Indian Institute of Information Technology, Indore

Health Center

Software Requirement Specification (SRS)

2023

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Submitted to:

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Mr. Puneet Gupta

Date of submission

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1. Introduction

The Health Center Management System is a software application that aims to streamline the management and administration of health centers, clinics, or medical practices. It is designed to automate various tasks and processes, improve operational efficiency, enhance patient care, and facilitate better decision-making for healthcare providers. The Health Center Management System will be a web-based application that can be accessed from any device with an internet connection, providing a user-friendly and scalable solution for health center management.

1.1 Purpose

The purpose of this SRS document is to define the requirements and functionalities of the Health Center Management System. It provides a detailed overview of the system's goals and objectives, user roles and permissions, user interfaces, data management, security and privacy, integration with external systems, and user acceptance testing. This document serves as a foundation for the development, implementation, and testing of the Health Center Management System, ensuring that all stakeholders have a clear understanding of the system's requirements and expectations.

1.2 Scope

The Health Center Management System will encompass various modules and functionalities that are essential for the management and administration of health centers. These functionalities may include, but are not limited to, patient registration, appointment scheduling, electronic health records (EHRs) management, billing and invoicing, inventory and pharmacy management, reporting and analytics, and user management. The system will also integrate with external systems, such as electronic medical record (EMR) systems, payment gateways, and insurance providers, to ensure smooth information flow and interoperability.
S is written well it will serve the following purposes. SRS is the agreement document between the client and the Software developer.

1.3 Audience

The primary audience for this SRS document includes:

- Health center administrators and managers who are responsible for overseeing the day-to-day operations of the health center and ensuring efficient management of resources.
- Healthcare providers, such as doctors, nurses, and other medical staff, who will use the system to manage patient appointments, record patient information, and provide care.
- Patients who will interact with the system to schedule appointments, view their medical records, and communicate with healthcare providers.
- IT staff who will be involved in the development, implementation, and maintenance of the Health Center Management System

1.4 System Overview

The Health Center Management System will be a web-based application that can be accessed through a web browser from any device with an internet connection. It will have a user-friendly and intuitive user interface that allows users to interact with the system easily. The system will be built using modern web technologies, such as HTML5, CSS3, JavaScript, EJS and a server-side programming language, NodeJs. It will utilize MongoDB for data storage and retrieval, and will implement appropriate security measures to protect patient information and ensure compliance with relevant regulations.

1.5 Goals and Objectives

The Health Center Management System aims to achieve the following goals and objectives:

- Streamline health center management: The system will do various tasks and processes, such as patient registration, appointment scheduling, billing and invoicing and reporting, to improve operational efficiency and reduce manual errors.
- Enhance patient care: The system will provide tools and features that enable healthcare providers to deliver high-quality patient care patient history tracking and communication tools.

- Ensure security and privacy: The system will implement appropriate security measures, such as data encryption and access controls, to protect patient information.
- Enhance patient experience: The system will provide patients with convenient and user-friendly features, such as online appointment scheduling, access to their electronic health records, and communication tools, to improve their overall experience and engagement with the health center.
- Provide scalability and flexibility: The system will be designed to be scalable and flexible, allowing for easy customization and adaptation to the specific needs and requirements of different health centers or medical practices, regardless of their size or specialty.

2. Functional Requirements

The Health Center Management System will consist of several modules and functionalities that are essential for efficient health center management. The following are the main functional requirements of the system:

2.1 User Management:

The system shall have different user roles, such as administrator, doctor, and patient, with different permissions and access levels based on their roles. The system shall allow administrators to create, modify, and delete user accounts, manage user roles and permissions and accept/deny appointments and give proper timing. The system shall provide authentication and authorization mechanisms to ensure secure access to the system.

2.2 Patient Registration and Appointment Scheduling:

The system shall allow patients to register their personal information, such as name, contact details, and medical history. The system shall provide a patient portal where patients can schedule appointments with doctors based on their availability and specialty. The system shall allow patients to cancel appointments that they have booked earlier. The system shall send appointment reminders to patients and doctors through email. Doctors should be able to view the patient's medical history and records during the consultation

2.3 Electronic Health Records (EHRs) Management :

The system shall allow healthcare providers to create, view, update, and manage electronic health records (EHRs) for patients, including patient demographics, medical history, diagnoses, treatments, and

medications. The system shall provide features for healthcare providers to document patient encounters, such as clinical notes, lab results, and imaging reports.

2.4 Pharmacy Management:

The system shall allow health center staff to manage inventory, including medications, medical supplies, and equipment. The system shall provide features for staff to track stock levels, expiration dates, and reordering of items. The system shall allow healthcare providers to prescribe medications electronically and generate electronic prescriptions for patients.

2.5 Feedback and Ratings:

Patients should be able to provide feedback and ratings about the doctor's consultation and service.

3. Non-Functional Requirements

In addition to functional requirements, the Health Center Management System shall also meet the following non-functional requirements:

3.1 Performance and Scalability

The system shall be designed to handle a large number of concurrent users and transactions without compromising performance.

The system shall provide response times that meet acceptable performance standards for users to efficiently interact with the system.

The system shall be scalable to accommodate the growing needs of health centers or medical practices.

3.2 Usability and User Experience

The system shall have a user-friendly and intuitive interface that is easy to navigate and use.

The system shall provide clear and concise documentation and help resources to assist users in understanding and using the system effectively.

The system shall be designed with consideration of accessibility guidelines, making it accessible to users with disabilities.

3.3 Reliability and Availability

The system shall have high availability, with minimal downtime and system failures.

The system shall provide data redundancy and backup mechanisms to ensure data integrity and availability in case of system failures or disasters.

The system shall have fault tolerance mechanisms in place to recover from system failures and ensure continuous operations.

3.4 Security

The system shall implement strong security measures, such as data encryption, access controls, and authentication mechanisms, to protect patient information and prevent unauthorized access.

3.5 Compliance

The system should be compatible with different devices and platforms, including desktops, laptops, tablets, and smartphones.

4. User Classes and Characteristics

- **Admin**

  Admin has the full access to the system which means he is able to manage any activity with regard to the system. He is the highest privileged user who can access to thesystem.

  Key functions

  - ✓ Manage doctors
  - ✓ Allocate resources
  - ✓ Allocate appointments to the doctors
  - ✓ Allocate timings to the patients
  - ✓ Generate reports
  - ✓ Manage ambulances

- **Doctors**

  Interacts with the systems most often to supply service to patients.

  Key functions

  - ✓ Keep track of patient details
  - ✓ Keep track of progress of patients
  - ✓ Accept or Deny the appointments

- **Patients**

  Interacts with the systems most often to receive services from doctors.

  Key functions

  - ✓ Make appointments
  - ✓ Can ask for the specific timings
  - ✓ Review Doctor
  - ✓ View history of past appointments
  - ✓ Keep track of progress of their health

5. Operating Environment

Software requirements

- Windows 7 or above operating system
- JRE 1.8

Hardware Requirements

- Core i5 processor
- 4GB Ram
- 20GB of hard disk space in terminal machines
- 1TB hard disk space in Server Machine

Software Requirements

- Chrome version required 102.0.5 or newer
- Brave version updated version
- Microsoft Edge 88.0.3 or newer

6. Project Documentation

Software Life Cycle Phase	Documentation	Intended Activities
Requirement Gathering, Analysis and Specification	● Project charter ● Project proposal ● Software Requirement and Specification (SRS) whichincludes ✓ Entity relational diagram ✓ Data flow diagrams ✓ Use case diagrams ✓ Use case scenarios	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(SD D)	Describes the logical basis of design decisions taken and howit will pave way in acquiring therequirements of the customer through the software
Implementation	● Technical Documentation	Contains information regardingthe implementations of the system using the programming concepts
Software Testing	● Software Test Documentation(ST D)	Includes information degrading testing procedures to validate andverify 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

7.USE CASE Scenarios

Name	Add Doctor Entry
Description	This function allows admin to add new doctors to system along with their specialization and field of expertise.
Actors	Data entry operator, receptionist
Pre-conditions	The operator should login with user account
Main flow of events	1. User selects “add doctor entry “ at home page 2. Doctor entry pop-up form displayed 3. User enter data to required fields 4. User selects “Add entry” button 5. “Successfully record added” message displayed. 6. System generates a Doctor and display.
extensions	3) A) if necessary fields left by user prompt userto enter all required fields.
Post conditions	Doctor added to the system

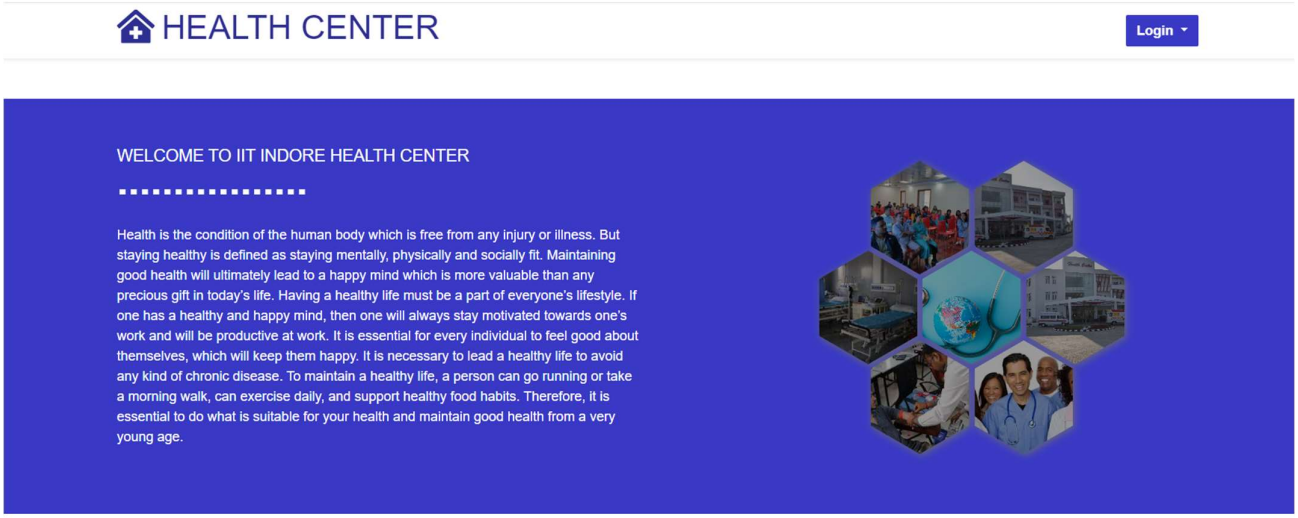
Name	Patient booking appointment
Description	This function initiates appointment and sends it to the admin
Actors	Patients
Pre-conditions	Patient must login to the system
Main flow of events	1. User selects “book appointment” at sidebar 2. System prompts user to fill up required details. 3. Patient can fill up preferred timings 4. User book appointment after clicking book.
extensions	3) a) if channeling appointment, user is required to fill timings
Post conditions	Patient appointment details send to the receptionist.

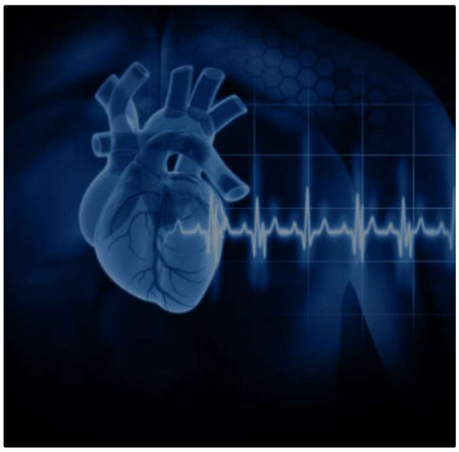
Name	Accepting Appointments and allocating doctors
Description	This function allocates doctors to the patients appointments
Actors	Recptionist
Pre-conditions	User must login and patient must generate appointment first
Main flow of events	1. User selects “Appointments ” from sidebar 2. System prompts to enter doctor and timings. 3. User enter either timings demanded from patients or the available timings for the doctor 4. On clicking appoint user can book appointment

Name	Review
Description	This function allows user to review Doctor
Actors	Patient
Pre-conditions	Patient must login to the system
Main flow of events	1. User selects “Reviews” from sidebar 2. System prompts patient to enter reviews for the doctor 3. User can review doctor out of 5 stars
Post conditions	The payment details should updated in paymentsfile.

Name	Deletes Patient entries
Description	This deletes Patients appointments
Actors	Receptionist
Pre-conditions	Admin must login to the system
Main flow of events	1. User selects “Appointments” from sidebar 2. System prompts admin to either accept or delete appointment. 3. User can click cross icon and delete the patient appointment
Post conditions	The appointment details of the patient will be deleted

8. User Interface





ABOUT US

Best Medical Care For Yourself

The Health Centre of the Indian Institute of Technology Indore provides dedicated health services to the institute community comprising of students, employees, their dependents and Institute Guests. The Health Centre offers Outpatient, Day care, Trauma and Emergency Care.

Emergency Care

The Health Centre of the Indian Institute of Technology Indore provides dedicated health services to the institute community comprising of students, employees, their dependents and Institute Guests.

Operation & Surgery

You can be of service and offer to tend to their needs. Express that you're there to support them, whether it's through running errands, handling the chores, or simply checking in each day.

Outdoor Checkup

Hospitals can come on board this platform and provide their appointment slots for online booking by patients.

Ambulance Service

Ambulance services plays an important part in ones live as it promises to provide immense support in saving lives.College offers several emergency ambulance services that delivers 24/7 nonstop services to its students and staff.

Medicine & Pharmacy

Blood tests are very common. They help doctors check for certain diseases and conditions. They also help check the function of your organs and show how well treatments are working.

Blood Testing

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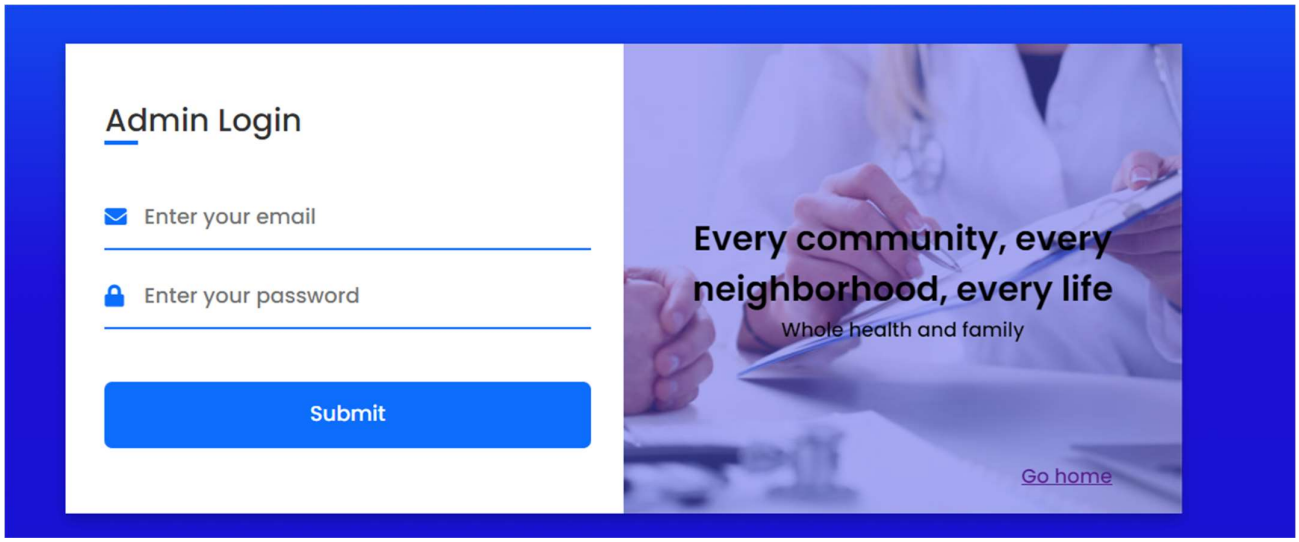
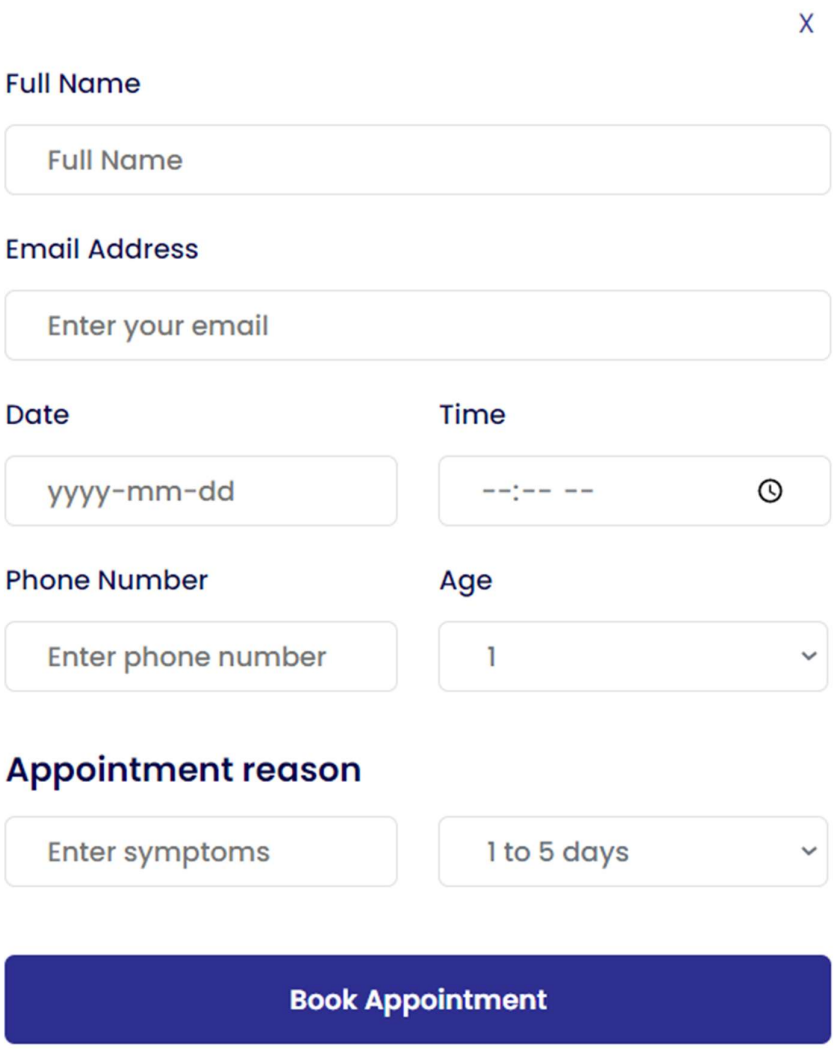
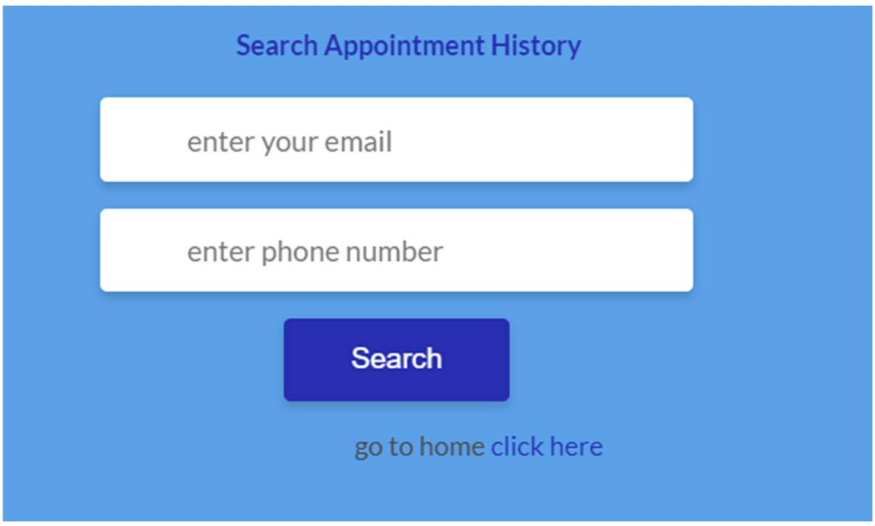
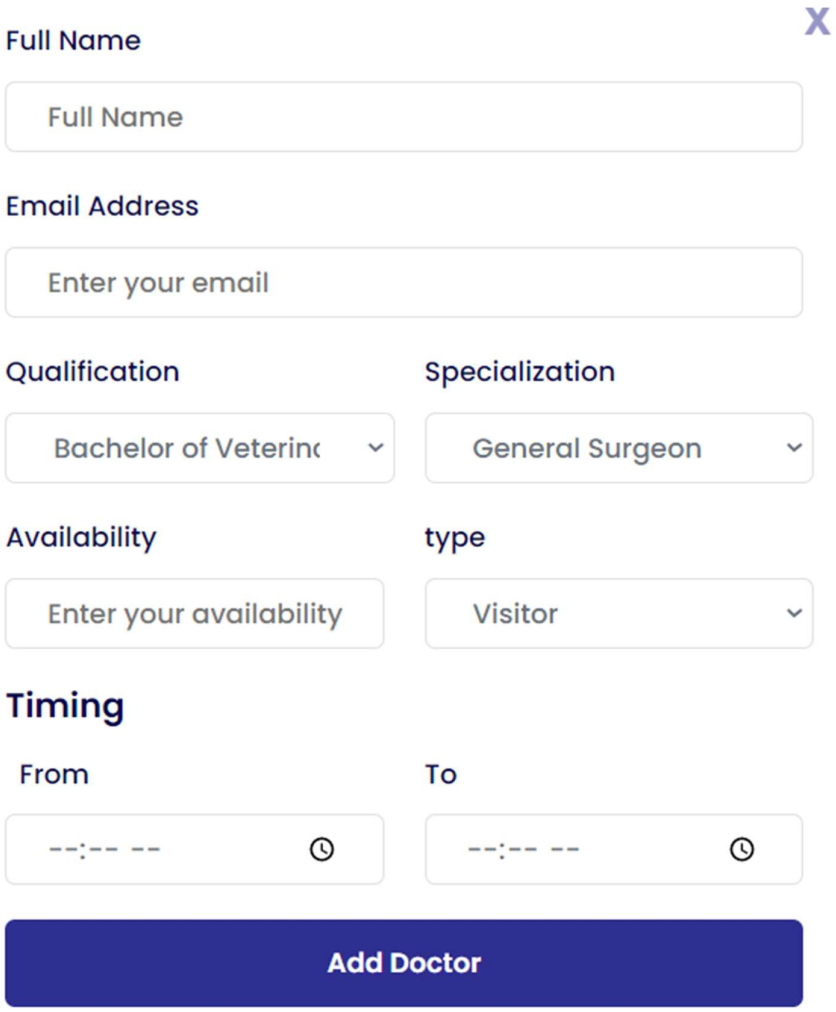



X
Full Name
Full Name
Email Address
Enter your email
Date
Time
yyyy-mm-dd
--:-- --
Phone Number
Age
Enter phone number
1
Appointment reason
Enter symptoms
1 to 5 days
Book Appointment



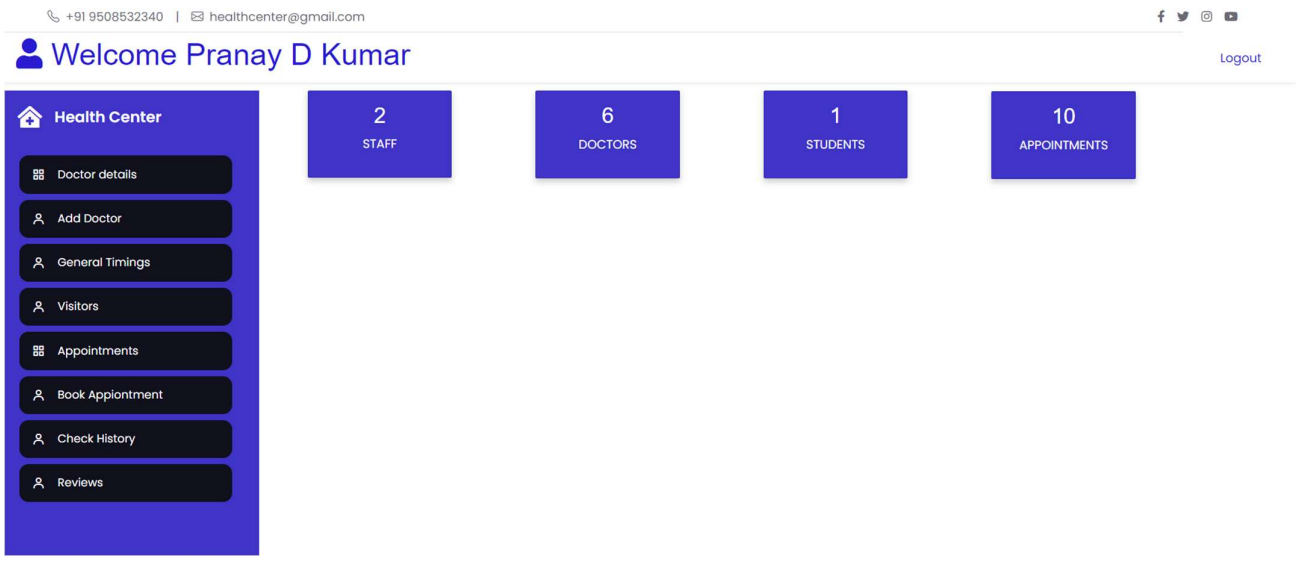
APPOINTMENTS

Patient Name	Phone Number	Email	Date	Age	Symptoms	Days
nihitha	9949533194	nihi@gmail.com	2007-08-08 time 21:11	16	fever	5



APPOINTMENTS

Patient Name	Phone Number	Email	Date	Age	Symptoms	Days	Accept/deny	Delete
we32r456453647	5215321520	xyz@email.com	2004-05-05 time 05:06	50	nvdcfhjasdfvjasdvf	df bhjreghsfdn	accept	delete/deny
rfehtgy5ilq3uhkja	9508532341	fkjguiyrwfeoqu@gmail.com	2004-05-05 time 15:04	16	ntg	1 to 5 days	accept	delete/deny
wqewrethyju	654232132	ewqrty@gmail.com	2004-5-5 time	45	qwefrgt	ert	accept	delete/deny
sdfghjk	87452452	sdfghjk@gmail.com	2004-50-50 time 01:41	50	dfgbhnj	defrgth	accept	delete/deny
sdfghjkl	7842531194	ghjk@gmail.com	2004-58-58 time 17:33	23	dfcghjkl	fghj	accept	delete/deny
nihitha	9949533194	nihi@gmail.com	2007-08-08 time 21:11	16	fever	5	accept	delete/deny
vikas	9508532342	vikas@gmail.com	2023-05-09 time 02:27	51	happiness	8	accept	delete/deny
3r4t5y6u7i89	754120	erwtyujki@gmail.com	85425000 time 02:06	50	wergthye	rwtyuy	accept	delete/deny
wqewrtyh	7854210	wqerty@gmail.com	8754210 time 02:11	8652	ewrfgt	ewre	accept	delete/deny
ewrtyu	weqrty	weqrtyu@gmail.com	wertyuwerty time 23:56	qwerty	weqrty	weqrty	accept	delete/deny


+91 9508532340 | healthcenter@gmail.com
Welcome Pranay D Kumar
Logout
Health Center
Doctor details
Add Doctor
General Timings
Visitors
Appointments
Book Appiontment
Check History
Reviews
2
STAFF
6
DOCTORS
1
STUDENTS
10
APPOINTMENTS


Regular Doctors
Home
Dr.Sanskar Singh
MBBS,FRCS
Cardiologist
Dr.Velpuru Navya
MBBS
Opthomologist
Dr.vikas
mbbs
dontknow
Vandana
MBBS
Neurologist

C✲Ovid-19 Protect Symtoms Prevent Handwash Footer Footer Home

How Covid-19 Spreads Over The World

The Health Impact Of COVID-19 Has Been Devastating. By 2021, 240 Million People Had Contracted The Virus With Nearly 4.9 Million Dying From It. Moreover, Millions Of Survivors Suffer From Long-Lasting Symptoms That Prevent A Return To Normal Life. Mental Distress Has Increased Substantially. The Chapter First Describes The Direct And Overall Health Repercussions Of COVID-19 In OECD Countries, Including Key Measures Such As COVID-19 Infections And Deaths, Along With Population Health Indicators Such As Excess Mortality And Life Expectancy, And What Is Known About 'Long COVID'. Special Attention Is Given To How The Vaccination Rollout And The Emergence Of Virus Variants Have Altered The Evolution Of The Pandemic In 2021. There Has Also Been A Clear Social Gradient To The Risk Of Infection And Death From The Virus. Furthermore, COVID-19 Has Disrupted Health Care For People With Other Needs. For Example, Cancer Screening Was Frequently Delayed, Non-Urgent Surgeries Postponed, Emergency Department Use Dropped, And Waiting Times For Elective Surgeries Increased. Nevertheless, Vaccinations Have Been A Game Changer In 2021, Reducing The Risk Of Severe Illness And Death. However, Vaccination Hesitancy Among Some Population Groups And Waning Vaccine Effectiveness Are An Ongoing Challenge.The Crisis Provides An Opportunity To Learn How To Make Health Systems More Resilient For The Future, Taking Stock Of The Effects Of The Pandemic And The Measures Implemented To Contain Them.

Donate Blood HOME SERVICE SCHEDULE CAMPS

UPCOMING CAMPS

BLOOD DONATION CAMPS

Date : Dec 13, 2023

Time : Starts @ 5PM

Venue : No AB-267,
HEALTH CENTER,
IIT INDORE - 26781

BLOOD DONATION CAMPS

Date : Oct 13, 2023

Time : Starts @ 5PM

Venue : No AB-267,
HEALTH CENTER,
IIT INDORE - 26781

BLOOD DONATION CAMPS

Date : Sep 13, 2023

Time : Starts @ 5PM

Venue : No AB-267,
HEALTH CENTER,
IIT INDORE - 26781

BLOOD DONATION CAMPS

Date : Nov 13, 2023

Time : Starts @ 5PM

Venue : No AB-267,
HEALTH CENTER
IIT INDORE - 26781

9.Other Nonfunctional Requirements

Performance Requirements

- Response time-The system will give responses within 1 second after checking the patientinformation 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

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 upto 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.

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.

Software Quality Attributes

- AVAILABILITY: The system shall be available all the time.
- CORRECTNESS: A bug free software which fulfill the correct need/requirements of theclient.
- MAINTAINABILITY: The ability to maintain ,modify information and update fixproblems of the system
- USABILITY: software can be used again and again without distortion.
- ACCESSIBILITY: Administrator and many other users can access the system but theaccess level is controlled for each user according to their work scope.

- ACCURACY: The reliability on the information/output. Can depend/be sure of theoutcome.
- STABILITY: The system outcome/output won't change time to time. Same output willbe given always for a given input.

10.Conclusion

The Online Health Center system is a comprehensive platform that provides patients with an easy and convenient way to consult with doctors online. The system should be secure, scalable, user-friendly, reliable, and compatible with different devices and platforms. The application should be designed to perform optimally, even during peak hours, and should be available 24x7.