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Project Topic

Our project topic is based on gathering insight from college-aged students on how their dietary restrictions/preferences influence the decisions that they make when finding day-to-day places to eat on and off campus. With this information, we hope to create an app that could help these same people figure out places for them to eat that are safe and provide alternatives that coincide with their restrictions/preferences.

Solution Space

We have a good amount of common solutions to the problems in the problem space that have a decent mix of both non-technological and technological solutions.

Types of Solutions in the Solution Space:

Technological Solutions:

- Specialized Dietary Apps and Websites: Target specific dietary needs like vegan or gluten-free diets, offering restaurant listings and community features.
- General Review and Travel Sites: Provide broader services including dining reviews and recommendations with basic filtering for dietary needs.
- Emerging Niche Solutions: Concepts like campus-focused apps offering localized information on dining options for specific groups, such as students.

Non-Technological Solutions:

- Community Engagement and Support Networks: Platforms or groups focused on the social and mental health aspects, offering spaces for sharing experiences and support among those with dietary restrictions.
- Pamphlets given during orientation: This solution is more for college campus as on orientation week you receive a lot of informational papers, but none of them talk about dietary restrictions for places to eat on campus. Including a pamphlet that would provide that information would make people become more aware of the places they can and cannot eat at.

Well-Responded Issues in the Problem Space

- Popular Dietary Preferences: Specialized platforms effectively cater to popular diets like vegan and gluten-free.
- Local Discovery and Reviews: General platforms cover the need for discovering and reviewing local dining options, though with limited focus on specific dietary restrictions.

Gaps in the Solution Space (Opportunities for Innovation):

- Comprehensive Coverage: A lack of solutions offering comprehensive support for a wide array of dietary restrictions beyond the most common ones.
- Advanced Functionalities: Many platforms lack personalized and advanced filtering options tailored to individual dietary needs.
- Targeted Demographic Solutions: A gap in solutions specifically designed for subgroups, like students, considering factors like budget and campus-specific options.

- Mental Health and Community Support: Few solutions deeply integrate aspects of mental health and community support, critical for individuals managing dietary restrictions.

By addressing these gaps, particularly through developing holistic, personalized, and targeted solutions that also emphasize mental health and community support, there is significant room for innovation in this space.

Design and Selection

During our brainstorming session we discussed multiple different ideas where most of them we talked about had to do with some form of technological aspect that would be accessible to every smartphone device. With each design we talked about we went over the pros and cons of the design and discussed what features may need improvement on and which ones were achievable in a real world setting. We then started to eliminate the ideas that had the most amount of cons/problems and narrowed it down to a couple of designs, then tried to make sure our ideas were original enough. Finally, we picked one of the designs and incorporated ideas from the other designs to improve the final design in order to fill any gaps that were missing in it that other ideas had.

Our final design was to have an app that would be free for all smartphone users to download and access anywhere there was adequate cell phone service. The app would work by allowing the user to create a profile that would be customized by the user to include any dietary restrictions, allergies, and food preferences that they would like to include. Using that profile the app would then use the user's location to determine any restaurants that match the type of

preferences put on the user's profile within a set range established by the user. The app would also allow you to put on filters for any allergies or restrictions that the user didn't include on their profile from the main search screen and allow the user to filter out food types as well if the user was in the mood for a certain type of food.

The app would also allow users to read or leave reviews of the specific restaurant that they went to so that other users on the app could see if that restaurant is good or not depending on the reviews to make informed decisions on where to eat. The user would also be able to favorite restaurants that way if they find a place that they like then all they have to do is simply favorite it and it will get saved in the favorites tab for easier access to their favorite places to eat. Each restaurant will have their menu with possible substitutions on the app that way the user can look through the menu before they drive to the restaurant for easier accessibility. The app will also include the ingredients to said menu items along with preparation methods to reduce the risk of cross contamination and hidden ingredients that might not be listed on the menu.

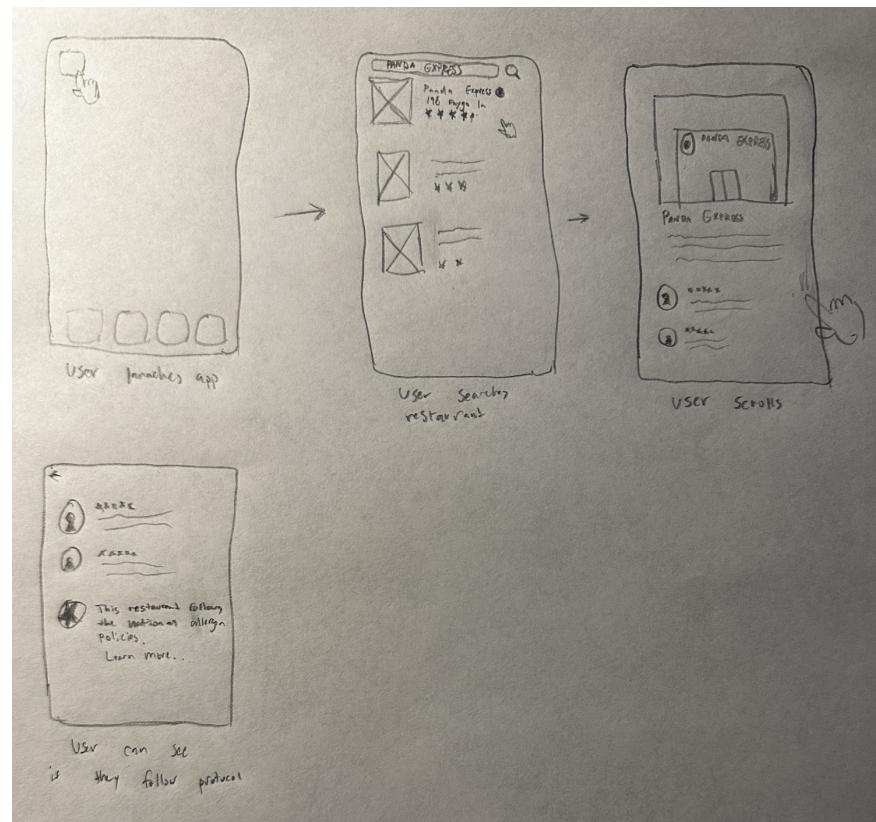
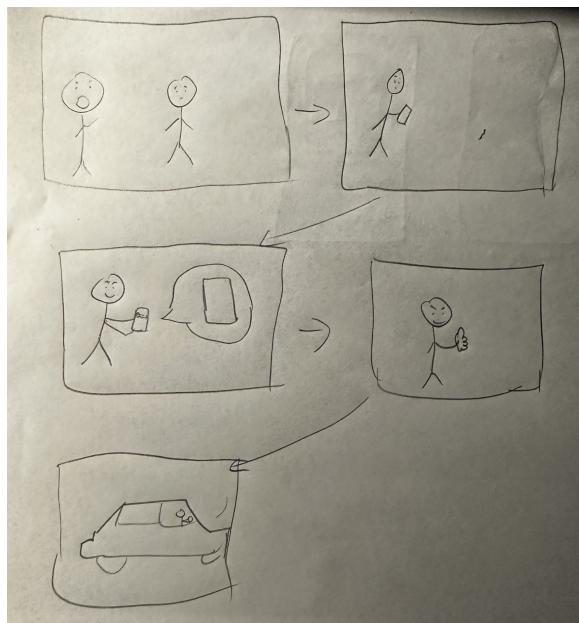
Additionally our app would allow users to look at grocery stores as well to find ways to cook themselves in case they don't want to eat out and aren't sure where they could find food that is safe for them to cook. Working in tandem with the grocery stores we could also include a scanning option that would allow the user to scan barcodes on food to see if there are any ingredients that conflict with the user's own profile setting thus ensuring they don't buy things accidentally. The app will also have a meal planning tool to assist people in making food that conform to their dietary restrictions or allergies with helpful tips to get the most out of the food that they buy and recipes that they can make based on those requirements.

Design Concept

Task 1:

Scenario

Michael, 19 year-old Business Major at JMU has a severe nut allergy. Michael has to stay extra cautious when dining out with friends or family due to his allergy as there could be cross contamination or nuts in the cooking not specifically stated. (Such as peanut oil being used) Michael has learned about a new application that helps find restaurants that are suitable for him. His friends ask him to go to Panda Express after class. Although most dishes at Panda Express do not have nuts or peanuts in their dishes, he is still worried about cross contamination and is wondering what types of protocols they take at Panda Express for allergens. Michael checks our application to see their protocols that they follow and makes sure that there is no chance for him to be exposed to those allergens. (Storyboard on the left and UI wireframe on the right)



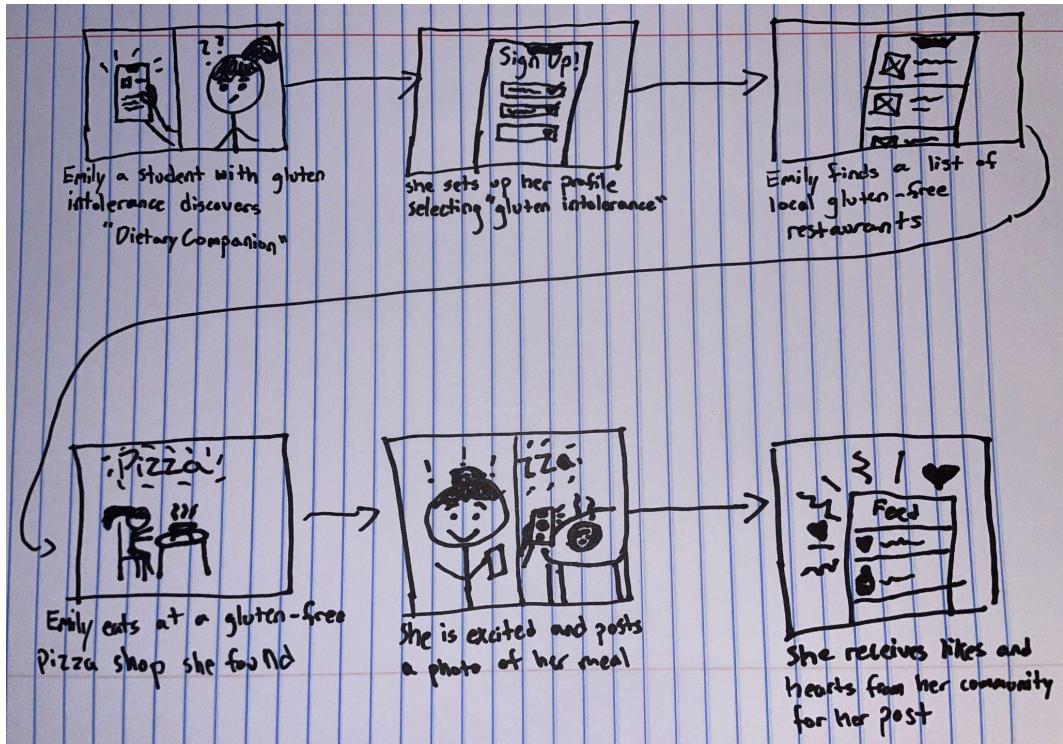
Task 2:

“DietaryCompanion” social media and review app. This design accomplishes the goal of connecting users with their communities in a deeper way.

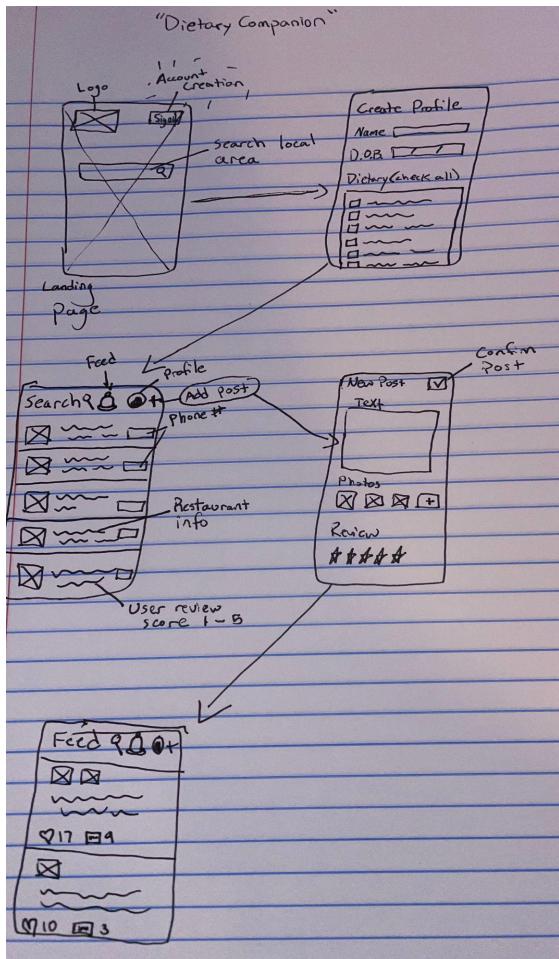
Scenario:

Emily, a college student with gluten intolerance, recently discovered "DietaryCompanion," an innovative app designed for individuals with dietary restrictions. Excited about the prospect of easily finding gluten-free dining options, she quickly registered and was delighted to find a wealth of local restaurant recommendations, all reviewed by users with similar dietary needs. Her first venture with the app led her to a highly rated gluten-free pizza place. The meal was a delightful experience, prompting Emily to share her own review and a photo on the app, seamlessly connecting with others in the gluten-free community. For Emily, "DietaryCompanion" has become more than just a utility; it's a platform that not only ensures her dietary needs are met but also connects her with a community that understands and shares her challenges.

Storyboard:



UI wireframe:



Task 3:

Another important task of our app is a user's ability to find suitable ingredients at the grocery store and make a delicious meal at home with those ingredients. The following scenario, storyboard, and UI sketch demonstrate how the user can use our app to accomplish this task.

Scenario

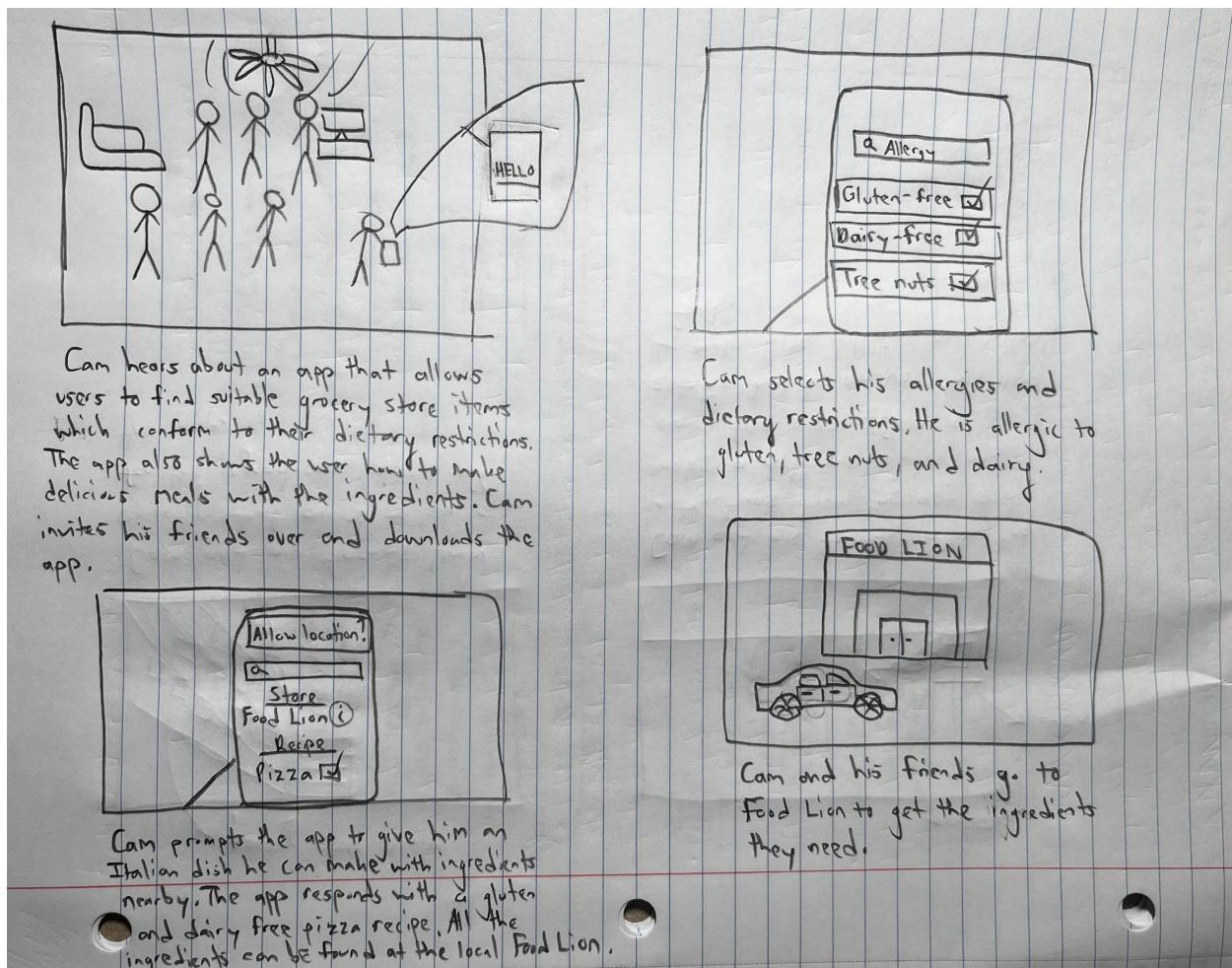
Cam is a 22-year-old Finance major at JMU and has severe allergies to gluten and tree nuts; he is also mildly lactose-intolerant and tries to avoid dairy products whenever he can. Cam

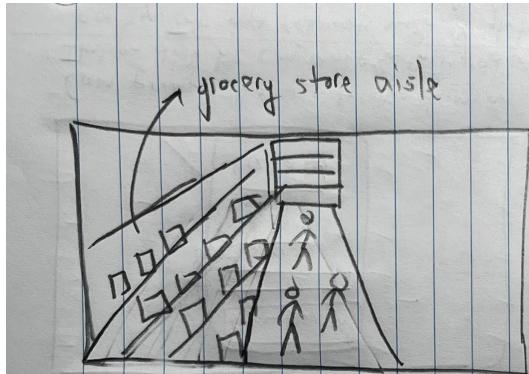
often struggles to find suitable food on campus in between his classes; many of the food locations on campus are not gluten-free and many places off campus don't provide adequate information on whether their products are safe for him to eat. He is always cautious about what he eats whenever he goes out with friends and only feels completely comfortable eating something when he makes it himself at home. Cam wants to use a product that will help him find delicious and safe food to eat both on campus and off-campus but also to make himself at home whenever he wants to save money.

One day on his way home from class, Cam learns about a new app that is tailored to filter restaurants and other food locations based on a user's dietary restrictions, allergies, and even preferred diets. The app also allows users to quickly find suitable ingredients at the grocery store and offers recipes that users can make from those ingredients. Cam is ecstatic to try out the app and invites his friends over to make some food with him for the football game later. He downloads the app, opens it, and is welcomed with a vivid and straightforward screen prompting him to create his user profile. Cam inputs his gluten, tree nut, and lactose intolerance restrictions and continues to the next section of the app. It then asks to use his location and displays a screen where Cam can directly search for food locations, grocery stores, and browse through highly rated locations that meet his dietary needs. Cam feels relieved and excited that he can finally find suitable food efficiently and quickly and asks his friends what type of food they are in the mood for. They settle on Italian cuisine; Cam inputs into the app that he would like to make an Italian dish that conforms to his dietary restrictions and would like to go to a suitable grocery store within 10 miles of his location. The app gives him a couple of locations to choose from and offers to teach him how to make gluten free and dairy free pizza. He taps on the more icon next to the first grocery store he sees and the app tells him exactly what aisles to find the ingredients

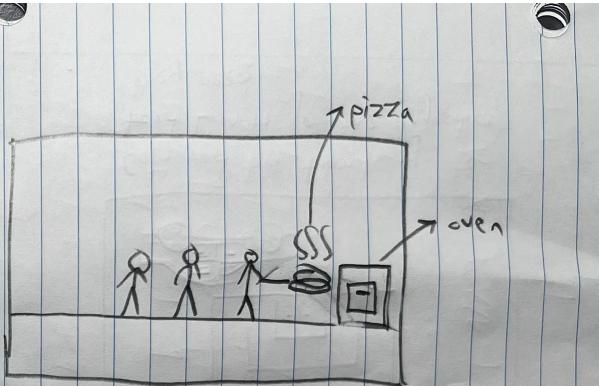
in. He excitedly tells his friends they should go there and they soon leave to go buy the ingredients. After buying the ingredients and coming home from the store, Cam and his friends follow the instructions in the app step by step and make a delicious gluten-free and dairy free buffalo pizza. Cam is grateful that there is finally an app that allows him to efficiently plan out what he can eat and how to make suitable food for himself at home. Up until this point, he had struggled with making food at home because he wasn't sure how to properly substitute for ingredients he cannot eat in his favorite recipes. This app now has a huge influence on his life and allows him to focus more on his classes without having to worry about what his next meal will be.

Storyboard



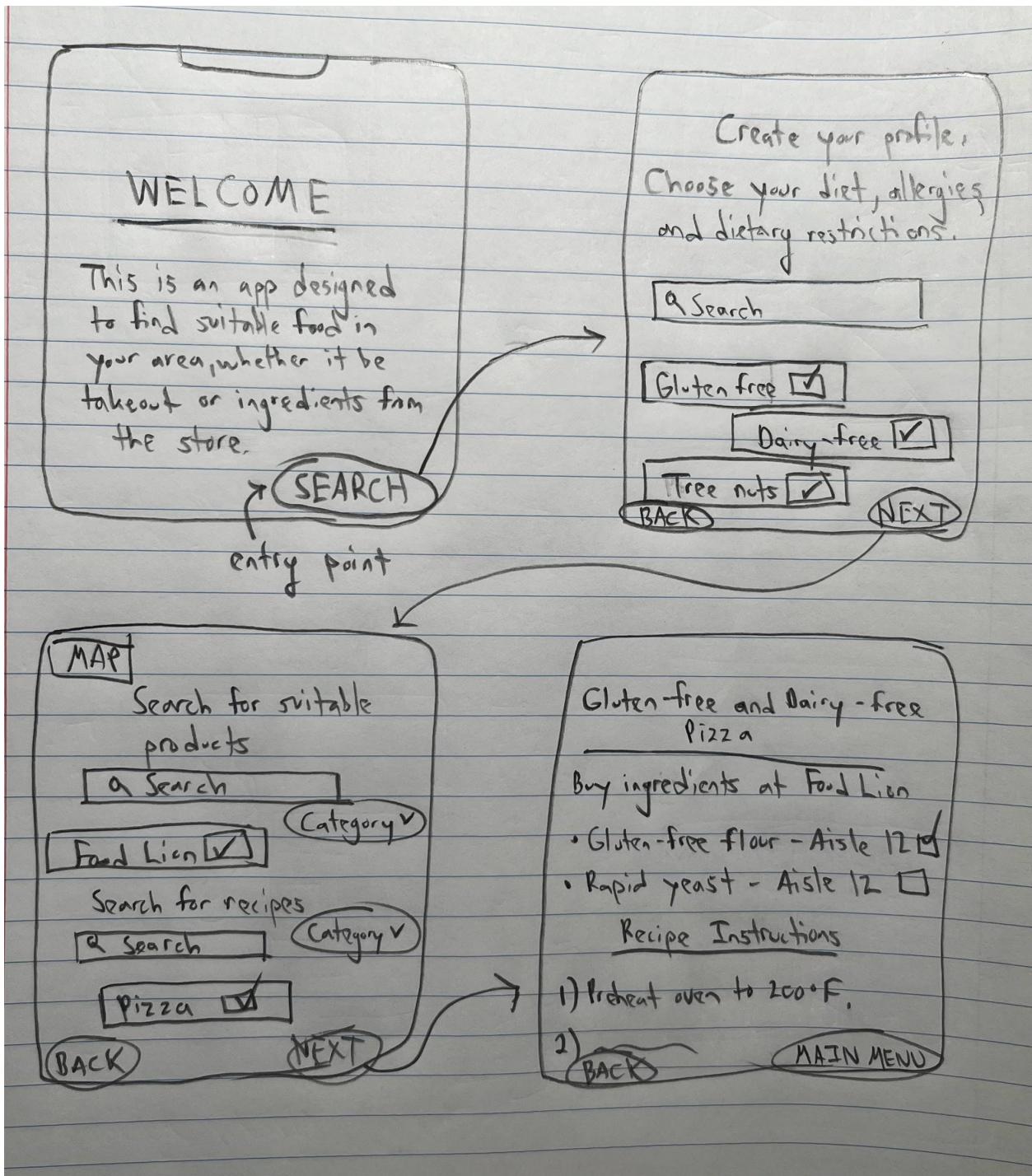


Cam and his friends know exactly what aisles to look in for the ingredients based off the app.



Cam and his friends follow the instructions from the app and make a delicious gluten and dairy free pizza. Cam is ecstatic that he can use this app to make both delicious and suitable food.

UI Sketch



Team Contributions

- Ryan West- Introduced new technological solutions for the solution space. Helped narrow down the goals of the project. Gave feedback for final project design and collaborated with teammates to create a realistic scenario.
- Samuel Joo- Shared and discussed in the design process and created the design storyboard and UI.
- Alex Karapetkov- Created the scenario, storyboard, and UI sketch for task 3.
- Josh Kuesters- Worked on the solution space, as well as, worked on the design selection processes and wrote what we discussed. Worked with teammates to figure out ideas and what to write.