Software Requirements Specification

for

eHospital

Version 1.0 approved

Prepared by Adwaith C D

National Institute of Technology Karnataka, Surathkal

January 07, 2018

Table of Contents

Revision History

Name	Date	Reason for Changes	Version
SRS for eHospital	January 07,2018		1.0

1. Introduction

1.1 Purpose

The SRS will provide a detailed description of the requirements for **eHospital** version 1.0. This SRS will allow for a complete understanding of what is to be expected from the newly introduced system which is to be constructed. The software is for better management of the patient data and hospital automation.

1.2 Document Conventions

The document has used the font type 'Times New Roman' for headings and 'Arial' for the body. The font size that has been used to type this document is 14pt for the headings and 11pt for the corresponding body. Standard IEEE template is the template used to recognize the appearance of the document and its flow.

1.3 Intended Audience and Reading Suggestions

This document is to be read by the development team, the project managers, marketing staff, testers and documentation writers. The SRS has been organized approximately in order of increasing specificity. The developers and project managers need to become intimately familiar with the SRS.

Others involved need to review the document as such:

Overall Description: Marketing staff have to become accustomed to the various product features in order to effectively advertise the product.

System features: Testers need an understanding of the system features to develop meaningful test cases and give useful feedback to the developers.

External Interface Requirements: The hardware developers need to know the requirements of the device they need to build. The marketing staff also needs to understand the external interface requirements to sell the product by describing the user friendly features of the product.

Non-functional and Functional Requirements: The hardware developers.

1.4 Product Scope

- The proposed software project is eHospital a hospital management system. The system will be used to get information from the patients and storing the data for future use.
- The intentions of the system are to reduce the over-time pay and increase the number of patients that can be treated accurately.
- Requirements statements in this document are both functional and non-functional

1.5 References

IEEE. IEEE Std. 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

2. Overall Description

2.1 Product Perspective

The proposed software product is eHospital a Hospital Patient Management System. The system will be used to get information from the patients and storing the data for future use. Doctors will also use the system to keep track of the patients assigned to them. The current system in use is a paper-based system. It is too slow and cannot provide updated lists of patients within a reasonable timeframe. Doctors must make rounds to pick up patients' treatment cards in order to know whether they have cases to treat or not. The intentions of the system are to reduce over-time pay and increase the number of patients that can be treated accurately.

2.2 Product Functions

- Management of the patient details
- The admin creates other user logins and credentials.
- The receptionist adds the new patient to the database. He / She also has assigns a doctor to the patient.
- The doctor can diagnose the patient and suggest tests and medicines.
- The Lab Technician generates the report of the patient.
- The pharmacy dispenses the medicine prescribed by the doctor. The stocks are updated accordingly.
- The owner can keep track of the total income and other associated parts of the hospitals including pharmacy and laboratory.

2.3 User Classes and Characteristics

The system provides different types of services based on the type of user and has a relational database.

Class	Characteristics
Admin	He will be the system administrator. He will maintain the overall software and creates other user logins.
Receptionist	The receptionist can add, delete or edit the patient information and assigns a doctor to the patient.
Doctor	The doctor can add symptoms to the patient database and suggest tests and medicines
Laboratory Analyst	Performs and returns the test results to the doctor. The prices are also set by the analyst.
Pharmacist	Gives the patient the prescribed medicine and enters the price of the medicine
Owner	Gets the financial reports
Database	Used to store the patient details.

2.4 Operating Environment

eHospital project is a web application and can run on windows and Ubuntu. The product is developed using **html, css, php** with MySQL server as backend to store the database The product can operate in all the famous browsers. The system should beenabled with network adapters.

2.5 Design and Implementation Constraints

The system should have more storage and faster access to the database which forms the backbone of the application. The users need to remember their usernames and the passwords to use the software. Limited processing power is also a concern

2.6 User Documentation

For user documentation and information please refer to the system features and the attached manual.

2.7 Assumptions and Dependencies

Assumptions are

- The coding should be error free and the product should be user friendly.
- The information must be stored in the database so that it can be accessed from the website
- Users must have the basic knowledge of operating a computer.
- The users need to remember their usernames and the passwords to use the software.

Dependencies are

- End users must have proper understanding of the product.

- The data should be stored in a database.
- All the updates regarding the patient prescription must be updated in the database.

3. External Interface Requirements

3.1 User Interfaces

The interface is in the form of a web app. The GUI has a login page where the user enters his credentials to gain access to the system. The access is given if the entered credentials match the ones in the database.HTML, CSS and PHP are used for the development of the application.

Depending on the type of user the interface differs. The receptionist page has the privilege to add or edit the patient details. The doctor page enables the doctor to provide the prescription. The Laboratory page enables to see the tests to be conducted and return the result. The pharmacy page allows to provide the medicines to the patient and bill them. The owner page gets the financial information about the hospital. The search allows to search for a particular patient.

3.2 Hardware Interfaces

- Hard Disk: 40GB
- RAM: 2 GB or more

3.3 Software Interfaces

- The system should have either windows or Ubuntu.
- The system should support MySQL.
- The system should contain a browser so that web application can be run.

3.4 Communications Interfaces

- Fast and reliable network.
- Secure protocols.
- The main communication protocol will be Hyper Text Transfer Protocol (HTTP). This will be used to transfer information back and forth from the client to the server. HTTP GET and POST will be used to send information.

4. System Features

4.1 User Login

4.1.1 Description and Priority

This is used by the users to login to the software. The user has to enter his login details in the login page.
This requirement is high priority. Here the user can be one among Admin, Receptionist, Doctor, Laboratory, Pharmacist, Owner

4.1.2 Stimulus/Response Sequences

Once the user enters the login details, the login details are verified with the details present in the database and if the login credentials are correct the user is logged in and taken to his account page.

4.1.3 Functional Requirements

REQ-1: The user shall navigate to the login page
REQ-2: The user has to enter the username and password.
REQ-3: The login credentials have to be verified with that present in the database

4.2 Receptionist

4.2.1 Description and Priority

The receptionist feeds the details of the patient into the database. The also assigns a doctor to the patient. Priority is high.

4.2.2 Stimulus/Response Sequences

The receptionist has to be logged in and all the details of the patient needs to be filled out. After the patient details are filled out a doctor can be assigned.

4.2.3 Functional Requirements

REQ-1: The receptionist has to hit the submit button after the patient info is entered
REQ-2: The receptionist has to assign a doctor to the patient.
REQ-3: The data needs to updated in the database and also in the doctor's profile or page.

4.3 Doctor

4.3.1 Description and Priority

The doctor analyses the patient and fills the report. The doctor can suggest a test or medicines to the patient. Priority is high.

4.3.2 Stimulus/Response Sequences

When the doctor logs in to the system he can see that a patient has been assigned to him/her. The doctor has to diagnose and enter the symptoms. The doctor can press the test button to prescribe a test.

4.3.3 Functional Requirements

REQ-1: The doctor has to be logged in to the system.
REQ-2: The patient information should have been updated in the doctor's home page and in the database.

4.4 Lab Technician

4.4.1 Description and Priority

The lab technician conducts the test and prepares a report and send it to the doctor for further analysis. The technician also bills the customer for the test. Priority is medium.

4.4.2 Stimulus/Response Sequences

When the doctor logs in to the system he can see that a patient has been assigned to him/her. The doctor has to diagnose and enter the symptoms. The doctor can press the test button to prescribe a test.

4.4.3 Functional Requirements

REQ-1: The lab technician has to be logged in to the system.
REQ-2: The patient information should have been updated in the laboratory home page and in the database.

4.5 Pharmacy

4.5.1 Description and Priority

The pharmacist analyses the patient's prescription and gives the medicines. The pharmacist also bills the patient for the medicines. Priority is medium.

4.5.2 Stimulus/Response Sequences

When the pharmacist logs in to the system he can see the details of the prescribed medicines. He provides the medicines and bills.

4.5.3 Functional Requirements

REQ-1: The pharmacist has to be logged in to the system.
REQ-2: The patient information should have been updated in the pharmacy's home page and in the database.

REQ-3: The supplied medicine should be deducted from the pharmacy stock database.

4.6 Owner

4.6.1 Description and Priority

The owner can see the financial report of the hospital i.e. the income. Priority is medium.

4.6.2 Stimulus/Response Sequences

When the owner in to the system he can see the details of the income obtained by the hospital. He can get detailed reports.

4.6.3 Functional Requirements

REQ-1: The owner has to be logged in to the system.
REQ-2: The income information should be updated in the database and also the patient info needs to be in the database.

4.7 Change password

4.6.1 Description and Priority

The user can change the password. Priority is medium.

4.6.2 Stimulus/Response Sequences

Once the user is logged in he/ she can change the password by providing the current password.

4.6.3 Functional Requirements

REQ-1: The user has to be logged in to the system.

4.8 Logout

4.6.1 Description and Priority

This is used for user to logout of the system. Priority is high.

4.6.2 Stimulus/Response Sequences

On pressing the logout button the user is logged out and directed back to the login page.

4.6.3 Functional Requirements

REQ-1: The user has to be logged in to the system.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The data should be updates within 2 seconds
- The query results must be returned within 3 seconds.
- The login validation must be done within 2 seconds

5.2 Safety Requirements

- Under system failure the system must be operational within the next 1 hour
- A copy of the database should be made daily as to prevent the loss of information.

5.3 Security Requirements

- All communication must be encrypted
- The admin credentials should not be available to anyone else.
- The data must be stored and protected.
- The system must be secured.

5.4 Software Quality Attributes

Not yet as the application is still in requirement phase.

5.5 Business rules

Not yet as the application is still in the requirement phase.

6. Other Requirements

The database should be large enough to contain all the patient information. MySQL should be supported by the system

Appendix A: Glossary

Term	***Definition***
Database	Collection of all the information monitored by this system.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
User	The person using the hospital management system
Admin	The one who controls the system and assigns other logins
GUI	Graphical User Interface

Appendix B: Analysis Models

Water flow model will be used to build the system as the requirements of the system are well known.
In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

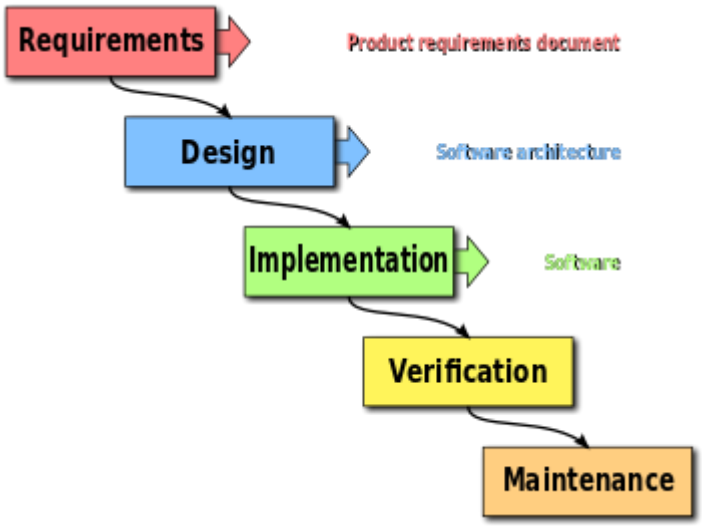

Fig 1 Water flow model

Appendix C: To Be Determined List

Not yet done as still in requirement phase.