LUT Lappeenranta University of Technology

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REPORT ON JOLLA CODE CAMP – WINTER '14 (GROUP 2)

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NOTTINGHAM TRAFFIC & PARKING

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Idea and Motivation

The Jolla Winter 2014 Code Camp was aimed at enabling students to develop on the new Sailfish operating system as well as harnessing open data therefore we had to consider which open data sources to use. Also, being a team of three students from the Erasmus Mundus Masters programme in Pervasive Computing for Sustainable Development, we considered how our application might be sustainable.

With these in mind, we settled on developing an application to help residents of Birmingham city avoid traffic congestions by providing them with access to real-time road maintenance sites around the city. This knowledge would aid drivers in either avoiding these sites or taking into account the extra time needed to pass through the resulting traffic. The effects of this function go well beyond saving time, as fewer people stuck in traffic would result in lower CO_2 emission from cars and thus contribute greatly to a more green and sustainable city.

To take it a step further, we also decided to make available information on parking spaces all around the city. Thanks to already existing open data about all parking structures as well as their capacities and current available space, we were able to provide this function on our application.

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Schedule

We started coding on Tuesday evening, we spent Monday and the better part of Tuesday, developing our idea and how to implement it. We had to decide what data we needed, find the available open sources and their corresponding XML files. In addition to finding the data sources we also had to find how to integrate these sources into the application. Below is a breakdown of the tasks we completed each day of the camp.

- Monday: brainstorming the idea and investigating possibilities;
- Tuesday: learning the environment, setting up the first examples and experience. Writing the wiki page;
- Wednesday: starting to construct the application. Tasks are divided between the members, and coding begins. Also, at that day, we changed a bit the idea and the plans on implementation due to unexpected difficulties in the environment. In detail, at that day we implemented basic interface and map request;
- Thursday: something is appearing in our application. A lot of work is done, but not less is ahead. Implementing XML parser for the sources, and ending the UI. During the evening we put together all the parts and tested the app. After solving minor problems, at night, we have refined the interface and have deployed the app on the actual phone. Refining the wiki page;
- Friday: demonstrating the application. Finishing the work.

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Technologies Used

We used quite a number of different technologies and although we started out thinking we would be required to do some coding in C++, it turned out to be unnecessary as all of our coding was done with QML. For testing the application on our PCs, we needed the Oracle VirtualBox as well as the actual Jolla phones for the final testing. All our work was of course carried out on the Sailfish OS SDK. Below is a list of the most important technologies we used.

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Sources

For our application, we used the following APIs and XML sources:

- Goggle Maps static API

- Nottingham Street Works

- Nottingham Travel Wise

Worth saying, that all the data here is reliable, and the XML from Nottingham web-services is managed by the municipality, so the data is always up-to-date and precise.

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Main Features

The application has two major functions, the road work sites locator and the parking space locator.

All scheduled road maintenance sites within a certain period are listed based on the dates entered by the user. The location, construction dates and possible impact on traffic are some of the information displayed and the user also has the option of viewing the precise location on a map by clicking the show on the map button which is available on every construction site page.

The parking space location function is also user friendly with an easy to use interface similar to the first, except the possibility to show the map position, as the source does not provide this information. Below are a few screenshots from the application.

Here's the start screen. You can enter the dates and then get the results.

BALMORAL CRESCENT

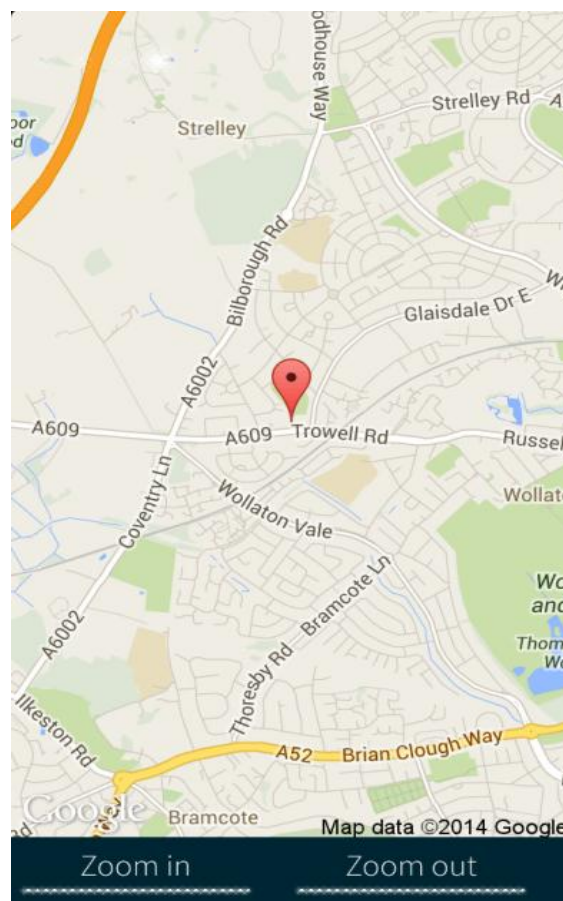**Precise location:**

FOOTWAY OUTSISDE 10

Description:

FIT NEW TEE - ROD & ROPE

Possible impact:

Delays unlikely
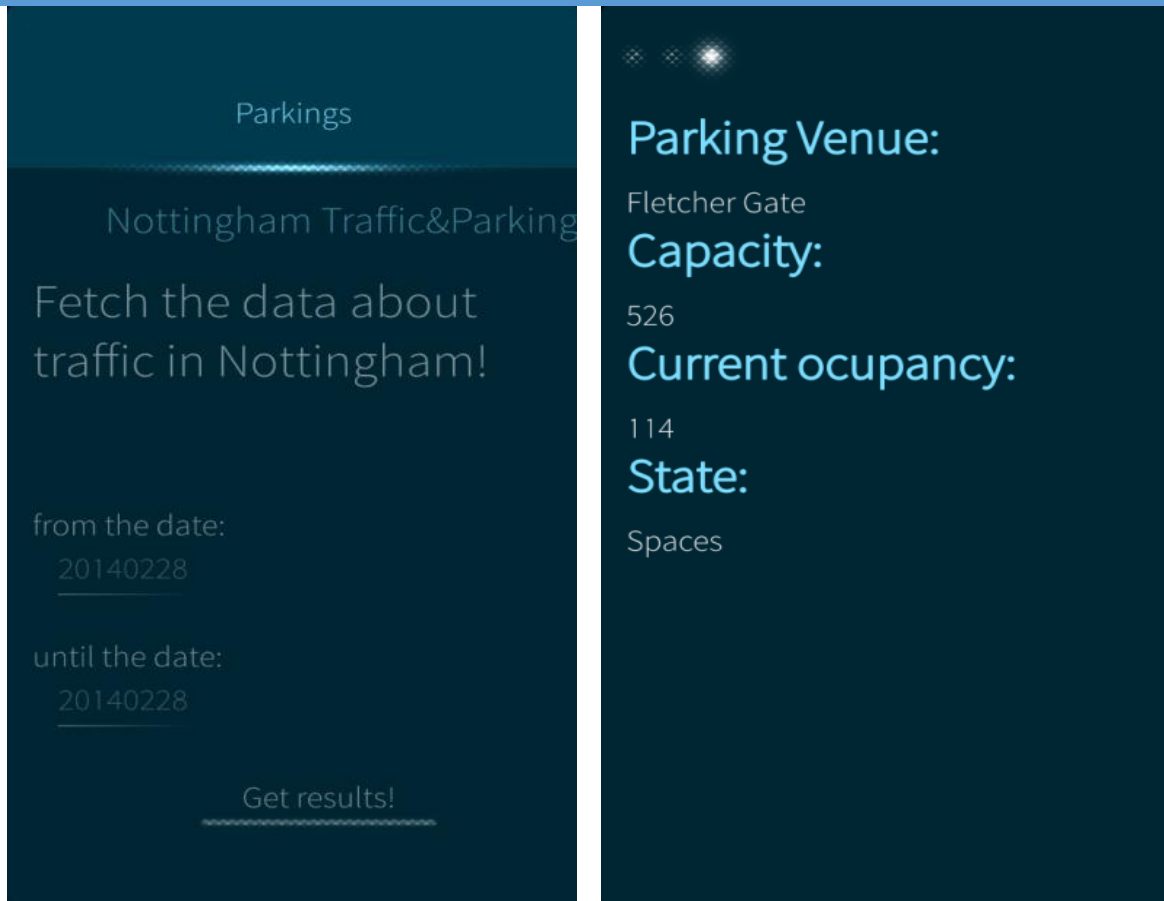
Construction dates:

from 20140225070000 to 20140228065959

Show on the map!

That's a detailed view of a roadworks record.

That's a map point of the roadworks record. You can zoom in/out the map.

Two screens above represent the parkings part. You can access it from the start screen by flicking the menu, and then select the necessary venue. Screen on the right shows the detailed view of a parking venue.