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Nutrition and Fitness tracking with Test Engineer

Within our Nutrition and fitness tracking project, both Test Engineers and Software Engineers have to work together to ensure a well-structured application that allows the purpose of users to track their nutrition and fitness throughout the week and reach their fitness goals. The application will allow the user to log their meals, track nutritional intake, and monitor their progress toward their dietary goals. The Test engineer will create the script for these tasks to be functional while also creating test cases for the user stories to ensure the project delivers a functional project for the stakeholders and consumers. These test cases can involve unit testing, integration testing, acceptance testing, and more.

For the test engineer, when testing the software code you have multiple methods to make sure there are no bugs/errors that may occur within the project. These tests help align with the important user stories for the nutrition project. Our user stories allow the user to log in to access their database of information, allow the user to log meals from the database or manually, user can view their nutrient intake, view their progress throughout the week, and update their dietary goals.

First is Unit testing which is essentially testing specific functions or methods of code to see if they are being used properly. The goal of this testing is to find any bugs that may occur in the project before execution. If there are any issues within the method they should be examined and fixed to help improve the code design and organization. One test case would be to verify the API for logging the meal. This test case will check to see if there's valid input, check for a return message of whether the information was successful or invalid representing a 200 or 400 status code, and verify that the logging meal action is working with the database correctly. The unit testing will run test cases throughout all of these actions to make sure everything is running properly, any errors that occur the developer has to make changes and align those changes with other methods if they work together. For example, if a developer allowed a word as the quantity of the food that would create an error because they are supposed to input a number for the quantity and not a word, the unit test would find these errors before execution of the project and then the developer has to update the method to were it now takes integers instead of strings.

Next would be Integration testing which is testing the connection between different units or modules within the code to the connection between components that work together. This is to understand a flow of data between modules to ensure the overall behavior of these components and validate reliability and stability between these components. For example, we can test the connection between the log mean function and the log meal API function to verify if the form is correctly passed to the endpoint of the API and to verify that the API is responding to the dashboard correctly without an error occurring. This can be more beneficial when you have more complex projects that require multiple files of code that need to be tested for any potential errors.

Afterwards is functional testing which is testing the project functionality based on the user's perspective to see if the software meets the requirements of the project including the user

stories. The testing would check for user flows to ensure that the user can complete their intended task whether it be logging a meal, checking the process, or setting a goal resulting in improving the overall experience user ensuring reliable software. A test case towards this would be verifying that the user can enter a food name, quantity, and meal type correctly without any errors occurring or that the meal logging form showcases the correct values based on the information inputs. If the functional testing detects that the meal log form doesn't display the correct meal type then this would be an error and give false information to our user so we can find the error within the meal log form method to then adjust the meal type variable and do test checks to ensure it properly displays the correct meal type.

The Final testing is acceptance testing which checks to see if the application meets the requirements of the stakeholders and managers for the project to be released. This is usually during the final stages before releasing the project, this stage involves the help of test engineers, requirement analyzers, and stakeholders to verify that all requirements are implemented into the project along with having a stable and reliable project. A test case would be to verify that the progress page displays accurate and clear information about the user's calorie consumption and weight. This is to ensure that the user experience is accurate and helpful to help achieve their nutrition goals. If the stakeholder sees that the graphs of the progress are displaying incorrect information it can become a problem for the user and the stakeholders. To tackle this encounter developers would examine the methods that focus on retrieving the data and displaying the data to ensure that the error is fixed and the information is displayed correctly resulting in giving the best information to the users.

In the end, all of these testing cases help improve the overall software of the system by ensuring a well-structured code layout, stable code that follows the requirements, and enhances

the user experience by displaying correct information based on the data they input throughout their nutrition journey.