2.1 Product Perspective

Santha Rita is an education institute based in Naples, Italy. This institute is in need of a website to authenticate the validity of the certificates they provide at the completion of their academic courses. Through this website the students and other interested parties should be able to certify that their documentation is valid. Currently no such mechanism exists and has therefore caused a plethora of issues, such as, duplication, lack of redundancy and irrecoverable loss of the certificates. The proposed system is one that plans to incorporate the top-of-the-line existing blockchain technologies to yield a product that satisfies the entirety of the client requirements. This website will house an easy-to-use user interface to provide the best user experience accessible from anytime, anywhere. Further descriptions of the system will be provided through the illustrations and diagrams further on in this document.

Figure 2.1: Architecture diagram of the project

2.2 Product Functions

The website will enable the end users to be able to authenticate and re-access their certificates. This will also allow the administrators to manage the existing certificates provided by the institution.

The functions of the proposed website in brief;

* User Authentication and different permission levels depending on the nature of the account.
* Facilitation of certificate uploads.
* Integration of blockchain technology.
* Verification of certificates.
* Role based access controls.
* User activity audits
* Alerts and notifications.

Figure 2.2: Class diagram

2.3 User Classes and Characteristics

There are only two user levels in this website.

I. Administrator

II. User

2.3.1 Administrator

Administrators have the ability to

* Login and logout
* Manage existing certificates
* Upload academic certificates
* Search and retrieve the needed documents,
* Access permission controls,
* Generate reports,
* Conduct audits
* Receive notifications.

2.3.2 Customer

The end users will get the functionality of authenticating their needful documents and their convenience.

2.4 Implementation and Development Requirements.

1. Software requirements

* MySQL Server
* Visual Studio Code
* Libraries- Bootstrap
* Microsoft word
* Microsoft PowerPoint
* Windows 7 / MAC OS X or above
* IPFS
* Harmony Blockchain

1. Hardware requirements

* PC
* WIFI router
* CPU i3 or above
* RAM - 4GB or above
* Disk - 20GB

1. Running Environment Requirements

Recommended requirements:

* Windows 10 / Mac OS X Desktop
* 2 GHz or above processor
* 32 / 64 – bit processor
* Disk - 20GB.
* Web browser

2.5 Design and Implementation Constraints

Technology Stack: The recommended website will be made using HTML, JavaScript,

Bootstrap and PHP with the Visual Studio Code integrated development environment. To

manage and store data, one requires the MySQL database system.

• Technologies:

Web programming technologies – HTML, CSS, JavaScript, PHP

Framework – PHP Laravel, Bootstrap

Libraries – Font Awesome

Database – MYSQL

Diagram tools – Draw.IO

Accessibility Focus: Through the creation of this website the development team plans to create a system accessible to anyone, anywhere, irrespective of their geological location and their skill in technology. It will boast an easy to use and easy to comprehend user experience in order to ensure that the maximum demographic of users will be able to use the website.

Internet Connection: The main requirement to access the website is to have a stable internet connection. Therefore, we can ensure that any individual with an internet connection can access the website irrespective of where they are geologically from.

Organizations Responsibility: The institution must take the responsibility for the software's

Maintenance post-delivery. This entails keeping the website’s security up to date, maintaining website’s performance, updating the website when required, taking care of any problems or errors.

Timeline and Customer Satisfaction: The factor deciding the success of this exercise is the level of customer satisfaction, therefore if the need presents itself the time frame will be altered to facilitate maximum customer satisfaction.

2.6 User Documentation

As mentioned in the upcoming section ( 2.8 Assumptions and Dependencies ) at the point of implementation of the proposed website the development team proceeds upon the assumption that the end user will be familiar with a basic comprehension of the internet. But in the interest of further improving the ease of use the users will be given an introduction and a training session through which the development team intends to provide the guidelines to using the website. Furthermore, an user manual written in a simple easily comprehensible manner will be provided to the users at the event of the launch. The client will also receive a copy of such hard copy of the user manual along with the product delivery.

2.7 Project Documentation

This section of the document will focus on the documentation produced by the team members so far in their progress of the proposed project. Namely the project brief and the project proposal.

Project Brief: The project brief is the document that serves as a point of reference to what the proposed project will entail once completed. The brief helps to bridge the gap between the client and the development team and ensure a common understanding exists between the two parties pertaining to the project.

Project Proposal: The project proposal focuses on the issue faced by the client and discusses the solution that the development team proposed to implement in order to solve the problem the client is faced with.

2.8 Assumptions and Dependencies

* The end users are in possession of a suitable device (such as : A mobile, a desktop computer or a laptop) that allows them to access the proposed website through a web browser.
* The end users have the means to access the internet safely and conveniently.
* The end users have a basic comprehension of the internet, the web browsers and how to use them.
* The end users are aware of how to protect their virtual identity while traversing the internet.