NutriBuddy

Argos Inc

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Executive Summary

This document will cover the final aspects of the development of NutriBuddy. The topics this report will go over include, the project description, the final timeline compared to the initial timeline, the results compared to the expected results, the evaluation of the software, and the work that still needs to be completed. These topics are being documented to understand how far the Argos Inc team has come with the NutriBuddy web app.

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Project Description

NutriBuddy is a web application designed to make healthy eating easy. It is designed to be engaging by keeping track of each user's caloric and nutritional intake, by allowing them to look up and log food, set caloric goals, and seek nutritional information from an AI assistant. The application uses a pre-existing nutritional database API that allows the users to look up the nutritional information of any food item. These food items can be logged into the user's daily food log and also retrieved from the log for future reference. The ultimate goal of NutriBuddy is to create a user-friendly nutrition tracker with an AI assistant that can provide advice on navigating the difficulties that people can face with their journey in healthy eating.

Final Timeline

Overall we have met the deadlines of our original timeline very well. We did switch around some features and in which sprint they were developed. For example in the original timeline we had the AI assistant being developed during the last sprint since we thought it would be one of the harder features to implement and not very essential. Instead we implemented the AI assistant in one of the first sprints and waited to develop other features later. The main things we have left to complete in accordance with our timeline is the macronutrients goal tracking and the rest of the documentation. The rest of the features have already been implemented and thoroughly tested.

Week 15 - Implement macro goal tracking, continued testing, finishing of reports and preparation of final deliverables

Week 16 (Sprint 4 End) (Final Presentation) - Working macronutrient tracking. Final testing before delivery.

Project Results

Our team was able to complete all of the features we wanted to get completed at the beginning of the semester. We were able to create a web app that allows its users to track meals and the nutrients of each. We were able to meet all the requirements we originally listed when brain storming the features we wanted our app to have. The only thing that is left to be completed, but is optional, is refinement of the user interface. The main features that the team came up with at the beginning of the semester have all been met.

We implemented 5/5 use cases featured in our technical document:

Use Case 1: Use Authentication
Use Case 2: Track Daily Caloric Intake
Use Case 3: Access Nutritional Information / Macros
Use Case 4: Log Food
Use Case 5: Interact with AI Chatbot

Software Evaluation

Functionality

Because this application is web based a lot of the testing was done manually. Each time a new feature was pushed testing was done manually on the new feature. These tests made sure that the new features fit the user stories we documented during the initial design of the application. We also conducted testing at the end of each sprint to confirm the features created during that sprint fit the user stories. Although a majority of the features the team wanted to release have been completed, not all of them have. An example of this is the food log, the team is still in the process of creating a log of food items the user has saved each day. This feature is still in development.

As stated above a majority of the testing was done manually. This was the main test strategy since we were developing a web based application in a short period of time. During the development of the project the team did not run into any major bugs that were found after new features were pushed. Thanks to the testing strategy and the well documented use cases, each feature that was pushed out was developed to strictly adhere to the use cases and then was manually tested. There were some issues with gathering data from the API and also storing data in the database at first but these issues were quickly resolved.

Business Requirement #	Name	Description
BR-1	Food Log	User should be able to log food items so they are able to keep track of what they are eating
BR-2	Food Search	User should be able to search the nutritional information of a food item to see if it is a good option
BR-3	AI Recommendations	User should be able to receive recommendations from an AI assistant on what to eat.
BR-4	User Creation	User should be able to create an account so they can log food.

BR-5	Past Meal Search	User should be able to look up past meals.

Table 1 Business requirements

Test Case #	Description
TC-1	User is able to login
TC-2	User is able to search food
TC-3	User is able to add food serving to log
TC-4	User is able to go back and see log
TC-5	User is able to access chatbot interface
TC-6	User is able to interact with assistant
TC-7	Assistant is able to make recommendations to user
TC-8	User is able to provide an email
TC-9	User is able to provide a password
TC-10	User should be able to confirm account creation
TC-11	User account should be saved in the database
TC-12	User food logs should be saved on the database

Table 2 Test Cases

	BR-1	BR-2	BR-3	BR-4	BR-5
TC-1	X	X	X		X
TC-2	X	X			
TC-3	X				
TC-4	X				X
TC-5			X		
TC-6			X		
TC-7			X		
TC-8				X	

TC-9				X	
TC-10				X	
TC-11				X	
TC-12	X				X

Table 3 Requirement Traceability Matrix

Testing is a very important aspect of developing any kind of software, without it apps would not be able to run. It is important to document the business requirements to understand how the tests need to be structured to fit. These tests make sure the features being developed fit the business requirements.

Security

Security is of paramount importance in the NutriBuddy web application to safeguard user data, ensure privacy, and protect against potential threats. With the nature of the application handling sensitive information related to users' dietary habits and personal accounts, robust security measures are essential to maintain trust and integrity.

Secure API Connections:
NutriBuddy establishes secure connections with external APIs, including the pre-existing nutritional database API used for food information retrieval. API endpoints are accessed over HTTPS, providing encryption and authentication to safeguard data transmission. Furthermore, NutriBuddy implements token-based authentication mechanisms to securely authenticate and authorize API requests, preventing unauthorized access to sensitive resources.

Hard-Coded Keys:
In compliance with security best practices, NutriBuddy avoids hard-coding sensitive information such as API keys or credentials directly into the source code. Instead, secure methods of key management are employed, ensuring that access keys are securely stored and managed, reducing the risk of exposure to unauthorized parties.

Continuous Security Testing:
NutriBuddy conducts regular security testing and reviews to identify and address potential vulnerabilities or weaknesses in the application. This includes code reviews, penetration testing, and vulnerability assessments to proactively detect and mitigate security risks. By continuously monitoring and evaluating the security posture of the application, NutriBuddy remains vigilant against evolving threats and vulnerabilities.

Work to Be Done

Thanks to the hard work of each team member, our team was able to complete all of the features by our original deadlines. The only work that needs to be done before the final deliverable is the inclusion of a macronutrients goal tracker, which is already in the process of being implemented and just needs to be tested. Another thing that could be worked on is the user interface, this however is completely optional as the user interface works without issue and is already very

clean. We also still need to complete the user guides at the time this is being written. All of the actual web app features have been completed.