Software Requirements Specification (SRS) for Blockchain-Based Land Registry Management System

1. Introduction

Product Scope

The Blockchain-Based Land Registry Management System aims to streamline internal business processes related to land registry management using smart contracts written in Solidity. The system will automate tasks and workflows to enhance efficiency and transparency in land registry operations.

Product Value

The system provides a secure and immutable platform for managing land registry records, ensuring data integrity and reducing the risk of fraud. By leveraging blockchain technology and smart contracts, the system offers a reliable and transparent solution for land registry management.

Intended Audience

The target users of the system include land registry administrators, government agencies, real estate professionals, and individuals with an interest in land ownership and transactions.

Intended Use

The system is designed to simplify the process of recording, verifying, and transferring land ownership through blockchain technology. It aims to provide a user-friendly interface for managing land registry information securely.

Definitions and Acronyms

- Solidity: A programming language used for writing smart contracts on blockchain platforms.
- Smart Contracts: Self-executing contracts with the terms of the agreement directly written into code.

2. System Requirements and Functional Requirements

Functional Requirements

1. User Registration: Users can create accounts and access the system securely.
2. Land Record Creation: Ability to create and store land registry records on the blockchain.
3. Transfer of Ownership: Facilitate the transfer of land ownership through smart contracts.
4. Verification Mechanism: Implement a verification process for validating land registry information.
5. Reporting and Analytics: Generate reports and analytics on land registry transactions.
6. Audit Trail: Maintain an audit trail of all activities performed within the system.
7. Notification System: Send notifications for important events and updates related to land registry management.

System Requirements

- Desktop Applications for Windows and macOS compatibility.
- Moderate performance suitable for small team use.
- Scalable cloud storage solutions for data storage needs.
- Hybrid environments with on-premises and cloud components for operating environments.

3. External Interface Requirements

User Interfaces

The system should have intuitive user interfaces for managing land registry records, creating smart contracts, and accessing reports and analytics.

Hardware Interfaces

No specific hardware interfaces required at this stage.

Software Interfaces

Integration with blockchain platforms for executing smart contracts and storing data securely.

Communication Interfaces

The system should support secure communication protocols for data exchange between users and the blockchain network.

4. Non-Functional Requirements (NRFs)

Security

Implement robust security measures to protect sensitive land registry data and ensure secure transactions.

Capacity

The system should be able to handle a growing volume of land registry records and user transactions.

Compatibility

Ensure compatibility with different desktop platforms and web browsers for seamless user experience.

Reliability and Availability

Maintain high system reliability and availability to ensure uninterrupted access to land registry information.

Scalability

Design the system to be scalable to accommodate future growth and increasing demand for land registry services.

Maintainability

Ensure the system is easy to maintain and update with new features and enhancements.

Usability

Prioritize user-friendly interfaces and intuitive workflows to enhance user experience and adoption.

By following these software requirements, the Blockchain-Based Land Registry Management System can effectively streamline internal business processes and provide a secure platform for managing land registry information.