PROJECT 10 – ORANGE LABS SENSORS API

Group Members

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Overview

This biweekly details work carried out for the project as of February 13th. It includes further plans for progress and highlights issues encountered along with the current status of each.

Timeline/ Summary of progress

- *20th Jan – Client meeting, presented a project proposal and a set of proposed deliverables*
- *22nd Jan – 2 minute Elevator pitch carried out*
- 22nd Jan – Continued discussion of hardware from last term and set plans for hardware components to be built with Electronics Design Engineer, Graeme McPhillips
- 23rd Jan – Request sent for server space to be allocated on CS department servers in order to set up a NoSQL instance
  [Reply received: 27th Jan – confirmed server space has been provided/ VM set up]
- 27th Jan – Collected a Sky Mote and began code experimentation with Contiki OS
  [As of 13th Feb: concurrency in C has been explored, code has been written to run on actual hardware when it arrives.]
- 30th Jan – Sent hardware enquiry to clear up existing confusion
  [Reply received: 6th Feb – cleared]
- 30th Jan – Research into NoSQL database options begins
  [As of 6th Feb: Type: Column Family, Apache Cassandra chosen]
- 2nd Feb – VM configured correctly for all users
- 2rd Feb – Recap on front-end web technologies for later building of G/UIs begins
- 4th Feb & 10th Feb – Team meetings, to check in on current progress, issues and next actions
- 11th Feb – Apache Cassandra installed and noSQL instance set up on server, code written to simulate sensor units and readings completed
- 13th Feb – Contact has been made with Neil Daeche and Graeme McPhillips regarding port issues (connecting to Cassandra) and pending hardware respectively. [Status: Pending]

Summary of meetings *[02/02/15 – 13/02/15]*

Wednesday 4th February – Current progress and further actions **[Team meeting]**
Location: Online, Skype call
Time: 7.00pm – 7.35pm
Attendees/ Absentees: Johan, Gulliver, Victoria / None

As a preface to this meeting, the team caught up with each other on what they had carried out from 30th January to 4th February, planned to carry out and brought forward issues found (cleared/ pending). This was followed by discussion revolving around the type of NoSQL database that would be most suitable to aim towards. This was narrowed down to either having a key-value or column

family store. The meeting was wrapped up with a brief discussion on a few relevant database management systems.

Tuesday 10th February – Weekly progress meeting **[Team meeting]**
Location: MPEB 1st Floor Labs
Time: 11.30am – 12.07pm
Attendees/ Absentees: Johan, Gulliver, Victoria / None

In this weekly meeting, each team member confirmed progress made from the 4th of February such as the writing of code for hardware components, the setting up of a Cassandra instance, new skills learnt or recapped, any issues still pending and ended with a few words on next actions in the following two weeks.

It was decided that: JOHAN would continue focusing on programming with Contiki OS, but this time on the actual hardware (pending), GULLIVER will look towards setting public access for the Cassandra instance then begin the task of writing code to be run on the zone controllers and VICTORIA will look into building the API layer using Node.js potentially as the back-end server-side language.

Next Actions

GULLIVER

Over the past two weeks I've continued to work towards establishing a publicly accessible Cassandra instance on our allocated server. After fixing a few issues with firewalls and closed ports, I managed to connect through Java code, and have written a basic class to connect to the server and execute CQL queries. Moving forward, I plan to expand this into a full Java API for building column families and sending/receiving data, working towards engineering the full software package to be run on the zone controllers.

JOHAN

For the past two weeks I have been focusing on learning the programming skills, mainly concurrency in C, necessary to use ContikiOS on our hardware. As we are currently still waiting to receive our hardware, I have not been able to do any physical testing yet however I have code prepared for when this is possible. The next two weeks will be focused on programming with Contiki using the actual hardware and making a start on writing code for uploading to our main database.

VICTORIA

In the past two weeks, I have focused partially on recapping front-end web technologies in preparation for the building of the G/UI in the upcoming month. I have also assisted in configuring the VM for all users properly and begun looking into the building of the API layer of which node.js is a contender for this. In the upcoming weeks, I plan to continue with this task, aiding Johan or Gulliver on the side as and when necessary.