Blockchain Visualisation Web App

Final Year Project Proposal
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Multimedia Applications Development

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Blockchain

A blockchain is essentially a shared database which exists across a network of cooperating computers. Data on the blockchain is public, immutable and decentralised. This new technology is gaining attention across industries for its wide range of applications.

As a new technology it can be difficult to gain an overview level understanding of how it functions. This project aims to address this issue.

The Solution

A web app which imitates a working blockchain network for visualisation and learning. The proposed web app will create a dynamic visual experience which will be used to understand how the network is initialised, how it expands and how it is maintained without a central authority. It will resemble Bitcoin's block layout and hashing technique but without any of the currency and wallet software in place.

Instead of transaction data, the blockchain will be used to store messages added by the users. The project will be visual-orientated. The technical complexity of the system will be used solely as a resource for the design process. If time and complexity become restrictive, focus of the work will be placed on the completion of a user friendly experience over a complex, practical application. The project is hoped to be a multi-user system where the user is represented as a virtual client on the network map. The map is made up of all the existing users on the service. This can be changed to a single user experience if time restrictions dictate.

Software

The app will be developed with the **JavaScript** language using Object Orientated Programming (OOP). The language is chosen for its compatibility with most browsers and its visual creative abilities. Time and experience permitting, the project can be reconfigured into a **Node.js** application allowing for user interaction across a shared Blockchain network.

The blockchain visualisation app will be hosted on **Heroku**, a Platform as a Service (PaaS) with Git integration and a range of innovative features. The web app's data will be stored using **MongoDB**, a database program using a JSON like format for data storage.

The development process will use **Git** for version control.

Objectives

In developing this project I hope to gain a deeper understanding of the technology, to develop my skills as a programmer and project manager, to showcase these skills, to raise my employability and to solidify my experience on this course. I plan to take the project to the next Sun Life Innovation Awards and will aim to win first prize with it.

Project Repository

https://github.com/JohnFromWIT/Blockchain-Visualisation-Web-App

Development Videos

https://www.youtube.com/playlist?list=PLjawYto_GUTEAtzxLK1e2XvukifH2wiQK