

CSU22013/CSU33013: Group 33
Software Design Specification Outline
Blockchain publishing system

Propylon

By Anastasiya Bogoslovskaya,
Steven Cataluna,
Charles Christiansson,
Mohamed Difallah,
Alice Doherty,
Conor Doherty,
Alexander Sepelenco

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1 Introduction

1.1 Overview and Success Criteria

Validation of information on the internet has gotten harder and harder with time. The internet is filled with misinformation, untrustworthy history and suspicious sources. The need for a way of validating information found on the internet in a way that is trustworthy has become ever so important in our day and age.

This is where Blockchain comes in, it will provide an effective way of validating history, current information and prevent tampering with information in the internet.

The Blockchain will work with solving these problems and the website itself will give a user friendly experience to the user, showing them visually, previous versions of information they seek as well as giving a visual indicator of validity and that tampering for certain did not occur, so that the user can be certain of its validity.

1.2 Scope

The following items are in scope for this project:

- The system must be able to validate the authenticity of information that is on the blockchain.
- The system must prevent tampering of information.
- The system must allow users to visually see the following:
 - Authenticity of information.
 - Previous history versions of that information.
 - If information has been tampered with.
- The system can support a pre-existing blockchain or a new one.
- The system can be built on pre-existing open source CMS such as WordPress or a personal website.
- The system allows for documents to be viewed publicly.

The following items are out of scope for this project:

- The system does not need to support mobile devices, desktop is sufficient.
- The system does not need to support multiple information methods of showing something to a user, a blog will suffice.
- The system focuses on the blockchain aspect and so, a website that allows users to login and register and creating passwords and login, is out of the scope. A simple login that demonstrates the blockchain capability is sufficient.

1.3 Definitions and Abbreviations

- **UI:** User Interface; How a user interacts with a computer
- **GUI:** Graphical User Interface; A form of UI that allows the user to interact with the computer through the use of graphics.
- **Blockchain:** Interlinked blocks that contains cryptographic hashes of the previous blocks, timestamps, and transaction data.
- **Genesis block:** The start of a blockchain, it does not have a hash to point to a previous block.
- **Crypto:** Anything related to the mathematical cryptography for use of secure communication.

1.4 References

- <https://www.educba.com/what-is-gui>
- <https://en.wikipedia.org/wiki/Cryptography>
- <https://www.youtube.com/watch?v=wHTcrmhskto>
- <https://www.youtube.com/watch?v=bBC-nXj3Ng4>
- https://www.youtube.com/watch?v=SSo_EIwHSd4
- <https://propylon.com/platform-architecture>
- www.citizensinformation.ie

2 System-Design

2.1 Design Overview

- 2.1.1 High-level overview of how the system is implemented, what tools, frameworks and languages are used etc.

2.2 System Design Models

- 2.2.1 System Context
- 2.2.2 Use cases (from Requirements)
- 2.2.3 System Architecture
- 2.2.4 Class Diagrams
- 2.2.5 Sequence Diagrams
- 2.2.6 State Diagrams
- 2.2.7 Other relevant models