Team 16 - Biweekly Report 2 | Due Friday, February 10th 2017

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1. Overview

During the last two weeks, we started the true technical work. We have finalised the stack we want to use, learned the basics of it quickly and dived into coding. The stack we decided on is: Meteor, MongoDB, Web3.js, Truffle, and the standard web development tools (HTML, CSS, JS, jQuery)

Sadir was assigned writing a suitable smart contract. Kristelle was assigned the task to finish a basic front-end as soon as possible, so that we can test our system in an iterative way. Alex was responsible of setting the required database up, with the authentication system, and document storage system.

However, our TA highlighted in meeting 2 that he should accelerate our pace, and that he wants to see something working as soon as possible. Hence, Sadir built a simple system that uses all our stack (except for the database), and that connects to ethereum TestRPC. The problems we faced are mainly about bugs in the different components of the website.

2. Meetings

Meeting 1 – Monday, January 30th 2017

Attendees: Sadir, Kristelle, Alex

We shared the research we've done during the weekend, sketched the different pages of the website together, and each person started doing their task. We have decided to use Meteor, a framework that is mainly used to build fast, easy to deploy distributed applications (Dapps), in addition to Truffle.

Meeting 2 – Tuesday, January 31st 2017

Attendees: Sadir, Kristelle, Alex

We discussed with our TA about our progress. He advised us to accelerate our pace, and so we reordered our priorities and started working on the various components of our system in parallel: front end interface (user UI and institution UI), back end integration of the database, the smart contract functionality and user accounts component.

We also discussed with Hirsh, a PhD student who's acquainted to distributed apps. He told us that our choice of stack is convenient, and gave us some resources to look at.

Meeting 3 - Friday, February 3rd 2017

Attendees: Antoaneta (supervisor), Sadir, Alex

We described our progress to our supervisor, she took note, and asked us to prepare a presentation for the next meeting, explaining our idea, the problem it solves, how it is original, and if possible show some working parts.

Meeting 4 - Tuesday, February 7th 2017

Attendees: Sadir, Kristelle, Alex

During the lab session, each of us showcased what they've done (see tasks completed), and we discussed with our TA about our performance last term.

Some progress was made, and we seem on track. Our tasks were made clear to our TA in order for him to give his opinion on our project.

3. Tasks Completed

Kristelle:

- Finished the skeleton front-end of the website that should be linked to the back-end
- Working on the design
- Started looking at the different options for our database

Sadir:

- Researched the best technologies to use, and chosen Meteor and web3.js, in addition to Truffle chosen earlier.
- Learned about Meteor, web3.js, and integrating smart contracts with a web app
- Built a simple web app that integrates all our stack (except for the databases), and connects to the Blockchain thanks to web3.js
- Written a smart contract that allows to upload a document, sign it, and view the signatures. This smart contract needs further refinement.

Alex:

- Familiarised with Meteor.js and React.js
- Experimented with small back end apps in Meteor
- Experimented with the database (created an instance of MongoDB and user accounts functionality)

Team progression:

We estimate that our progress is tight on time. Although we're late in some areas where some team members faced difficulties (database setup/ user authentication system), we've done some things ahead of the schedule for decision making purposes (integrating the different systems).

4. Plan for the next two weeks

Sadir:

- Finalise the smart contract that should be used
- Deploy the smart contract on ethereum testnet (different from testRPC as it's not local to the machine, but distributed on the different nodes of the testnet)
- Link our website to ethereum testnet.
- Start linking the endpoints created at the website's back-end to the blockchain, along with Alex.

Kristelle:

- Link the front end to the databases, i.e. the meteor project created by Alex.
- Set up a convenient server that would be used to our final project.
- Work closely with alex while focusing on security, the structure of the website, and the navigation between the different pages.

Alex:

- Fully set up the database.
- Create the endpoints of the website that should link to the blockchain
- Make sure the documents are saved in a secure and compact way
- Integrate the meteor project with Kristelle's front end

5. Individual section

Sadir

At the beginning of last week, I felt that we were behind, and hence I decided to give more time to this module than usual. You can see my achievements in section 3. In fact, I was quite worried about the difficulties that might be hidden in the integration of the different systems, so I decided to learn how to overcome them. I followed tutorials about Smart Contracts in general, and the Solidity language in particular, but also Web3.js, Truffle, and Meteor to stay on the same wavelength as Alex. I've later put what I've learned into practice, written a smart contract tailored to our needs, and built a web app that integrates all the technologies stated above together, that connects to ethereum testRPC (github). However, I was forced to slow my pace down at the end of the second week because of other courseworks that are due.

I've also done my best to make sure we're on track and following the schedule well, and scheduled a meeting with the client.

Kristelle

The past weeks, I worked on the front end of our website. I created the different pages and structured them in order to have an easy navigation between them. I am still working on some parts that I wish to ameliorate, such as the way the documents are viewed. I am searching for a nice plugin to view the files in a modal. The design of the website still needs work, which I plan to keep working on as we go through the project. The future steps that I wish to take are to create a database and work on the login and register forms. Moreover, I plan to link the backend and frontend as soon as possible in order to make progress faster.

Alex

During the past two weeks I have been experimenting with the meteor frameworks and familiarising myself with the environment so that we can build the back end of our app. Meteor has a lot of useful features (such as an integrated database) which makes the deployment of projects a lot easier. I have been working through various tutorials on how to create simple apps and moving forward I started working on the login system and integration of the database. Meteor uses MongoDB which is a non relational database, but for the purpose of our application there's very little difference to a regular MySQL database (which is a relational database). My plan for the immediate future is to use the assets that Kristelle has created and link them to the back end project.