

DAR ES SALAAM INSTECHNOLOGY



COMPUTER STUDIES DEPARTMENT

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

PROJECT

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MODULE NAME: SOFTWARE ENGINEERING

PROJECT NAME: HOSPITAL MANAGEMENT SYSTEM

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Hospital Management System - Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this document is to provide a detailed description of the requirements for the Hospital Management System. It serves as a foundation for the design, development, and testing of the system.

1.2 Scope

The Hospital Management System is designed to streamline the administrative and operational processes within a hospital. It includes modules for patient management, appointment scheduling, staff management, billing, and reporting.

2. System Overview

2.1 System Description

The Hospital Management System is a comprehensive solution that facilitates efficient management of patient data, appointments, medical records, and billing. It integrates various departments within a hospital to improve overall workflow and patient care.

2.2 System Features

1. Patient Management

- Register new patients with personal and medical details.
- Maintain and update patient records, including medical history and test results.
- Assign unique identifiers to each patient for easy tracking.

2. Appointment Scheduling

- Schedule and manage appointments for patients.
- Send appointment reminders to patients and staff.
- Allow rescheduling and cancellations.

3. Staff Management

- Maintain a database of hospital staff with their roles and contact information.
- Manage staff schedules and assignments.

- Track staff attendance and performance.

4. Billing and Invoicing

- Generate invoices for medical services provided to patients.
- Track payments, overdue balances, and outstanding bills.
- Provide billing reports for financial analysis.

5. Medical Records

- Digitize and organize patient medical records securely.
- Allow authorized personnel to access and update medical records.
- Ensure compliance with healthcare data privacy regulations.

6. Pharmacy Management

- Manage pharmacy inventory and prescriptions.
- Integrate with the patient's medical history for prescription validation.
- Generate reports on medication usage and inventory status.

7. Laboratory Management

- Schedule and record laboratory tests.
- Track test results and link them to patient records.
- Ensure compliance with testing standards and regulations.

8. Reporting and Analytics

- Generate reports on hospital activities, patient statistics, and financial performance.
- Analyze trends and patterns to improve decision-making.
- Export reports in various formats for sharing and archiving.

3. Functional Requirements

3.1 Patient Management

- The system shall allow the registration of new patients with relevant personal and medical information.
- Patients shall be assigned a unique identification number for record tracking.
- The system shall support the update and retrieval of patient records.

3.2 Appointment Scheduling

- Authorized users shall be able to schedule appointments for patients.
- The system shall send automated appointment reminders to patients and staff.
- Patients shall have the ability to reschedule or cancel appointments.

3.3 Staff Management

- The system shall maintain a centralized database of hospital staff with roles and contact information.
- Authorized personnel shall be able to manage staff schedules, assignments, and attendance.
- Performance metrics for staff members shall be recorded and accessible.

3.4 Billing and Invoicing

- The system shall generate invoices for medical services provided to patients.
- It shall track payments, overdue balances, and outstanding bills.
- Billing reports shall be available for financial analysis.

3.5 Medical Records

- The system shall digitize and organize patient medical records securely.
- Authorized personnel shall have access to update and retrieve medical records.
- Compliance with healthcare data privacy regulations (such as HIPAA) shall be ensured.

3.6 Pharmacy Management

- The system shall manage pharmacy inventory and prescriptions.
- It shall integrate with the patient's medical history for prescription validation.
- Reports on medication usage and inventory status shall be generated.

3.7 Laboratory Management

- Authorized users shall schedule and record laboratory tests.
- Test results shall be tracked and linked to patient records.
- The system shall ensure compliance with testing standards and regulations.

3.8 Reporting and Analytics

- The system shall generate reports on hospital activities, patient statistics, and financial performance.
- Reports shall be customizable based on specified parameters.
- Reports shall be exportable in various formats (PDF, CSV).

4. Non-functional Requirements

4.1 Performance

- The system shall handle a concurrent user load of at least 100 users.
- Response time for critical functions shall be less than 3 seconds.

4.2 Security

- Patient data shall be encrypted during transmission and storage.
- Role-based access control shall be implemented to restrict unauthorized access.
- Regular security audits shall be conducted to identify and address vulnerabilities.

4.3 Usability

- The user interface shall be intuitive and user-friendly.
- Training materials and documentation shall be provided for system users.
- The system shall be accessible to users with disabilities.

4.4 Reliability

- The system shall have a backup and recovery mechanism to ensure data integrity.
- The software shall be available 99.9% of the time.

- Emergency procedures for system failures shall be documented.

5. Constraints

- The system shall be developed using EJS, JavaScript, HTML, CSS.
- The software shall be compatible with all web browser.
- Compliance with healthcare regulations, including HIPAA, shall be maintained.

6. Glossary

- SRS: Software Requirements Specification
- HIPAA: Health Insurance Portability and Accountability Act

7. Conclusion

This Software Requirements Specification document provides a comprehensive overview of the requirements for the Hospital Management System. It serves as a reference for the development team to design, implement, and test the system. Any changes to the requirements must be documented and approved through the appropriate change control process.