Software Requirements Specification

for

Hospital Management System

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1. Introduction

My project Hospital Management system includes registration of patients, storing their disease details into the system. My software has the facility to give a unique id for every patient and stores the details of every patient. The Hospital Management System can be used by entering respective username and password. It is accessible either by an administrator or receptionist. Only the respective person can add data in the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected and data processing is very fast, accurate and relevant.

1.1 Purpose

A hospital management system is a software designed to manage all the areas of a hospital such as medical, financial, administrative and the corresponding processing of services.

1.2 Document Conventions

The document is prepared using Microsoft Word 2019 and has used the font type 'Times New Roman'. The fixed font size that has been used to type this document is 12pt and for headings 18pt with 1.15 line spacing. It has used the bold property to set the headings of the document. All pages except the cover page are numbered, the numbers appear on the upper right-hand corner of the page. Every image and data table are numbered and referred to the in the main text

1.3 Intended Audience and Reading Suggestions

The intended audience of this document would be the client and specific employees like Manager and Receptionist, consultants and System Operators of the XYZ Hospital, and project team, supervisor with the objective to refer and analyze the information. The SRS document can be used in any case regarding the requirements

of the project and the solutions that have been taken.The document would finally provide a clear idea about the system that is building

1.4 Product Scope

Daily functions like patient registration, managing admission and overall management of various departments can be easily performed with higher accuracy after the installation of hospital software. The modules of hospital management software are user-friendly and easy to access

1.5 References

http://www.itu.dk/~slauesen/Papers/IEEEtasks.pdf

2. Overall Description

A hospital management system is a software designed to manage all the areas of a hospital such as medical, administrative and the corresponding processing of services. HMS is an abbreviation of ***hospital management system***. The hospital management system (HMS) is an integrated software that handles different directions of clinic workflows. It manages the smooth healthcare performance along with administrative, medical, legal, and financial control. That is a cornerstone for the successful operation of the healthcare facility

2.1 Product Perspective

This Hospital Patient Management System is a self- contained system that manages activities of the hospital as bed assignment, operations scheduling, personnel management, and administrative issues. Various stakeholders are involved in the hospital system

2.2 Product Functions

Doctor Module:

- Add patients report
- Delete patients report

- Display reports
- Give prescriptions
- Search reports of patients

Receptionist Module:

- Add patients data
- Delete patients data
- Display records
- Refer to different doctors
- Search the record of patients

Patient Module:

- Search report
- Search his/her record

2.3 User Classes and Characteristics

The system will be used in the hospital. The administrators, front-desk staff will be the main users. Given the condition that not all the users are computer-literate. Some users may have to be trained on using the system

2.4 Operating Environment

The system is also designed to be user-friendly. The software will operate, including the hardware platform, operating system and versions, and any other software components or applications with which it must peacefully coexist

2.5 Design and Implementation Constraints

1. Anticipate difficulties and limitations regarding system upgrades and improvements due to the coordination required to stop clinical systems that require continuity of operation.
2. Be able to handle a significant number of transactions at any time.
3. Support a high rate of concurrent electronic transactions as different health professionals may have to enter new information or modify it.

4. Always log all transactions to be able to know what happened, allowing you to replay events, understanding bugs and ensuring the integrity of information.
5. Always ensure the integrity of the information, even in concurrent consultation.
6. Always make information accessible, even in concurrent consultation.
7. Guarantee a speed of data display, no matter how much information to look for in several different databases.

3. External Interface Requirements

3.1 User Interfaces

Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.

3.2 Hardware Interfaces

Servers and Database Systems:

- High-performance servers to host the HMS software and database systems.
- The hardware should have sufficient processing power, memory, and storage to handle the expected load of patient data, appointments, billing records, and other information.

Networking Infrastructure:

- Local Area Network (LAN) to connect different departments and areas within the hospital.
- Wide Area Network (WAN) connectivity for remote access and communication with other healthcare facilities or external parties.

- Network switches, routers, and firewalls to ensure secure and efficient data transmission.

Client Devices:

- Workstations (desktops or laptops) for hospital staff to access and use the HMS software.
- Mobile devices (tablets or smartphones) for on-the-go access to patient records, appointments, and other information.

Printers and Scanners:

- Printers for generating patient reports, prescription slips, invoices, and other documents.
- Scanners for digitizing physical documents such as patient forms or medical reports.

3.3 Software Interfaces

User Interface:

- The primary interface through which hospital staff interact with the HMS.
- Provides intuitive and user-friendly screens for tasks such as patient registration, appointment scheduling, billing, and medical record management.
- Should be responsive and adaptable to different devices, including desktops, laptops, tablets, and smartphones.

Administrative Interface:

- Allows administrative personnel to manage user accounts, permissions, and system settings.

- Enables configuration of various modules, departments, and roles within the HMS.

Patient Portal:

- A secure web-based interface that allows patients to access their health records, view test results, schedule appointments, and communicate with healthcare providers.
- Supports patient self-service and reduces administrative workload.

Electronic Health Records (EHR) Interface:

- Facilitates the creation, storage, and retrieval of electronic health records, including patient medical history, diagnoses, treatment plans, and prescriptions.
- Interoperability with other healthcare systems and standards (e.g., HL7, FHIR) for exchanging patient data with external providers.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

SRS017 **Response Time**
The system shall give responses in 1 second after checking the patient's information.

SRS018 **Capacity**
The System must support 1000 people at a time.

SRS019 **User-interface**
The user-interface screen shall respond within 5 seconds.

SRS020 **Conformity**

The systems must conform to the Microsoft Accessibility guidelines

4.2 Security Requirements

SRS012 **Patient Identification**
The system requires the patient to identify himself /herself using PHN

SRS013 **Login ID**
Any user who uses the system shall have a Login ID and Password.

SRS014 **Modification**
Any modification (insert, delete, update) for the Database shall be synchronized and done only by the administrator in the ward.

SRS015 **Front Desk staff Rights**
Front Desk staff shall be able to view all information in HPIMS, add new patients to HPIMS but shall not be able to modify any information in it.

SRS016 **Administrators' Rights**
Administrators shall be able to view and modify all information in HPIMS.

4.3 Maintainability

SRS021 **Back Up**
The system shall provide the capability to back-up the Data

SRS022 **Errors**
The system shall keep a log of all the errors.

4.4 Reliability

SRS023 **Availability**
The system shall be available all the time

5. Other Requirements

Appendix A: Glossary

- HMS - Hospital Management System
- GUI - Graphical User Interface
- PHN - Public Health Nurse
- HPIMS - Health Public Intermediate Service
- ADT Interface - Patient Administration Interface for “admissions, discharges and transfer”.
- DMS - Document Management System
- EMR - Electronic Medical Record
- HL7 - Health Level 7
- HIM - Health Information Management
- Interface - A digital method to which health information can be discreetly and most times, securely transferred and accessed between two computer systems.

Appendix B: Analysis Models

Class Diagram: