Software Requirements Specification

For

Health Care Management System

Version 1.0 approved

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Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| HCPMS | April 8,2018 | Automating the medical examination process, which would otherwise have to be performed manually. | Version 1.0 |

# Introduction:

The purpose of this document is to present a detailed description of the Health Care Patient Management System (HCPMS), which is developed for the Health Care Management System (HCMS) located in the Health Care Hospital. This document explains the purpose and features of the system, the interfaces of the system, what the system will do and the constraints under which it must operate. The expected audience of this document includes the project advisors, other HBDC staff and the system development team.

## Purpose:

The Software is for the automation of Hospital Management.

* It maintains three levels of users
* Administrator Level
* Doctors
* Patient Level
* The Software includes Maintaining Patient details.
* Providing Prescription, Precautions and Diet advice.
* Billing and Report generation

## Document Conventions:

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Database | Collection of all the information monitored by this system. |
| HCMS | Health Care Management System |
| HCPMS | Health Care Patient Management System |
| (SRS) 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 | Patient, Nurse, Physician or Admin. |

## Intended Audience and Reading Suggestions:

## The expected audience of this document includes the project advisors, other HCPMS staff and the system development team.

## Product Scope:

The HCPMS will be a web-based system; designed to maximize the HCMS's productivity by providing features to assist in automating the medical examination process, which would otherwise have to be performed manually.

More specifically, this system is designed to allow its users to manage the patient profiles by storing their data in a database system. The system will also simplify the search and retrieval of data by providing search functionality. Report generation functionality will be provided by the system allowing the user to generate distinct reports.

## References:

* Document#1: Health Care Patient Management System Project Requirements.
* IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
* https://techwhirl.com/writing-software-requirements-specifications/

# Overall Description:

## Product Perspective

The system has no interaction with any external system as it implements and uses its own database filer. Users will access the module via the main HCMS interface as an independent module. The data source for the system will include its users and the patients of the HCMS. The database will contain the patients’ and actors (Admin, Physician and Nurse) profiles information. The filer will contain attachments for reports.

## Product Functions:

The main purpose of HCMS is to keep track of Doctor’s status, patient appointments. The main part of the module will be:

* To provide Doctor’s availability.
* To provide status information on medical facilities including rooms, medicine and staff.
* To facilitate patient to add appointments.
* To facilitate patients to view their reports.
* To provide doctor’s platform to update their availability.
* To alert doctor’s about appointments.

## User Classes and Characteristics:

**2.3.1 Administrator:**

|  |  |
| --- | --- |
| Description | Manage the system organization and security. |
| Characteristics | Expected to have knowledge of databases, web administration and search engines. |

**2.3.2 Doctor:**

|  |  |
| --- | --- |
| Description | Provides health details about patients' progress. |
| Characteristics | Expected to have basic knowledge about using the internet, search engines, attachment and retrieval of files. |

**2.3.3 Patient:**

|  |  |
| --- | --- |
| Description | View all the details of Doctors, place appointment and generate their own report. |
| Characteristics | Expected to have basic knowledge about using the internet, search engines, attachment and retrieval of files. |

## Operating Environment:

Admin

Doctor

HCPMS System

Patient

D

B

Filer

## Design and Implementation Constraints:

* **Database:**

The system shall use the MySQL Database, which is open source and free.

* **Operating System:**

The Development environment shall be Android/IOS.

* **Web-Based**:

The system shall be a Web-based application**. (PHP Laravel).**

## User Documentation:

The requirements described in section 3 contain all requirements to be implemented for the demonstration on Dec 18th, 2018.

## Assumptions and Dependencies:

The module does not depend on any external services.

# External Interface Requirements:

## User Interfaces:

* The software provides good graphical interface for the users.
* Administrator can operate on the system, performing the required task such as create, update, viewing the details of the appointments.
* Allows user to view quick reports in between particular time.
* Verification of appointments and alerts.

## Hardware Interfaces:

* **Operating system:** Android/IOS
* **Hard disk**: 500MB.
* **RAM:** 50MB

## Software Interfaces:

* Java language/ Objective-C
* LARAVEL 5.5
* MS SQL server 2005.

## Communications Interfaces:

* Window
* Android / IOS

# System Features

The functional requirements for the product by system features, the major services provided by the product.

**4.1 Display Patient Appointments:**

**Input** Selection of the link to the HCPMS from the main page.

**Action** All users are transferred to HCPMS Console Page.

**Output** HCPMS console will display information on the most recent appointments including name of Doctor, location, status and Time.

**Notes** Project information should be drawn from database.

**Priority** High

**4.2 Display Patient Report:**

**Input** Selection of the link to the HCPMS from the main page.

**Action** All users are transferred to HCPMS Console Page.

**Output** HCPMS console will display Report on all of the appointments including name of Doctors, locations, Status and Time and Result.

**Notes** Project information should be drawn from database.

**Priority** High

**4.3 Display All Doctors:**

**Input** Selection of the View link from the HCPMS navigation menu item.

**Action** All users are transferred to the Hospital Details Page.

**Output** Hospital Details Page displays information on all Doctors including name, location, Status.

**Notes** Project information should be drawn from a database.

**Priority** High

**4.3.1 Display Individual Doctor:**

**Input** Selection of Doctor name from HCPMS Details Page.

**Action** All users are transferred to Individual Doctor Details Page.

**Output** Individual Doctor Details Page displays Doctor Information including:

* Name of Doctor.
* Location.
* Available appointment time.

**Notes** N/A

**Priority** High

**4.4 Display form:**

**Input** Selecting the link to Doctor on the HCPMS navigation menu.

**Action** Administrator is transferred to the Add Doctor Page

**Output** The page will consist of a form allowing input of:

* Name of Doctor.
* Location.
* Available Timings.
* Working Days.

**Notes**  N/A

**Priority** High

**4.4.1 Submit form:**

**Input** Selection of Submit button on the Add Doctor Page.

**Action** Information is added to the database, administrator is transferred to a confirmation page.

**Output** A confirmation page informing the administrator of the success of the form submission.

**Notes** Administrator needs to at least enter name and location and Timings slots.

**Priority** High.

**4.5 Delete a Doctor:**

**Input** Selection of Delete Doctor from the HCPMS navigation menu.

**Action** Administrator is transferred to a Delete Doctor Page where administrator must select the Doctor they want to delete.

**Output** Delete Doctor page is displayed, containing a list of all Doctors in the database and the option to delete any one of them.

**Notes**  N/A

**Priority** High

**4.5.1 Submit Deletion:**

**Input** Selection of Delete button on the Delete Doctor Page.

**Action** Administrator is transferred to a confirmation page.

**Output** A confirmation page informing the user of the success of the deletion request.

**Notes** N/A

**Priority** High

**4.6 Edit Doctors Information**

**Input** Selection of Edit Doctors Information button on the HCPMS navigation menu.

**Action** Administrator is transferred to a Edit Doctors Page

**Output** The Edit Hospital Page will display a list of all Doctors in the database.

**Notes** N/A

**Priority** High.

**4.6.1 Edit an individual Doctor information:**

**Input**  Selection of a Doctor from the Edit Doctor Page.

**Action** Administrator is transferred to Edit Individual Doctor Page.

**Output** The page will consist of a form filled with information of the chosen Doctor from the database and it allows input of:

* Name of Doctor
* Location
* Available Timings
* Working days

**Notes** N/A

**Priority** High

**4.6.2 Submit individual Doctor Information edit:**

**Input** Selection of Submit button in the Edit Individual Doctor Page.

**Action** Administrator is transferred to a Confirmation page.

**Output** A confirmation page informing the user of the success of the edit request.

**Notes** N/A

**Priority** High

# Nonfunctional Requirements

## Performance Requirements

* **Response Time :-**

The system shall give responses in 1 second after checking the Patients information.

* **Capacity :-**

The System must support 1000 people at a time.

* **User-interface :-**

The user-interface screen shall respond within 5 seconds.

* **Conformity:-**

The systems must conform to the Microsoft Accessibility

## Safety Requirements

Humans can make error but the negative effects of common errors should be limited. E.g., users should realize that a given command will delete data, and be asked to confirm their intent or have the option to undo.

## Security Requirements

* **Patient Identification:-**

The system requires the patient to identify himself /herself using CNIC.

* **Logon ID :-**

Any user who uses the system shall have a Logon ID and Password.

* **Modification**

Any modification (inert, delete, update) for the Database shall be synchronized and only by the administrator in the ward.

* **Administrators' Rights:-**

Administrators shall be able to view and modify all information in HCPMS.

## Software Quality Attributes

* **Reliability:**

System must be defect free in generating reports.

* **Availability:**

The system shall be available all the time.

* **Reusability:**

Is part of the code going to be used elsewhere, produces simple and independent codemodules that can be reused.

* **Maintainability:**

**Back Up**

The system shall provide the capability to back-up the Data.

**Errors**

The system shall keep a log of all the errors.

## Other Requirements:

A degraded mode of operation should be possible in which each system can operate independently of central scheduling. The software shall have failure and error recognition codes acting as a safety net, thus keeping the software from performing any major catastrophic functions.

**Accident and emergency service:**

Unplanned services provided to patients who are not admitted to the hospital.

Appendix A: Glossary

DatabaseCollection of all the information monitored by this system.

HCMSHealth Care Management System

HCPMSHealth Care Patient Management System

SRSA 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 Patient, Nurse, Physician or Admin.

Filer The filer will contain attachments for reports.

DB Database (Contains User Information)

Appendix B: Analysis

The project requirements elicitation interview conducted by

AY Team helped to define the proposed architecture of the product.

The proposed system breaks the problem into two distinct parts, both separated by a connection to the internet.

In this proposed scenario, the client Device access the application over the internet on a server, which hosts the application. The application stores all related Information, client data.

Appendix C: To Be Determined List

Presently there are no remaining TBDs. All TBDs have been tracked to their closure.