PROJECT DOCUMENTATION

PROJECT PLAN

Project: **Certichain - A Secure Certificate Management System for Institute Santha Rita**

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PRINCE2

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Client: Mr. Ravi Muditha

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1. Plan Document History

1.1. Documentation Location

This document is only valid on the day it was printed.
The source of the document will be found on the project's PC in location.

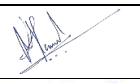
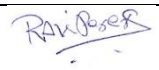
1.2. Revision History

Date of this revision:
Date of Next revision:

Revision date	Previous revision date	Summary of Changes	Changes marked
16/02/2024		First Issue	

1.3. Approvals

This document requires the following approvals.
Signed approval forms are filed in the Management section of the project files.

Name	Signature	Title	Date of Issue	Version
Dr. Yasas Jayaweera		Project Board		2.0
A. A. M. N. Perera		Project Manager	17/02/2024	2.0
Mr. Ravi Muditha		Client	17/02/2024	2.0

1.4. Distribution

This document has been distributed to:

Name	Title	Date of Issue	Version
A. A. M. N. Perera	Project Manager	17/02/2024	2.0
I. Hassaan	Start-Up Manager	17/02/2024	2.0
Nethrough Wickramasinghe	Quality Manager	17/02/2024	2.0
Shenuka Fernando	Risk Manager	17/02/2024	2.0
P. A. Gunawardhana	Scheduling Manager	17/02/2024	2.0

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Project Plan

2. Purpose of Document

The purpose of the project plan is to provide a comprehensive overview and guidance for the entire project. It aims to discuss the concepts and the objectives of the project, as well as describe the strategies and resources needed to achieve those objectives successfully. Moreover, this will act as a roadmap, detailing the project plan with a cost management section. Every step of the project will be tracked and analyzed. It will ensure cost-effectiveness by including a transparent analysis of the project's financial aspects, outlining costs and budget allocations.

3. Plan Description

The project has 5 main phases, namely planning, documentation, design, development, and testing. The initial stage of the project will be the planning phase comprehending activities like daily team meetings, client meetings, risk analysis, quality management and identification of issues.

The documentation phase is well defined on creating and managing all the required project documentation such as Software Requirement Specification (SRS), Project Initiation Document (PID), Project proposal, and any other document that ensures successful project implementation.

The other subsequent phases: design, development, and testing include activities such as designing project architecture, implementing required functionalities, and conducting a quality test to ensure the quality and the reliability of the project deliverables.

4. Prerequisites

- Updating executives on the project board about the progress of the project.
- Make necessary resources available.
- Get the client's approval for the project brief.

5. Dependencies

A clear understanding about the functional requirements is needed from the client's side to proceed with the project. This includes a detailed version of desired features, functionalities, and goals. Thereafter, the given requirements could be reviewed with the client to ensure that both parties have a shared understanding about the project scope, and it could help to minimize the risk of miscommunication. After that time frames can be decided with available resources.

6. Assumption

A number of core assumptions underpin the Certichain project's operations. First and foremost, users should have a basic understanding of web browsing and device operation, as well as internet-enabled devices (such as desktop computers, laptops, tablets, or smartphones) with compatible web browsers. Second, users understand that system performance may be impacted by fluctuations in connectivity and that in order to interact with the blockchain-powered certificate authentication system, they must have access to a secure and dependable internet connection. Finally, it is assumed that users uphold a certain level of awareness concerning internet security protocols, such as creating strong passwords and exercising caution when clicking on dubious links. In spite of these presumptions, the project will include extra security measures to strengthen user data protection and reduce the possibility of unwanted access.

7. Project Plan

7.1. Gantt Chart

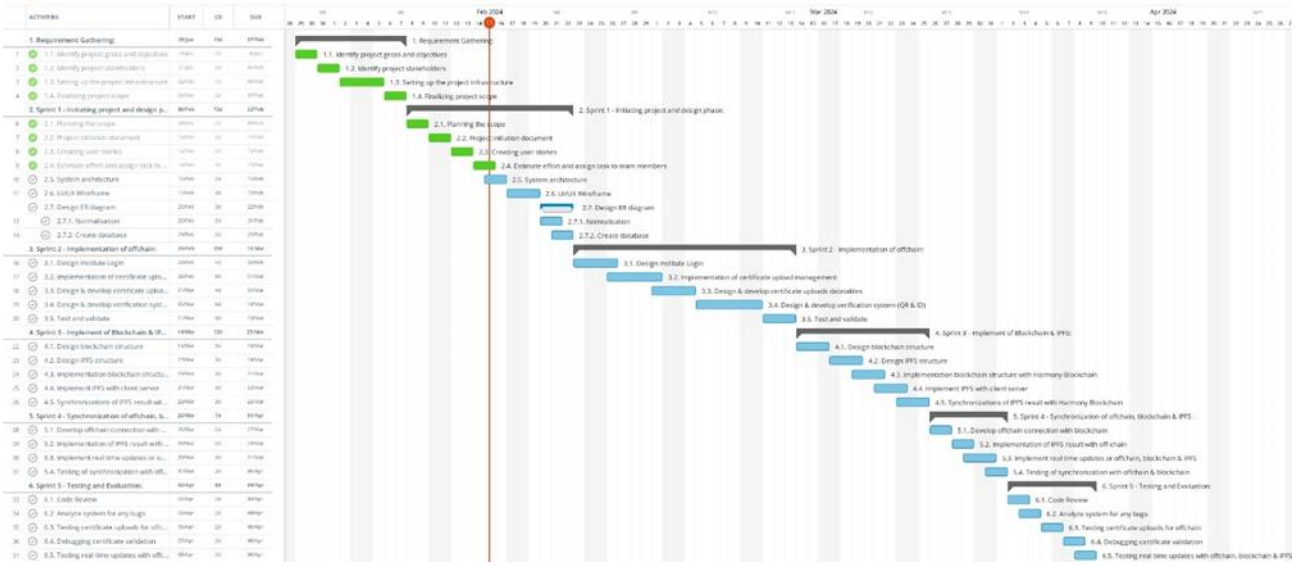

Figure 1: Gantt Chart

	ACTIVITIES	START	CD	DUE
	1. Requirement Gathering:	29/Jan	10d	07/Feb
1	1.1. Identify project gross and objectives	29/Jan	2d	30/Jan
2	1.2. Identify project stakeholders	31/Jan	2d	01/Feb
3	1.3. Setting up the project infrastructure	02/Feb	4d	05/Feb
4	1.4. Finalizing project scope	06/Feb	2d	07/Feb
	2. Sprint 1 - Initiating project and design p...	08/Feb	15d	22/Feb
6	2.1. Planning the scope	08/Feb	2d	09/Feb
7	2.2. Project initiation document	10/Feb	2d	11/Feb
8	2.3. Creating user stories	12/Feb	2d	13/Feb
9	2.4. Estimate effort and assign task to ...	14/Feb	2d	15/Feb
10	2.5. System architecture	15/Feb	2d	16/Feb
11	2.6. UI/UX Wireframe	17/Feb	3d	19/Feb
	2.7. Design ER diagram	20/Feb	3d	22/Feb
13	2.7.1. Normalisation	20/Feb	2d	21/Feb
14	2.7.2. Create database	21/Feb	2d	22/Feb
	3. Sprint 2 - Implementation of offchain:	23/Feb	20d	13/Mar
16	3.1. Design Institute Login	23/Feb	4d	26/Feb
17	3.2. Implementation of certificate uplo...	26/Feb	5d	01/Mar
18	3.3. Design & develop certificate uploa...	01/Mar	4d	04/Mar
19	3.4. Design & develop verification syst...	05/Mar	6d	10/Mar
20	3.5. Test and validate	11/Mar	3d	13/Mar
	4. Sprint 3 - Implement of Blockchain & IP...	14/Mar	12d	25/Mar
22	4.1. Design blockchain structure	14/Mar	3d	16/Mar
23	4.2. Design IPFS structure	17/Mar	3d	19/Mar
24	4.3. Implementation blockchain structu...	19/Mar	3d	21/Mar
25	4.4. Implement IPFS with client server	21/Mar	3d	23/Mar
26	4.5. Synchronizations of IPFS result wit...	23/Mar	3d	25/Mar
	5. Sprint 4 - Synchronization of offchain, b...	26/Mar	7d	01/Apr
28	5.1. Develop offchain connection with ...	26/Mar	2d	27/Mar
29	5.2. Implementation of IPFS result with ...	28/Mar	2d	29/Mar
30	5.3. Implement real time updates or o...	29/Mar	3d	31/Mar
31	5.4. Testing of synchronization with off...	31/Mar	2d	01/Apr
	6. Sprint 5 - Testing and Evaluation:	02/Apr	8d	09/Apr
33	6.1. Code Review	02/Apr	2d	03/Apr
34	6.2. Analyze system for any bugs	03/Apr	2d	04/Apr
35	6.3. Testing certificate uploads for offc...	05/Apr	2d	06/Apr
36	6.4. Debugging certificate validation	07/Apr	2d	08/Apr
37	6.5. Testing real time updates with offc...	08/Apr	2d	09/Apr

Figure 2: Scheduled Works

7.2. Work Breakdown Structure.

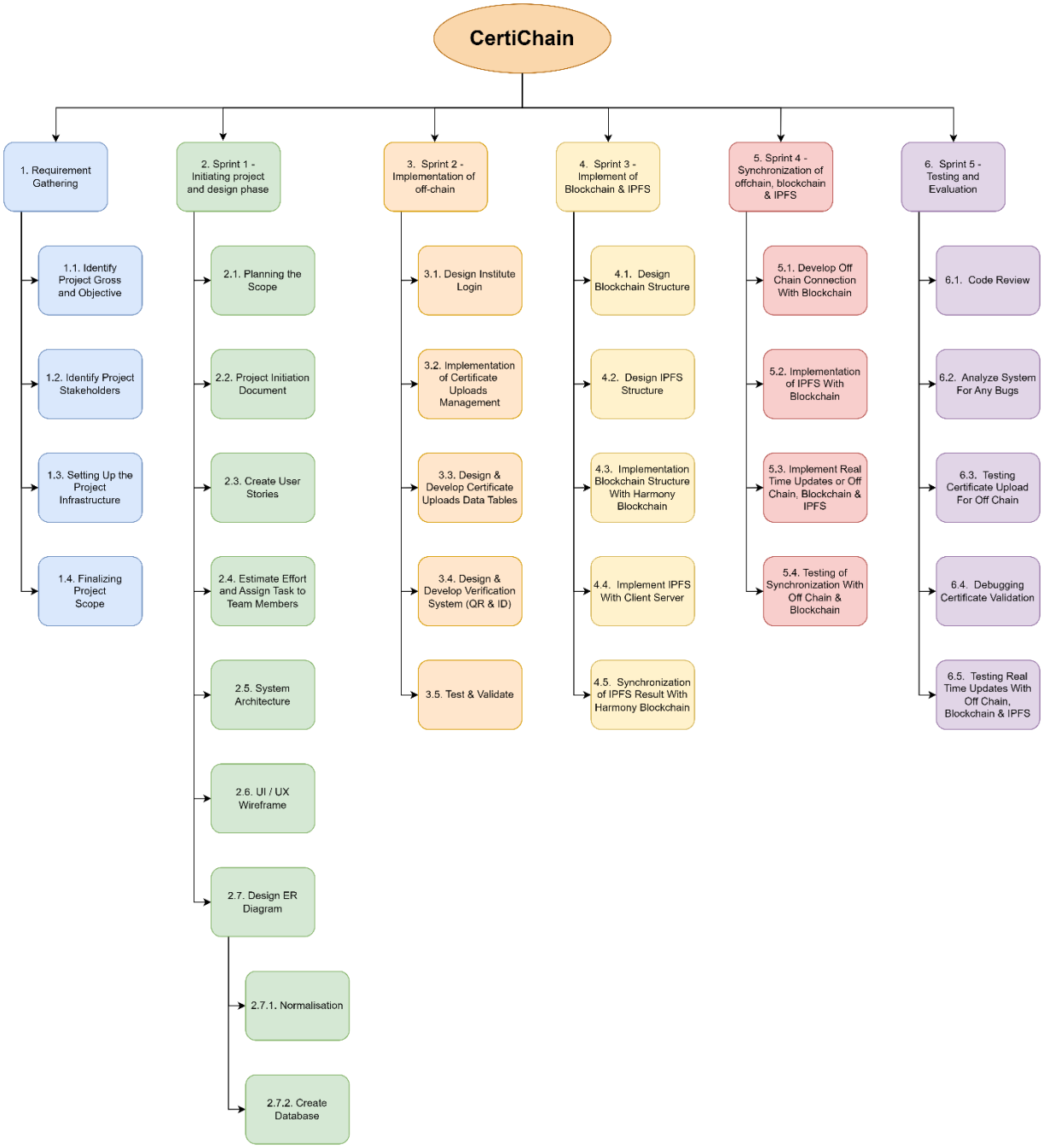

Figure 3: WBS Diagram

7.3. Product Breakdown Structure.

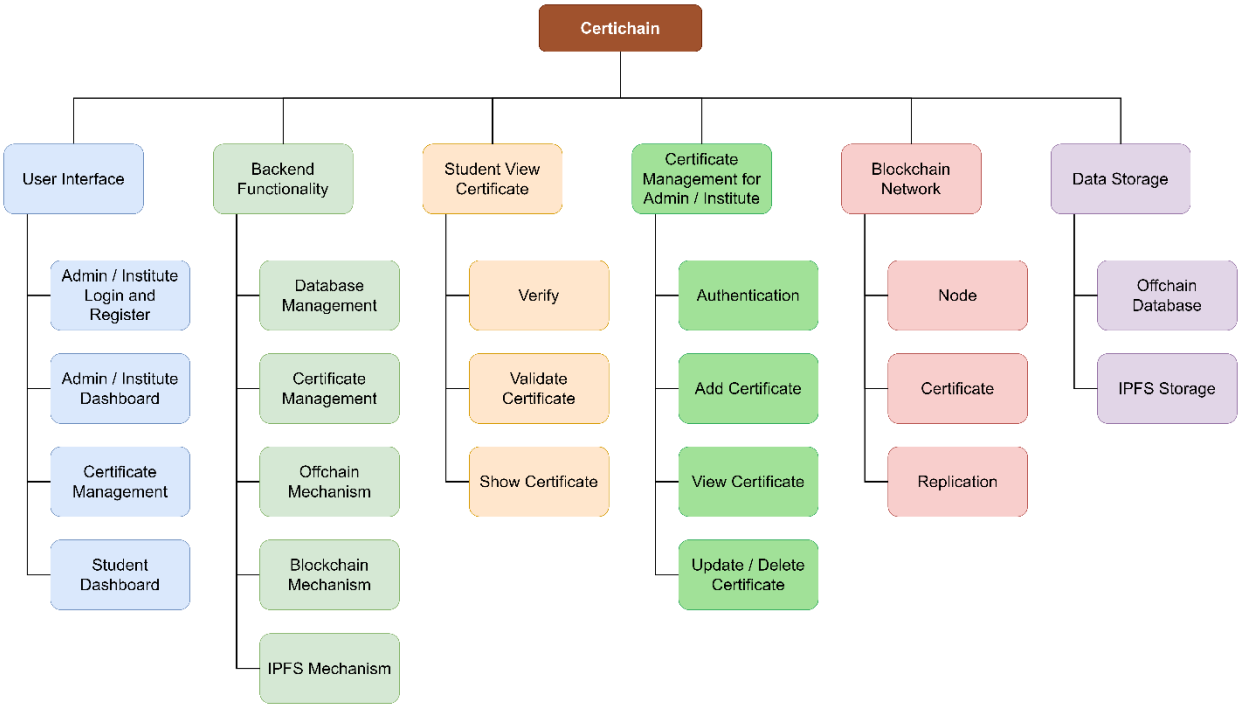

Figure 4: PBS Diagram

7.4. Product Flow Diagram

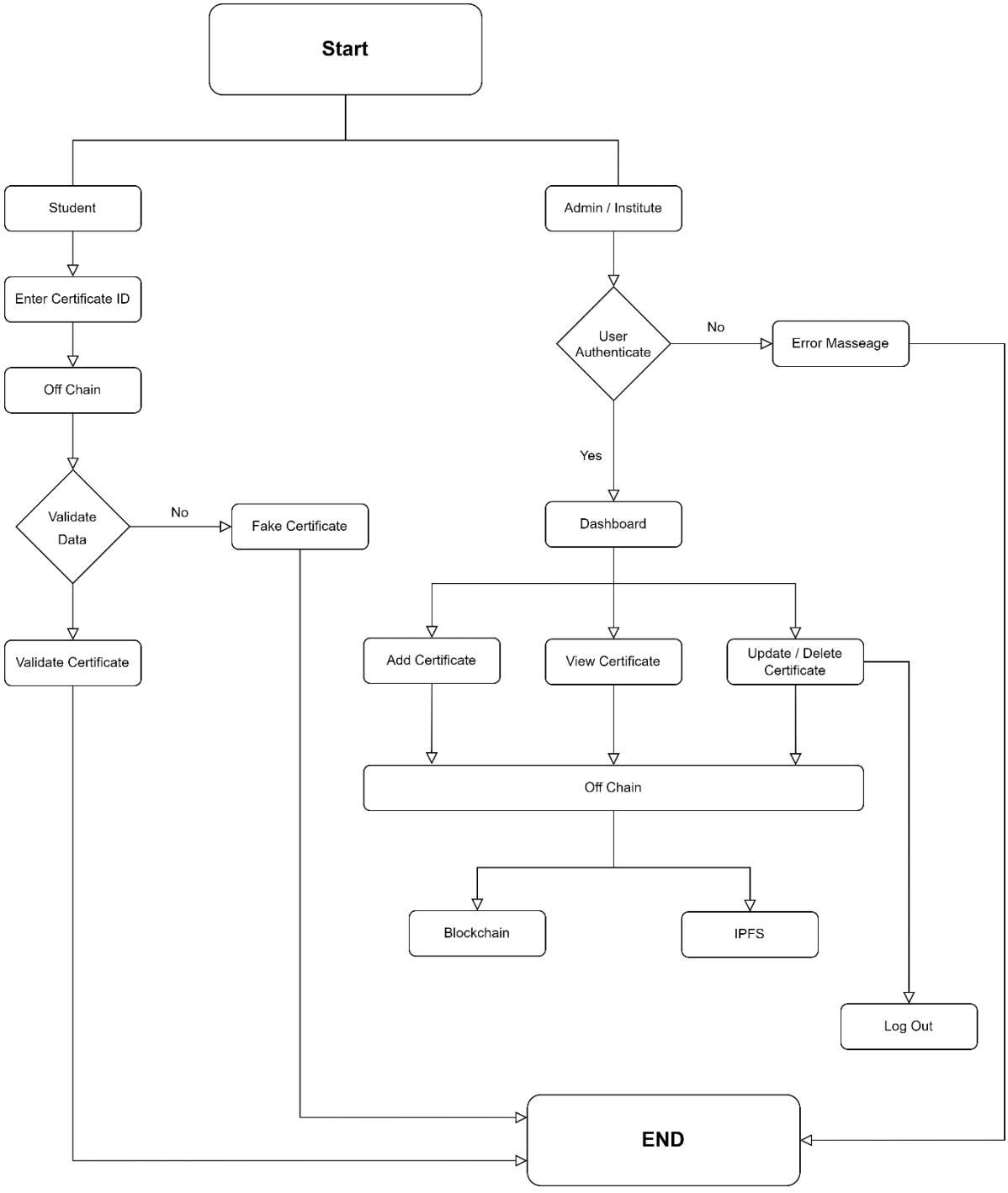

Figure 5: Product Flow Diagram

7.5. Product Description

Refer to the attached product descriptions.

7.6. Activity Diagram

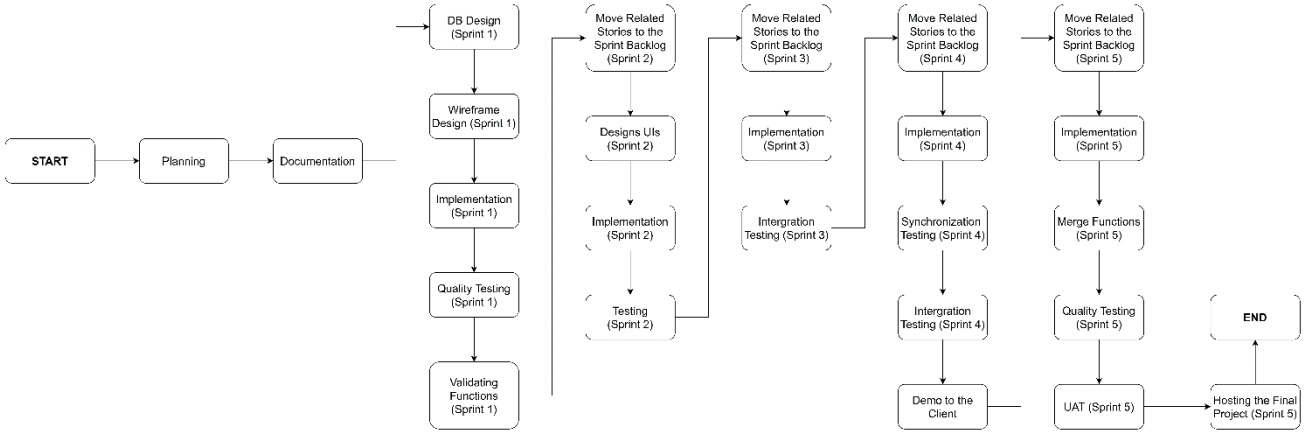

Figure 6: Activity Diagram

7.7. Financial Budget

Expenses	Description	Basis	Unit	Rate	Total
Planning					
Meetings (Zoom Meetings)	Internet charges	Hourly	10	200	2 000
Development					
Designing UIs	Design UIs for the website	Per hour	12	1000	12 000
Website implementation	Implement functions according to the designed UIs	Hourly	45	800	36 000
Blockchain Gateway	Harmony Blockchain	Per data	100	30	3 000
FileBase	IPFS File Storage	Per data	100	100	10 000
Database design and implementation	Develop a database and store data	Hourly	12	700	8 400
Testing					
QA testing	Check the quality of the site	Hourly	5	500	2 500
Documentation					
Preparation of documentation	Prepare required documents for the project	All documents	N/A	N/A	4 000
Setting up					
Domain	Domain name for the website	Per year	1	3600	3 600
Hosting	Hosting the website and the database	Per year	1	15 000	15 000
Total					96 500 LKR

Table 1: Financial Budget

(312 LKR = 1 UDS)

7.8. Change Budget

Approximate change budget for the project cost around LKR 3000 per hour

7.9. Resource Requirements

Resource	***Total hours***	***February 18th – February 27th***	***February 28th – March 4th***	***March 5th – March 11th***	***March 12th – March 18th***	***March 19th - March 27th***	***March 28th – April 6th***
Project Manager (Backend)	60 hours	8 hours	12 hours	10 hours	10 hours	8 hours	12 hours
Start-Up Manager	52 hours	10 hours	8 hours	10 hours	10 hours	9 hours	5 hours
Quality Manager (Frontend)	60 hours	8 hours	12 hours	10 hours	10 hours	8 hours	12 hours
Risk manager	56 hours	15 hours	8 hours	10 hours	10 hours	9 hours	4 hours
Schedule Manager (Backend)	52 hours	10 hours	8 hours	10 hours	10 hours	8 hours	6 hours

Table 2: Resource allocation

7.10. Specific Resources

Resource	**Type**	**Total hours**
Project manager	work	60 hours
Startup manager	work	52 hours
Quality manager	work	60 hours
Risk manager	work	56 hours
Schedule manager	work	52 hours

Table 3: Total hours

7.11. Tolerance

- Time: ±25%
- Cost: ±35%

7.12. Contingency Plans

- **Web application downtime -** Implementing high availability architecture with redundancy, auto-scaling capabilities, and multiple hosting options can minimize application downtime.
- **Certificate data integrity issues -** Hashing, cryptographic signatures, and other validations should be built-in to detect unauthorized modifications. Periodic audits can also help.
- **User authentication failures -** Alternate multi-factor authentication mechanisms and credential recovery options will provide backup login methods for users.
- **Changing client requirements -** The agile methodology and continuous client engagement approach will help respond swiftly to new requirements through iterative development.
- **Budget overruns -** Scope management, estimation buffer and controlled change requests can prevent cost escalations.