**Software Requirements**

**Specification**

**for**

# Clinic Management System

## Version 2.0 approved

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# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Eng. Abdallah rashwan | 15-1-2024 | The functional requirements weren’t written correctly. | 1.0 |

# Introduction

## Purpose

This application is designed to streamline the management of core healthcare operations, ensuring efficient handling of doctors, patients, shifts, and appointments. It aims to enhance administrative workflows, reduce manual errors, and improve scheduling and communication between patients and healthcare providers

## Product Scope

The system provides an intuitive interface for administrators to:

* View, add, edit, and delete information about doctors, patients, shifts, and appointments.
* Enable scheduling and shift management for healthcare professionals.
* Facilitate appointment bookings and status tracking.

#### ****1.3 Objectives****

* Efficient management of healthcare-related data.
* User-friendly interface for streamlined operations.
* Scalability to support future modules or features.

#### ****1.4 Users****

* **Administrator**: Manages doctors, patients, shifts, and appointments.
* **Receptionist/User**: Handles appointment scheduling and patient management.

### ****2. Overall Description****

#### ****2.1 Product Functions****

This system allows healthcare institutions to manage essential operations effectively. The main functionalities include:

* **Doctor Management:** Adding, updating, and displaying doctor profiles and schedules.
* **Patient Management:** Registering new patients, updating patient information, and viewing medical histories.
* **Shift Management:** Assigning and managing doctor shifts.
* **Appointment Booking:** Scheduling and verifying appointments for patients with available doctors.
* **Appointment Status Management:** Updating appointment statuses (e.g., Confirmed, Pending, or Completed).
* **View Operations:** Displaying details for doctors, patients, appointments, and shifts.

#### ****2.2 User Classes and Characteristics****

**Receptionists**: Handle appointment bookings, verify schedules, and assist patients.

* **Doctors:** View assigned schedules, patient details, and appointment status.

#### ****2.3 Operating Environment****

* **Platform:** The system operates as a web application supported on Google Chrome (v110.0 and later), Firefox (v110.0 and later), and Edge browsers.
* **Minimum Server Requirements:**
  + **Processor:** Intel Xeon E5 Series
  + **RAM:** 16 GB
  + **Storage:** 1 TB SSD
  + **Network:** Gigabit Ethernet
* **Database:** SQL Server with SQL Authentication.

#### 2.4 Assumptions and Dependencies

The system relies on a stable internet connection to ensure smooth operation. Any interruption in the connection may affect functionality.

Dependencies include third-party libraries for database management and front-end frameworks.

# System Functions

## Sign up

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR001 | Administrators and receptionists must sign up by entering their email and creating a password | Must | Initial system access |
| FR002 | Users must provide full name and contact information during registration |  |  |

## Sign in

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR003 | Users can sign in using their registered email and password | Must | Secure access mechanism |
| FR004 | Implement role-based access control for different user types | Must | |  | | --- | | Differentiate admin  and receptionist access | |

## Log out

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR005 | Users can log out of the system securely | Must | None |

## Doctor Management

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR006 | Administrators can add new doctors to the system | Must | Comprehensive doctor profiles |
| FR007 | Capture doctor details: name, specialization, contact information | Must | |  | | --- | | Detailed doctor  information | |

## Shift Management

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR008 | Administrators can create and manage doctor shifts | Must | Flexible scheduling |
| FR009 | Shifts must include date, start time, end time, and assigned doctors | Must | |  | | --- | | Detailed shift  information | |

## Patient Management

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR010 | Receptionists can add new patient information | Must | Patient record creation |
| FR011 | Capture patient details: name, contact, medical history | Must | |  | | --- | | Comprehensive  patient profiles | |

## Appointment Scheduling

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR012 | Receptionists can book appointments for patients. | Must | Appointment creation |
| FR013 | System checks doctor availability before appointment booking | Must | Prevent double-booking |

## Notifications

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR012 | Send appointment confirmation notifications to patients | Must | Communication mechanism |
| FR013 | Notify doctors about scheduled appointments | Must | |  | | --- | | Staff  coordination | |

* 1. **Create a purchase receipt**

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| FR030 | The secretary creates a purchase receipt for each customer, in which the supplies that were purchased, the prices of the supplies, product brands, the date of purchase, the discounts  that were added, and the customer’s data are added, and the full cost is calculated. | Must | Two copies of the invoice are printed, one for the customer and another copy to be placed on the clinic system to calculate the monthly income. |

# Nonfunctional Requirements

## Capacity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments | Unit |
| NFR001 | How well the service performs these functions, networks. | Must | None | Can have 500 user at a time |

## Reliability

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| NFR002 | Specifies how likely the system or its element would run without a failure for a given period of time under predefined conditions. | Must | None |

## Compatibility

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| NFR003 | It must be ensured that the website is properly working across different browsers, devices, operating systems,  networks, and hardware. | Must | None |

## Speed and performance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments | Unit |
| NFR004 | What are the required response times, benchmark specifications, and other attributes related to performance? How fast does the system provide results, and how will the performance change with higher workloads? | Must | None | Normal Response time is 3 seconds.  In case of higher workloads  It becomes 6 to 10 seconds. |

## Security

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| NFR005 | Implement role-based access control | Must | Secure user authentication |
| NFR006 | Protect sensitive patient and medical information | Must | Data privacy |

## Usability

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments |
| NFR007 | Provide intuitive user interface | Must | Easy system navigation. |
| NFR008 | Support users with basic computer skills | Must | Accessibility |

## Portability

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments | Unit |
| NFR010 | The list of supported operating systems and their versions.  Network specifics, the list of supported browsers and their versions. Devices and other hardware requirements. | Should | None | Available on all the commonly used browsers and operating systems. |

* 1. **Availability**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | Requirements statement | Must/should | Comments | Unit |
| NFR011 | How often does the system experience critical failures, how much time does it take to fix the issue when it arises, and how is user availability time compared to downtime? | Should | Takes few minutes to fix any appeared issues. |  |