CT30A9301 Code Camp on Platform Based Application Development Winter 2014

Group 10 Application name: BusRoute

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About application

Problem statement

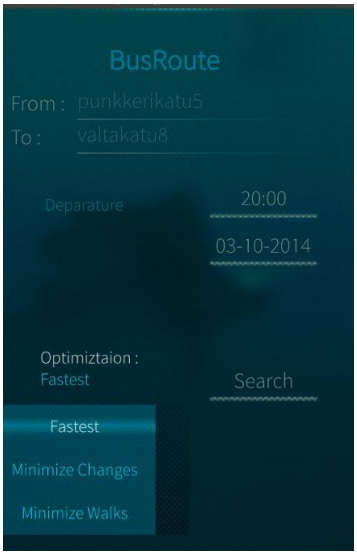
In Google maps, when user wants to get directions in order to define trip distance, time and type there are five options for type of travel such as driving, transit, etc. By choosing each type, there will be outputs like time and distance based on chosen way of travel. For example when user chooses transit mode it takes different amount of time and different routes to get to destination in compare of driving mode. But this option is disabled for many cities. Lappeenranta is one of these cities. So it is impossible to gain such information from its Google map Lappeenranta is one of the cities which really need this service. There are many international students who can benefit from this service especially in their first days of arrival also very cold weather of Lappeenranta's winters makes it so hard to wait near the bus stops for next bus.

Bus Route

Bus Route asks source and destination from user and gives information about bus service of Lappeenranta such as time of next bus, routes that bus will use for getting to destination and also time duration of getting to destination.

Using Bus Route

Bus Route needs information about source and destination of user. Also user can enter her/his arrival or departure time and date to get more information about desired trip.



Picture 1

As it is depicted in picture 1, in main page of application, user can enter source and destination respectively. Under destination box, time and date box are available. By clicking (one touch) on each box, application shows time or date page. In these pages, which are easy to work, user can easily choose desired time and date.

There is a combo box available near the date box. User can choose whether departure or arrival time from the combo box. By clicking on search button map page of application with requested information will come up. Next bus and its routes will be shown on the Google map of application.

By using the second combo box (Optimization), user has three other options: Fastest, Minimize Changes, Minimize Walks. Fastest, show the fast routes, Minimize Changes, show the direction which need minimum change in routes (for long trips) and Minimize Walks shows the nearest bus stop to user, so s/he needs to have minimum walk to the bus stop.

Brief information on develop process

Design plan

Team came with idea of in the first day of Code camp. Since the problem (Lappeenranta bus route on Google map) can be the concern of new comers, idea of developing Bus Route was easy

to reach though two other ideas came up in brain storming which had been denied because of unavailable open data.

Based on requirements and design plan, team needed to use open data of Lappeenranta bus service routes and timetable. Although there were two websites which have the open data relating to Bus Route, it wasn't easy to reach this open data due to security matters. Anyway we reached the open data of website matka.fi in Wednesday.

Technologies

We developed in Sailfish SDK environment. There is good documentation available in Sailfish website. Also there are many tools and elements available which helps to develop a user friendly application. It took a lot time to solve problems and error in using Oracle virtual machine as mobile emulator for Qt. We also run the application in one of Jolla mobile phone devices to see how it works on real machine.

We worked with SVN as our version control. The issue here was, one of team members' laptop couldn't connect to SVN. As it has been mentioned, we used open data available in matka.fi for bus timetables and routes of Lappeenranta.

Implementation

In Tuesday we deal with issues of applying Subversion and solve errors of using virtual machine in Sailfish. Moreover we search for finding open data in different websites. So in Wednesday we began to coding for GUI, applying Google map and data for application. We develop using QML for GUI, HTML for Google map and also JavaScript.

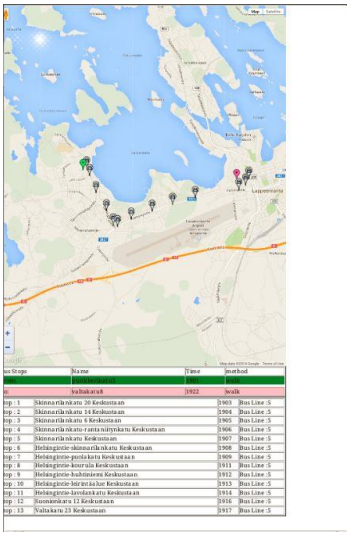
The primary challenge in developing was parsing data which was XML file into application code. Since we needed many information such as end points, bus stops, fastest way based on bus routes, etc. from open data to use in our application we tried to receive information directly to our show map page which was in HTML (showmap.html). But it didn't work so we get the data from map page which was in QML (MapPage.qml). We lost huge time to figure out this solution for applying data.

Presentation

The last problem which we confronted in Code camp was just before our presenting. We decided to show using application on laptop because we were coding till last minutes. After last updating the presentation laptop couldn't run the application so we transfer our files in another laptop which had some problem for linking it to the video projector. It really affects our presentation.

Deployment and completion

We continue improving application to reach our goals in the next week of Code camp. By defining a table in map page, we enabled application to represent routes of requested location for Lappeenranta bus service. Moreover, now marks between end points (source and destination) will be shown on the map, so user can see the whole bus stops located in requested route (picture 2).



Picture 2

Conclusion

At the end, we reach our goals for the application. We think it can be a helpful application for using Lappeenranta bus service. The issues we confronted in first day of coding (such as SVN problem mentioned in part Technologies, delay to find the open data and technical issues) took a day from us and it cost us unsuccessful presentation.

But all the team agree that we learned so much from this code camp, even issues showed us that we should be more prepared before beginning developing. Moreover, developing in new platform for a mobile OS which we didn't work with before was a precious experience.

References and links

Matka.fi. 2014. HTTP Get interface. [Accessed 26 February 2014]. Available at http://developer.matka.fi/pages/en/http-get-interface.php

Group 10 wiki page: http://codecamp.fi/doku.php/jolla2014/group10/start

Presentation: http://codecamp.fi/lib/exe/fetch.php/jolla2014/group10/presentation_busroute.pdf

Poster: http://codecamp.fi/lib/exe/detail.php/jolla2014/group10/busrouteposter.png?id=jolla2014%3Agroup10%3Astart

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