Smart Grocery App
Spring 2023 Group 5
Arijus Trakymas, Sharva Darpan Thakur, Russel Tjahjadi, Mohammad Zaid

The Smart Grocery App seeks to bring together the everyday tasks of searching for recipes, grocery stores, and restaurants in a single app. These ideas were partially inspired by work that was completed by Group 25 in the fall of 2022.

Let's begin by going into an overview of the releases and what was accomplished in each release. The first release of the project was released on 24th of February. This release consisted of a login screen which had authentication built into it, the signup screen which allowed users to register for an account and set their preferences once they registered. The preference screen lets users input their preferences such as intolerances, diets and cuisines. The home screen consisted of a single screen which pulled data from the spoonacular API to retrieve recipes. The second scenario would then build onto these features.

The second release was released on 31st March which added onto the first scenario. The new things that were added were that you can now change your preferences from the home screen. A navigation rail was introduced which allows the user to navigate between all the different parts of the application. New screens included a grocery screen which shows you the nearby grocery stores using the Google Places API and the user's location. A restaurant screen also uses the user's location and the spoonacular API to get the nearby restaurants. Lastly, a trending screen displays recipes which are currently popular so that the user can explore trending recipes. Additionally, a search feature was added to the home screen which allows users to search recipes while being filtered according to their preferences. Next we'll discuss how the app differs from the original vision laid out in the original report document.

The prototype of the application is very similar to the application which was described by the previous group. The idea of a login, signup and home screen still exist in our app. However, where our app differs is that we do not display groceries directly in the app. The original report also planned on showing nearby grocery store inventories of groceries which we found next to impossible to implement. Including user preferences and a trending page were ideas we came up with to supplement the fact that we had to improvise on some features. User preferences makes the app personalized to the user which makes the overall user experience better. The restaurants feature was also added in as a way to tie in dining to an app that focuses on food with the rationale being that if the user does not want to cook they can find somewhere nearby to dine at instead while staying inside our app.

Testing of our app went well. Since our app boils down to four main services, we created tests for those four services. For the first test we tested the recipes screen by calling the spoonacular API and making sure that the results were not empty. This ensured that the app would receive actual data to display (recipes) so that the user find and explore recipes to cook and enjoy. Next we tested the trending recipes screen by calling the spoonacular API and ensuring that data returned was not empty. Just like before, by making sure that the data returned is not empty we can be confident that we have data to show to the user. Moving on, we tested our restaurants screen by calling the spoonacular API and making sure the results returned were also not empty. This ensured that there would be actual restaurants shown to the user and not empty

data. Lastly, we tested our grocery store screen by calling upon the Google Places API and checking that the locations returned by the API were not empty. All of our tests passed and provided the results we needed to see.

The tests we wrote could need to be re-run in the future if new features are built upon the existing features. The tests could break if the API keys become invalid or the API parameters change in the future.

As we further integrate more features in the app, we may need to develop more tests and further inspections to ensure that the updated version of the app will be up to par.

One of the biggest problems that we have encountered is that we needed to limit our testing because of the limited quota that we have because of the free version that we are using for the different API services that we use. Unfortunately, to increase our quota, we needed to pay more to the API service however we lacked funding for that.

An idea that would further improve the app is to implement user feedback which allows us as the developers to understand what users need or want in the app. This way, it can be more personalized and can therefore enhance the user experience. In addition to user feedback, integrating customer support would be beneficial because we understand that certain users need assistance when using the app.

From the observations we made we could conclude that by using other APIs and services we were able to implement our application better than what we would without using them.

Due to security concerns we had to make sure that the user data which is being stored cannot be breached as well as the accounts have enough security restrictions.

The implementation of an API was more complicated than we had expected it to be when we started to work on this project but we were able to solve it and get the API working. One of the main issues was finding an API that gave us the results we wanted and in the way we wanted for which we had to use 2 different APIs which were Spoonacular and Google Places API.

Even though we had to face a lot of challenges, we were able to complete the part of the project which we set the goal at the start of the semester in time and present it. By working as an responsible and organized team we were able to overcome all of the difficulties and complete the project in time.