Group name: 4chainz

Project: Blockchain as a service

## Problem analysis

Main problem: Develop a cluster of virtual machines for blockchain as a service.

There are a couple ways to implement a blockchain:

- One of the options we have is to develop a blockchain from scratch. Considering that we are new to this technology, going with this option would mean that the development of the blockchain would be our main focus.
- The second option is to implement an existing blockchain prototype (ex. Cello blockchain). This way we would not only learn how a blockchain works but would also focus more on making changes to the already existing project so that it satisfies our needs. In addition, we would focus more on developing it as a service.

Also, there are some different ideas on how to use it as a service:

- Specified - only possible to insert specific type of data (ex. When someone took the keys and brought them back). This way user would only be able to add data in a form, while blockchain as a technology would still allow space for future improvements and other types of forms.
- Unspecified - user is able to add any type of data and is not limited to any forms. The main advantage would be that each new administrator (companies, project groups, etc.) could modify the blockchain to suit their needs.
- Open environment - accessible by everyone through the internet.
- Closed environment – Accessible only from private network (ex. Vilnius university).

Whichever type we pick, we would still have to decide who are we making this product for:

- University needs.
- To sell as a data storage system for companies or people.
- Open source.

## Project vision

We imagine that our finished product will be a hierarchy of blockchains hosted on Vilnius university server. Hierarchy will consist of separate blockchains for each faculty connected to each other and a central blockchain used by Vilnius university central office. Each blockchain will have one virtual machine with GUI as a master with some other VMs as slaves. GUI will include user dashboard making it simple to add new data. For this project we decided to modify an existing blockchain prototype called Cello by removing its usage of Docker and making it fully virtualized and able to exchange information throughout the hierarchy.

# MEETING MINUTES

*Staff Meeting*

| | | | |
|---|---|---|---|
| **Meeting Name:** | Meeting 1 | | |
| **Date of Meeting:** | 2017-09-19 | **Time:** | 09:00 |
| **Meeting Purpose:** | Meet with the client and decide on the direction of the project | **Meeting Leader:** | |
| | | **Prepared By:** | |

| **1. Attendance at Meeting** *(add rows as necessary)* | | |
|---|---|---|
| **Name** | **Position** | **Note** |
| Jonas Gavėnavičius | | |
| Lukas Klimas | | |
| Tautvydas Kubolis | | |
| Povilas Spruogis | | |
| Linas Bukauskas | Client | |

| **2. Meeting Notes, Decisions, Issues** |
|---|
| There are several ways to implement the project. One way is to develop the blockchain from scratch. Another way is to use an existing project (ex. Cello blockchain, Naivechain) and focus on updating the project and developing it as a service. Using Cello seems the best option. |
| Service ideas: smart contract blockchain, administrational event logs, open to validation of any data |
| Blockchain hierarchy: a chain for each faculty which connects to the main block of the university |
| Change Cello to proper virtualization hosted on MIF system instead of using Docker and implement a user interface |
| Client prefers us to create a blockchain consisting of seperate blocks for each faculty, that allows the unversity's administration to register events, files or any data and then helps to validate it. |

| **3. Action Items** *(add rows as necessary)* | | |
|---|---|---|
| **Actions** | **Assigned to** | **Due Date** |
| Install Ubuntu and Cello, analyse how the Cello blockchain works and where to make changes | Everyone | 2017-09-28 |