Requirements: PhiQuest Project

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History of document

- **Version 1.00** (February 2nd, 2022) – Initial document created
- **Version 1.01** (February 16th, 2022) – Document updated with added input from Dr. Christensen and the PhiQuest stakeholders
- **Version 1.02** (March 24th, 2022) – Document updated with mark ups to show completed, in progress, and incomplete user stories as of the Minimum Viable Product demonstration.
- **Version 1.03 (March 30th, 2022)** – Locked-down version of the requirements document.
    - Modified acceptance criteria on 4.PS1.3.a to only allow accounts that are oAuthenticated and within the database access to the administrative dashboard to keep the blockchain private. Added 4.PS1.3.b for blockchain commitments.
    - Added an acceptance criterion for 4.PS2.4.a that includes failed/error logging.

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1. Introduction

PhiQuest has approached this student team for help in building an administration interface for their existing DocBridge.io extension in Google Chrome and for building a private blockchain to support the onTask.io application. The problems that this project will be addressing are as follows: (PS.1): “Can a private blockchain system be implemented to certify transactions and documents signed via the DocBridge.io user interface?” and (PS.2): “Can an administration user interface be implemented so that operations personnel can visualize Docbridge.io metrics, perform user administration, and log selective events and transactions?”

2. Glossary

OnTask.io: a web-based application that helps automate business processes, by creating digital transactions that simplify document-based procedure, such as digital forms, document signing, and project reviews.

Certify: a status given by a central authority that carries the approval or authentication from that authority. In this case, a document is certified when it is given a hash that matches the original document’s hash in the blockchain.

User: any person or organization that utilizes OnTask.io for business operations.

Administrator: any person that operates under the authority of PhiQuest or OnTask.io and utilizes provided tools to manage users, accounts, documents, and application operations.

Chrome Extension: programs installed into the web browser Google Chrome that change the browser’s functionality, such as adding new features or modifying existing behaviors of the program.

DocBridge.io: is a Google Chrome Extension built by PhiQuest that integrates Ontask.io and popular Google Apps platform that automates document processing and e-signatures.

Document Certification: is a multi-stage security process of electronic documentation for the verification of authenticity and validity of the document.

Ledger: a record-keeping system traditionally used in the financial industry to keep track of all transactions that a business or entity has been involved in.

Distributed Ledger: a record-keeping ledger that is maintained in multiple locations to prevent unauthorized alterations or erasures.

Peer-to-Peer Networking: the sharing of resources between two or more connected computers without traffic being routed through a separate server. (2)

Blockchain: a distributed ledger on a peer-to-peer network whose transactions cannot be altered or erased. Each new transaction that occurs is verified and is copied onto all copies of the ledger. (1)

User interface: is the point at which human users interact with a computer, website, or application.

3. Assumptions

1) The project should be programmed in JavaScript and implemented to fit the existing environment of the DocBridge.io extension.
2) The project will provide extended functionality on top of the existing DocBridge.io extension.
3) The project will use the already established database as the source for information such as users, workflows, groups.

4. Requirements

(PS.1): Can a private blockchain system be implemented to certify transactions and documents signed via the DocBridge.io user interface?

1) As a user of DocBridge.io I want to be able to tie user signatures for a document to a private blockchain so that I may know that the signature is authentic.

- Acceptance criteria:
    a) Signatures may be tied to documents as a transaction sending the document or as a transaction that sends data to the document from a user.

2) As an administrator I want a blockchain explorer so that I can search for real-time and historical information related to the transactions that are stored in the private blockchain.

- Acceptance criteria:
    a) An administrator should be able to find the document identifier on the blockchain.
    b) An administrator should be able to upload a document to the blockchain explorer to confirm the validity of the document.

3) As an administrator, I want the blockchain to be a private blockchain that restricts who holds the ledger so that documents and signatures are kept private within the system and cannot be publicly viewed.

- Acceptance criteria:
    a) Blockchain exploration is restricted to admin user accounts that are both authenticated through Google oAuthentication and within the “admin_user” database table.
    b) New blocks may only be committed by privileged instances committing to the database.

(PS.2): Can an administration user interface be implemented so that operations personnel can visualize Docbridge.io metrics, perform user administration, and log selective events and transactions?

1) As an administrator I want a back-end administration interface for the DocBridge.io system so that I can edit information of users that are using DocBridge.io.

- Acceptance criteria:
    a) An administrator should be able to add accounts, remove accounts and edit accounts with this interface.

2) As an administrator I want a back-end visualization interface for the DocBridge.io system so that I can visualize DocBridge metrics.

- Acceptance criteria:
    a) The metrics should be visualized in a dashboard available in the administration interface.
    b) The displayed metrics should at least include the number of users and how many documents have been sent.

3) As an administrator I want a back-end administration interface for the DocBridge.io system so that I can view and edit information of all users of DocBridge.io.

- Acceptance criteria:
    a) An administrator should be able to reset a user's API key.
    b) An administrator should be able to edit a user’s email, groups, workflows and personal information.

4) As an administrator I want a back-end administration interface for the DocBridge.io system so that I can view information on previous operations.

- Acceptance criteria:
    a) An administrator should be able to see when workflows start, when groups are created/deleted, and when program failures occur.

5. Needs and factors

For each need and factor describe considerations for this project. Some needs and/or factors may not apply to the project, if so then note as such (and briefly describe why it does not apply).

5.1 Public health needs

Public health needs are not applicable to this project. Public health will remain unchanged after the finalization of this project, as no aspect of it will impact the health and wellness of the public.

5.2 Public safety needs

Public safety is addressed by requirements (1). This requirement covers concerns about the security of critical information such as legal documents, which is a measure of public safety.

5.3 Public welfare needs

Public welfare needs are not applicable to this project. The requirements and assumptions only affect the internal systems that onTask.io operates within.

5.4 Global factors

Global factors are not applicable to this project. The requirements and assumptions only affect the internal systems that onTask.io operates within and will not change its global impact.

5.5 Cultural factors

Cultural factors are not applicable to this project. The requirements and assumptions only affect the internal systems that onTask.io operates within.

5.6 Social factors

The social factors are addressed in requirements (1) and (7). These requirements describe the need for a blockchain that contains a privately held ledger of transactions that a community or authority will agree is without erasures or alterations.

5.7 Environmental factors

Environmental factors are addressed by assumption (4). As the assumption states that the project will run on a local server, which is connected to power consumption and potential environmental pollution.

5.8 Economic factors

Economic factors are not applicable to this project. The project does not have any economic factors as it will not have any characteristics that will affect interest rates, tax rates, wages etc.

References

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