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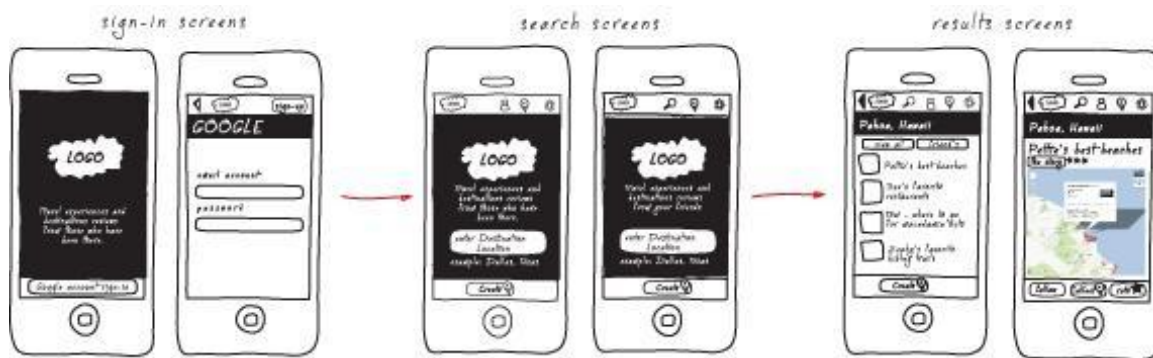
Footprints Mobile Application – Final Paper

Focus of Project

For our project, we developed a prototype for a mobile application called Footprints. Footprints is a mobile application designed to help travelers experience curated destination maps from other trusted users. We want maps and trip recommendations to be from users that have a story to tell or share uncommon knowledge about the places they have visited. Each of us knows about the best place or our favorite places for certain things such as restaurants, outdoor recreation spots, concert venues. This app will provide users with access to personal and unique destinations. Footprints users are not only able to find the best destinations based on their traveling needs, but they may also share their personal and unique experiences about a particular location.

Our application gives users a platform to share maps created with an existing tool developed by Google called "My Maps." Google's "My Maps" is an excellent tool for assembling map markers onto maps. However, it does not extend functionality into map sharing or allow users to easily share their map creations. Footprints is the solution for extending and expanding a users' map value. Footprints maps are embedded with a Google map, personalized destination information added by the user and the power to share those maps and experiences with others. The main features of the application are search, browse, rate maps, add new maps, save the maps of others, categorize maps, and add friends. In an effort to support users with privacy concerns, Footprints also allows users to limit the scope of the maps they put into the application. With Footprints, user's can plan unique experiences: a day trip, a month-long excursion or a guide that can be used without any time constraint.

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User Groups

This app would be useful for users interested in seeking, recording, and/or sharing entertainment, dining, historic, or general information about a particular area. This tool would be especially useful for travelers, but would be equally useful for people who move to a new location, or for anyone that wants to know learn more about their location and what is available to them. For example, an app user may be traveling to Portland, Maine for the first time on a weekend getaway and would like a map of a Portland resident's favorite lighthouses. He would get those lighthouse locations after browsing for maps created for Portland. A student at the University of Texas may know the best places to nap around campus, and would like to share that map with other students. This tool would help him share this information that is not known by most students. The app not only makes it easier to navigate your surroundings and accomplish travel goals, the app provides a way to share knowledge about a shared place.

User Tasks

1   Footprints will allow users to search for maps that others have created based on destination and interest. A general search would provide shared maps that meet the interests of the user.

2   Users will be able to include their own personalized maps with individual locators based on their own travel experiences. These personalized maps will have specific subject and destination content – *example*: a user wanted to include a map on their favorite hiking trails in Yosemite. This user might include some of the following items: photos, reviews, where to find the trailhead, etc.

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3   The other major task that our app will provide is maps sharing. For example: a corporate traveler could create a map based on best restaurants, cabstands, hotels, etc. This valuable information could be shared with colleagues traveling to the same location. Map creators do not have to share map, these maps could be kept private if desired.

Personas, Goals, Tasks and Scenarios

Sandra Rose - *persona*

Sandra is a 32-year-old production assistant working for a book and magazine publishing group specializing in cookbooks and articles on the culinary arts. She has worked for her company for the past 12 years and as a part of her production duties she travels once a month to check out cities and restaurants where the latest trends in food are being explored. She then reports back to her colleagues and superiors her findings.

About 45% of Sandra's job involves travel. Sandra rarely visits one place more than a couple of times a year and her travel takes her to all parts of the US. She may visit large cities like New York to learn and write about a trendy new restaurant's signature salad and turn around and go to smaller hamlets like Greenwood Mississippi to do an article about how to cook grits the southern way. Sandra will often go from one city to the next without returning to her office.

Sandra is a vital part of a small publishing production team whose role is to scope out possible restaurants or food stories for her executive and team to pursue. Often times this requires her to travel to that location and do a preliminary outline of the story idea, take some photos and get a general feel for the area and what people are saying about her subject. As a part of a team, it is Sandra's responsibility to send the information to the senior editors and marketing executives for consideration.

Because Sandra travels a lot she has learned to travel light and only take to her locations the items necessary to do her job. Sandra carries only a small laptop computer

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and mobile phone, which are her constant travel companions and are relied on to be the only tools that are necessary to gather and share the information she gathers. She uses these mobile devices to book travel, find the restaurants/eateries, locate meeting places, find contact information, submit articles, inform colleagues and communicate with her office.

Because Sandra is out there learning about the latest trends many of her colleagues look to her for advice and information, which she is happy to share.

Key Goals

1. Find possible locations where people are raving about a restaurant or a food item in a particular area of the country.
2. Once the location is determined, based on user experiences, go there and scope out the stories to see if they merit publication.
3. When a location is considered noteworthy, note where that restaurant/eatery is located and jot down a few notes about that location's merit for publication along with a few photos to help convey the experience.
4. Create a simple way to share the information that is gathered with colleagues in a way that allows them to easily find these locations and any associated reviews.

Tasks

1. Find "hot" restaurant locations for magazine.
2. Visit location and verify quality based on user ratings and comments.
3. If it's good, create a map based on your selections.
4. Share information with colleagues.

Scenario

It is a busy morning and Sandra has been asked to research some information on a planned article on best places to eat barbeque in and around the Pahoa, Hawaii area. This article is a part of a bigger magazine spread that will include recipes and recommendations for the best places to buy organic produce in the same area. Sandra is running late and needs to identify what the barbeque experience is in the Pahoa area based on reviews and personal experiences.

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Sandra goes online and searches for places to eat barbeque. Sandra very quickly gets search results that identify barbeque restaurants but finds it difficult to see what diners are saying about these choices and where they are located. She scrolls around and finds some reviews but would like to know from Pahoa diners who like and eat barbeque on a regular basis where they eat and why and if they rate one location better than the other. She would also like to know if location plays a part in their dining evaluation.

Sandra then enters "organic produce in Pahoa" into her computer's search engine. The results list several locations where organic farmers sell their produce. She then enters "best places to find organic produce in Pahoa" into the search engine which produces much the same results as the first search.

A colleague tells Sandra about the Footprints application – a mobile application designed to help travelers by telling them about the experiences of other travels in a particular location. Sandra logs into Footprints by entering a user name and password and allows her settings to share her own maps and the ones she finds interesting and useful with her circle of friends. Sandra then enters "Pahoa" in the *Where are you going* input field. Sandra views the scrolling list of personal experiences with titles like – *My favorite places to find coffee after hours in Pahoa* and *My picks for antique shopping in Pahoa.* She finds several maps for barbeque and the best places to find organic produce in Pahoa. From this list, she clicks on several of the Pahoa links for barbeque and organic produce where she finds maps that pin locations in Pahoa and reads personal reviews. She is able to share these maps with her team by clicking Footprint's share button that adds these and all new maps that she creates to the her personal list of maps.

Once in Pahoa, Sandra finds a couple of very interesting locations that will meet her assignment. She goes to Google maps and creates two maps with locations, photos and short reviews that she creates – one map for each item – barbeque and organic produce locations. Sandra then adds these maps to the footprints app, which makes these maps available to shares with her team back at the office. Sandra leaves for her next location.

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Her team can simply view her locations and notes and the other maps she has collected on Pahoa's barbeque restaurants and organic produce and determine if they will make the next edition.

Alex Sheel - **persona**

Alex Sheel is a 25-year old assistant-manager working at the Gap in Austin, Texas. He was working as a lead sales associate at a location in New Orleans before he relocated. The Gap offered him the management position as soon as it became available. Alex accepted the position in Austin, so he could have a bit more freedom: nights/weekends off, vacation time and benefits. He also had a few friends there that went to college at UT Austin and figures he would give it a shot.

Alex is married. He and his wife were both born and raised in New Orleans, and were very comfortable with the terrain. They both knew all of the great restaurants in town, their favorite movie locations, best art galleries, etc. Alex and his wife have been in Austin for a little over a month. Alex is using his mobile phone map application at all times for directions. He is only in the early stages of being comfortable with his new position with the Gap and surroundings.

After a couple of weeks unpacking, ordering out for pizza, and watching Netflix movies at home, Alex and his wife are getting anxious to explore and find some places for entertainment, nightlife and food around Austin. They look around online, check reviews on Yelp, search the Web, and talk to. Alex finds it very difficult to trust any of those resources. Using these resources and through trial and error, Alex and his wife manage to find an only two places around town that they actually like. They had the most success by combining recommendations from their friends and from ratings websites. Yelp was often inconsistent, and he found it difficult to remember the names and locations of their friends' recommendations.

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Key Goals

1   Look for recommendations for food or entertainment in the local area based a location search criteria.

2   Once recommended locations are found that meet search criteria, determine how you trustworthy those recommendations actually are.

3   When it can be determined that these recommendations are trusted, save that information for future use (i.e. making dinner or activity plans, giving the recommendation to a friend).

Tasks

1   Find entertainment/dining in local area

2   Determine trust in recommendations

3   Save trusted maps.

Scenario

One afternoon, Alex is working on a yearly inventory check at a Gap location in North Austin along with some other Gap managers from around the area. It's almost noon, and he needs to head out for a lunch break. He doesn't know anything about the North Austin area, so he goes to use Yelp from his mobile phone. The top rated restaurants are all chain steak restaurants. He's looking for something healthy, but there isn't anything showing up. Yelpers recommend a new sandwich shop located down the street. With no idea where to go, he heads over there and eats lunch. Not even an hour later, Alex begins to feel sick. He eventually gets so sick that he needs to leave work.

Alex wonders why Yelpers would have recommended that place. Once he was feeling better, he backtracks through some of the reviews and it becomes obvious that Yelp spammers faked the reviews for this restaurant. He lost a lot of trust in this system and was determined to find a way to figure out where to go and not be tricked by false ratings.

A few Google searches on recommendation apps and travel apps led him to the Footprints App. After reading the description, Alex downloaded the app. Since Alex was

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already equipped with a Google account, he logged in using his account. Following Google sign in, Alex selected his privacy level to "Private" since he was not yet ready to share his experiences. He tapped "Done" and was presented with a location based search box. His search for "Austin, TX" gave him a long list of user-created maps for the area. He was surprised by how much people knew about the Austin area. Alex felt a lot more comfortable with these maps because someone local to Austin, each with a unique experience to share, created each map. Alex found a map that he really liked and wanted to save and use it as a guide around the city.

He continued to use Footprints and used it to travel around town and visit new places. He told his friend about the App, and his friend signed up for an account as well. Alex's friend shared with Alex some great healthy dining options if he ever travels back to North Austin. Eventually, some of Alex's other friends and family downloaded the Footprints app. Although he did not do much sharing himself, Alex used Footprints frequently. He always felt more confident when he went to find something to around town or abroad that he was going to have great experiences.

Project Key Features

Footprint's *read the story* technology provides personal travel stories that are uploaded and shared directly by users providing personal thoughts and commentaries on specific destinations, and details of trips. The way it works - a user uploads a map (best places to find coffee in Atlanta for example) as a part of that posting function, users include a small description for that particular map. This description is up to the user and can include things like why the map was posted, the history behind that map, the detailed information about the locations within that map. The point is to share experiences through this description.

Footprints *follow person* feature addresses the social and psychological needs of users by connecting them with the community. How it works - If a user really likes the information and the personalized content for a particular map they can choose to follow that user much like you would follow or friend within social media. I believe that Footprint's *read the story* and *follow* features set out to meet traveler's functional needs

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of seeking, gathering, and consuming information from those who have been there. When a user of our system uploads a map they write the story behind that map. By doing this, the user is able to personalize the experience for other travelers. If a Footprint user finds an enjoyable kindred traveler they can choose to *follow* or track that user through their other travel adventures.

We used a four-star ratings system to attract new users by providing diverse opinions. Footprints is a social space where trust is an essential factor and where one's credibility is harder to capture. The addition of a mechanism where users can provide their opinions and provide contradicting points of view would be helpful in the establishment of trust.

Add a Map

Collect a Map
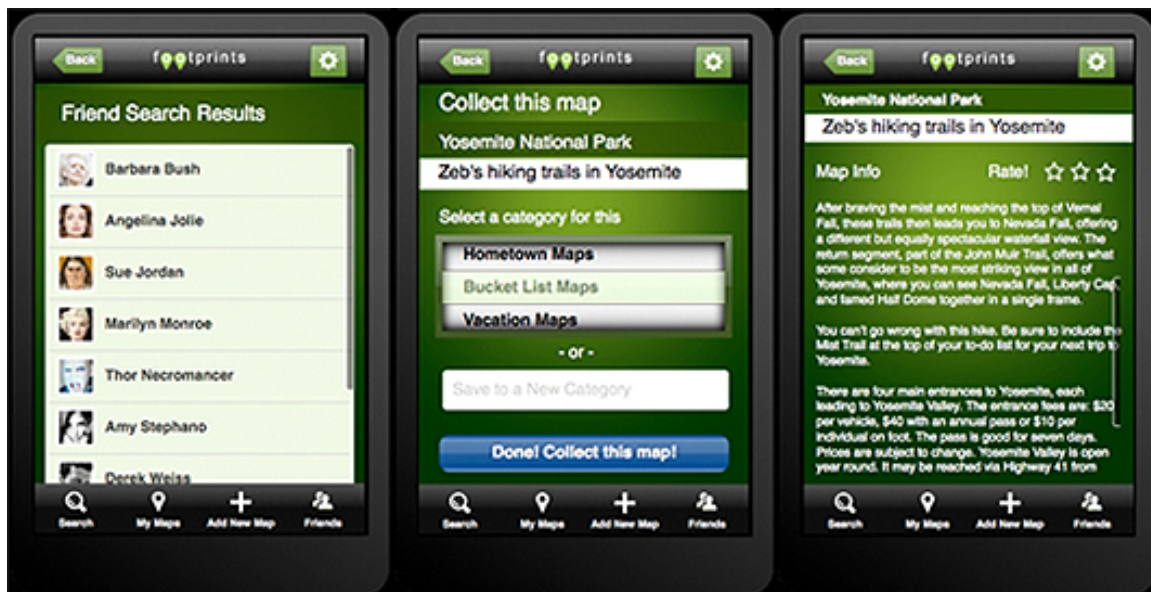
Evaluation and Assessment

Our user research centered on an online survey that asked traveler's general questions about reasons and how often they travel and various questions about how they plan their travel. Our online survey consisted of 15 questions with a total of 56 respondents going through all the questions. Below is our over-all analysis of the results. We also received

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valuable Heuristic Evaluations from two of our colleagues; their recommendations are listed below.

Data Summary

- Roughly three-quarters of our respondents are traveling often.
- A majority of our respondents travel for leisure rather than business.
- 90% of respondents use maps to get around with some frequency both in their city and when they go out of town.
- Our respondents like to share their travel information most often with friends and family.
- The majority of survey respondents want to know destinations beforehand.
- TripAdvisor and Yelp as well as friends and family are the most frequently used sources for finding travel destinations.
- A majority of respondents would like to share their travel information. Sharing in many cases would be dependent on the situation (privacy controls, is it worth sharing)
- Most respondents would use a travel map application depending on the situation.
- Our app will help them to use get access to the following features:
  - Stories
  - Photos
  - Map Ratings
  - Privacy Settings
  - Comments
- The majority of our respondents like to document travel experience, but it depends on the situation.
- A majority of travelers do use recommendations from other travelers

A key part of our product assessment came from the feedback we received from a Heuristic Evaluation conducted on our functioning prototype by our colleagues. Below are their recommendations.

1   Add image of map creators to the friend's search result page.
2   Change "follow" to *follow user* and *"collect"* to *collect map.*
3   Change "find friends" to *find friends' maps.*

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4   A great recommendation is to go to "my maps" page after users add maps.
All of these suggestions were incorporated into the features of our application.

Lessons Learned

During the initial mobile application planning, we examined the idea of users being able
to design and develop their own Google maps within the application as the center point
of the application. It wasn't until midway through the planning stages that we understood
that the value of the application was not in the map development, but in the experiences
of the users who originally developed those maps. We understood that sharing these
experiences is the feature that would set our application apart. We came to this
understanding from examining other similar mobile technologies and how they solved
similar problems. These examinations and experiences of user interface guidelines
allowed us to understand the value between human experiences (users) and the
technology (human computer interaction). This was a valuable lesson learned, allowing
us to understand our direction and the importance of how our information was going to
be displayed and received.

Another lesson learned surrounded the understanding of the learning curve our users
would experience. As a team, we identified the navigation elements we felt were
important to include in the application. We named and placed those navigational
elements where we thought made the most sense to us. It was not until we put the
prototype in front of potential users that we learned that the task flow was not as simple
as we had anticipated. We re-examined the labeling, interaction placement and
functionality based on this feedback. We understood that our users do not need to learn
to use the system they just need to be able to perform the task.

Originally, our team thought Footprints was going to be a simple system to design and
develop. Before approaching our initial sketches and designs, we expected to create
five or six screens along with the interactions. As we began our paper prototyping, we
found that there were many more dependencies than we had previously anticipated in
the conceptual stage. Paper prototyping is a critical step and an excellent tool for
quickly revealing gaps in an app concept as well as technology requirements. This

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realization resulted in a scaling back our application into one that could better fit into our project timeline and scope. Ultimately, we learned that a lot of careful thought, detailed planning, and involvement of human interaction at the right time is required to make that system "simple."

Recommendations for Further Redesign

When we reached a deadline for a high-fidelity prototype on the project, we handed our work to expert users for a heuristic evaluation. The feedback we received pointed us to some major and minor issues in our design and interaction. Where it was possible to complete before the final project deadline, we made changes to our design to address some of those major and minor issues. In this section, I will briefly call attention to changes that were made based on the heuristic evaluation and highlight some of our recommendations for redesign.

Our expert evaluators provided the team with excellent suggestions and critiques for improving the design and interaction of our mobile prototype. The list below represents design changes that were made for the final project.

1   Changed text "Follow" button to read as "Follow User"

2   Modified text on "Collect" button to read as "Collect This Map"

3   Added images to Friend List and Friend search results

4   Changed "Add a map" submission to redirect to "My Maps" page.

5   Alphabetized page results and lists.

6   Moved top-level navigation to bottom and made consistent.

7   Find Friends search displays list of searched friends.

These changes do not address all of the recommendations made by our expert evaluators, nor do they represent all of the design changes necessary for application implementation. One issue that was brought up in the evaluation that could not be added to the final product was including a sort feature. I believe including a sort feature (date, rating, relevance, and alphabetical) would be a useful tool for navigating through content. Including at least some sorting ability would be one our recommendations for redesign. Another design recommendation that could not be addressed was improving the search page. The search page confused our users because of the

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tabbed search and search language. One recommendation may be to move the search in a fixed location on friend page or on a maps page. We would want make it clear that to the user that they are searching for friends. Overall, the recommendation would be to refine our functions. At certain points, our evaluators were not sure of a particular function. We recommend a continuation of making sure functionality and interaction are made clear to the user.

Summary

You are an avid hiker and you are in the planning stage for a trip to Alaska. You are at a party and someone you have not met mentions they just got back from an Alaskan where they found some great restaurants and off the beaten path drives to experience the true Alaskan wilderness. This is the idea behind Footprints, a mobile application that allows users to connect and to share curated travel experiences, to provide destination information from those who have been there to those who are plan to go.

As a mobile application development team we understood that the purpose of the Footprints project is to better understand and experience the process of mobile user interface design development. We began this process by bringing to the table a couple ideas and features under the umbrella of travel. As a team, we merged these ideas and examined the major challenges and opportunities of developing a system that would allow users to post and retrieve personalized travel opinions and experiences.

Here are the questions we asked ourselves in the early stages.
1   What would make our product different?
2   What does our audience look like?
3   Does our audience use technology and social media when travel planning?
4   What are the privacy issues that concern our audience?
5   What is the value?

We asked these questions of ourselves and of others in order to understand the problem from which a solution could be defined. The problem is connection between the user

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who has been there and the traveler who is planning to go. The solution is a travel application that makes those connections happen, a travel application we call Footprints.