EECE 418 - Assignment 4a
Group #13 “International Love”

SchengenBackpacker App

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Section A1. Redesign rationale.

What we learned from Pass 1:

a) Create more specific Cast of Character:

In Pass 1, we included a variety of characters that would use our app. Our approach was to try to satisfy as many users as possible. However, after the meeting with the professor and TAs for the design review, we found out that our Cast of Characters was too broad. This makes it hard to achieve the requirement to satisfy all of the possible users. In Pass 2, we will rewrite the Cast of Characters so that the target users are more specific and we will be able to focus on satisfying their requirements.

b) Problems with whether the application is a travel agent based or tour guide based application:

In Pass 1, we started designing the project with a tour guide app in mind. However, it was unclear whether our app is a tour guide app or a travel agent app. One of the problems that makes our app ambiguous is the browsing function on the first screen. It is designed to allow user to search for the cities or countries that they want to go to and suggest some preset trips on the first screen. However, this makes the app appear to be a travel agent app instead of a tour guide app, because a user of a tour guide shouldn't need to search for a city or a country. Instead, the app should be able to detect their current location and suggest some tour based on the current location.

c) The name of the app is not suitable

The app we were designing was a tour guide app which guide user to walk around the available attractions in a specific city. However, our app name, CosmoTravel, makes it sounds more like a travel agent app instead of a tour guide app. We will need to change our app name if we are to continue designing an app for a tour guide purpose.

Summary

Based on the feedback provided by the course staff, a new direction is necessary for the project. The original idea was to give support to a broad number of users by meeting their main required tasks. However, after finishing the low-fidelity prototype, the result was that the needs of personas in the cast of characters would not be completely met by the first prototype. Furthermore, the concept of the app (tour guide or travel agent) was not very clearly identified in the first prototype. Therefore, the new approach for the project will focus on an travel agent type of app that meets the requirements of young adults on a certain budget who are planning to backpack around Europe in 2 or more cities that are in the Schengen countries. We can assume their focus will be less on experiencing the scenic countryside of Europe and more on city tours.

Preserved, changed and added features

The mental model of trip planning is preserved, while the mental model of guided walking tour is discarded as having two sets of mental models in our first low-fi prototype confuses potential users and causes detriment to the usability of the design. Since our current design is more towards a travel agent app, we decided to design a travel agent app and discard the direction of designing guided walking tour.

Another feature that was kept is the use of images with the name of cities instead of using simple list with only the names.

Critical questions:

1. Do backpackers need a more central and simplistic way to plan their trips?
2. Is this app easy to use for novice users? What is the learning curve for novice users?
3. Does this app require more work compared to the existing approaches (guidebooks, blogs, travel agents, etc)?
4. How satisfied will the users be after using this app?
5. How likely is it that users will recommend this app to their friends?

Evaluation

Observation can answer question 1, 5. We can observe the number of errors the users make when they're interacting with the app and the strategies the users take to exit errors, and quantitatively measure user's task completion time to test if the app is more efficient to plan trips compared to traditional approaches. Interviews can be conducted to learn the users' actual needs and the main tasks they perform, qualitative results like preference, satisfaction and general comments of app can be elicited in order to answer qualitative questions like 3 and 4. Questionnaire can help us obtain both quantitative and qualitative results: users' level of satisfaction and likeness of the app can be obtained using Likert scale questions, or their overall opinions, subjective information and recommendations.

Evaluation goals: evaluate the user performance using task completion time and task error rate, as well as clients' preference and satisfaction towards the travel agent apps.

Prototyping

To provide a level of support needed for the evaluation outlined above, we will need a medium fidelity prototype. The prototype should not only mock up visual components of the interface, but also support interactions with the interface.

The prototype is built with the JustInMind prototyping tool for mobile platforms. The interface is designed with the Android OS devices in mind. The prototype simulates the response of the interface to user actions such as clicking on buttons and links by taking the user to another screen or displaying a status message.

Section A2. Additional Analysis and Evaluation.

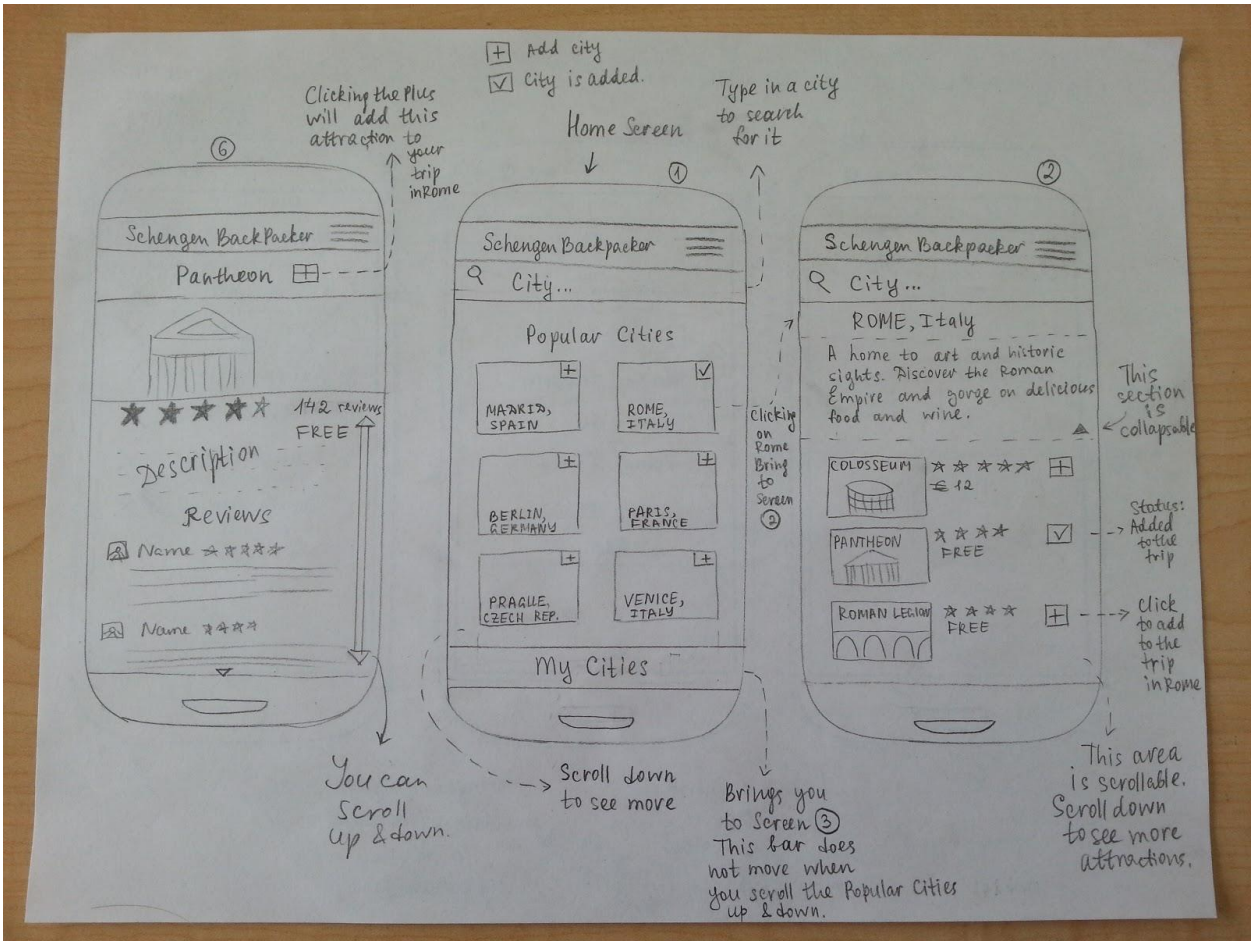
Before implementing a higher fidelity prototype, we brainstormed and discussed ideas for the redesign of the new interface. To get a better insight in the user needs, we talked to our friends who are current UBC students about their summer travel plans and needs. Based on that (and our own travelling experience) we created a new cast of characters that reflects the target audience of young adults backpacking in Europe. Then, we created several paper prototypes, as well as sketched a prototype on a whiteboard (See Appendix 1 for the sketch).

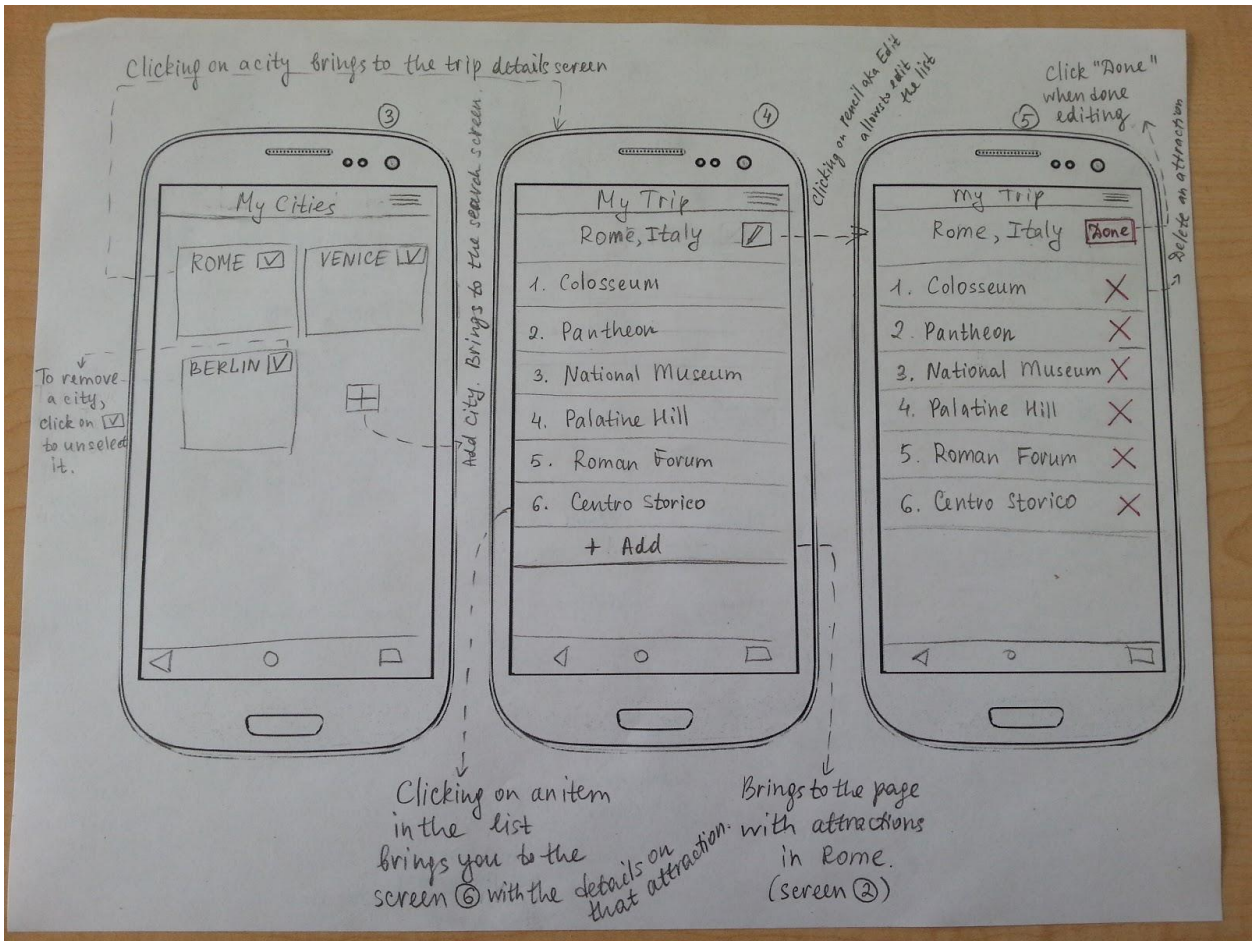
Informal User Evaluation

The informal user evaluation is performed on the new paper prototype (see the prototype below). The following aspects have been identified:

- The check icon (that indicates that the city has been added to a list of cities) may be confused with a checkbox. The user tried to "uncheck" the box thinking that it behaves like a checkbox.
- To add flexibility in the search, searching the attractions by categories of attractions (e.g. museums, parks, art, music) and sorting by price range would have helped users to find what they are looking for. Scrolling up and down the page is not the only way to access and look for things.
- The user liked having the search bar in both Home Screen #1 and City Overview Screen #2. It makes it quicker to search for another city.
- The dual mode of My Trip (Screens # 4 and 5) seems a bit redundant. The two screens could have been combined. If there is a confirmation dialog to confirm if the user really wants to delete a place, then there is no need to add an extra layer of redundancy via Pencil/Done buttons.

Annotated Paper Design




Clicking on a city brings to the trip details screen
③
My Cities
ROME
VENICE
BERLIN
To remove a city, click on to unselect it.
Add city. Brings to the several screen
④
My Trip
Rome, Italy
1. Colosseum
2. Pantheon
3. National Museum
4. Palatine Hill
5. Roman Forum
6. Centro Storico
+ Add
Clicking on "edit" aka Edit allowes edit the list
⑤
My Trip
Rome, Italy
Done
1. Colosseum
2. Pantheon
3. National Museum
4. Palatine Hill
5. Roman Forum
6. Centro Storico
Click "Done" when done editing
Delete an attraction
Clicking on an item in the list brings you to the screen ⑥ with the details on that attraction
Brings to the page with attractions in Rome. (screen ②)

Section A3. Prototype Illustrations

Illustration 1: Main Screen

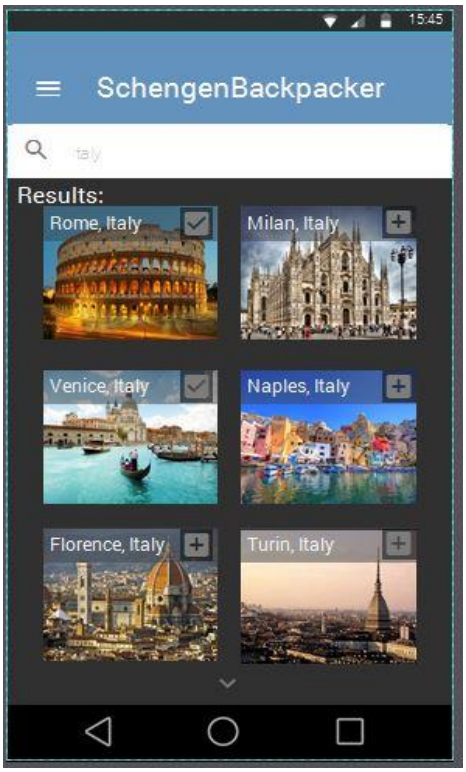


Illustration 2: Searching for cities in Italy

Illustration 3: Accessing the menu

Illustration 4: Adding a city to My Trips

Illustration 5: Viewing the details of a city

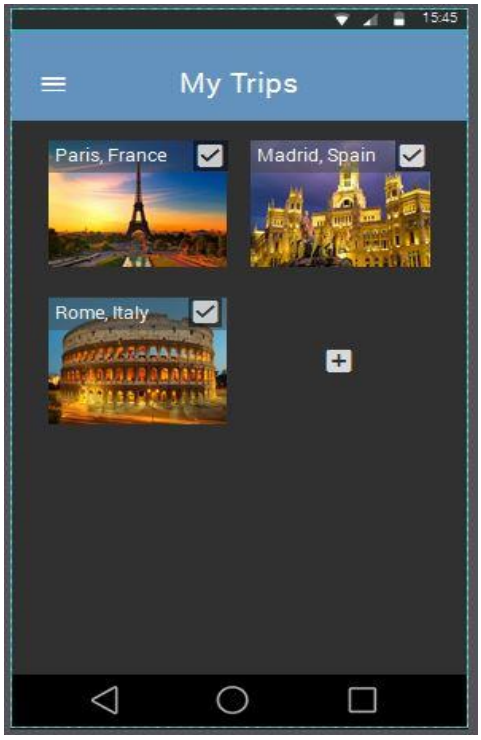


Illustration 6: Viewing all cities in My Trips

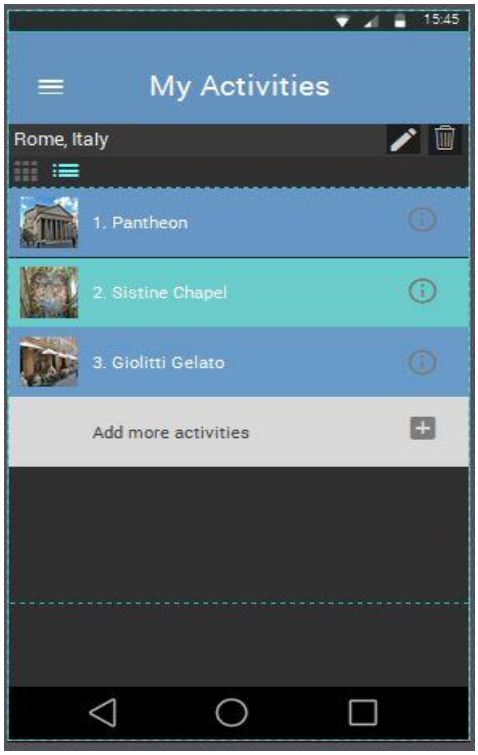


Illustration 7: Viewing all saved activities in a city

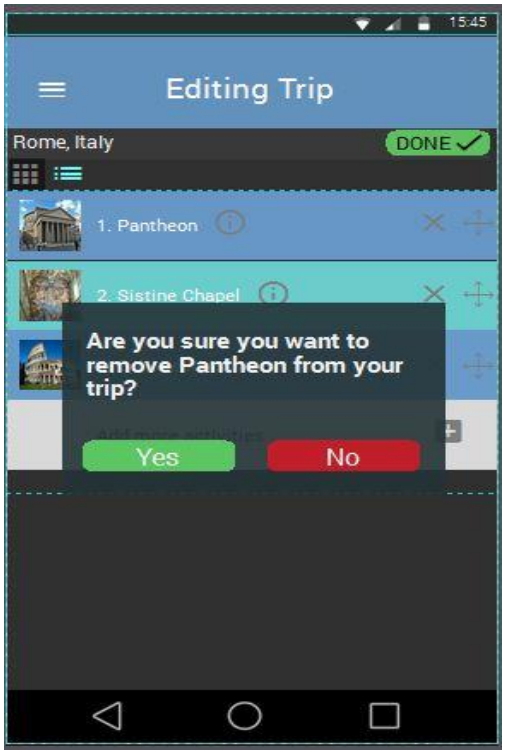


Illustration 8: Editing and deleting an activity

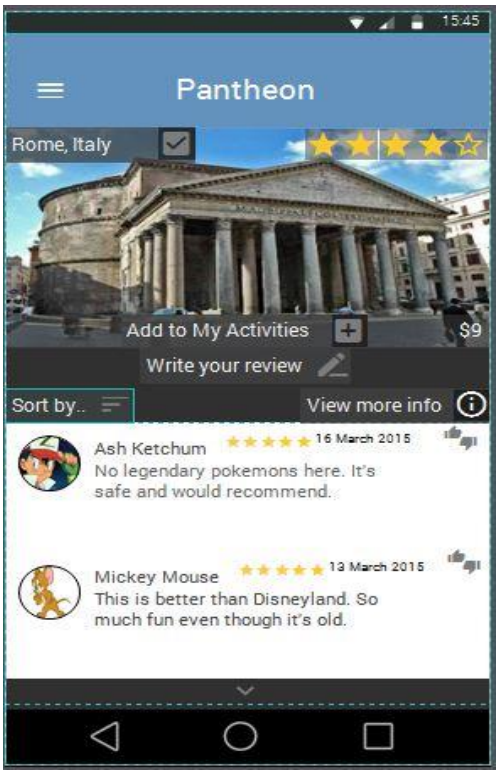


Illustration 9: Viewing an activity

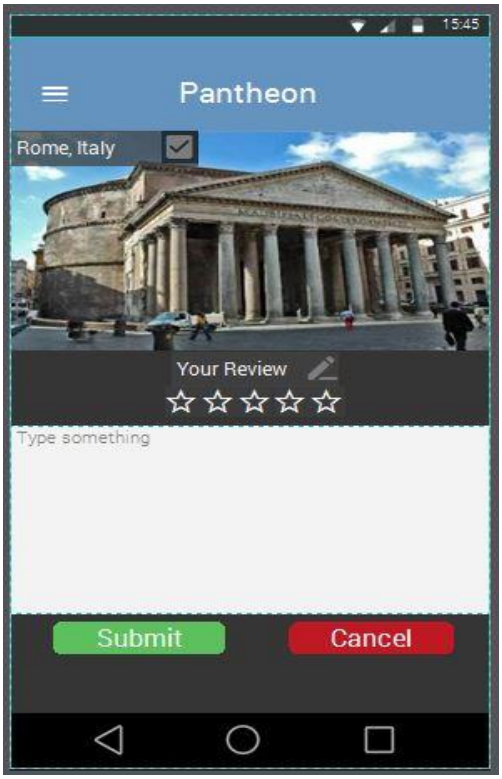


Illustration 10: Writing a review

Section B1. User Evaluation Protocol.

Representative Users

Our representative users will be young adults on a budget who are planning to visit multiple cities that are part of the Schengen countries of Europe.

1) Theresa, 23 yrs - 3rd year international UBC student from Taiwan who is planning on backpacking to Europe this summer. She has not backpacked around Europe before and is looking to experience as much as she can. Theresa has saved up just enough money from the three jobs she has had this year to go on a budgeted trip for 6 weeks.

2) Farah, 23 yrs - UBC alumni and a med student in Ireland who will be meeting Theresa on this trip and has not backpacked around either. She has not had time to work because of her heavy course load as a med student, but her parents have given her a small amount to join Theresa for one week.

3) Samantha, 21 yrs - 3rd year UBC student from Quebec who backpacked around Europe 2 summers ago using her saved money from waitressing and is planning on doing it again but in different cities.

4) Leong, 22 yrs - 4th year UBC student from Malaysia who would like to go to some of the Schengen countries of Europe before he turns 40. However, he wants to minimize the travel expense as much as possible as he has not started working yet. He is considering to backpack for the whole trip.

5) David, 24 yrs - 5th year graduating UBC student from Ontario. He is planning to backpack in Europe with a friend for 1 month before he starts working full time after graduation. David aims to keep the trip on a certain budget, because his friend cannot afford much.

Plan for evaluations

We will be performing an experiment that consists of a comparative evaluation and a questionnaire that would allow us to evaluate the effectiveness and preference of our app. The goal is to find out the ease-of-use, ease-of-learning, as well as clients' preference and satisfaction towards the travel agent apps. User performance is measured by task completion time and error rates, while user preference and satisfaction are measured via subjective ratings collected through questionnaire.

Participant & Prototype System

To explore the impact of our current design, we will recruit 5 backpackers to participate in a comparative evaluation. We use two interfaces for the evaluation, one is the "Controlled APP", a commercially available travel agent app - TripIt Travel Organizer, and our "SchengenBackpacker app". Each participant will perform the same task on the two Apps, so it's a 2 (App type) by 4 (Tasks) by 2 (Order of Presentation) within-subject design.

Method

The study will be conducted in a private, quiet room with an Android mobile phone and a laptop. These two devices are positioned in a way that the participant could not see both screens at the same time, while the researcher could view both screens without moving and potentially distracting the participant. The Android mobile phone has a "Controlled App" - TripIt Travel Organizer being installed while the computer is running a version of the "SchengenBackpacker app".

For the comparative evaluation, participants will be asked to attempt 6 tasks on both Apps (see List of Tasks below for descriptions of tasks). Participants will attempt each task on one of the two Apps before moving on to the second App. The order of which App the task will be performed first will alternate for each participant and each task to counterbalance the study and mitigate the learning effects. For the second part of the study, a questionnaire will be conducted to measure the participants' preference and satisfaction of these two Apps.

Data Collection

For the comparative evaluation, we measure the task completion time, number of errors for each participant, each app and each task.

For the questionnaire, the participants will be asked to answer a Likert question after each task which App do they prefer or more satisfied to complete the task on. This 5 point Likert question ranges from "Controlled App" to "SchengenBackpacker app" with a neutral point of "No Opinion". This results in 3 of these questions for each participant.

In conclusion:

Independent Variables: Types of App (2, "controlled App" and "SchengenBackpacker app"), Tasks (4), Order of Presentation(2, "Controlled App first", "SchengenBackpacker app first")

Dependent Variables: Task completion time, error rates, App preference, satisfaction.

Approach of Analysis

For each task, the Null Hypotheses are:

H0-1: The users perform the task faster and make less errors using the "Controlled App" than that of the "SchengenBackpacker app".

H0-2: The users prefer the "Controlled App" over the "SchengenBackpacker app" and are more satisfied with the "Controlled App".

We will use one-way ANOVA to analyze the task completion time and task error rate, and use CHI-square statistics or t-test to analyze the users' preference.

List of Tasks:

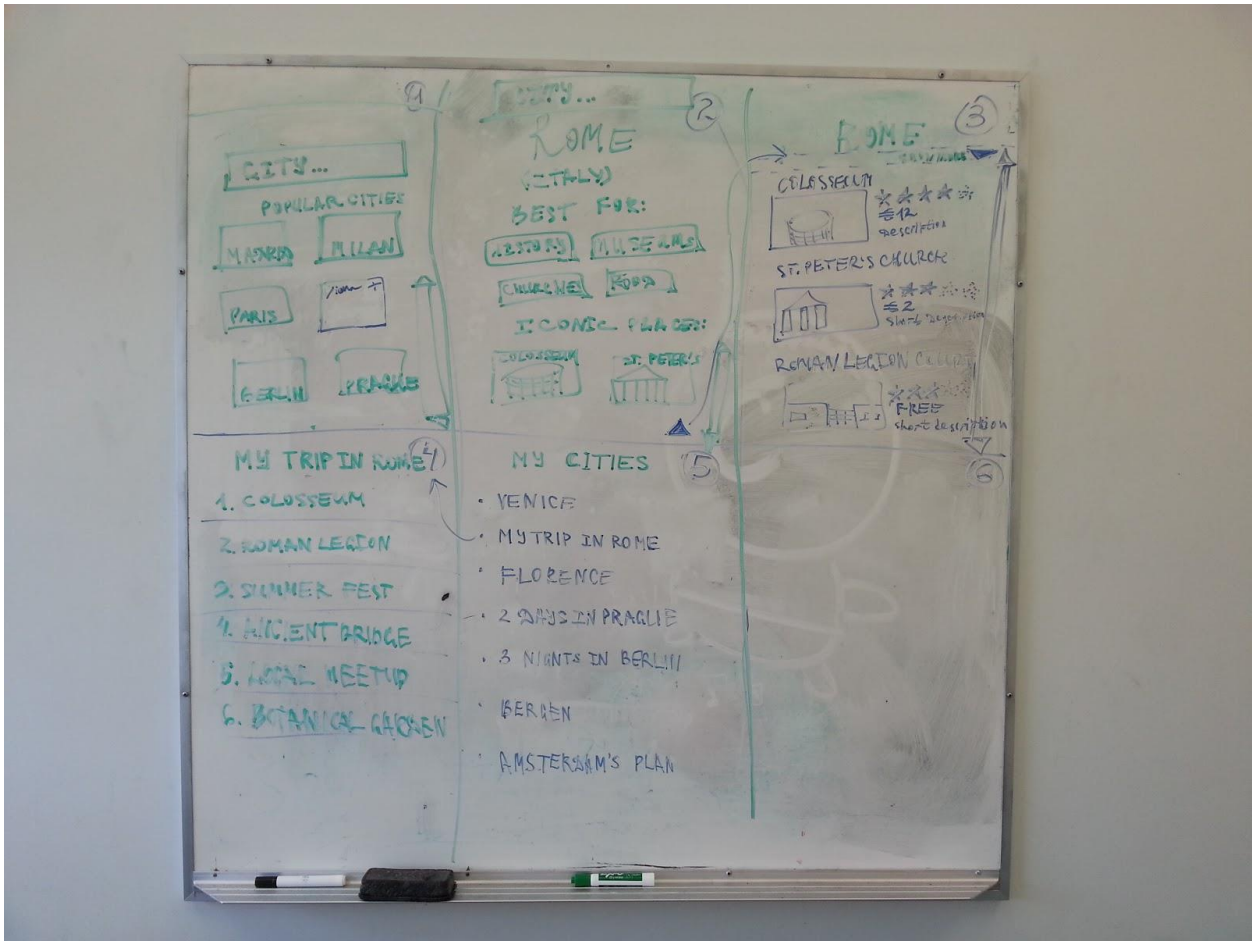
1. Identify each icon's function.
2. Create a list of activities for an one-day trip in a certain city (e.g. in Rome).
3. Create a list of cities for a 2 week trip.
4. Navigate to search page from My Activities and from My Trips pages.
5. Navigate to and edit a trip (delete 2 activities and add 1 different activity - choice of activities will be known)
6. Repeat task 5 for another trip.

Evaluation of Tasks:

1. Can the user match each icon with its function on first glance? (Point and ask for each icon eg. "What do you think this plus sign does?')
2. Does the user enter a reasonable number of tasks based on the suggested duration of each trip? How many errors or misinterpretations does the user encounter?
3. Can the user successfully create a two week trip with less than 2 errors in misinterpretation of icons/symbols? What is the user's satisfaction of the experience from performing this task?
4. Can the user navigate to the search page in less than 3 seconds from any screen in the app?
5. Can the user successfully delete an activity he or she previously added and then add another activity in less than 15 seconds (assuming they know which activity they need to add in advance)?
6. Does the user spend less time the second time?

Appendix 1. Design Alternatives.

Design 1. Rough Sketch of a Horizontal Prototype.



From left to right starting from the top row:

- Screen 1. Search for a city or choose one of the most popular cities. To choose a city, click on the + icon.
- Screen 2. Overview of a city. For example, Rome, Italy. The screen gives details on what the city is best known for, and what its iconic attractions are. A user can click on the Up arrow to hide the details and focus more on the attractions.
- Screen 3. The city overview. Note that the details are hidden under the Down button. The user can scroll the list up and down to see more attractions. Clicking on an attraction, a user can see more details (not shown in here) or add it to their list.
- Screen 4. My Trip. This is a list of attractions that the user has added to their trip in Rome.
- Screen 5. My Cities. This is a list of cities that the user is planning to visit. Clicking on a city trip brings Screen #4.

Further ideas that have been generated based on this prototype:

- Merge Screens #2 and 3.
- Add quick access to My Trips/My Cities list.
- Display images of cities along with their names in the My Cities screen.
- Add a + icon to save the trip. When the trip is added (aka the user has clicked on the plus), the icon changes to the tick icon to indicate that the city has been added.

Appendix 2. Supporting Materials

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science
2366 Main Mall
Vancouver, B.C., V6T 1Z4

February 19, 2015

Consent Form (no videotaping)

Human-Computer Interaction Course Projects (EECE 418/518)
UBC Ethics Approval H07-03063

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Project Purpose and Procedures

This course project is designed to investigate how people interact with certain types of interactive technology. Interactive technology includes applications that run on a standard desktop or laptop computer, such as a word processor, web browser, and email, as well as applications on handheld technology, such as the datebook on the Pocket PC, and also applications on more novel platforms such a SmartBoard (electronic whiteboard) or a Diamond Touch tabletop display.

The purpose of this course project is to gather information that can help improve the design of interactive technology. You will be asked to use one or more forms of interactive technology to perform a number of tasks. We will observe you performing those tasks and analyze how the technology is used. You may be asked to complete a number of questionnaires and we may ask to interview you to find out your impressions of the technology. You will be asked to participate in at most 3 sessions, each lasting no more than 1 hour.

Although only a course project in its current form, this project may, at a later date, be extended by one or more of the student investigators to form the basis of his/her thesis research.

Confidentiality

The identities of all people who participate will remain anonymous and will be kept confidential. Identifiable data will be stored securely in a locked metal filing cabinet or in a password protected computer account. All data from individual participants will be coded so that their anonymity will be protected in any project reports and presentations that result from this work.

Remuneration/Compensation

We are very grateful for your participation. However, you will not receive compensation of any kind for participating in this project.

Contact Information About the Project

If you have any questions or require further information about the project you may contact Dr. Sidney S. Fels by phone at 604-822-5338.

Contact for information about the rights of research subjects

If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598.

Consent

We intend for your participation in this project to be pleasant and stress-free. Your participation is entirely voluntary and you may refuse to participate or withdraw from the study at any time.

Your signature below indicates that you have received a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this project. You do not waive any legal rights by signing this consent form.

I, Michael Kubik, agree to participate in the project as outlined above. My participation in this project is voluntary and I understand that I may withdraw at any time.

Michael Kubik — Feb 19th 2015

Participant's Signature — Date

Feb. 19, 2015

Student Investigator's Signature — Date