Team 16: Biweekly Report 2 – Friday October 28th

Blockchain + Internet of Things – Atos

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Overview

During the past two weeks the whole group focused on research on many different topics as such the platform we plan on using, the public ledger, bitcoin, ethereum and mostly ideas to merge the internet of things with blockchain. Our goal was to find the idea for our project and pitch it to our client for his approval. However, we had trouble finding an idea that uses blockchain in an IoT prospect since both are new technologies, and anything we came up with is either not feasible or requires the use of devices we do not own (such as smart watches, smart home system, TV, driverless cars etc) .
Also, we started setting up a website, which will be used to show our progress by making our reports, research and experiments available. Finally, we assigned roles to each team members:

Sadir – Technical Lead, Client Liaison
Kristelle - Chief Editor (website), Secondary researcher
Alex - Chief Researcher, Secondary editor (website)

Meetings

Meeting #1 - October 13th 2016 // Meeting Andy
Attendees: Andy Wallace from Atos, Sadir, Kristelle, Alex
This meeting marked our first encounter with our client Andy Wallace during which we discussed the project and what is expected of us. We were not given any specific requirements, and we were told we needed to come up with our own idea to work on for this project. Our client gave us some examples such as the driverless cars, and advised to look for a situation where there is a lack of trust between 2 parties, and hence where Blockchain can applied. We asked questions about the utility and feasibility of using Blockchain in certain domains. To conclude, this meeting helped us have a better image of Blockchain and IoT, even though we had to come up with our own requirements (and get our client's approval).

Meeting #2 - October 13th 2016 // Lab session
Attendees: Sadir, Kristelle, Alex
This lab session was mainly spent talking about the different ideas we had and finding their pros and cons. We discussed the possibility to use Blockchain to connect people with ambulances without having to give a call to the call center, however we found this concept to be very hard to bring to life. We also did some research to find out how to program a Blockchain and we decided to start experimenting Ethereum

Meeting #3 - October 20th 2016 // Lab session 2
Attendees : Sadir, Kristelle, Alex
During the lab session, we discussed our project with other Blockchain teams, and decided to schedule a meeting all together. We also continued our technical experiments (Ethereum) without really succeeding, as the we had some problems without installing and running ethereum.

Meeting #4 - October 24th 2016 // Meeting Antoaneta
Attendees : Antoaneta Serguieva, Sadir, Kristelle, Alex
We met and updated Antoaneta with our progress. We expressed our concerns about the Atos competition in which we were enrolled automatically and a possible clash with the courses requirements, we were told to focus on the course and not worry about the competition. We were also advised to work in collaboration with the UCL's lab of IoT. Finally, we were given some tasks to complete before our next meeting:

1. Confirm with our client that the project meets both the courses' requirements and the Atos competition requirements
2. Choose a final idea to work on
3. Contact the IoT lab team

Meeting #5 - October 24th 2016 // Meeting all Blockchain teams
Attendees: All Blockchain Teams, including all the members of ours (Sadir, Kristelle, Alex)
All the teams working on Blockchain met on the 24th of October at the Science library to explore Ethereum. We discussed various research pages and tutorials that might help us better understand how to tackle using the platform and we also shared some of the knowledge we have learnt so far. Furthermore, we talked about the various programming languages Ethereum supports and which one would be more approachable. We were able to create our own Ethereum network and we started mining experimental ethers (non valuable money).

Meeting #6 - October 27th 2016 // Lab session
Attendees: Sadir, Kristelle
This lab session was spent discussing new ideas that focused on blockchain more than the IoT and setting up the website. The ideas are to be shortlisted with the client.
Our TA advised us to:

- Use devices everyone owns: smartphones, computers, etc
- Not focus too much on the internet of things
- Find an innovative idea that actually solves a problem

Meeting #7 - October 28th 2016 // Meeting Andy
Attendees: Andy Wallace from Atos, Sadir, Alex
During this meeting, we discussed the different ideas, and we shortlisted 3 main ones, ranked as followed:

1- Platform to organise elections and votings - using fingerprints
2- Platform to legalise and authenticate documents (Virtual Notary Public)
3- Platform concerning fair trade of manufactured products
We need to research the resources we have for each, and choose one single idea as soon as possible

Ideas we came up with

- Contract shaking hands
- Fair trade platform
- Tracking devices for maintenance issues
- Elections: voting app

- E-Notary Public, document authentication platform

Tasks Completed

- Setting up our website: link to our website
- Coming up with ideas for our client
- Short listing the ideas
- Creating our own ethereum network and mining it

Problems

- Deciding on a single feasible idea
- Difficult research, since the link between IoT and Blockchain is very recent.
- Not finding support for Internet of Things experimenting

Plan for the next 2 weeks

- Continue working on the website: structure and content
- Research specific to our idea
- Continue our experimental coding

Individual Section

Kristelle Feghali:

During this past two weeks, I worked on the website we will use to present our work. I searched for templates and tried a couple before choosing the finale one. I had to make some changes to fit our needs such as creating different pages and inserting a menu and links to our reports and so on. However, the website is not completely done, we decided to make it more structured we would prefer to have everything in the website instead of using too many links (to pdf files). I also did some research and came up with some ideas, such as using blockchain to create a platform for voters that guarantees their vote is counted and there is no cheating in the election. We found some projects based on this idea, and we thought of developing the front end and tweak the back end code to create our very own application.

Sadir Abdul Hadi:

As the team leader and the client liaison, I continued working on logistics, meeting scheduling, and progress tracking. I also focused on technical experiments and succeeded in creating my own ethereum network, using the Go version of ethereum. Furthermore, I've done some research and came up with potential ideas, such as : an e-notary public, that would authenticate documents via internet, and a recycle bin that would pay you bitcoins when you throw rubbish inside, to encourage recycling in developing countries. Finally, I participated in the design of the structure of our website, and looked for some examples of online portfolios.

Alexandru Chiriac:

Over the past two weeks I have researched a couple ideas that might prove useful for our project and I have read various articles about technologies that are currently being developed such that our ideas do not overlap with existing projects. During these weeks not much coding has been done because our team is still trying to come up with an idea for the project as our client has

asked us to brainstorm these weeks and tell him our idea on the Friday 28th of Oct meeting. I came up with 3 ideas for the project: using blockchain to secure the communication between wireless chargers and various objects which support the feature; using blockchain to establish a connection between Solar Roadways (a project still currently being developed) and electric cars; using blockchain to connect in line power generators from a specific area such that when a drop occurs, another node can temporarily redistribute it's power to the affected area.