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Software Requirements Specification

for

Hospital Management System

Version 2.0 approved

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**Revision:**

| Version | Primary Author(s) | Description of Version | Date Completed |
| --- | --- | --- | --- |
| V 1.0 | Waqas ,Awais,Faizan | This is the initial version of the software. Changes will be made as per requirements and for systematic improvements in upcoming versions. | 2/10/13 |
| V 2.0 | Waqas ,Awais,Faizan | SRS-2 include GUI interface,Use-Case Diagram,Use Case Description Table,Data Gathering Techniques | 11/10/13 |

# Introduction

## Purpose

This is document is written to identify the Software Requirement Specifications of “Hospital management system” v 1.0, 1st release. In this phase we have identified that what is the need of this product, how it will help the user, requirement documentation, who will be the end user. This product will automate a small scale hospital by providing the ease of automated data management, human resource and patient management system

## Document Conventions

Writing this SRS standard IEEE format is followed. Naming and formation of the document is done in accordance with the IEEE standers. Main heading are of Arial type and text size is 14.Description of headings is of Arial font and text size is 11 throughout the document. Document text is single spaced and maintain the 1” margins found in this template. For Section and Subsection titles please follow the template. Content table is maintained, specific content can be viewed on respective pages as defined in table of contents.

## Intended Audience and Reading Suggestions

This document will help project managers to manage different phases of software development in the accordance with user requirments.it will also provide the ease to understand exact problem and how to solve the respective problem.it will provide the guide way to developers that what are system and user requirements and what approach should be implement to achieve desire requirments.it will provide guide way to user how to use respective services of the product to achieve desired serviecies.it will also provide different testing criteria to the software testing team to judge the correctness of the product.

## Product Scope

The purpose of this software is to get rid of the conventional manual hospital record management and vigilance system. This product will be helpful in the management system of hospital it will facilitate both end users management (Doctors and Non-medical staff) and patients. This software will provide the online facility to patient to access their private medical history and reports, enable doctors to online update their attendance, accounting system.

This software will reduce the human effort in keeping the manual history of patients and the pharmacy record.it will provide ease to doctors to upload their attendance. Online help desk and online patient reports system will save precious time of patients. By achieving these objectives we will achieve the main goal to facilitate and entertain doctors patients and management.

## References

[www.wellcare.co.ae](http://www.wellcare.co.ae)

<http://www.halifaxhealth.org/>

[www.wikipedia.org/SoftwareRequirmentSpecification](http://www.wikipedia.org/SoftwareRequirmentSpecification)

<http://www.uml-diagrams.org/examples/hospital-management-use-case-diagram-example.html>

# Overall Description

## Product Perspective

This is a specified product, it will be designed to work in a specific environment of a hospital and it will perform specific functionalities as per the requirements defined by user. The main purpose of this product is to provide ease of management to users by reducing human efforts. This product a new self-contained product and the initial version of the product, follow-on members of this family will be release in feature will be more sophisticated and advance. This SRS is the general SRS which is defining the requirements of whole system in further developmental stages specific SRS will be publish defining the SRS of subsystems Multiple users will be using this product but this product in divided into specific modules and the users will be able to access their respective module as per the type of the user e.g. Patients will only be able to access their respective module they can’t access the administrative module of the product but internally all these modules are inter-connected.

## Product Functions

Online help desk is the part of this product to assist the users online for quires and appointments. Patients will be having the facility that they can view their online test reports. Patients will be providing their login id for the purpose of safety and security patients will be able to access their medical history and test reports online. Admiration will be provided administrative ids they will be able to maintain their online attendance they can view their salary record. This product will have pharmacy record of available stock of Madison and will have the accounting section for pharmacy will keep the record of the Madison sales in respective month. Accounts section will keep the record of the hospitals income received from patients and the total expenses of the respective month. Another major part of this product is to provide the ease of administration for the MS of the hospital for in vigilance he can view the statistics of number of doctors available, number of patients visited in last 30days, amount received from patients and the expenses done in one month. Staff attendance and Salaries and bonuses paid to staff.

## C:\Users\Awais\Downloads\Capture1.jpgUser Classes and Characteristics

**\*Use Case Diagram For Hospital Management System\***

Income  Financial Management System  Expenditure



Receptionist



Staff Nurse

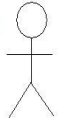


InhousePatient



Doctor

consultants  Record System

Information System

**Use Case Description Form-1**

**Use Case Name** Login

**Abstract** No

**Purpose** Doctors, Receptionist and staff have to login to use system.

**Actor** Doctors, Receptionist, Staff Nurse.

**Importance** Primary

**Requirements** System login

**Overview** Actors login into the system and can access the information about the hospital only if their password is correct.

**Uses** Helpful for the staff, patients and doctors.

**Pre-Conditions** Password is needed to login.

**Post-Condition** Actors cannot log in if their password is wrong.

**Actors & System Response**

**Actors & System Response**

# Use-Case Description Form 2:

**Use Case Name** Record System

**Abstract** No

**Purpose** Add, Edit or delete the information of staff and doctors.

**Actor** Record System.

**Importance** Primary

**Requirements** Information of staff and doctors.

**Overview** Record of the actors like doctors and staff can be updated or changed.

**Pre-Conditions** Information of staff and doctors.

**Post-Condition** Cannot be updated if we don’t have information of staff and doctors.

**Use-Case Description Form-3:**

**Use Case Name** Receptionist

**Abstract** No

**Purpose** Allotments of beds,Doctor Appointments.

**Actor** Receptionist.

**Importance** Primary.

**Requirements** Doctors time and free beds.

**Status** Assential

**Overview** Receptionist can give admission to the patient and can get the appointments from the doctor and allot bed.

**Uses** Helpful for the patients.

**Pre-Conditions** Beds and doctors should be free.

**Post-Condition** Patient cannot see a doctor without appointment.

**Use-Case Description Form-4:**

**Use Case Name** Doctor

**Abstract** No

**Purpose** To check the patients.

**Actor** Doctor.

**Importance** Primary.

**Requirements** Appointments of patients.

**Overview** Doctor will see the patients problem by loging into the system.

**Uses** Helpful for the patients.

**Pre-Conditions** Doctors can login to see patients record.

**Post-Condition** Check the patients.

**Typical Course of actions:**

**Actors & System Response Table 1:**

# Actors & system Responce

**Actors Actions** (Doctor) **System Response**

To treat the patients.

Patient is assigned bed if necessary.

Assign Bed

Assigned for bed.

# 

# 

# 

# Actors & System Response Table 2:

# 

**Actors Actions** (Staff) **System Response**

Reffer Patients to doctor

Inform Doctor

Add new patient

Amission of patient

Check Out Time

Delete patient record

Check medicine record

If not available report to the system

Check out patient

Give patient bill.

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## 8

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## Actors actions and system response Table-3:

**Actors Actions** (Receptionist) **System Response**

Add a patient

If the bed is available add patient

Give an appointment

Give the appointment of doctor.

## 

## 

## 2.4 Operating Environment

This software will be used by various users in different environment. Doctors and Medical suprident will use this software in their offices personally in this kind of environment safety and security hazard is minimized. Staff will use this product on the basis of mutual sharing of systems this can increase the factor of safety and security of information. Pharmacist will

use this product in the pharmacy he have to deal a large number of buyers every day this will require a continuous updating database system. Patients will use this software in a variant environment on different System with different operating system and hardware components. It is advised to Medical superiednt of the hospital to use this product on latest core-i series of processors with Windows 7 operating system having Direct-x 10 libraries and .net platform 4 on system to run this software peacefully. Doctors patients and staff can use normal home computers with windows operating system and flash player 10 to access online web portal.

## 2.5 Design and Implementation Constraints

In the developmental stage of this product developers must have to keep in mind the design and implementation constrains as this product will be used by many different users in different environments with different level of skill and on different systems with different hardware and software specifications. One constrain is in the development of the online portal system is the design of the portal has to be simple as users in different environments with different speed of the internet connection and with different hardware compatibilities. Other constrain is that is has to be simple and easy to use because users will be from different profession and different level of software usability skills. This product must have sport to update it into new versions as the requirements may extend with the passage of time. This product must have to portable with the previous versions of .net platform 4. This product will have to compile for 32bit operating system as most of the usres are using 32-bit operating system.

## 2.6 User Documentation

User manuals will be generate at the initial stage to facilitate the user. This will be having different instruction and methods to operate the product with ease and perfection. User

manuals will be generate according to the type of users e.g. Separate manuals will be generated for Doctors, Staff, Pharmacist, Patients and other general users. Reference site will also be provided to the users which will help them to increase the knowledge of the usability of the product.

## 2.7 Assumptions and Dependencies

All the data entered will be correct and up\_to\_date. This software package is developed using java as front end which is supported by sun micro system, MS SQL server 2010 as the back end which is supported by Microsoft windows 7.

# External Interface Requirements

## User Interfaces

The first page of HMS will be the welcome page which will have different buttons of the top left of the screen and on the top left of the screen it will have three conventional buttons to close, restore down and minimize respectively. Reception button will provide the fields for the Patient name, patient number, date, Check-up Fee and referred consultant to maintain the record of the patient. Patient examine button be having patient name, patient number, date and patient examine report to keep the medical history of the patient. Lab button will have the fields for patient name, patient id, date and the test report. Pharmacy will have the

fields for the Madison name, date and amount received. Staff button will have fields of user name, password, attendance, total salary. Online portal will have to user login page for patients and another separate login for staff and management. On this online portal there will be another option of help desk which can be access just by clicking that button.

## 3.2 Hardware Interfaces

This HMS will be using simple graphic texture and design so no extra specific hardware component is need. No special libraries will be required.

## Software Interfaces

User log in system and financial system will be share across different components of software. In general the whole database will be share across different components of the software. Mechanism of data sharing is simple one database will be created with different fields and specific software components will only be able to access the specific fields of database according under predefined constrains. This software will be using ‘MySQL’ to maintain the database. This software will be supportable on 32bit operation system.

## Communications Interfaces

To use online portal systems must have to be connected with an internet connection. Web browser should have to update to achieve best result from the product. This online portal will use HTTP protocol. Maximum Data transfer rate can be up to 10Mbps but it will be dependent on internet connection of the user.

# 

# 4.0 System Features

## 4.1 System Feature 1

**4.1.1 Reception module**

This module enables the staff at reception to insert, view and delete the patient information. They can a refer doctors to patients as well.

**4.1.2. Patient module**

This model will have patents personal information such as Patient Id, Name, Age, Sex, Address, Phone Number and Weight.

**4.1.3. Lab module**

*This module used to store or produce the laboratory reports. They will upload the reports online. Patient Id, Weight, Category, Doctor, Inpatient/Outpatient, Date Updating like deletion and modification is done.*

**4.1.4. Billing module**

Billing module will have the fields for the amount received from patient this will be store in data base

This will help in generation of accounting system.

**4.1.5 Log in module**

Log in module will have the fields for user name and password an it will compare with the user name and password already stored in the data base system*.*

**4.1.6 Pharmacy module**

Pharmacy module will have the data fields for the name of the available medicos and it will have the field for the price of the Madison this will collectively make the accounts of the pharmacy.

**4.1.7 Attendance module**

Attendance module will allow the staff and doctors to upload their attendance

**4.1.8 Payment module**

Payment module will enable doctors and staff to view their salary and bonuses.

**4.1.9 Statistics Module**

This is one of the most important modules of the software this is specified for the Medical Superintendent this will help them to view the statistics of all the predefined modules this will enable them to invigilate the hospital in efficient methods.

## 4.1.10Response sequence

In response sequence the modules will execute in the following sequence.

Log-in will be the first to response in the software after this it will be optional to the user to what module he wants to access. Other modules can be considered as the parallel modules.

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# Other Nonfunctional Requirements

## Performance Requirements

The capability of the software depends on the performance of the computers on which it will be use. The software can take fair enough number of input provided the database size is large enough. This would depend on the available memory space*.*

### 

### 5.1.1 Response time

This software should have to response in less than 1second after checking the patient information.

### Capacity

This Software will be using simple database system which is recommended to keep the record of upto 500 patients.

### 5.1.3 User interface

User interface screen should have to response in less than 3 seconds.

### 5.1.4 Exception handling

This software must have the basic exception handling to reduce the chance of failure in the real time execution

* 1. **Safety and Security Requirements**

There are certain measures should have to take for sake of security and safety*.*

### 5.2.1 Reception staff

Front desk staff will only be able to add the information of new patient they cannot modify the information.

### 5.2.2 User IDs

All the user of this software will only be able to access specific feature after providing their user name and id.

### 5.2.3 Patient identification number

Patient will be provided with unique patient ids to counter the factor of mismanagement of information.

## Software Quality Attributes

### Human errors

This software will have the tendency to deal with human errors, e.g if a user will press delete button by mistake it will ask again to confirm the command given by the user.

### Availability

This product will be available all the time.

### Quality assurance

This product will be bugs free and it will satisfy all the requirements of the customer with in its limitations.

## Business Rules

Users can only access their own user ids they cannot check patients or other staff member’s personal information.

## 6.0 Other Requirements:

## 6.0.1 Reusability

In the development of this product developers should produce simple and independent code modules that can be reused.

## 6.0.2 Legalization requirements

Once the final product will be ready it is required for this product to pass the standers of ISO.

Appendix A: Glossary

MS: Medical Superident

Modules: Program Blocks which will be implement to perform Specific tasks for a group.

SRS: Software Requirement Specifications.

**Appendix B:**

**Data flow diagram:**

*Log-in system*

*Pharmacy Management*

Staff Management System

Patient Facilitation

**Data Gathering Techniques**

**Personal Information:**

Name:

Gender:

Phone No:

Email:

**Questionairs that can be asked:**

* Who will control the system?
* Who can login into the system?
* How many managers and staff members in the hospital?
* What those managers and staff do?
* How many wards and room available in the hospital?
* How qualified the doctors are?
* How many specialist doctors are in the hospital?
* What is the timing of their existence in the hospital?
* What is the salary of doctors and staff?
* Is their laboratory in the hospital?
* Medical store is available or not?
* Are the medicine in the store are complete and efficient?
* How many cafeterias in the hospital?
* How many sweepers and guards in the hospital?
* Average daily patients number?
* How much security is reliable?
* How many ambulance available?
* What is the capacity of parking?
* What is the budget?
* Do you need Software update?