ID 2216 - Developing Mobile Applications

Assignment - 1

Project Proposal Report - Travel Application

Group 6: **The Super Group**

Team Members:

- **Lisa Noren** <lisasko@kth.se>
- **Parth Singh** <parths@kth.se>
- **Rakesh G N** <rakeshgn@kth.se>
- **Joakim Sandberg** <joasandb@kth.se>
- **Melodi Nergis Demirag** <mnde@kth.se>

Introduction

"Man cannot discover new oceans unless he has the courage to lose sight of the shore."
Andre Gide

Travelling **-** A way to disconnect yourself from your regular life that is swamped with lot of challenges, tensions and worries. It is a learning that everyone should experience to cherish the beauty of various cultures, traditions and scenic natural attractions around the world. It is a way of educating yourselves by recognizing and observing the various delightful events and happenings around the globe.

With the advent of technological advancements, travel has become way easier and sophisticated. Nowadays, there are various applications that help us in planning and organizing our travel in a more comfortable way. Irrespective of place and time, the services provided by Google Maps, HERE Maps, etc. act as very critical resources for structuring various parameters of our travel such as different airlines, logistics, cruises and other services. A multi-city travel could be managed using a variety of applications, for instance, Rome2Rio. Similar to this, there are other applications in the market that allow users to trace the routes, included the distance and time, look for motels on their way, lodging, instant reviews (word-of-mouth) etc., if they want to travel from a point to point. However, there is still no dedicated travelling application or a website that allows a traveler to cover a list of places of their interest starting from a point in the best-effective optimum path in terms of distance.

We, five team members having travelled to different places, faced a similar problem in at least one of our travelling experiences in which we had a stay for 12 to 15 hours and wanted to visit maximum number of places. Unfortunately, sometimes we missed the best places due to improper planning or due to a lack of proper resources or information in-hand. After thorough brainstorming sessions and research, we realized that besides the distance between two places, travelling time plays a more vital role. For a tourist, what matters is how long it will take to reach from A to B to C to D and again back to A. As a result, all these led us to a conclusion that the idea as explained is worthy for a field study and get the feedback.

Field Study and Observations

"A ***field study*** *is a general method for collecting data about users, user needs, and product requirements that involves observation and interviewing"*. Interview/Survey is a way of field study best suited to get a collective feedback about an idea or a problem and to understand the depth of a specific issue.

As part of our study, we took interviews of various people that included a nice mix of people from various age groups and cultures who have wide good travel experiences. We prepared a questionnaire comprising of questions that cater to our requirements regarding various parameters and considerations. The interview questionnaire is listed below.

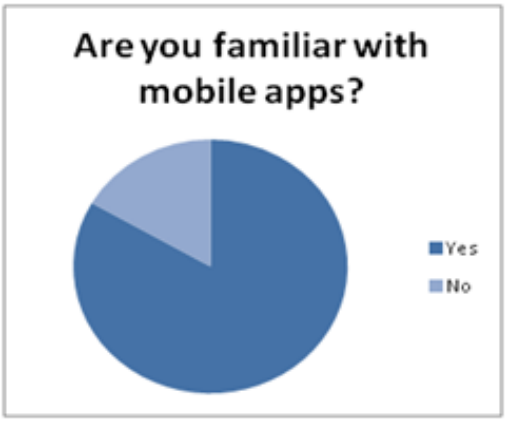
Questions:

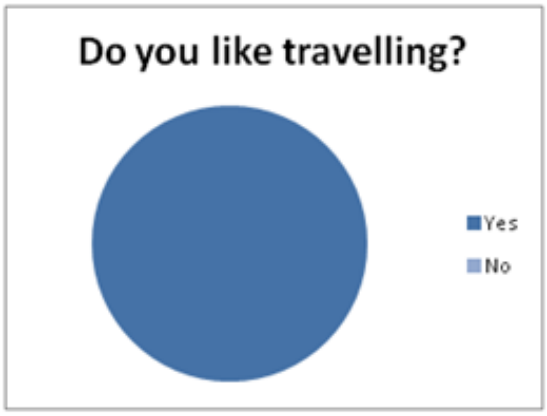
1. Introducing each other.
2. Explained the purpose of interview.

3. Are you familiar with Mobile Applications and usage?
4. Do you like travelling?
5. How frequently do you travel?
6. How planned are you before travelling?
7. List some places you have travelled.
8. What are the important considerations that you plan ahead?
9. Could you describe any of your recent travel experiences?
10. Given a suitable application, what would be your preferred language of interaction?

The recorded **Observations or Results** from the interview provide us with the different opinions of various people. Analysis of these observations help us trace out the similarities, differences in the expectations of diverse people. It also helps us in correcting and consolidating the requirements for our application design to take it closer to the real-world. The following presents the consolidated results of our study and brainstorming discussions. Based on the feedback given, it is more evident that a significant part of travelers were not able to visit all the places they had planned during their stay due to various reasons as listed below.

Number of People Interviewed: 11





Application Categories based on the Usage:

- Productivity Helpers (Task Organizers, Reminders, Dashboard apps,)
- Time Killers (Games, Music, Videos,)
- Socializing Apps (Facebook, WhatsApp, Twitter, WeChat,)
- Others (Professional, Tourist apps, photos organizer,)

Frequency of Travel:

- Once in two months
- Once in a quarter
- Once in six months
- Once in a year

Prior Travel Planning:

- On the spot planning after reaching the destination

- Little planning - places of visit, bookings etc...

Recent Places of Travel:

- Miami, Philippines, Spain, Greece, Finland, Italy, St. Petersburg

Important Considerations:

- Airline tickets, Hotel/Accommodation bookings, Places of interests (Where to go), Entry timings (When to go), Popular attractions, Local food and Restaurants, Prices, Transportation,

Preferred Language:

- 9 out of 11 people prefer English
- 2 prefer Swedish

Idea Proposal

Based on our analysis of results from the field study and discussions among the team members, we form and propose the following as our problem statement based on Travelling Salesman Problem.

"Trace out an efficient route covering selected places of interest and then back to the starting point within the available time"

We intend to build a native mobile application for Android in which a traveler can enter a list of various places he/she wants to travel starting from a point and as a result he/she will get the best optimum route in terms of least distance or time. The application shall also facilitate whether a traveler wants to have a round trip (end point is same as starting point while covering all the desired places of interests in a city or a locality) or a one way trip (in which a person wants to go from one place to other covering all the places in between).

With our idea in mind, we would like to put forth the following constraints on our application for better and efficient design.

Objectives - User Perspective:

- Cover all the places, back to the starting point
- Efficient route with less travel time

Objectives - Application Design Perspective:

- Mark route for future
- Simple and appealing user interface
- Extendibility (Public transport, Restaurants,)
- Reliability
- Backend storage support (Saved Routes, User Profile Info,)

Technical Aspects of Design and Implementation:

- Native Android Application
- 3-tier MVC Architecture
- Branch and Bound Algorithm
- Programming Languages: JAVA
- Backend: SQLite
- Google Maps APIs

Conclusion

The application shall be designed in a way that is simple for the users to use thereby minimizing their work and at the same time it is efficient and reliable. We also want to build it in a compact design with loosely coupled component architecture so that it is extendible for future use cases. This shall help us in fulfilling the course objectives and also deliver a promising applications to the real world users.