**SOFTWARE REQUIREMENTS SPECIFICATION**

For **HOSPITAL MANAGEMENT SYSTEM**

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***1. Introduction***

***1.1 Purpose***

The purposed software product is the HOSPITAL MANAGEMENT SYSTEM(HMS).The system will be used to get the information from the patients and then storing that data for future usage.

The intensions of the system are to reduce over-time pay & increase the number of patients that can be treated accurately.

Requirements statements in this documents are both functional & non-functional

***1.2 Document Conventions :***

The document is prepared using Microsoft Word 2010 and has used the font type. ' Comic Sans MS’. The fixed font size that has been used to type this document is 12pt with 1.5 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 lower right hand corner of the page. Every image and data table are numbered and referred to the in the main text. Standard IEEE template is the template used to organize the appearance of the document and its flow. Every requirement stated have its own priority.

***1.3 Intended Audience and Reading Suggestions:***

The intended audience of this document would be the client and specific employees like Manager and Receptionist, Doctors and Staff of the 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 final provide a clear idea about the system that is building.

**1.4 Product Scope**

We assume that the HOSPITAL is using a manual system to handle the hospital process. When patients arrive they make an appointment at the reception to consult a Doctor. These are being recorded in a file. Then again the patients diagnosed symptoms related disease details, ward details and other necessary details are being recorded and those files are being stored in special locations. Calculation of bills and inventory are done manually. As the current system is a file based one, management of the hospital has to put much effort on securing the files. They can be easily damaged by fire, insects and natural disasters. Also could be misplaced by losing data and information. Limited storage space of the files is another issue that they currently face when the management is manually done. There occurs an issue with the organization of data information and schedules and running the process methodically which leads to the manual system malfunctioning.

If we want to check a previous record of a patient or other detail. Management will be in a great problem. It’s a tough and time taking process to search for a record in a file. Keeping files takes much time and waste much precious man hours. The tendency of making mistakes is high when functioning manually. It is hard to relay on the accuracy of calculations done manually too. It is more obvious for problems to arise. We plan to overcome the above mentioned problems through a standalone application, to manage the major functions of the Hospital System. The hospital management system we are going to implement will be covering all basic processes done in the hospital. It would handle

DOCTOR:

* View Patient’s History
* View Appointment for Operation
* Prescribe Medicine
* Prescribe Test

ADMIN:

* Add Doctor
* Add Staff
* View Patient
* Modify/Delete Doctor
* Prepare Doctor’s salary
* Modify/Delete Staff
* Prepare Staff’s Salary

PATIENT:

* Register for appointment
* Pay fee
* Add History

RECEPTIONIST:

* View Staff
* View Doctor
* Add Patient
* Schedule Patient’s appointment
* Receive Patient’s charges
* View Appointment

STAFF:

* File Medical Report

So the staff does not need to spend time on writing appointment records and updating them in files. And the number issuing process becomes easier and efficient. And keeping the track of patients and medical prescription details allow them to review the details whenever needed. Implementing the Salary Management system we record consulting

Doctor’s schedules. This is more efficient and more reliable and accurate as the system avoids incorrect data inputs whenever they are occurred. The system developing for Emergency Treatment & Equipment Management automate the current processes of patient registering and propose a better way to keep records of equipment and medicines related to the emergency treatment unit in a computer based file system. The proposed system provides a simple interface to gather quick information of the patient and record them. So that in a case of special request by an external party, details of the patient history can be accessed and viewed. This increases the accuracy of report generating process and save a lot of time in manual handling of report details and improve the efficiency and the productivity of the organization. Our goal is to make a client satisfied system by full filling the client requirements and improving the current manual system with client needs which are not even particularly mentioned but what we have suggested by analyzing and got approved by the client to improve the standard of the system and of the management of the hospital to its utmost. The scope of the SRS is basically for everyone involved to understand and have an idea about how and what is going to happen in the system. Using User Case diagrams and GUI’s which are in a form where everyone can understand. How the interfaces finally appear. To have an idea about the new employees that the client might have to get employed when the system is implemented.

***1.5 References:***

IEEE Software Requirements Specification Template

Available: <http://home.agh.edu.pl/~jsw/io/IEEE830.pdf>

**2. Overall Description**

**2.1 Product Perspective:**

This hospital follows manual procedures to keep track of its day to day

activities. When scenarios such as patient information handling, employee handling, financial analysis and report generation is taken into consideration there exists many issues with regard to efficiency, security, accuracy and reliability. Due to improperly managed details medical center faces quite a lot of difficulties in accessing past data as well as managing present data. The manual file systems which are being used at present require storage facilities which is also another overhead. The fully functional automated hospital management system which will be developed through this project will eliminate the disadvantages caused by the manual system by improving the reliability, efficiency and performance. The usage of a database to store patient, doctor’s , staff details etc. will accommodate easy access, retrieval, search and manipulation of data. The access limitations provided through access privilege levels will enhance the security of the system. The system will facilitate concurrent access and convenient management of activities of the medical center.

OPD and Consultation Management

* Recording patient details
* Issuing numbers according to doctor channeled
* Updating the record with medical prescription
* Printing bill of doctor charges

Employee and Salary Management System

* Schedule of consulting doctors

Mini Theatre and Ward Management

* Details of surgeon
* Surgery success/failure details
* Complications of the patient, patient history and other details
* Bill calculation and reports

Patient management

* Progress report

**2.3 User Classes and Characteristics:**

* DOCTOR:
  + View Patient’s history
  + Prescribe medicine
  + Prescribe test to Patient
  + Schedule appointments for operation
  + View Appointment
* PATIENT:
* Register for appointment
* RECEPTIONIST:
* Schedule Patient’s appointment
* View Appointment
* Add/Delete/Modify Doctor
* Add/Delete/Modify Patient
* Patient’s hospital admission
* Bed allotment
* Patient’s charges
* Doctor’s Salary
* Staff Salary
* STAFF:
* File Medical Report

**2.4 Operating Environment**

Software requirements

* Windows 7 or above operating system
* MySQL server

Hardware Requirements

* Core i5 Processor
* 4GB Ram
* 20GB of hard disk space in terminal machines

***2.5 Design and Implementation Constraints***

* System is wirelessly networked with an encryption
* System is only accessible within the hospital premises only.
* Database is password protected.
* Should use less RAM and processing power.
* Each user should have individual ID and password.

**2.6 Project Documentation**

|  |  |  |
| --- | --- | --- |
| Software Life Cycle Phase | Documentation | Intended Activities |
| Requirement Gathering, Analysis and Specification | * Use Case Diagram with Flow of Events * Activity Diagram * Realization of Use Cases * Software Requirement and Specification (SRS) | Includes the customer expected software features, constraints, interfaces and other attributes.  Moreover the objectives and the benefits gained through the system are clearly specified. |
| Software Design | Software Design Description(SDD) | Describes the logical basis of design decisions taken and how it will pave way in acquiring the requirements of the customer through the software |
| Implementation | Technical Documentation | Contains information regarding the implementations of the system using the programming concepts |
| Software Testing | Software Test Documentation(STD) | Includes information degrading testing procedures to validate and verify the software results. Main types of testing techniques are unit testing, integration testing, system testing and acceptance testing |
| Maintenance | User Documentation | Includes manuals for the end users according to their position of access levels |

***2.7 User Documentation***

As a part of the system itself a user documentation is provided to the customers which gives an overview of the system. It will include the full description about the product and complete orderly followed steps to install the software. The users will get the opportunity to use the system without having any trouble. The user manual will include the email addresses to contact us in need. Tasks are listed alphabetically or logically grouped often using cross referenced indexes which helps the users to know exactly what sort of information they are looking for.

***2.8 Assumptions and Dependencies***

* Each user must have a valid user id and password
* Server must be running for the system to function
* Users must log in to the system to access any record.

***3. External Interface Requirements***

***3.1 Hardware Interfaces***

* Laptop/Desktop PC

core i5 processor

4GB RAM

500GB HDD

 Purpose of this pc is to give information when Patients ask information about doctors, medicine available lab tests etc. To perform such Action it need very efficient computer otherwise due to that reason patients have to wait for a long time to get what they ask for.

* Laser Printer (B/W)

Simply this device is for printing bills and view reports.

* Wi-Fi router

 Wi-Fi router is used to for internetwork operations inside of a

Hospital and simply data transmission from pc’s to sever.

***3.2 Software Interfaces***

Developing end

* C# is fast, secure, and reliable. From laptops to data centers, game consoles to scientific super computers, cell phones to the Internet,
* MySQL server - Database connectivity and management

 Client end

* OS - Windows 7/8/8.1- Very user friendly and common OS
* MySQL server - Database connectivity

***.4 Communications Interfaces***

* NIC (Network Interface Card) – It is a computer hardware component that allows a computer to connect to a network

. NICs may be used for both wired and wireless connections.

* CAT 5 network cable- for high signal integrity
* TCP/IP protocol-Internet service provider to access and share information over the Internet
* Ethernet Communications Interface- Ethernet is a frame-based computer network technology for local area networks (LANs)
* Ubiquitous, easy to set up and easy to use. Low cost and high data transmission rates.

***Nonfunctional Requirements***

***5.1 Performance Requirements***

Response time-The system will give responses within 1 second after checking the patient information and other information.

Capacity-The system must support 1000 people at a time

User interface- User interface screen will response within 5 seconds.

Conformity – The system must conform to the Microsoft accessibility

***5.2 Safety Requirements***

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

***5.3 Security Requirements***

All the administrative and data entry operators have unique logins so system can understand who is login in to system right now no intruders allowed except system administrative nobody cannot change record and valuable data.

***5.4 Software Quality Attributes***

AVAILABILITY: The system shall be available all the time.

CORRECTNESS: A bug free software which fulfill the correct need/requirements of the client.

MAINTAINABILITY: The ability to maintain ,modify information and update fix problems of the system

USABILITY: software can be used again and again without distortion.

ACCESSIBILITY: Administrator and many other users can access the system but the access level is controlled for each user according to their work scope.

ACCURACY: The reliability on the information/output. Can depend/be sure of the outcome.

STABILITY: The system outcome/output won’t change time to time. Same output

 Will be given always for a given input.

***5.5 Business Rules***

* Want take the responsibility of failures due to hardware malfunctioning.
* Warranty period of maintaining the software would be one year.
* Additional payments will be analyzed and charged for further maintenance
* If any error occur due to a user’s improper use. Warranty will not be allocated to it.
* No money back returns for the software.
* Trust bond placement should be done before designing and coding. An advance or an agreement.