[Software Requirement Specification]

[Hospital Management System]

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# **Introduction**

This SRS is made to describe the functionality of the Hospital Management System. It will describe what the system is supposed to do without discussing about how will it do it. This automated Hospital Management System will make patients to take appointments from the hospital using the software. Doctor can prescribe medicine against the CNIC of the patient and Admin can search, display, update the patients and view the doctors. Pharmacy can see the prescription using the patient CNIC.

# **Purpose**

The purpose of this system was to automate the hospital management system. Replacing the manual hospital system with automated hospital system. Data of the patient would be stored on a hardware device rather than a register. This automated Hospital Management System will make it easier to attain and maintain patient data. And perform different operations on it.

## **Intended Audience and Reading Suggestions**

This document is made for the developers, tester, and programmers to help them design the system based on the requirements gathered. It will help latter in the testing phase while testing if the built system meets the requirements identified by the business analyst.

# **Product Scope**

This product is only made for Hospital Management System to automate the patient record managing. Its scope lies within this type of system. It does not concern other components of the Hospital.

# **Feasibility Study**

The feasibility study of this system is based on following points.

* + - 1. To automate the system
      2. Meet the user expectations from the system
      3. Drawbacks in the existing system

# **Overall Description**

The Hospital Management System is a system built to automate the tasks performed in the hospital.

# **Product perspective**

This project describes how the patient enter data into the system and get an appointment and got treatment by the doctor. And how the admin controls all the administrative tasks of the system. The admin needs to login into the system to maintain the data. So, as to provide data security.

# **Product Functions**

Following are the functionality performed by the system.

* + - 1. Patient can enter his personal data
      2. Patient can get appointment
      3. Doctor can prescribe medicine
      4. Pharmacy can check the prescription using patient’s CNIC
      5. Admin can login
      6. Admin can view the patients
      7. Admin can view the doctors
      8. Admin can update patient data
      9. Admin can search the patient

# **User Classes and Characteristics**

Following user classes are present in the system

* + - 1. Patients
      2. Doctors
      3. Admins
      4. Pharmacists

Following are the user characteristics

* + - 1. Patient can easily understand the system as the system is user friendly and implemented in Graphical user Interface.
      2. Doctors can add prescription for the patients easily
      3. Admin can manage the patient’s data and functionality easily using the system.
      4. Pharmacist are linked in the system. They can view the patient’s prescription using the patient’s CNIC.

# **Operating Environment**

The system is operated in the hospital and patients can use it form their home. The system has been implemented on hardware of specifications and built using software’s of different kinds.

# **Assumptions and Dependencies**

The software will maintain all the patient data accurately and up to date. The technology used may change during the development phase. However, this document describes complete requirements for the system to be built.

# **Design and Implementation Constraints**

The developer must design the system using SQL server 2012 and visual studio.

# **External Interface Requirements**

# **User Interface**

This a user-friendly system. It is easy for the patients to understand the system.

# **Hardware Interface**

Ram ---> 1.00 GB

Hard drive ---> 500 GB

OS ---> Windows 10

# **Software Interface**

SQL Server 2012

Visual Studio 2016

# **Communication Interface**

Windows 10

# **System Features**

# **Patient Add record**

Patient can add their data very easily into the system. This system provides the facility for the patient to add their CNIC, Name, address, CellNo, Age, Gender. Patient ID that’s assigned to the patient.

# **Patient gets appointment**

Patient can select the time and date and make an appointment and that appointment will be saved against their CNIC. Appointment number will be assigned automatically.

# **Doctor prescribes medicine**

The doctor can prescribe medicine to the patient using the CNIC of that patient. He can enter medicine name, medicine code, medicine dosage.

# **Pharmacy checks medicine**

Pharmacy can see the medicine and give the medicine to the patient. Using the CNIC of the patient, the pharmacy would see the prescription given to the patient by the doctor.

# **Admin logins**

Admin needs to give username and password to bring search, update, view the patient records.

# **Admin view all doctors**

Admin has the facility to view all the doctors in the hospital. He needs to authenticate himself first.

# **Admin can view all patients**

Admin has the facility to view all the patients in the hospital. He needs to authenticate himself first.

# **Admin can search patient**

Admin can search a patient record by entering his CNIC in the system.

# **Admin can update patient record**

Admin can update the data of the patient using the CNIC of the patient.

# **Other Non-Functional Requirement**

The system would be built to provide data security for the patients. Only the admin would view the patient data and update and search it. And Admin needs to login into the system to authenticate himself first, this provides the facility that patient data will be kept secure.

The system performance depends upon the working of the software. The number of entries in the system in limited to the size of hard drive.

**PROJECT\_SRS**

**Business Requirements**

1. We have used the automated number assignment for Prescription ID, Pharmacy ID, Patient ID, Doctor ID.
2. We used SQL server to implement Database Concepts.
3. Username and Password is necessary for the admin to access the record of the Patient.
4. We have affiliated the pharmacy with the Hospital. So, the pharmacy can see the prescription of the patient and give medicine.
5. Only the Prescription is shown to the pharmacy with the CNIC number of the patient.

# **List of Entities**

1. Patient
2. Doctor
3. Login
4. Admin
5. Prescription
6. Pharmacy
7. Appointment

# **Relationships among Entities**

1. Patient takes an appointment
2. Doctor Prescribes medicine
3. Pharmacy checks prescription
4. Admin logins into System
5. Patient checks prescription
6. Patient takes medicine from pharmacy

**ERD (Entity Relationship Diagram)Diagram

Description automatically generated**

**EERD Diagram

Description automatically generated(Enhanced Entity Relationship Diagram)**

# **PATIENT**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Patient  CNIC | Patient  ID | Patient  Name | Patient  address | Patient  Age | Patient Gender | Patient  CellNo |
| 33102-738482 | 1 | Afzal | Faisalabad | 17 | Male | 0324567386 |
| 33102-45783-3 | 2 | Sara | Faisalabad | 23 | Female | 0324676288 |

# **DOCTOR**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Doctor CNIC | Doctor Name | Doctor  ID | Doctor Address | Doctor Dept | Doctor Qualification | | Doctor CellNo |
| 33102-38234-4 | Dr. Shahid | 2 | Gulshan Colony | Neurology | | Ph.D. | 0324459454 |
| 33102-34784-4 | Dr. Jibran | 3 | Milat Chowk | Heart | | Ph.D. | 036528728 |

# **LOGIN**

|  |  |  |
| --- | --- | --- |
| Admin  CNIC | Username | Password |
| 33102-34343-5 | Admin | 13245 |
| 33102-34343-5 | Admin | 13245 |

# **ADMIN**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Admin  CNIC | Admin ID | Admin Name | Admin Address | Admin CellNo |
| 33102-34343-5 | 32 | Rahal | Sadiq Abad | 032456723 |
| 33102-34343-5 | 32 | Rahal | Sadiq Abad | 032456723 |

# **APPOINTMENT**

|  |  |  |  |
| --- | --- | --- | --- |
| Appointment No | Time | Date | Patient  CNIC |
| 1 | 12 | 19-02-2022 | 33102-738482 |
| 2 | 9 | 20-02-2022 | 33102-45783-3 |

# **PHARMACY**

|  |  |
| --- | --- |
| Pharmacy No | Patient  CNIC |
| 1 | 33102-738482 |
| 2 | 33102-45783-3 |

# **PRESCRIPTION**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Prescription No | Medicine Name | Medicine Code | Medicine Dosage | Patient  CNIC | Doctor CNIC | Pharmacy No |
| 1 | Panadol | 4325 | Thrice | 33102-738482 | 33102-38234-4 | 1 |
| 1 | Senegambian | 6353 | Two times | 33102-45783-3 | 33102-34784-4 | 2 |

**Classes in the Project**

1. Patient
2. Doctor
3. Login
4. Admin
5. Prescription
6. Pharmacy
7. Appointment
8. DAL
9. Forms classes

# **Methods:**

AddPrescriprion

DisplayPrescription

# **CLASS DIAGRAM**

Diagram

Description automatically generated

# **USE CASE DIAGRAM**

Diagram

Description automatically generated

**SYSTEM**

**PHARMACIST**

**DOCTOR**

**PATIENT**

**ADMIN**

# **USE CASES:**

|  |  |
| --- | --- |
| Use case: | Admin Login |
| Primary Actor: | Admin |
| Secondar Actor: | System |
| Description: | 1. Admin will enter the Username and Password. 2. Password and Username verify from the database. |
| Extensions: | * 1. If password and username correct the move to the admin interface.   2. If password or username wrong, then move back to the main panel. |

|  |  |
| --- | --- |
| Use Case: | Appointment |
| Primary Actor: | Patient |
| Secondary Actor: | System |
| Description: | 1. Patient will first select patient option from the main interface 2. The patient will enter its personal details and appointment details. |

|  |  |
| --- | --- |
| Use Case: | Prescription |
| Primary Actor: | Doctor |
| Secondary Actor: | Patient |
| Description: | 1. Enter the CNIC of the patient that the doctor wants to prescribe the medicine to. 2. Enter the details of the prescription. |

|  |  |
| --- | --- |
| Use Case: | Checking Prescription |
| Primary Actor: | Pharmacist |
| Secondary Actor: | Patient |
| Description: | 1. The pharmacist will enter the CNIC of the patient whose prescription he wants to see. 2. The prescription details will be displayed which the doctor had prescribed to the patient. |

|  |  |
| --- | --- |
| Use Case: | Admin Functions |
| Primary Actor: | Admin |
| Secondary Actor: | System |
| Description: | 1. Admin can view all the patient records. 2. Admin can view all the doctor records. 3. Admin can update the patient information. 4. Admin can search patient records. |

# **SEQUENCE DIAGRAM**

Table

Description automatically generated