# CHAPTER 2: REQUIREMENT SPECIFICATION

## 2.1 Functional Requirements

1. Property Management:

- Property Registration: Users can register properties with details such as location, ownership proof, and legal documents.

- Land Record Maintenance: The system will store and manage property records, including owner details and transaction history.

- Ownership Verification: The system will verify property ownership through legal documentation.

- Property Classification: Categorizing land as commercial, residential, or agricultural based on user inputs.

- Search & Filter: Users can search and filter properties based on location, type, and owner.

2. User Management:

- User Roles: Defining roles (admin, property owner) with permissions.

- Authentication: Implementing secure login and multi-factor authentication.

- Profile Management: Users can update their profile and contact details.

3. Reporting & Analytics:

- Transaction Reports: Generating reports on property transactions and ownership history.

- User Activity Tracking: Monitoring actions performed by users.

- Land Usage Reports: Analyzing land usage trends and statistics.

4. Notifications & Alerts:

- Ownership Updates: Notify users about ownership transfers or disputes.

- System Alerts: Alerts for incomplete records or verification status.

5. Legal Compliance:

- Regulatory Compliance: Ensure compliance with land management regulations.

- Audit Trails: Maintain logs of transactions and modifications for legal purposes.

## 2.2 Non-Functional Requirements

1. Performance:

- The system should respond within 2-3 seconds.

- Handle up to 1000 concurrent users.

2. Security:

- Encryption for sensitive data.

- Access restrictions based on user roles.

- Secure API access for third-party integrations.

3. Scalability:

- Support increasing users and property records.

- Allow integration with external databases.

4. Usability:

- Intuitive interface.

- Support for mobile and desktop devices.

5. Reliability:

- Automatic data backups.

- Fault tolerance to recover from failures.

6. Compliance:

- Adhere to government regulations.

- Data privacy compliance.

7. Testing & Maintenance:

- Automated and manual testing.

- Regular system updates and patches.

## 2.3 Hardware Requirements

1. Processor:

- Web Server: Quad-core processor.

- Database Server: Dual-core processor or better.

2. Storage & Memory:

- Web Server: SSD with 100 GB storage.

- Database Server: SSD with 500 GB storage.

- RAM: 8 GB minimum for servers.

3. Networking:

- 100 Mbps internet connection.

- 1 Gbps routers/switches.

4. Backup System:

- Cloud/off-site storage (200 GB minimum).

- Automated backups.

## 2.4 Software Requirements

1. Operating System:

- Linux or Windows Server.

2. Web Server Software:

- Apache or Nginx.

3. Database Management System:

- MySQL or PostgreSQL.

4. Programming Languages:

- Frontend: HTML, CSS, JavaScript.

- Backend: PHP, Python, or Java.

5. Development Tools:

- Code Editor: VS Code, Sublime Text.

- Version Control: Git, GitHub.

6. Testing Tools:

- Selenium, JUnit for automated testing.

- Postman for API testing.

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