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Dr. Stewart

CS 447 - Group 3

7 April, 2022

Group Assignment 3

Project Topic: Our project focuses on the challenges of moving to a new place and having limited resources to meet people and become familiar with an area. We want to provide our user group with access to information about their new home and resources to find roommates, friends, restaurants and activities to allow them to settle into their new home as quickly as possible.

Group Member Contributions:

1. **Hailey:** Contributed to the solution space write-up in terms of technological solutions that were found, explained our design selection process and completed the task scenario, storyboard and UI sketches in a timely manner. Lastly, I completed the hierarchical sketch for the task visualization.
2. **Katherine:** I worked on the section regarding how the previous solutions we found in I3 worked well to address our problem space. I touched on what we decided we wanted our product to do after the brainstorming session and described the feature regarding learning about the new area. I also completed my scenario storyboard, and UI sketch for making a profile within our application.
3. **Matt L:** I completed the section regarding why non-technological solutions are not our best option for the media of our project and the section about how the product addresses our persona's goals. I also completed my scenario, storyboard, and UI sketch for learning about the new area within our application.

4. **Matt M:** I completed the section relating to the features of the design idea. I also completed the UI sketch, storyboard, and scenario for joining a sports league. The last contribution I made was talking about our tasks and visualization.
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1. Solution Space

During our search for solutions, we found a combination of technological and non-technological solutions. In terms of technological solutions, we found many variations of mobile applications and websites that addressed different aspects of our problem. When exploring ways to find a roommate, we came across websites that allowed you to search available apartments by location and filter by different conditions such as number of bedrooms, whether AC is available or if washer/dryer are in the unit or by personal preferences such as pet-friendly, is smoking allowed, etc. An example of this type of website that we explored was Craigslist. This type of website is more focused on the actual house rather than the roommates and finds you a place to live with your desired preferences regardless of who lives there. Another aspect of our problem space that is addressed in current solutions is websites that focus on matching people based on their personality traits and habits. RoomieMatch.com allows you to fill out a profile which is looked at by a professional who will match you with a compatible roommate. This allows the users to be matched with someone with similar interests and habits which will most likely result in a better living situation for both parties. However, this solution doesn't find housing options in a given area and caters more to users who want to look at apartments or houses with their roommate rather than finding a place to live and trying to fill the vacancies afterwards. Another solution space was websites that allow anyone

moving to a given area to join and connect such as Facebook Group. This allows for users to casually meet people without solely looking for a roommate. People have the option to meet potential friends and ask for recommendations on restaurants and things to do in addition to possibly finding a roommate. Lastly, there are also a group of websites and apps that address our problem of finding new places to eat and things to do. It is important to learn about the community of a new place in addition to finding a place and people to live with. Yelp.com and StreetAdvisor were two websites that encompassed this idea and allowed users to see menus of restaurants, read reviews on attractions and access other information about an area. Our application will hopefully encompass all of these aspects into a single application so users can find compatible roommates, new favorite restaurants and new things to do all in the same space.

We also found a variety of non-technological solutions through our research into this solution space. Some of these non-technological solutions revolved around physical events where people could meet. Examples of these events include alumni networking events, a new grad fair, and events held at a community center. These solutions cater to the goals of finding employment, meeting people who have recently graduated, and meeting people that live within a person's new community. Another subgroups of these non-technological solutions include physical resources that people could visit and interact with. Examples of these include bulletin boards within a community and community sublease boards. Bulletin boards help advertise different services or organizations. Community sublease boards offer a way for people to find short-term housing within an area.

The portion of our problem space best responded to by other solutions seems to be finding a roommate in a new area. A nice feature that a lot of the solutions we find with regard to finding a roommate included the ability to contact people you might be interested in living with in order to get to know them better. The other main part of the problem space we identified that was well responded to by other solutions is reviewing places in the area. Most of the existing solutions we identified were fairly open and allowed users to add to them however they desired. This seemed particularly positive considering most of the people we interviewed in previous parts of the project specifically said that they learned more about a new area by talking to people than they did by reading the opinions of one person. Ideally, by pulling information from other members of the community of interest, the information is able to stay up to date.

The non-technological solutions for this problem are all outdated and not as useful anymore. This is due to simpler and easier solutions being provided. For example it is easier to post about yourself and connect with people online than it is to put your contact information on a local bulletin board, hope someone sees it, hope that this person is from or moving to your area, and wants to connect. The technological solutions are lacking as they all seem to be niche solutions, as opposed to an all encompassing solution. There are many solutions to meet a roommate or people in a new area, but not learn about the area or find a place to stay. The solutions where you do connect with people are lacking in a way to genuinely connect with or learn about the people you are meeting. For example, it is easy to connect with people and say “let’s meetup”, but what do you actually do and how likely is it that this happens?

2. Design Selection Process

During our brainstorming session, we took turns explaining each of our ideas and what problem space it addresses. We discussed both our technological and non-technological ideas but all of us seemed to lean towards a technological solution that could be used by a wide range of people from anywhere in the world. As we explained our ideas, a common theme we wanted to focus on was making sure the product was easy to use and self-explanatory with enough sections and filters to find the ideal roommate, restaurant, closest hotspot or attraction easily. We found that a lot of the websites we looked at addressed one of these issues but not all of them in the same place. We also found that some of the websites were overwhelming with too many options so we want to prioritize simplicity and design the application in such a way that only applicable filters are visual based on the current page. We felt that a mobile application was a more suitable format for our product so it can be used on-the-go. Since these concepts are important to our design, we started incorporating features from our sketches that helped us meet this goal such as search bars, filter components, and simple and easy to navigate screens. We checked for originality by searching online for similar products and made sure nothing like ours existed. Although there are many websites that allow the user to find roommates or restaurants, we didn't find any that incorporated all the ideas into one space and was available through a mobile application as we plan to do.

After discussing all our ideas, we were able to create an online application that would allow users to find roommates, restaurants, attractions, and hotspots such as grocery stores, pharmacies and schools within a given area code. The users will be individuals who are new to an area and want to become acclimated to their new home. We want to encompass all of these aspects of life into a single easy-to-use application.

Our application is designed to help foster a sense of community with new people in an area. Specifically, it provides information on and assistance with pain points we identified in the previous research we've done for our project. Since our application runs online, it would store the information about the users from their profiles and the data about restaurants, activities and hotspots in a database that can be accessed when needed. Each user will fill out a profile and roommate quiz and this information will be stored in our database. The information will be used to find compatible roommates and suggest restaurants, activities, and other amenities based on the user's preferences. By using the information in this manner, we will be able to give each user a custom experience that is tailored to their needs.

Our application is broken up into four main categories to simplify relevant information for new members of a community. These four categories include roommates, information about the area, businesses and organizations, and a social category. Each section only contains information about that specific category to help avoid confusion from users. In the roommates category, basic information is used from your profile to display to potential roommates. In addition, a survey is given in order to find out more information specific to housing and living arrangements. Potential roommates are shown sorted by likelihood of compatibility based on needs and the survey. Security measures would also be taken to confirm the identity of someone looking for a roommate.

The next section deals with information regarding the area. In this category, people can come together to discuss certain parts of a location or city. This category can further be broken down into information regarding schools, the safety, and cleanliness of a certain part of a location. There is also a service available in this category for a new

member of the community to enter their new address and get recommendations for essential services around their residence. This information serves as a guide for new members that includes grocery stores in the area, barber shops, health clinics, and other essential information. These recommendations would be based largely on proximity to the address entered by the users where they can choose from the options nearby and click on them to expand for more information and reviews to assist in making an informed decision.

The third category encompasses things to do in a new location. Once a user clicks on this category, they would be prompted with subcategories of restaurants, services, organizations, events, and other activities. For restaurants, a user would be displayed a list of restaurants that they could filter by proximity, rating, and type of food. People could click on these restaurants and give ratings to help others pick the right place to eat. One of these categories is events, this includes meetups for new members of the community or social events with the community. Another subcategory includes a list of local organizations. Members can search these organizations by topic such as sports or religion to help integrate into a group of likeminded people.

The final section of features we're hoping to include in our product is a social aspect to help make friends and learn about the area. It is here that users can work on creating a profile that will be shown to other users looking to make new connections in the area. There may also be a survey/quiz to help match users new to the area with organizations and events that they may enjoy. This is also the section where we will group in our chat feature, whether it be one-on-one with other users or in a group that could be created off of shared interests, proximity, or other user created groups.

Our persona Mark will interact with our design by first filling out a profile about himself as well as a roommate quiz that specifies what qualities he wants in a roommate. His profile would include that he is a 21 year old college student from New Jersey. He would also add that he is graduating from JMU with a degree in Business Management, enjoys playing sports such as baseball, and is in a fraternity. In the roommate quiz, he would include how he's social, goes to bed relatively early during the week but wants to get out and meet people on the weekend. He would also add that he loves pets and would love to get a dog at some point and that he is very clean and organized. This information will advise the suggestions that the application makes in terms of good roommate matches, restaurants, attractions, hotspots, etc. After filling out this information, Mark will be able to look at the subsections from the main page and choose a category to explore. As an example, Mark decides to select the 'Roommates' tab. He will be redirected to a new page that is specifically for finding roommates. There would be additional filters for Mark to use on this page such as preferred roommate gender, age, sleeping schedule, etc. to further filter his search for a roommate. There would also be a list of suggested roommates that are good matches for Mark based on his personality and habits. This list would be altered by the further specifications Mark makes by applying filters. Mark would be able to click on any of the suggested roommates from the list and view their profile or message them if they seem like a good fit. Mark can navigate back to the main page and explore the other subsections and their features. Each subsection has their own unique features that Mark can interact with as explained in our '*Features*' section in the paragraph above.

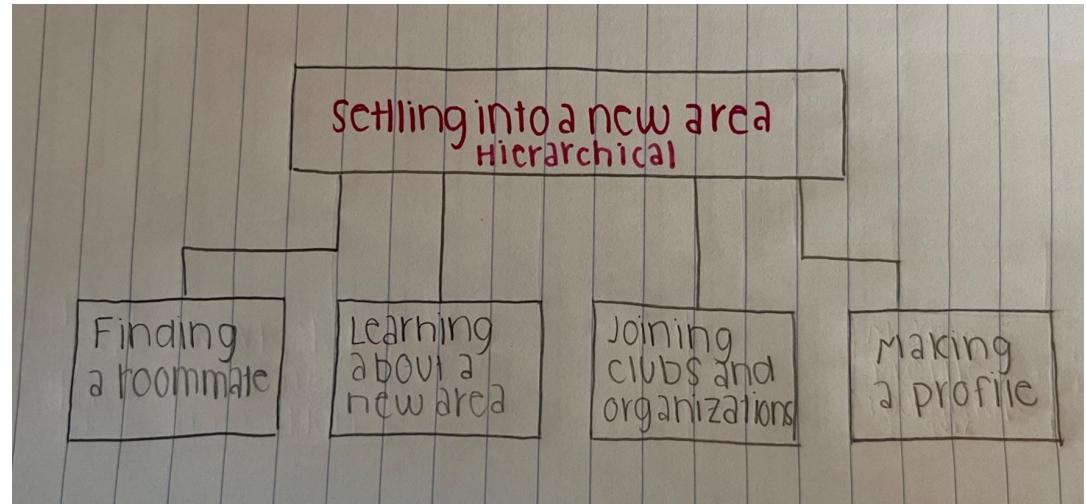
The main goals of our persona from G2 are to find a roommate, make new friends, and be comfortable in his new area. Our app responds to these goals as we have features to find a roommate, meet new people in the area, and get involved in the community, which in turn will make the user feel more at home. Our first requirement is to filter functionality, making it simpler and easy to use. We will do this by splitting our app into four main sections or links of roommates, about the area, activities, and a new connections section. This will allow the user to easily decide and accomplish whichever their given task is. Our second requirement was to filter constraints, which we will do by limiting the number of filters we implement when searching for roommates, activities or anything else. The next requirement was to crowdsource information which we accomplish by allowing the users to leave reviews on areas and specific businesses such as barber shops, grocery stores, or neighborhoods. The next 2 requirements are to be able to connect with other users of the app and join groups or get involved in the community. Both of which are handled by our features of the personal profile to connect with people and our activities and events page. The final 2 requirements are more implementation based, one is to handle a certain number of users (50,000) and the other is that it must be accessible on a mobile device. These are not handled at this point of our development. The one requirement that was not handled was the ability to compare areas. We decided against implementing this as we want the app to be for people that are certain they are moving to a specific area and need help connecting with people and learning about the area.

Our idea is original as it is an all encompassing app for anybody that is looking to move. There are more niche apps that can help you accomplish singular tasks such as

finding a roommate or show you reviews of an area, but there isn't a one stop shop to accomplish all of these tasks specifically for people new to an area. It is creative as it combines many different features of functionality to accomplish many tasks in different ways. For example, you can get a broad overview of an area, or a specific user review of a specific shop a block from your new home.

3. Design Concept

Task Description and Visualization: Our overarching task for our application is to help Mark settle into his new location after graduation. From here, there were four tasks that we identified as important for Mark to accomplish this. Mark must make a profile to help people and potential roommates learn about him. He will also have to find a roommate to live with in Austin. Using the roommate feature of the application will make this process easier. He will have to learn about the area and the businesses and services located around his apartment. Lastly, Mark wanted to join a sports league after graduation and will use the application to help find a competitive baseball league to join. Each of these tasks will help Mark settle into his new area and feel more comfortable. In terms of relationships between the four sub-tasks, Mark would first make a profile and then go through each of the other tasks as he sees fit. Since we envision our application as a main problem with subproblems, we drew it in a hierarchical design.

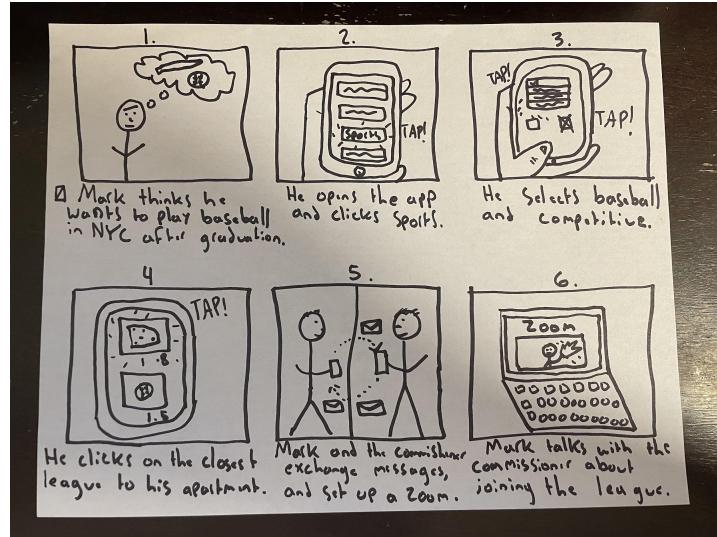


a. Task 1: Joining a local sports team (Matt McKenzie)

i. **Scenario:** Mark Qualimus is graduating from James Madison University in less than a month. During his time in college, he was an active member of the club baseball team. Some of his best memories from college were made with the guys on the baseball team and he would like a similar experience after he moves to Austin after graduation. Mark opens his iPhone and opens our application. Mark has used the app before and has previously entered the location of his new apartment into his profile. He taps on the businesses and organizations tab and is prompted with different subcategories of businesses and organizations. He clicks on sports organizations and is brought to a separate screen that lists different features of the sports leagues. He chooses baseball from a dropdown menu and clicks on the competitive setting. He feels like because of his experience playing in college that he is good enough to play in a competitive league. Mark then scrolls through different competitive baseball leagues sorted by proximity from his apartment. He picks the

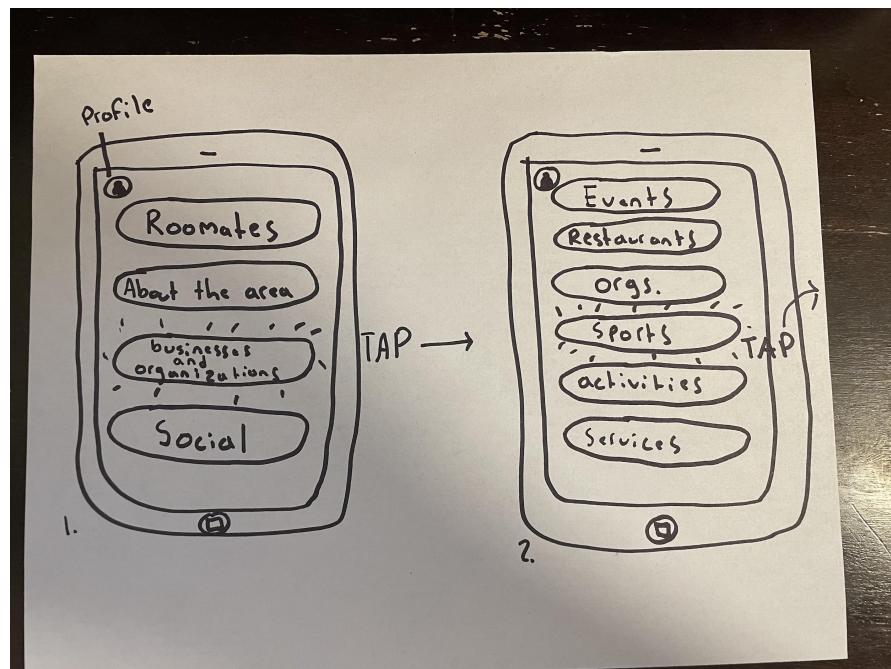
closest league to him which plays at a park .8 miles away from his apartment. He messages the commissioner on the app about joining the league. The next day the commissioner messages him back and they set up a Zoom meeting to discuss Mark joining the league.

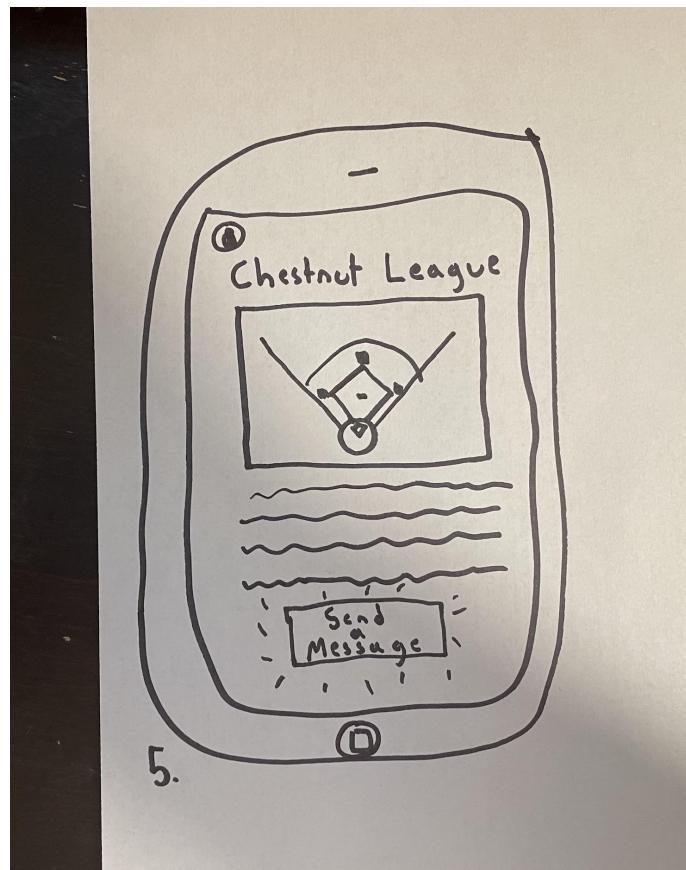
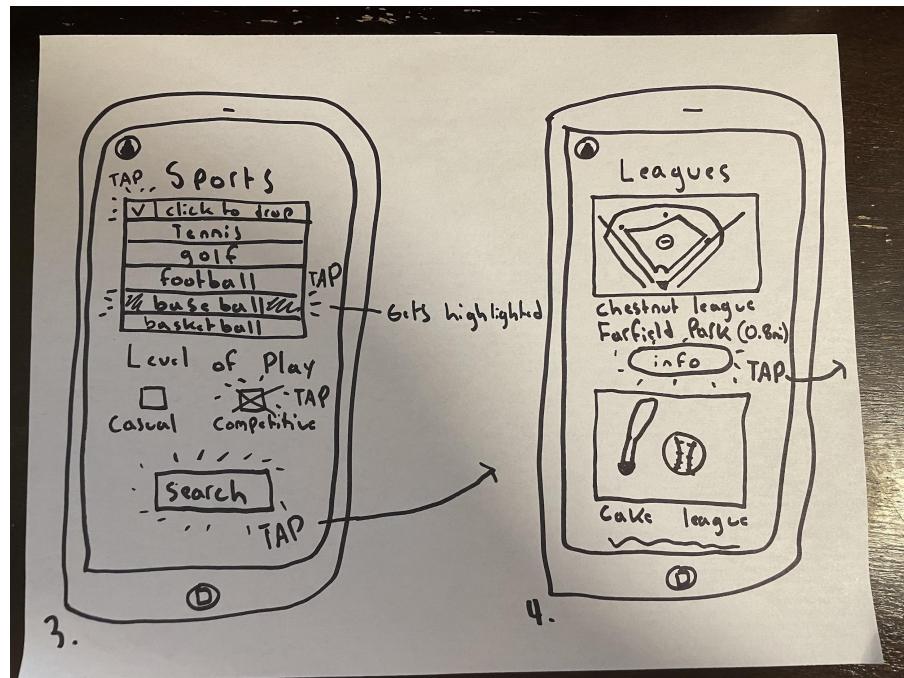
ii. Storyboard:



iii. **UI Sketch:** These UI sketches detail the process of getting information about local sports teams. When Mark first opened the app on his phone, he started on the home screen which displays the four larger categories. He taps on the businesses and organizations button and is brought to another screen. This next screen displays more specific options that fall under businesses and organizations. Both of these screens have limited options that ensure the user does not get overwhelmed and the app stays intuitive to use. He moves to the next screen after tapping sports. From here, Mark clicks the dropdown menu and selects baseball as the sport he would like to find a league for. He also selects that he would like to be in a competitive league. He then presses the search button which brings him to

screen 4. On this screen Mark is given different options for competitive baseball leagues sorted by proximity to his apartment. He can scroll down to get more options. He clicks on the info button on the closest league and is brought to another screen that details more information about this particular league. He reads more information on this baseball league and determines that he would like to join. Mark presses the “Send a Message” button to send a message to the commissioner about joining the league.

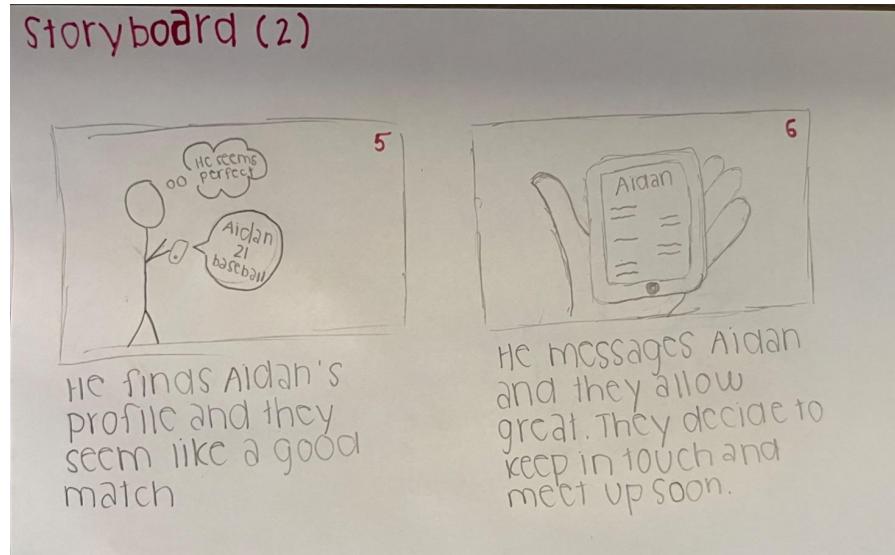
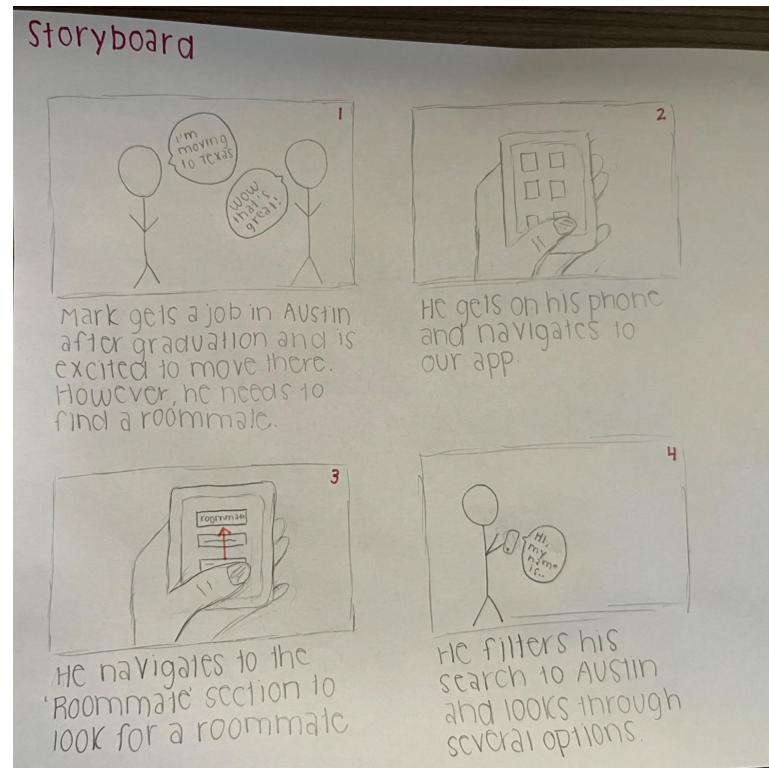




b. Task 2: Finding a Roommate (Hailey)

- i. **Scenario:** In this scenario, Mark has decided that he is moving to Austin, TX after graduation and needs to find a roommate. He goes on his phone and navigates to our application. He has used our product before so when the screen loads, he is taken to the home screen that shows the different subsections that our application caters to. He selects the ‘Roommate’ tab and is redirected to a new screen where he can see a search bar for the given area he is looking at and filters describing a roommate that he can alter to match his preferences. Below the search bar and filters pane, he can see a list of potential roommate suggestions that are filtered based on qualities he outlined in his profile. He decides to enter the zip code of Austin into the search bar to specifically look at people who have also designated Austin as their new home. The page refreshes and he can see a bunch of potential roommates that look great. He clicks on a couple of the people listed and reads their bios before finding Aidan. Aidan is a 21 year old male who is moving to Austin, TX as well after graduating from FSU in May. Both of them play club baseball at school and are majoring in Business Management. Mark decides to message Aidan to talk to him more. He messages Aidan and they chat back and forth for a while before deciding to meet up over the summer as they are both from the same part of New Jersey. They make plans to get lunch and stay in contact during the remainder of the semester.

- ii. **Storyboard:**

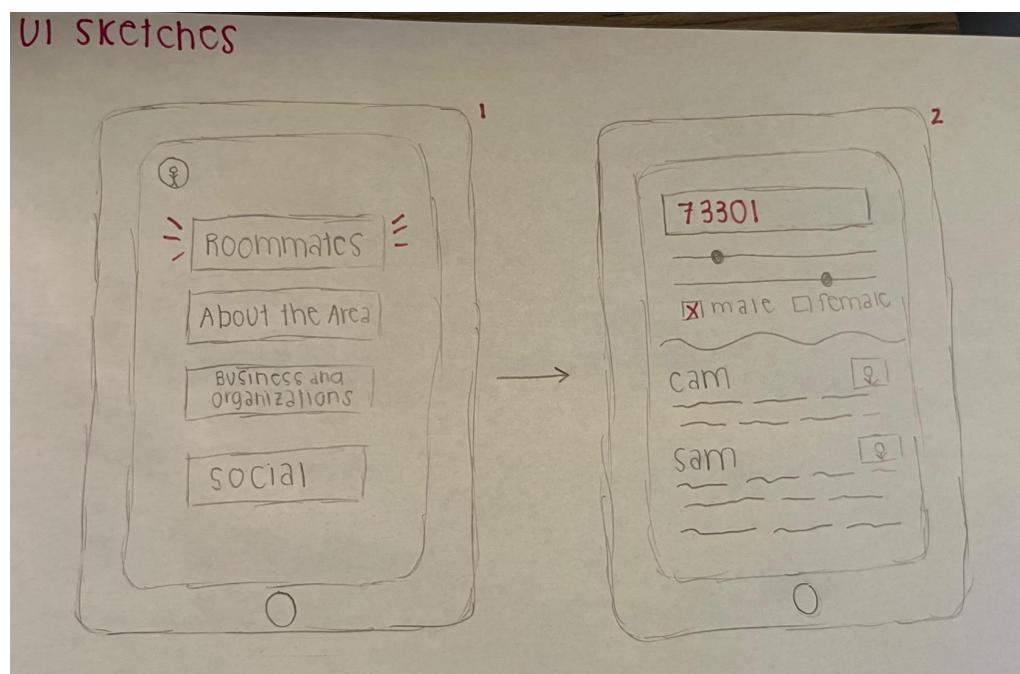


- iii. **UI Sketch:** When the user initially opens the application, they will see the screen presented in Sketch 1. This screen will show several buttons that display the different subsections that are available to explore within the app. In the top left corner, there is a little icon that represents the profile

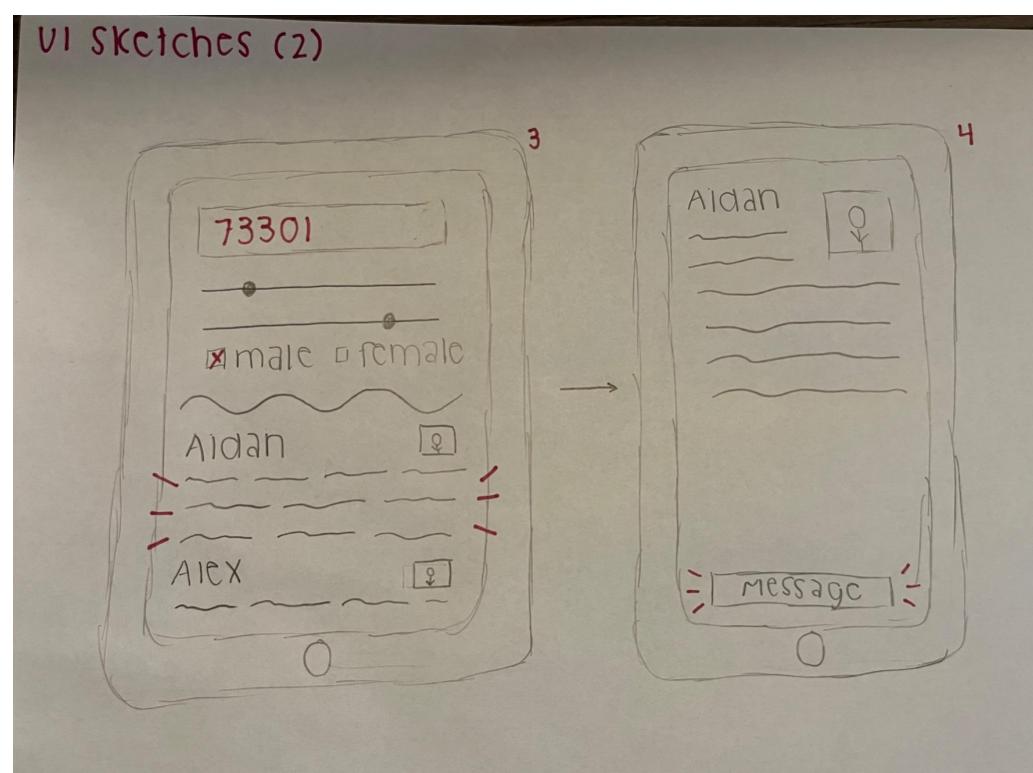
that the user makes when they use the application for the first time. We wanted to keep the primary screen very simple and only provide details as needed on the subsequent screens to avoid overwhelming the user with options. In the sketch, the pink lines indicate a *TAP* on the ‘Roommate’ button and the screen transitions to the next sketch. In Sketch 2, there is a search bar that is made to search based on zip code. The two sliders and checkboxes below are meant to represent filters that we will include to allow the user further narrow their search. We want to implement these filters in ways that simplify the design and minimize user error. Sliders and checkboxes are pre-determined the values that will be implemented to manipulate data that we know is available. Below the filters, there are bios of several people who would be potential roommate options for the user. From this screen, the user could view these people’s name, profile picture and some of their bio. The pink numbers in the search bar and the checked checkbox indicate that the user has applied filters which moves the user to the next screen. In Sketch 3, the user will see a very similar screen to Sketch 2 but now the people displayed in the potential roommates section will only be people that match the filters that were specified. The user can see options for potential roommates and decides to select ‘Aidan’ from the list and learn more about him by tapping on his profile blurb. The pink lines indicate a *TAP* that moves the user to the next screen. In the next screen (Sketch 4), the user will see Aidan’s entire profile with his picture and full bio. There is also a button at the bottom that will read “Message”.

We wanted to keep this page simple as well and only offer important features to the users. The pink lines show that when the button is tapped, the user will be redirected to a new screen which is explained in Sketch 5.

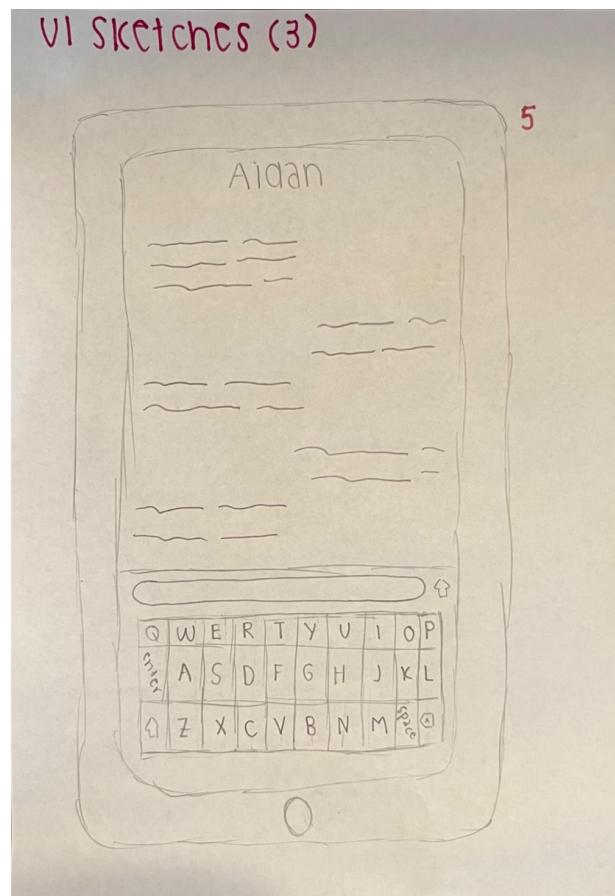
In the final sketch, the messaging screen is shown. It would mimic a traditional messaging layout with previews of the messages in the main part of the screen and a keyboard in the lower half. The user would be able to message back and forth with Aidan and learn more about each other or even make plans to meet in-person.



UI Sketches (2)



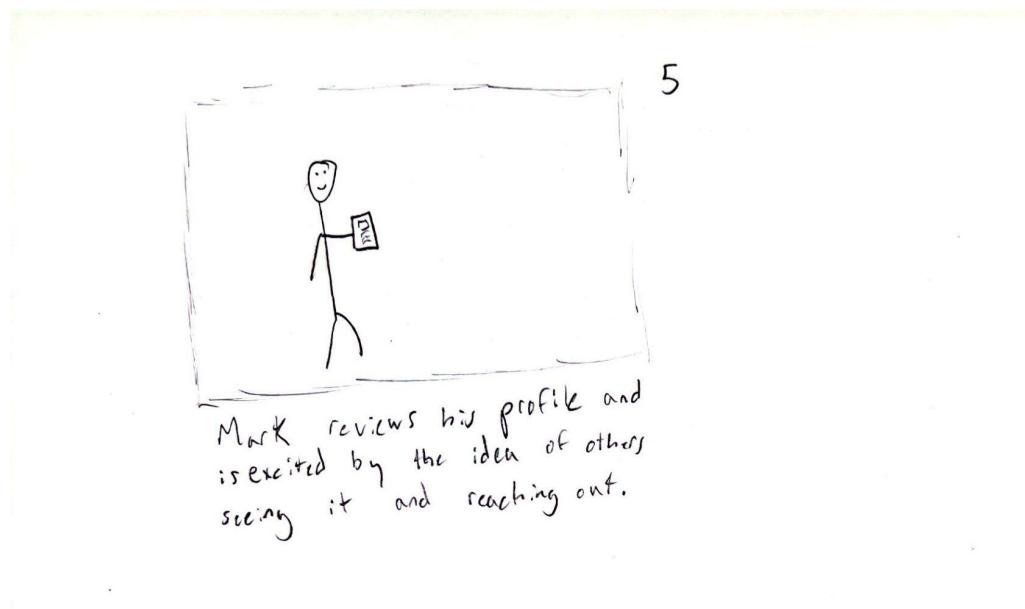
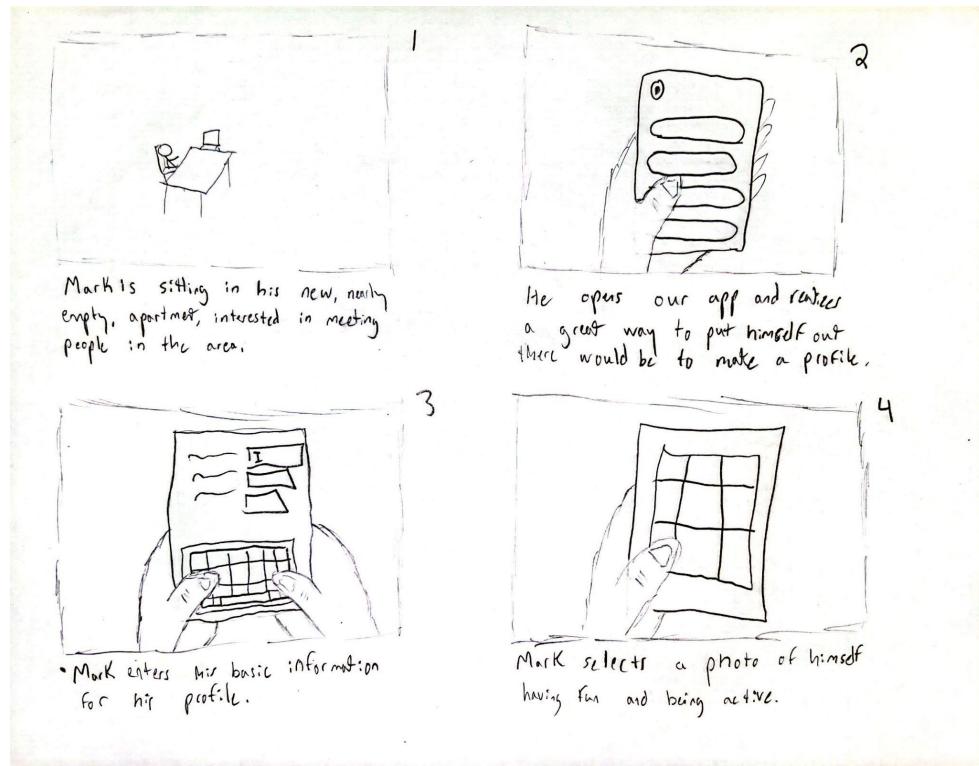
UI Sketches (3)



c. Task 3: Set up Profile (Katherine)

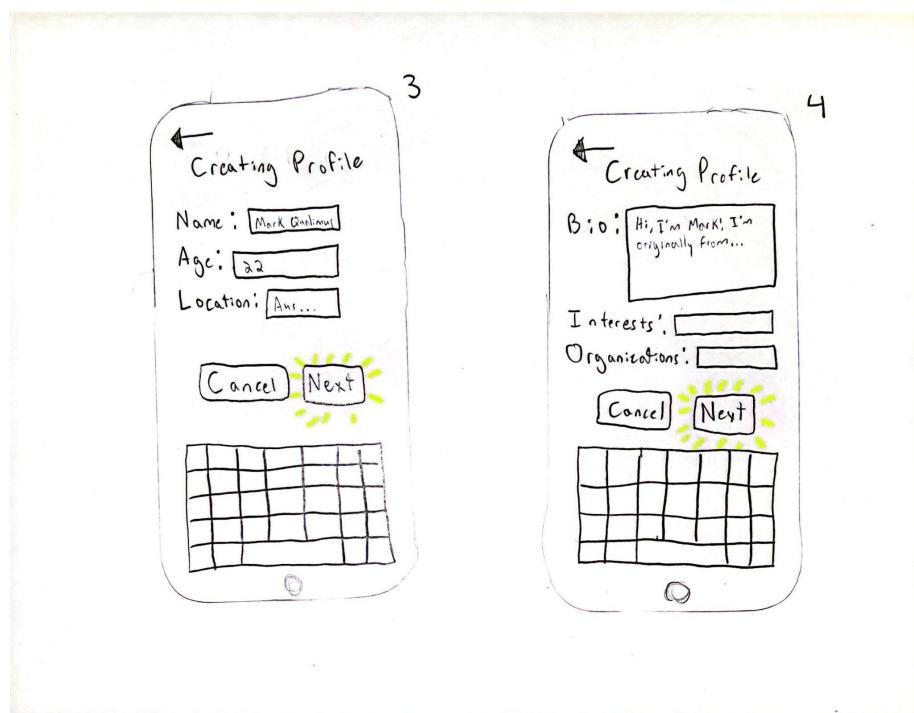
i. **Scenario:** Mark is new to the area and new to our application but is excited by the idea of meeting new people through it so it's time for him to set up his profile. He opens the app and clicks in the top left hand corner and clicks 'Create Profile'. There he is prompted with and answers the following questions for his basic information: name, age, and location. Once that information is inputted, he sees a box asking for a short description of himself and enters "Hi, I'm Mark! I'm originally from New Jersey but went to college in Virginia at James Madison University. I majored in Business and specialized in Management but spent a lot of my time hanging out with friends from Baseball and SAE. I'm new to Austin and excited to get involved in the area!". He sees he has the option to enter organizations he's involved in as well as interests he has. He considers for a moment and enters baseball, going out, and listening to music. Mark has the ability to connect his profile to organizations in the area he's involved with but doesn't yet since he is yet to join any. As the final step in creating a profile, Mark scrolls through his photos to find one that he likes and sets it as his profile picture. Once that is completed, he is able to view his profile how others will see it and is asked to confirm before uploading it for others to see.

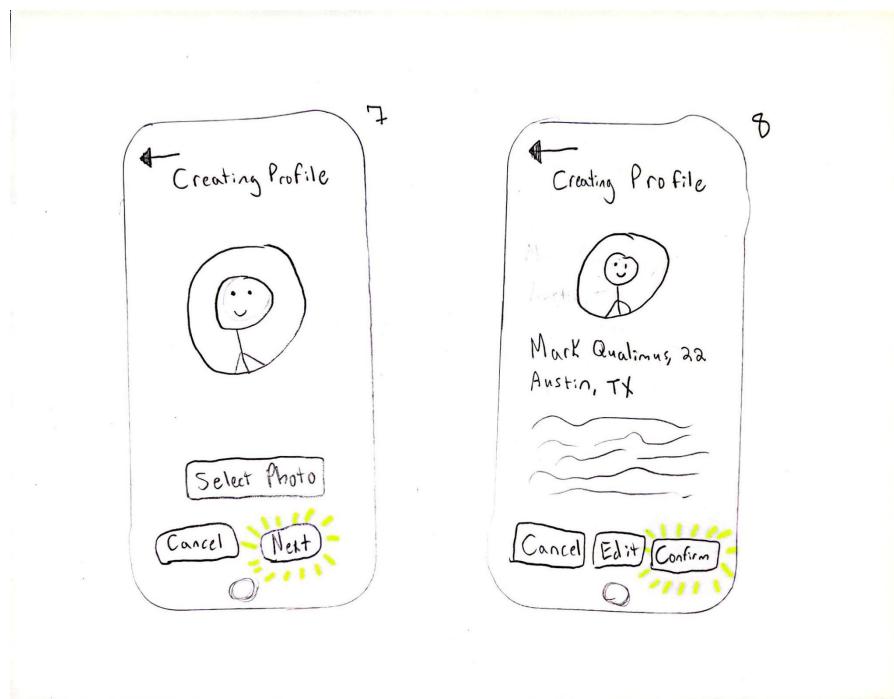
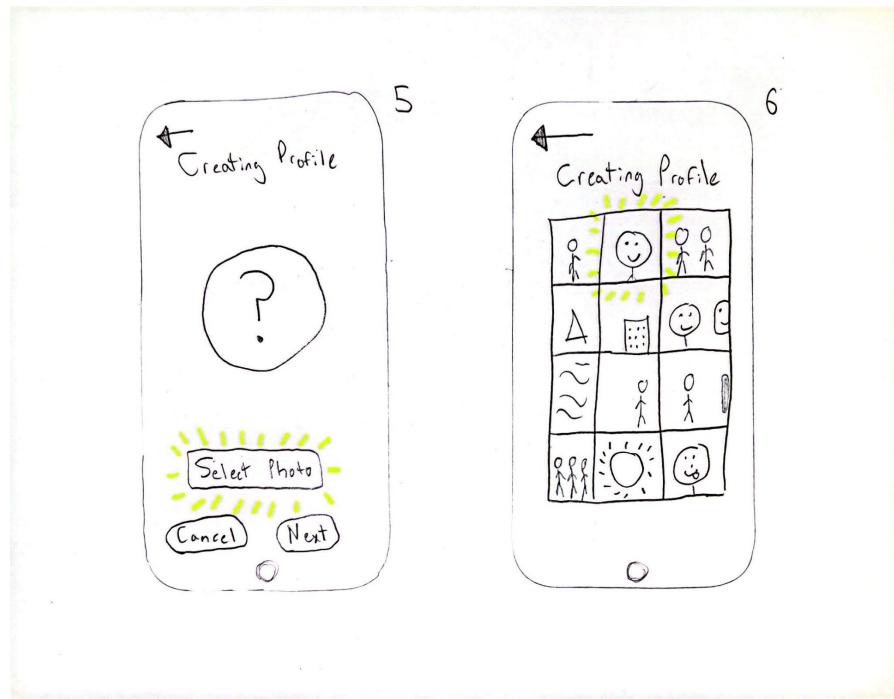
ii. **Storyboard:**



iii. **UI Sketch:** In this UI sketch, yellow lines surrounding something means that it is tapped to continue to the next screen drawn. When the user first enters the app, they are presented with the homescreen (Screen 1). The

homescreen has four main buttons as well as an icon in the top left corner that can be pressed to open the user's profile. Once Mark clicks this button, he is presented with a message saying he is yet to create a profile and a button that allows him to start the process (Screen 2). Once Mark clicks the 'Create Profile' button, he is prompted to enter his name, age, and location so that other users can view that information about him if they were to click on his profile. Once completed, Marks clicks the 'Next' button to continue the process of creating his profile (Screen 3). Here, he is asked to write a short bio describing himself, enter his interests, and add any organizations in the city that he is a part of. Now that he has inputted that information, he once again clicks the 'Next' button and is taken to the next part of the profile creation process (Screen 4). On this screen, Mark can see he has not selected a photo for his profile yet and clicks on the 'Select Photo' button (Screen 5). Tapping this button shows him his photos and he can scroll through them and choose his favorite to set as his profile photo (Screen 6). Now that Mark has selected a photo, he is shown it and taps the 'Next' button to continue to the next step (Screen 7). Finally, Mark is presented his completed profile as other users will see it and is given the option to either continue editing it or confirm and publish it to the application (Screen 8).





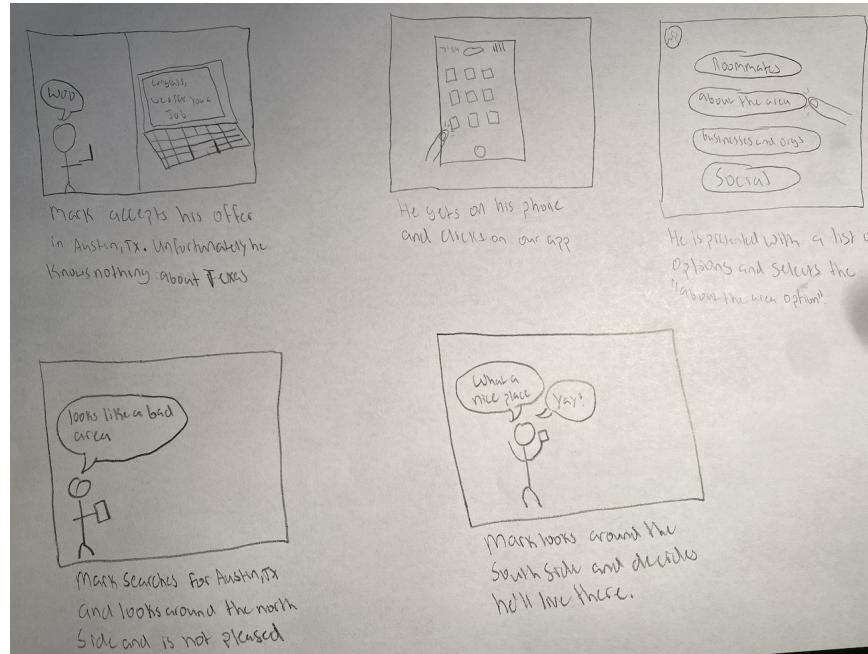
d. Task 4: Learn about New Area (Matt Lansford)

i. Scenario: Mark Qualimus has just accepted a job offer in Austin Texas.

Unfortunately, Mark has never been west of Tennessee and knows

absolutely nothing about Texas or that area of the country. So he takes out his phone and opens our application. When he opens our app he is presented with the different options he can choose from. He selects the “About the Area” button and is presented with a new screen. He enters his new location and the screen displays a community hotspot guide that shows necessary businesses that you will need in the area such as grocery stores or barber shops along with reviews of these businesses. There is also a google maps type of map that mark can click on to get a street view or virtual tour of the given area. Mark reads the reviews about the businesses and area on the north side of Austin and is unsure if he would like to live on that side of town. To further influence his decision he decides to get the street view of the area near an apartment complex he was looking into and confirms he does not want to live there. He does the same with the south side of Austin and finds a much nicer area with better reviews and decides he will live down there.

ii. Storyboard:



iii. UI Sketch: When the user first enters the app, they are presented with the homescreen (Screen 1). The homescreen has four main buttons as well as an icon in the top left corner that can be pressed to open the user's profile. Mark selects the "about the area" button and he is taken to screen 2 where he can search for his given area. Mark types in Austin and is taken to screen 3 where he is presented with local hotspots around the area including barber shops and grocery stores as well as a map of Austin. He clicks on a grocery store and is taken to screen 5 where he can see user reviews of the grocery store as well as its rating. He goes back to screen 4 once he has read them and then drops a pin on an area up north to see a street view of the area (screen 5).

