Bi Weekly Report 5
COMP204P - Systems Engineering

Group 31

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Nuffield Health & Microsoft Project

Overview of progress

6 December 2016

This meeting was held between the team members with the intention of implementing scripts that would pull the messages from the queue and automatically push them into the MongoDB every set period of time. The idea was to program a simple script that would be repeatedly run on the Windows Server VM that hosts the NoSQL database. The test script was written at the meeting that was then compiled to get an executable. This executable was then set to be executed every 5 minutes every time the VM is started. The empirical tests at the meeting were successful.

In addition to this implementation, the general progress was discussed and each team member presented their experiments. The plan was also outlined as to which experiments will be run in the following week and what sections of the website will be worked on.

8 December 2016

This meeting was held between the team members and Diana Darie. The intention was the integration between her mobile client and our MongoDB. She has presented a script that publishes messages into the messaging queue and we have presented the script developed on the 6 December. Then the system was empirically tested and some bugs were discovered.

The debugging was done during the meeting and the empirical tests at the end were successful. Furthermore, a standard format for the messages pushed into the messaging queue was decided and the script modifications were planned for the following days.

9 December 2016

This meeting was our final gathering in the UCL Computer Science Labs before the break between First Term and Second Term. Mirek Janatka (our Labs TA) got an overview of the work we'd produced since last week, mainly related to our experiments. He also approved the improvements we'd made on the website. We also had the opportunity to talk to Alex Matei about the issues faced when attempting to complete our experiments. We also discussed further the integration of Diana Darie's work.

In terms of website content, we improved some aspects mentioned in the last meeting. We added the last remaining parts of our website, like Testing & Automation and improved the storyboards. We also reviewed the architecture design.
An important aspect of this meeting was to outline what we wanted to achieve by the start of next term. These objectives have been communicated to Microsoft parties, including Paul and Stuart, and are mainly related to experiments on Microsoft Azure.

Plan for the next two weeks

For the next two weeks we will primarily be focusing on finishing off the first phase of systems engineering one. We will be creating a video which will showcase our project as a whole. It will include an overview of the system and key requirements, research and experiment performed, PoC and prototype design and all the achievements and plans for the final PoC in terms 2. We will also be creating individual reports based on our performance and achievements made on the project.

Plan for phase 2 of the project

The main phase for the second part of the project will be the development phase. Based on the design architecture and PoC designs we have created during phase 1 of the project we will start integrating the system in a more practical manner. We have already integrated majority of the core functionality of databases, messaging queue and authorisation. The next step will be to continue integrating the system in a more complex manner as well as working with Azure ML and creation of interactive dashboards for Nuffield Health Hospital.

Individual section

Marc de Fontenay: the last two weeks have mainly been focused on attempting to achieve the experiments we'd set out earlier and described on our website. The first experiments were successful, such as registering applications with Active Directory, adding identity providers or launching new Directories. I gave the follow experiments multiple attempts but achieved partial success. Regarding the Social Media login experiment, I was able to add facebook as an identity provider and register the application with Facebook login using its appID and Secret, while using a template application downloaded from the Microsoft resource pages, and configuring the corresponding web.config code. To address the issues I encountered I contacted our contact points at Microsoft and Stuart's availability should enable us to complete the experiment shortly. I also contributed again to the website content, producing storyboards, and the Testing & Automation sections. This includes

conducting research and finding relevant tools that could help us in that field, such as Azure Diagnostics.

Mo Afsharmoqaddam: During the last two weeks our team was dedicating the majority of the time to finalise the project website as well as continuing to complete the research, PoC and prototyping section and continuing on producing experiments. During these two weeks with the help of Jas, I managed to pull messages developing a simple Python script using pyMongo and Python libraries from azure to store the messages inside the database within specific tables and collections. Furthermore, I managed to to also automate the system so that the script is run every five minutes whenever mongoDB is connected so that the user does not need to manually run the script to redirect the messages every time from the messaging queue. Additionally, I developed an attractive prototype of a dashboard for the Nuffield Health Hospital users which showcased how the final dashboard may look. The prototype is interactive which showcases relevant visualisations of sample data, which is relevant as well as other feature that may be used for the final product such as notifications to the user and a login page. Finally, I contributed in proof-reading the website and added minor details when needed.

Jas Semrl: During the past two weeks, I have helped implementing the scripts for the automation of retrieving messages from the message queue and pushing them into the MongoDB. After the basic implementation was successful, I have upgraded it to support multiple queues and multiple collections. The system was empirically tested and did not show any faults. In addition to that, I have implemented a simple message queue publisher/subscriber RESTful API for third parties to be able to retrieve and publish data onto the messaging queues without having direct access to the queues or the queue access keys. Instead, in the future versions, the authentication will be done through our app registered in the Azure Active Directory. For now, the API is able to publish/retrieve data from different queues, but it is not yet safe to deploy as it does not have any authentication. Furthermore, I have added content on the project website and contributed to removing grammatical errors and typos by proofreading some sections.

General Tasks:

- *Start working on the video for the project*
- *Write individual reports*
- *Start planning for term 2 functionalities such as D3 and Azure Machine Learning*
- *Continue editing final report using LaTeX*