the user the option to remove the meal recipe from their planner 3. After the user selects the remove recipe option, the recipe should be removed from the weekly meal planner page | | |
| Post-Conditions | The selected meal recipe is no longer on the weekly meal planner page at the removed date and time slot | | |
| Test Status | UNTESTED | | |
| Creator | Jared Jackson | Date Created | 04/26/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/16/2025 |

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|-----------------|--------------|---|--|------------|
| Test ID | GLUC-014-005 | Test Name | Weekly Meal Planner Saves and Loads Plan | |
| Description | | When a user makes a change to their weekly meal plan, the plan should save automatically to their device and / or a database. | | |
| Pre-Conditions | | User is logged in and has the app open on weekly meal planner page | | |
| Steps | | 1. The user makes one or more changes on the weekly meal planner page 2. The user then goes to the home page of the app 3. From there, the user goes back into the weekly meal planner page 4. The user then makes one or more changes again to their meal plan 5. Afterwards, the user force closes the app and opens the app again 6. The user then navigates back to the weekly meal planner page | | |
| Post-Conditions | | The weekly meal planner page should reflect the user’s recent changes to their meal plan | | |
| Test Status | | UNTESTED | | |
| Creator | | Jared Jackson | Date Created | 04/26/2025 |
| Tester | | Carson Ford | Date to Test by | 05/16/2025 |

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|----------------|--------------|------------------|---|--|
| Test ID | GLUC-014-006 | Test Name | Weekly Meal Planner Resets After New Week | |
|----------------|--------------|------------------|---|--|

| | | | |
|------------------------|--|------------------------|------------|
| Description | When a week passes, the user's meal plan should reset to an empty meal plan. | | |
| Pre-Conditions | User is logged in and has the app open on home page | | |
| Steps | 1. The user clicks on the weekly meal planner button 2. When the page loads, the meal plan should be empty and the days of the week should reflect the current week | | |
| Post-Conditions | - | | |
| Test Status | UNTESTED | | |
| Creator | Jared Jackson | Date Created | 04/26/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/16/2025 |

Tests for Grocery List Page

| | | | | |
|-----------------|--------------|--|--|------------|
| Test ID | GLUC-009-001 | Test Name | Grocery List Displays Message When Empty | |
| Description | | When a user opens the grocery list page without any recipes in their meal plan, the grocery list should display an “empty” message | | |
| Pre-Conditions | | User is logged in and has the app open on home page | | |
| Steps | | 1. The user clicks on the grocery list button 2. When the page loads, the grocery list should have no items in it. It should inform the user that they have no recipes in their meal plan | | |
| Post-Conditions | | - | | |
| Test Status | | UNTESTED | | |
| Creator | | Jared Jackson | Date Created | 04/26/2025 |
| Tester | | Carson Ford | Date to Test by | 05/16/2025 |

| | | | | |
|-----------------|--------------|--|-------------------------------------|------------|
| Test ID | GLUC-009-002 | Test Name | Grocery List Displays Grocery Items | |
| Description | | When a user opens the grocery list page, it should display a list of grocery items needed to make the recipes in the user’s meal plan | | |
| Pre-Conditions | | User is logged in and has the app open on home page | | |
| Steps | | 1. The user clicks on the grocery list button 2. When the page loads, the grocery list should have items in it. The items should reflect the ingredients needed to make the recipes saved in the user’s meal plan | | |
| Post-Conditions | | - | | |
| Test Status | | UNTESTED | | |
| Creator | | Jared Jackson | Date Created | 04/26/2025 |
| Tester | | Thomas Capro | Date to Test by | 05/16/2025 |

| | | | |
|------------------------|--|------------------------|------------------------------------|
| Test ID | GLUC-009-003 | Test Name | Grocery List Updates Grocery Items |
| Description | When a user opens the grocery list page, it should display a list of grocery items needed to make the recipes in the user's meal plan. If the user then makes a change to their meal plan and opens the grocery list page, the grocery list should be updated to reflect the current meal plan. | | |
| Pre-Conditions | User is logged in and has the app open on home page | | |
| Steps | <ol style="list-style-type: none"> 1. The user clicks on the grocery list button 2. When the page loads, the grocery list should have items in it. The items should reflect the ingredients needed to make the recipes saved in the user's meal plan 3. The user then navigates back to the weekly meal planner page 4. The user makes one or more changes to their meal plan 5. Afterwards, the user navigates back to the grocery list page | | |
| Post-Conditions | The grocery list page should be updated to reflect the user's current meal plan | | |
| Test Status | UNTESTED | | |
| Creator | Jared Jackson | Date Created | 04/26/2025 |
| Tester | Thomas Capro | Date to Test by | 05/16/2025 |

Tests for Grocery Store Map page:

| | | | |
|------------------------|---|------------------------|---|
| Test ID | GLUC-006-001 | Test Name | User location is seen on Grocery Store Map Page |
| Description | The Grocery Store Map page should load and display the user's location correctly. | | |
| Pre-Conditions | User is logged in and is on home screen. Location services should already be allowed by user. | | |
| Steps | <ol style="list-style-type: none"> 1. Click Grocery Store Map page. 2. User Annotation (blue dot) is seen on map. | | |
| Post-Conditions | User annotation corresponds with the user's location | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Thomas Capro | Date to Test by | 05/25/2025 |

| | | | |
|----------------|--------------|------------------|----------------------------------|
| Test ID | GLUC-006-002 | Test Name | Location services window appears |
|----------------|--------------|------------------|----------------------------------|

| | | | |
|------------------------|---|------------------------|------------|
| Description | The Grocery Store Map page asks for the user's location on first appearance | | |
| Pre-Conditions | User is logged in and is on home screen. Location services permission should be unset | | |
| Steps | 1. Click Grocery Store Map page. | | |
| Post-Conditions | Apple alert window should pop up saying "Glucose Genie want to access your location to show nearby grocery stores". | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/24/2025 |

| | | | |
|------------------------|--|------------------------|---------------------------------------|
| Test ID | GLUC-006-003 | Test Name | Location Services access – allow once |
| Description | The Grocery Store Map page should refresh with user's location after giving access to location services with allow once button | | |
| Pre-Conditions | User is logged in and is on home screen. Location services permission should be unset | | |
| Steps | 1. Click Grocery Store Map page. 2. When location services window appears, press "Allow once" | | |
| Post-Conditions | Apple alert window should disappear and map should refresh to show user's location. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Jared Jackson | Date to Test by | 05/25/2025 |

| | | | |
|------------------------|---|------------------------|--|
| Test ID | GLUC-006-004 | Test Name | Location Services access – allow while using app |
| Description | The Grocery Store Map page should refresh with user's location after giving access to location services with allow while using app button | | |
| Pre-Conditions | User is logged in and is on home screen. Location services permission should be unset | | |
| Steps | 3. Click Grocery Store Map page. 4. When location services window appears, press "Allow while using app" | | |
| Post-Conditions | Apple alert window should disappear and map should refresh to show user's location. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Jared Jackson | Date to Test by | 05/25/2025 |

| | | | |
|------------------------|--|------------------------|--|
| Test ID | GLUC-006-005 | Test Name | Location Services access – don't allow |
| Description | The Grocery Store Map page should show default map after pressing “don’t allow” button for location services prompt | | |
| Pre-Conditions | User is logged in and is on home screen. Location services permission should be unset | | |
| Steps | 5. Click Grocery Store Map page. 6. When location services window appears, press “Don't Allow” | | |
| Post-Conditions | Apple alert window should disappear and map should be default. (Expected result of this should be double checked before testing) | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Jared Jackson | Date to Test by | 05/25/2025 |

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|------------------------|---|------------------------|-------------------------------------|
| Test ID | GLUC-015-001 | Test Name | Grocery Store Map page is rotatable |
| Description | The user is able to access the rotation map control | | |
| Pre-Conditions | The user is logged in and has allowed location services | | |
| Steps | 1. Open Grocery Store Map page from home screen. 2. Rotate map | | |
| Post-Conditions | Map has been rotated | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Thomas Capro | Date to Test by | 05/25/2025 |

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|------------------------|--|------------------------|------------------------------------|
| Test ID | GLUC-015-002 | Test Name | Grocery Store Map page is zoomable |
| Description | The user is able to access the zoom map control | | |
| Pre-Conditions | The user is logged in and has allowed location services | | |
| Steps | 1. Open Grocery Store Map page from home screen. 2. Zoom into or out of map | | |
| Post-Conditions | Map zoom has been changed | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/14/2025 |

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|-----------------------|---|------------------|------------------------------------|
| Test ID | GLUC-015-003 | Test Name | Grocery Store Map page is pannable |
| Description | The user is able to access the pan map control | | |
| Pre-Conditions | The user is logged in and has allowed location services | | |

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|------------------------|---|------------------------|------------|
| Steps | 1. Open Grocery Store Map page from home screen. 2. Pan away from initial map location | | |
| Post-Conditions | Map view has been changed | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/14/2025 |

| | | | | |
|-----------------|--------------|--|--|------------|
| Test ID | GLUC-015-004 | Test Name | Grocery Store Map page "Search for Stores" button functions properly | |
| Description | | The user should be able to press the "Search for Stores" button and automatically have stores searched for them. Markers should appear on the map to indicate stores' locations. | | |
| Pre-Conditions | | The user is logged in and has allowed location services | | |
| Steps | | 1. Open Grocery Store Map page from home screen. 2. Wait for map to load current location. 3. Click the "Search for Stores" button. 4. Wait 2 seconds. | | |
| Post-Conditions | | Markers should appear for nearby grocery stores. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Krisi Hristova | Date to Test by | 05/24/2025 |

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|-----------------|--------------|--|--|------------|
| Test ID | GLUC-015-005 | Test Name | Grocery Store Map page - store details | |
| Description | | The user should be able to press any grocery store marker to see details about the location | | |
| Pre-Conditions | | The user is logged in, has allowed location services, and has searched for stores on the grocery store map page. | | |
| Steps | | 1. Click a marker. | | |
| Post-Conditions | | The store details half-page should appear for that store. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Francisco Cruz-Urbanc | Date to Test by | 05/25/2025 |

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|-------------|--------------|---|---|
| Test ID | GLUC-015-006 | Test Name | Grocery Store Map page - store details – open in maps |
| Description | | The user should be able to view a details page for any store marker and can open that location in the Apple Maps app. | |

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|------------------------|--|------------------------|------------|
| Pre-Conditions | The user is logged in, has allowed location services, and has searched for stores on the grocery store map page. Device should have been through the initial set up of the Maps app. | | |
| Steps | 1. Click a marker. 2. Click the “Open in Maps” button. | | |
| Post-Conditions | Maps app should be opened and the selected location should appear. May have to be tested manually. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/25/2025 |

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|------------------------|--|------------------------|--|
| Test ID | GLUC-015-007 | Test Name | Grocery Store Map page - store details – street view appears |
| Description | The user should be able to view a details page for any store marker and can open that location's street view. | | |
| Pre-Conditions | The user is logged in, has allowed location services, and has searched for stores on the grocery store map page. | | |
| Steps | 1. Click a marker. 2. Click the Street View window. | | |
| Post-Conditions | A view should appear of the street view of the selected location | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/25/2025 |

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|------------------------|--|------------------------|--|
| Test ID | GLUC-015-008 | Test Name | Grocery Store Map page - store details – street view is interactable |
| Description | The user should be able to interact with the street view for any nearby store location | | |
| Pre-Conditions | The user is logged in, has allowed location services, and has searched for stores on the grocery store map page. | | |
| Steps | 1. Click a marker. 2. Click the Street View window. 3. Drag the screen to look around. 4. Tap a spot on the street to move around. | | |
| Post-Conditions | The user’s location in the 3D space of the street view should have moved and the camera perspective should have changed from looking around. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/25/2025 |

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|------------------------|---|------------------------|-----------------------------|
| Test ID | GLUC-015-009 | Test Name | Exit Grocery Store Map page |
| Description | The user should be able to leave the grocery store map page with back button | | |
| Pre-Conditions | The user is logged in. | | |
| Steps | 1. Click “Grocery Store Map” page 2. Click “Back” button. | | |
| Post-Conditions | The grocery store map page should be exited and the user should be taken back to the home page. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Jared Jackson | Date to Test by | 05/25/2025 |

Tests for Nutrient Tracker page:

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|------------------------|--|------------------------|---------------------------------------|
| Test ID | GLUC-012-001 | Test Name | Nutrient Tracker page can be accessed |
| Description | The user should be able to visit the nutrient tracker page | | |
| Pre-Conditions | The user is logged in. | | |
| Steps | 1. Click “Nutrient Tracker” page | | |
| Post-Conditions | The nutrient tracker page appears. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/25/2025 |

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|------------------------|--|------------------------|--------------------------------------|
| Test ID | GLUC-012-002 | Test Name | Logs appear on Nutrient Tracker page |
| Description | A log of the user’s nutrients should appear after entering any value of nutrients. | | |
| Pre-Conditions | The user is logged in. | | |
| Steps | 1. Click “Nutrient Tracker” page 2. Type “1” into protein entry. 3. Press enter button. | | |
| Post-Conditions | Log window pops up with a log at the top with the current date and a value of 1 for protein, 0 for carbs, and 0 for fiber. | | |
| Test Status | UNTESTED | | |
| Creator | Carson Ford | Date Created | 04/27/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/25/2025 |

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|-----------------|--------------|--|--|------------|
| Test ID | GLUC-012-003 | Test Name | Nutrient tracker tracks a running total for nutrient in a day. | |
| Description | | A running total of a user’s nutrient intake should be calculated. | | |
| Pre-Conditions | | The user is logged in. | | |
| Steps | | 1. Click “Nutrient Tracker” page 2. Type “1” into protein/carb/fiber entry. 3. Press enter button. 4. Validate log. 5. Type “1” into protein/carb/fiber entry. 6. Press enter button. | | |
| Post-Conditions | | Log window shows a running total of the protein/carb/fiber count by showing “2g” for total intake. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Krisi Hristova | Date to Test by | 05/25/2025 |

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|-----------------|--------------|--|----------------------------|------------|
| Test ID | GLUC-012-004 | Test Name | Exit Nutrient Tracker page | |
| Description | | User should be able to exit the nutrient tracker page | | |
| Pre-Conditions | | The user is logged in. | | |
| Steps | | 1. Click “Nutrient Tracker” page 2. Click “Back” button | | |
| Post-Conditions | | User should be taken back to home page. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Krisi Hristova | Date to Test by | 05/25/2025 |

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|-----------------|--------------|---|---|------------|
| Test ID | GLUC-012-005 | Test Name | Nutrient Tracker page alphabetical characters | |
| Description | | User should not be able to enter alphabetical characters into nutrient tracker | | |
| Pre-Conditions | | The user is logged in. | | |
| Steps | | 1. Click “Nutrient Tracker” page 2. Click any field. 3. Enter “abc” 4. Press enter button. | | |
| Post-Conditions | | Log should not be corrupted at all. Invalid input should be handled gracefully. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Krisi Hristova | Date to Test by | 05/25/2025 |

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|-----------------|--------------|--|--|------------|
| Test ID | GLUC-012-006 | Test Name | Nutrient Tracker page special characters | |
| Description | | User should not be able to enter special characters into nutrient tracker | | |
| Pre-Conditions | | The user is logged in. | | |
| Steps | | 1. Click “Nutrient Tracker” page 2. Click any field. 3. Enter “%\$&” 4. Press enter button. | | |
| Post-Conditions | | Log should not be corrupted at all. Invalid input should be handled gracefully. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Jared Jackson | Date to Test by | 05/25/2025 |

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|------------------------|--------------|--|----------------------------------|------------|
| Test ID | GLUC-012-007 | Test Name | Nutrient Tracker page whitespace | |
| Description | | User should not be able to enter whitespace into nutrient tracker | | |
| Pre-Conditions | | The user is logged in. | | |
| Steps | | 1. Click “Nutrient Tracker” page 2. Click any field. 3. Enter “ “. 4. Press enter button. | | |
| Post-Conditions | | Log should not be corrupted at all. Invalid input should be handled gracefully. | | |
| Test Status | | UNTESTED | | |
| Creator | | Carson Ford | Date Created | 04/27/2025 |
| Tester | | Thomas Capro | Date to Test by | 05/25/2025 |

Tests for language settings:

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|-----------------------|--------------|--|--------------------------------|
| Test ID | GLUC-007-001 | Test Name | Spanish Version of Application |
| Description | | If the user’s phone is set to Spanish, then the application should automatically be in Spanish when it is opened. | |
| Pre-Conditions | | The user’s phone has it’s primary language set to Spanish. | |
| Steps | | 1. Open the application. 2. View every custom screen (for example, main page, recipes page, etc.) 3. Check that everything is in Spanish instead of English, | |

| | | | |
|------------------------|-----------------------|------------------------|------------|
| Post-Conditions | None. | | |
| Test Status | UNTESTED | | |
| Creator | Francisco Cruz-Urbanc | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/25/2025 |

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|-----------------|--------------|--|-----------------------------------|------------|
| Test ID | GLUC-007-002 | Test Name | Spanish Version of Authentication | |
| Description | | If the user’s phone is set to Spanish, then the AWS-hosted authentication page should be in Spanish. | | |
| Pre-Conditions | | The user’s phone has it’s primary language set to Spanish. | | |
| Steps | | 1. Open the application (sign out if needed) 2. Sign in 3. Check that sign in page is in Spanish | | |
| Post-Conditions | | None. | | |
| Test Status | | UNTESTED | | |
| Creator | | Francisco Cruz-Urbanc | Date Created | 04/27/2025 |
| Tester | | Francisco Cruz-Urbanc | Date to Test by | 05/25/2025 |

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|-----------------|-----------------------|--|-----------------------------|--|
| Test ID | GLUC-007-003 | Test Name | Spanish Version of API data | |
| Description | | If the user’s phone is set to Spanish, then the application should automatically make API calls to the Spanish version of the API and display recipes translated to Spanish. | | |
| Pre-Conditions | | The user’s phone has it’s primary language set to Spanish. | | |
| Steps | | 1. Open the application 2. Click on the Recipes Search button 3. Check that the recipes that have been fetched are in Spanish instead of English. | | |
| Post-Conditions | | None. | | |
| Test Status | | UNTESTED | | |
| Creator | Francisco Cruz-Urbanc | Date Created | 04/27/2025 | |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/25/2025 | |

7.2 API Test Cases

Tests for Recipe Saving

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|------------------------|---|------------------------|-----------------------------|
| Test ID | GLUC-010-001 | Test Name | Save Recipe to User Profile |
| Description | Ensure that when a recipe is saved, it is correctly stored in the user's profile in the database. | | |
| Pre-Conditions | User is logged in and has not saved this recipe before. | | |
| Steps | 1. Save a new recipe from the individual recipe page. 2. Query user's saved recipes backend or use Saved Recipes page. | | |
| Post-Conditions | The saved recipe exists in the user's profile data (server-side/database). | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/27/2025 |

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|------------------------|---|------------------------|-------------------------|
| Test ID | GLUC-010-002 | Test Name | Prevent Duplicate Saves |
| Description | Test that saving a recipe already saved does not create duplicate entries in the backend. | | |
| Pre-Conditions | User already saved the recipe once. | | |
| Steps | 1. Attempt to save the same recipe again. 2. Check backend database for recipe entries under the user. | | |
| Post-Conditions | No duplicate recipe is added. Either the server rejects the request gracefully or ignores it. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Krisi Hristova | Date to Test by | 05/27/2025 |

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|------------------------|---|------------------------|---------------------------------|
| Test ID | GLUC-010-003 | Test Name | Fetch and Display Saved Recipes |
| Description | Ensure that saved recipes can be fetched correctly and displayed in the "Saved Recipes" section. | | |
| Pre-Conditions | User has one or more recipes saved. | | |
| Steps | 1. Login. 2. Navigate to the Saved Recipes page. 3. Verify list content against backend data. | | |
| Post-Conditions | Displayed recipes match backend data (correct names, images, etc.). | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Francisco Cruz-Urbanc | Date to Test by | 05/27/2025 |

| | | | |
|------------------------|--|------------------------|------------------------------------|
| Test ID | GLUC-010-004 | Test Name | Saved Recipes Persist After Logout |
| Description | Verify that recipes saved to a user's account persist after logging out and logging back in. | | |
| Pre-Conditions | User has saved one or more recipes. | | |
| Steps | 1. Save a recipe. 2. Log out. 3. Log back in. 4. Navigate to Saved Recipes page. | | |
| Post-Conditions | Previously saved recipes are still present and accessible. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Carson Ford | Date to Test by | 05/27/2025 |

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|------------------------|---|------------------------|---------------------|
| Test ID | GLUC-010-005 | Test Name | Handle Save Failure |
| Description | If saving a recipe fails (network issue, API error), the app should notify the user and not falsely show it as saved. | | |
| Pre-Conditions | Network disabled or simulate API failure. | | |
| Steps | 1. Try saving a recipe while offline or simulate API 500 error. | | |
| Post-Conditions | Save operation fails gracefully (e.g., error message shown). No incorrect entries saved. | | |
| Test Status | UNTESTED | | |
| Creator | Thomas Capro | Date Created | 04/27/2025 |
| Tester | Jared Jackson | Date to Test by | 05/27/2025 |

7 Exit Criteria

The Glucose Genie system will be considered ready for release when all planned functional and nonfunctional test cases have been tested and passed successfully. All arising issues and critical defects must be identified during testing, resolved, retested, and closed. Stable performance under expected load conditions, no outstanding security vulnerabilities and verification that no new issues have been introduced through bug fixing is also required. Additionally, all system documentation including SRS and user manuals must be updated to portray the current state of the application. Finally, approval for release should be given by the stakeholders before deployment to the App Store.

8 Risks

8.1 API Access

There is the risk that the APIs that we use in this project might not always be available. For example, this project uses the Edamam API for recipe searching and recipe information. If the Edamam API is offline for maintenance or some other issue, features such as recipe searching and recipe details will not function properly. Additionally, there is the risk that access to the different APIs that we use can be revoked. This can most likely occur if access to the APIs is not renewed.

8.2 Time Constraints

As we are approaching the end of the spring quarter, there is a limited amount of time left to dedicate to coding, testing, and documenting this project. Testing time could be reduced if certain features need extra development time or if project documentation needs to be updated.

8.3 Cloud Service Interruptions

There is a risk that cloud services such as Amazon EC2 (server hosting), RDS (database), and Cognito (user authentication) could experience outages, degraded performance, or security breaches during development or testing. This could lead to partial or full system unavailability, which would impact feature testing, user login functionality, and data storage operations.

8.4 Cloud Service Interruptions

There is a risk that certain UI or feature behaviors could differ between different iPhone models or iOS versions despite successful simulator testing. Issues could include layout glitches, slower performance, or feature malfunction.

8.5 Assumptions

- All required third-party APIs (Edamam Recipe API, Map APIs) will remain available and functional throughout testing.
- Development and testing environments (macOS, Xcode, Swift) will remain stable and compatible with the application throughout testing.
- iOS simulator testing accurately reflects behavior on actual iOS devices.
- Internet access will be available during testing sessions to interact with backend servers and APIs.
- Test data used during API and UI testing will be representative of real-world scenarios.
- Testers will have access to the most recent builds.

- Team members assigned to testing tasks will be available and complete testing on schedule.

9 Appendix

Appendix A: Version History

Version 1 – The initial version of this document.

Version 2 – Correct duplicated test ID's and update document title to Glucose Genie