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Fooodify Final Report

Overview

The app that we created is a location-based food recommendation app. The basic idea of the app, called “Fooodify”, allows users to choose preferences based on whichever type of cuisine they are craving at the moment (e.g. Italian, Mexican, Japanese, Indian, etc). Once they have chosen this, the user will either enter the city in which they want the app to generate results, or use their current location as the primary location. Finally, the application will display a list of restaurants at the given location based upon the preferences that the user chose. For each restaurant displayed, the list will contain information about the restaurant, including the name, rating, prices, address, distance, and whether or not the restaurant is currently open.

The inspiration behind the app idea was fairly straightforward. We wanted to make a simple yet productive app that can be used by almost anyone. When thinking of ideas that are universally relevant, one thing stood out amongst everything else - food! Regardless of who you are, every person needs to eat food to survive. Additionally, everyone has their own individual food preferences. People can be in the mood for all different types of foods - different cuisines, spicy, sweet, savory, healthy, cheap food, vegetarian, vegan, and more. Given this vast range of cravings, it can be difficult to find a place to eat that matches a majority of these preferences. It can be even more difficult to search through options that meet these desires that are in close proximity to your location. The motivation behind our app was to provide a convenient way for people to solve this specific problem. Fooodify gives its users an easy and reliable way to find restaurants that match their food preferences near a given location. By using our app, users can save valuable time in their day instead of spending it searching through the surfeit of restaurant options that serve meals matching their food preferences.

We noticed that iOS developers release their mobile applications on the Apple App Store in many different ways and formats. Some apps on the app store require users to pay a certain price tag while other apps are free for all users. According to [Statistica.com](https://www.statista.com), approximately 93.9% of all iOS apps are free for all users with an iPhone. One of the main factors of keeping an application free to download is that it has a higher chance for a user to download or try it out for fun. For many big companies that have a large enough demand for a certain app that they are planning to release a new

app would have a reasonable cause to instantiate a price for users to download it. However, since we are a group of 4 developers on a much smaller scale, we concluded that, if we decide to publish Foodify on the App Store, it would be best to keep our application free to download for all users. This gives us a higher chance of people downloading and trying out our application.

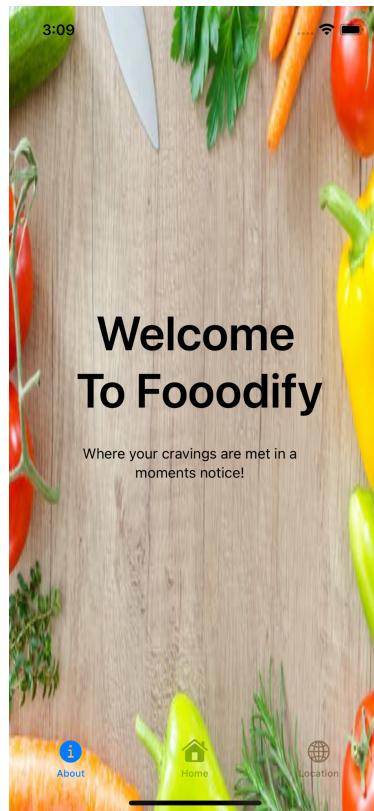
Goals

The primary goal of this Swift project was to create a well-designed application that transitions smoothly from location retrieval, pinpointing nearby restaurants, adding certain food preferences, and storing food item selections. These factors collectively add appeal and build up a refined experience for the end-user for overall better customer experience. We also aimed to provide increased feasibility for the customers by returning to a nearby restaurant based on the user's preferred type of cuisine. Regarding this beneficial goal, there is a text box that has been added where the user can input any cuisine type, including Mediterranean, Mexican, Indian, etc.

Another goal we had was the accuracy of the information that would be output upon a user's response, whether the "Use Current Location" button is clicked or not. We knew an API, such as Yelp, would be beneficial to successfully execute this goal, listing a few search results. As we want the customer to obtain all the necessary information one would need before considering a purchase, we provide the user with the name of the restaurant, its status rating (generally out of 5), phone number to contact for additional information or help, precise address, and the prices of an item. Besides a private key, there would not be any sort of authentication to be added for the user to gaining access to food details as the API would be called from our iOS application. Not only does this API help our goal of providing the food inventory and orders, but also helps customers manage their list. We planned to allow the customer further operations in dealing with the results, such as deletion. Popups would occur and the user would proceed to see their status or remove any item they would not need.

User Interactions

When the app launches, it will start off in the About View as shown below.



From there, the second tab is the home view where the user is able to store a list of food preferences for the type of cuisine and location. These preferences can be added and removed upon in the same view. In order to remove a preference, you can long-press/tap the preference you would like to remove and an alert box will pop up confirming whether you really want to remove it or not. Once a selection is made, it will remove or leave the list as is and you'll be able to see it there.

The figure consists of three screenshots of the Fooodify app, showing the transition from the home view to a delete confirmation dialog and back.

- Screenshot 1 (Left):** Shows the home screen with a list of preferences:
 - Type of Cuisine: Chinese
 - Location: College Park, United StatesA blue "Add Preference" button is visible at the bottom.
- Screenshot 2 (Middle):** Shows the same screen after a preference has been long-pressed. A modal dialog box appears in the center:

Cuisine: Mexican
Loc: Annopolis, United States

Confirm Deletion

Do you really want to delete Chinese?

Cancel Delete

United States

The "Delete" button is highlighted in red.
- Screenshot 3 (Right):** Shows the home screen again, with the deleted preference removed from the list:
 - Type of Cuisine: Mediterranean, Mexican, etc.
 - Location: City Name Only ex: College ParkA blue "Add Preference" button is visible at the bottom.

The third tab view is where you can see Yelp API in action. It will start with asking permission to view your location in order to be able to move forward with the app. Next, you'll see a similar view from the home view which will allow you to type in your preferences and once done, just click the search button and it will display your results. A disclaimer for the Location text field to work properly, it should be formatted with the city name first, followed by a comma, space, and then the country in which you want to view the results for. If you choose to use your current location instead, it will automatically figure that out and display the results. The results are all sorted by distance so the user does not have to worry about finding out which one would be the closest and we have set the limit to show you 3 results at a time. Each item in the list can also be tapped on to take you to its Yelp website using Safari. Within each Yelp website, the user can find out more information about directions, hours of operation, menu of items, and contact information. Aside from these details, this directed webpage also lists out alternative considerations of similar cuisine types.

The image displays three screenshots of the Fooodify app interface, illustrating the search process across three tabs: About, Home, and Location.

Top Row (3:11, 3:12, 3:13):

- 3:11:** Shows the 'About' tab. The status bar indicates signal strength, battery level, and time (3:11). Below the header 'Fooodify' is a text input field with placeholder 'Type of Cuisine: Mexican'. Below the input is another text input field with placeholder 'Location: Annapolis, United States'. A blue 'Search' button is centered below these fields. To the right is a toggle switch labeled 'Use Current Location' with a grey circle indicating it is off.
- 3:12:** Shows the 'Home' tab. The status bar indicates signal strength, battery level, and time (3:12). Below the header 'Fooodify' is a text input field with placeholder 'Type of Cuisine: Mexican'. Below the input is another text input field with placeholder 'Location: Annapolis, United States'. A blue 'Search' button is centered below these fields. To the right is a toggle switch labeled 'Use Current Location' with a grey circle indicating it is off.
- 3:13:** Shows the 'Location' tab. The status bar indicates signal strength, battery level, and time (3:13). Below the header 'Fooodify' is a text input field with placeholder 'Type of Cuisine: Mexican'. Below the input is another text input field with placeholder 'Location: Annapolis, United States'. A blue 'Search' button is centered below these fields. To the right is a toggle switch labeled 'Use Current Location' with a green circle indicating it is on.

Middle Row (3:11, 3:12, 3:13):

In the middle row, the screens show the results of the search queries:

- 3:11 (About Tab):** Displays results for 'Annapolis, United States'. The first result is 'Name: Mollie Stone's Status: 3.5 Price: \$\$\$ Phone: (415) 255-8959 Address: 4201 18th St San Francisco, CA 94114'
- 3:12 (Home Tab):** Displays results for 'Annapolis, United States'. The first result is 'Name: Nachos Muchachos Status: 1.0 Price: N/A Phone: (415) 923-8047 Address: 4150 18th St San Francisco, CA 94114'
- 3:13 (Location Tab):** Displays results for 'San Francisco, United States'. The first result is 'Name: Nespresso Boutique Status: 3.5 Price: \$\$ Phone: (800) 562-1465 Address: 55 Stockton St San Francisco, CA 94108'

Bottom Row (3:11, 3:12, 3:13):

At the bottom of each screen, there is a navigation bar with three icons: 'About' (info icon), 'Home' (house icon), and 'Location' (globe icon). Each icon has a thin horizontal bar underneath it, indicating the active tab.

Development Process

The development was a lengthy and continuous process, which can be broken down into five parts: idea generation, product definition, prototyping, initial design, and validation/testing. We spent the first three weeks of the classes deciding on our app idea (approximately around January 31 through February 22).

Our team juggled with many different ideas here, including a budget tracker, dog walker, and medical care app. After much consideration, we finally decided upon our Foooodify app. After deciding on this, we started planning the logistics of the product - which features we wanted to include, and how we planned on implementing these features. For about the next two and a half weeks (approx Feb 23 - Mar 12), we worked on the design of our application, which consisted of the prototyping of the app as well as the design features that we desired. We used the website [Proto.io](#) to construct a visual representation of our product, including all of the UI elements as well as the color schemes. Here is where we also had to make a change to our initial proposal. In our initial proposal, our goal was to make it so that Foooodify would display specific food items from restaurants near the user's location that matched their food preferences. After researching the Yelp API, we came to the conclusion that this was not very feasible. Our group ended up changing this goal so that we displayed restaurants that fit the user's preferences instead of individual food items at the restaurants.

After we were able to visualize the app's design layout, we could finally start on the initial design of the app. In this phase (approximately March 15 through April 15), we used things that we learned in the course so far (Swift, SwiftUI, Resources - Location) in order to implement the design and functionality of the application. We encountered several setbacks during this process. Getting the user's permission to user's their location was a bit troublesome as the alert was not displaying properly. Implementing the About Page to load up right after the app was launched instead of displaying it as another TabView. Correctly using the Yelp API to show a limited number of restaurants near a specific location that matched the user's preferences was also tricky. We had to use different data structures and structs to capture the user's preferences and pass them as parameters to the Yelp search. We ran into an issue of Yelp displaying an unlimited number of options instead of a fix number, which took time to work out/debug.

We finally managed to collaborate and fix our issues, and were ultimately able to implement most of the features that we set out for in our initial proposal. However, there is still a bug where the app is calling the Yelp API three times for the same number of results passed in where the last two times, the results show similar results but are different to the first set of results. We hope to have this resolved before submitting the final form of the app or in a future iteration of the app.

Future Directions

According to our initial proposals, our stretch goals for this project were to allow users to create their profile that they can log in/out later, be able to include specific food images, and be able to display restaurant info. We were able to display restaurant information since displaying just food would not have been feasible as mentioned above therefore displaying images of the restaurant given from the Yelp API and allowing users to log in/out would be our next steps in expanding the user experience enabling them to edit their preferences even further and including visual representations of our app to appeal the user when they are using it. When adding a preference to the list, currently we only have the type of cuisine and the location (city name) as two variables that we would be storing and using. We would like to include more variables such as capturing photos to keep track of the food they enjoyed, adding names to those foods, and sorting these preferences with a rating system in which the users can rate so they are viewed in the order that the user wants them to be viewed either by rating, date added, or closest to them. When this feature is implemented, the user will probably see a layout similar to how social media apps have it in which the images selected will be shown along with the type of cuisine and location as captions. The user will then be able to click on one of those images to take them to another view using the NavigationViewLink to give them more information or edit their preferences for that specific entry in that place and then go back to their main view. Currently, our About page is also just a part of the tab view and due to difficulties and having it appear before the app loads up, we decided to just keep it as a part of the tab view instead and would like to instead refine it and have it load up as soon as the app launches and then dismiss once the app is ready to have its elements displayed for the user to start using the app.

In addition, we have future plans that will increase our mobile application's level of profitability. As mentioned earlier in the final report, if we were to publish our iOS application on Apple's App Store, we would keep it free for everyone to download, as this appeals much more to people. However, to make it profitable, we use a subscription-based business model. In other words, the app would ask if the user would like to be a "premium user", which would unlock several new features that they could

use. Some of the premium features within Foodify could be a calorie counter. For example, once the user clicks a specific restaurant that they find when using our app, then they can log the food that they consumed from this restaurant. As a result, we can use an API to retrieve the approximate calorie count for that dish from that specific restaurant and log it for that specific user. Then, the user will be able to track the calories they consume from any takeout to lead a healthier lifestyle. In addition, another premium feature can be a rewards program. So, every time a user uses Foodify, finds a restaurant, and clicks a restaurant to order food from, then we can reward the user with a certain amount of rewards points. Then, we can offer certain incentives that will cost the user a certain amount of points. For example, 100 rewards points can be traded in for 2 months of free premium access for Foodify or a discount that can be applied on their next restaurant order.