AUTOMATED TUTOR

Report on Jolla Mobile Application DevelopmentCode-Camp

Submitted By

GROUP FIVE

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1.0   Goal &Idea

The primary goal of this application is to give newly-arrived students in Lappeenranta necessary information. There are many methods to provide information to end-users. However, one proven method is to provide these information in an mobile application for immediate access by end-users. The application should be able to connect to various familiar open solutions and data sources, with full unlimited access and with attractive user interface. The app should be also useful for university's tutors, the student affairs administrative personnel, as well as the students. Tutors and administrative personnel can create events and have a global view of all the tasks that new students have to complete before attending the first lectures. And students can experience a smooth navigational event application that will guide them through the events provided the university.This Code camp provides this excellent opportunity to provide this solution and acquire sufficient experience on developing mobile application in a new development environment. Together, we can acquire new knowledge, new skills and memories and also enjoy the Code camp spirit by sharing knowledge and having fun with each other.

2.0   The Problem and Our Motivation

In 2013, 32.8% of the students in Lappeenranta University of Technology were foreign students (LUT Figures and Facts). From our own experience as exchange students, during the first days, it was quite difficult to get information (places, address, directions) of several places in the city and to communicate due to the language barrier. Though tutors are assigned to new students by the school to guide them in various registration tasks, these tutors cannot be available at all times.

There also exist other media where questions can be asked and information can be retrieved like (Facebook Page of international students in Lappeenranta andthe official website of the city),however, these information are not frequently updated and not totally interactive.

These challenges motivated us in creating a mobile application that can be helpful for the new students to provide needed information and guidance. This application should have all the necessary information, together with an interactive map that displays the exact location of events and necessary direction.

3.0   The Code Camp theme

The theme for this 2014 Codecamp is "Open Data", which impliesusing public data and open solution that are provided in an open format. In our opinion, this theme fits well with the idea of making a

mobile application for new students in Lappeenranta. We can feed the application with open data from several sources and it will display these data to the users in aneffective and interactive way.For interactivity, our applicationrequires an electronic map to immediately communicate events, its location and directions to the eventshence we decided to use the openly available Google Maps amongstother available maps application because of its embedded functionality, popularity and user-friendliness.

4.0   The Architecture

This mobile application runs on *Sailfish OS*, which is a Linux-based mobile operating system developed by *Jolla* in cooperation with the *Mer project* and supported by the *Sailfish Alliance*. It is slated to be used in upcoming smartphones by Jolla and other licences. Our app is at the application layer, which is the topmost in the architecture stack. From the bottom up, these layers includes: Hardware, hardware specific kernel adaptation, Mer Core, UI and Middleware and then AutomatedTutor Application.

KARF's Automated Tutor
UI and Middleware
Mer Core
Hardware specific kernel adaptation
Hardware
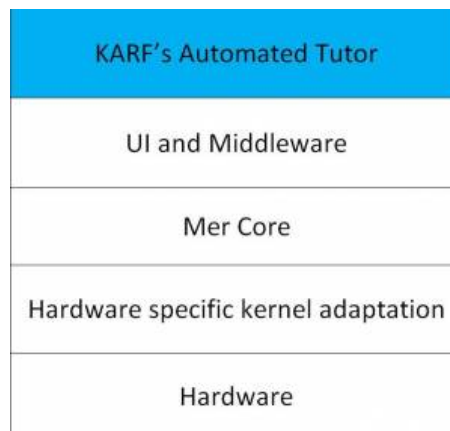
5.0   Use Case diagram

Typically, there are four (4) actors interacting with this application, they includethe Student, Tutor, Developer and API. The students are the main user who queries information about events, places in Lappeenranta and its environs. The tutor can submit new events and location to the developers who modifies the source code with ease. The developers are in charge of writing and maintaining the source code. And additionally, the application interacts with the Google Map and Google Directions API to send request and interpret the response from the servers. This interaction is illustrated below:
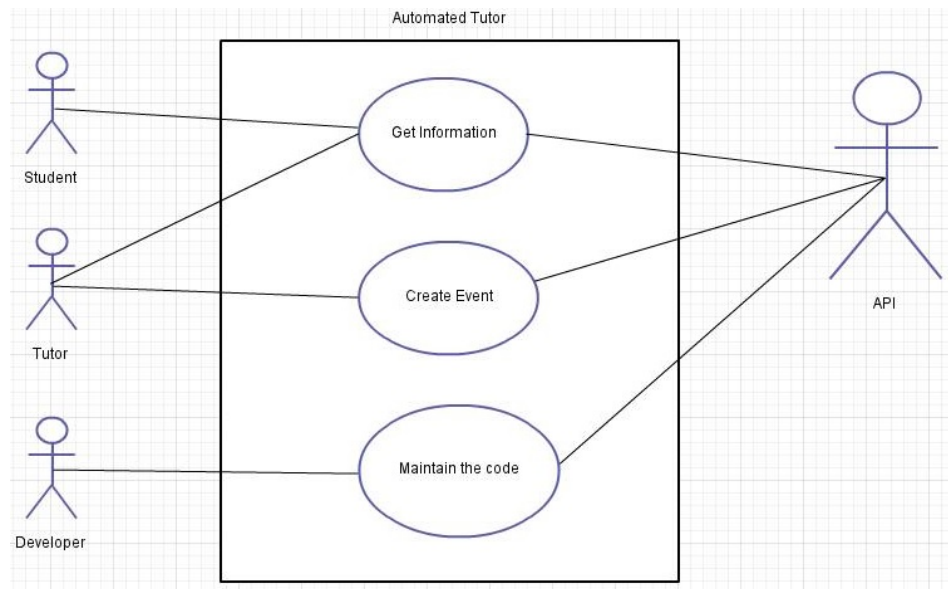
6.0 Features of Automated Tutor app

1. **Direction**: When the user click on a place button, the app should zoom in the map, show the direction to that place using WALKING mode. When the user double-clicks on the place button, the map displays the exact location together with the info-window.

2. **Markers with Event Info:** On the Google map, there are several markers. Each marker should point to a place of interest, showing the exact locationand an information window containing necessary information about events at the pointed place.

3. **Street View:** Google streetview is also available in this app. The user need to drag-n-drop the streetview icon into the desired place in the map.

4. **Realtime Dynamic Google Map:**The Map retains all the functionalities of the Google Map: zoom-able, scrollable.

5. **OnClick Ability:** The buttons differentiate single-click and double click. Single-click shows directions while double-click shows detailed information of events at a particular place.

7.0 Future Development

In near future, we believe that, our Automated Tutor app could be a best choice for small scale information searching tools in different schools. We hope that, we could use some other open solution and data like Google Calendar API to create events to allow our application extract events and location directly from calendar solutions and for flexibleuse.

8.0   Screenshots of the app
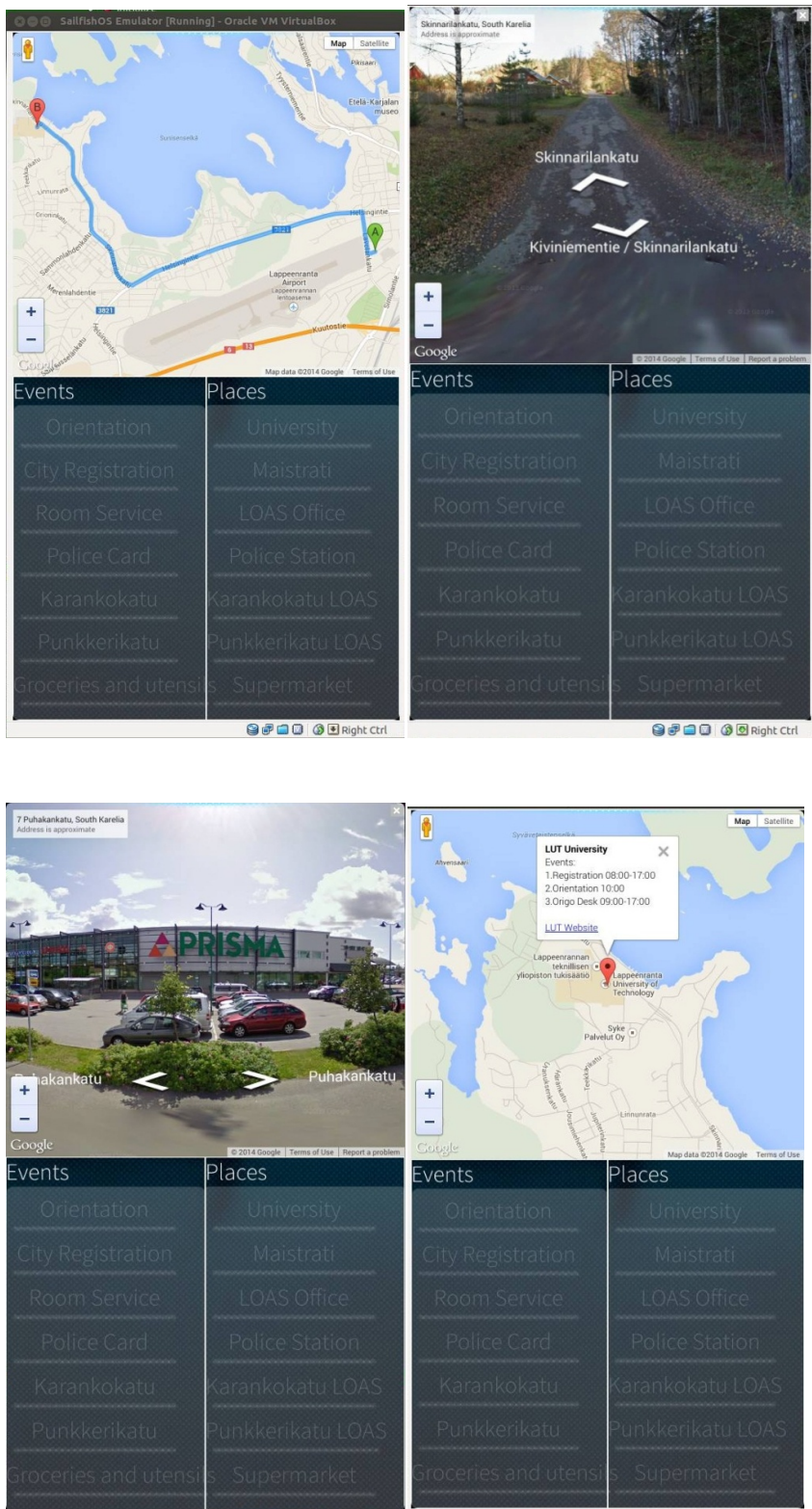
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