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Doctor Appointment System

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13th Jan, 2023

Project Description

The Doctor Appointment System is a revolutionary web-based solution that streamlines the process of scheduling medical appointments for patients. By leveraging the power of technology, this system provides patients with the flexibility to search for and book appointments with doctors online, without the need to wait in long queues or make phone calls.

With an intuitive user interface and easy-to-use features, the Doctor Appointment System offers patients an unparalleled level of convenience. The system includes an admin panel for managing the system, a registration and login system for patients and doctors, patient and doctor profiles, and a department-wise list of doctors. Patients can also use a filter option to find expert doctors, view their location, timetable, and schedule.

The system ensures that patients are informed about their upcoming appointments via appointment notifications and even provides both consultant and emergency services for their needs. The system also offers a review option for patients, allowing them to provide feedback on their experience, which can help the doctors to improve.

In conclusion, the Doctor Appointment System is more than just a booking platform. It eliminates the need for traditional appointment booking methods, making it more convenient, efficient and accessible for both patients and medical staff.

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CHAPTER 1

INTRODUCTION

The Doctor Appointment System is an online platform that simplifies the process of scheduling medical appointments for patients. It offers a user-friendly interface, advanced features and easy booking options for patients to search for available doctors and book appointments at their convenience, without any wait time. This system aims to improve patient satisfaction and make the process of booking appointments more efficient for both patients and medical staff.

1.1. Project Motivation and Target User Groups

One of the main reasons we chose this project is because of the increasing demand for online medical appointment scheduling systems. With the rise of technology, patients are looking for more convenient and efficient ways to schedule appointments with doctors. Additionally, the current COVID-19 pandemic has further highlighted the need for a system that allows patients to schedule appointments online, in order to reduce the risk of exposure to the virus.

The Doctor Appointment System is designed to benefit a wide range of users, including patients, doctors, and clinic staff. Patients will be able to use the system to search for available doctors and book appointments online, which can save them time and increase their access to medical care. Doctors and clinic staff will also benefit from the system, as it will help them to manage their schedules more efficiently and reduce the workload of answering phone calls and scheduling appointments manually. Overall, the system is designed to improve the patient experience, increase efficiency for medical staff, and make the appointment booking process more convenient for all users.

1.2. Similar Products and their features

Similar products and their features refer to web-based platforms like Doctor360.com.bd, doctime.com.bd, which offer similar functions as the Doctor Appointment System, such as online appointment booking, doctor's profile, timetable, location, ratings and other healthcare services.

1.2.1. Similar Product 1

Doctor360.com.bd is a similar website to the Doctor Appointment System. It's a digital healthcare service in Bangladesh that provides patients with the ability to search for available doctors and book appointments online. This platform allows patients to find the right doctors and schedule appointments according to their convenience. It also provides a feature of online consultation, medicine delivery, and telemedicine consultation. Patients can also use the

platform to view doctor's profile, timetable, location, and ratings. Additionally, the site offers a mobile application for patients to access the services from their smartphones.

1.2.2. Similar Product 2

Doctime.com.bd is a similar website to the Doctor Appointment System, it's an online platform for healthcare services in Bangladesh, which enables patients to search for available doctors, book appointments and get the information about doctors such as their profile, location, timing, fees, and ratings. This platform can help patients to get an appointment from any doctors from any location, also offers telemedicine consultation feature and also has a mobile application for easy accessibility. It is designed to provide a convenient and efficient way for patients to schedule appointments and access healthcare services

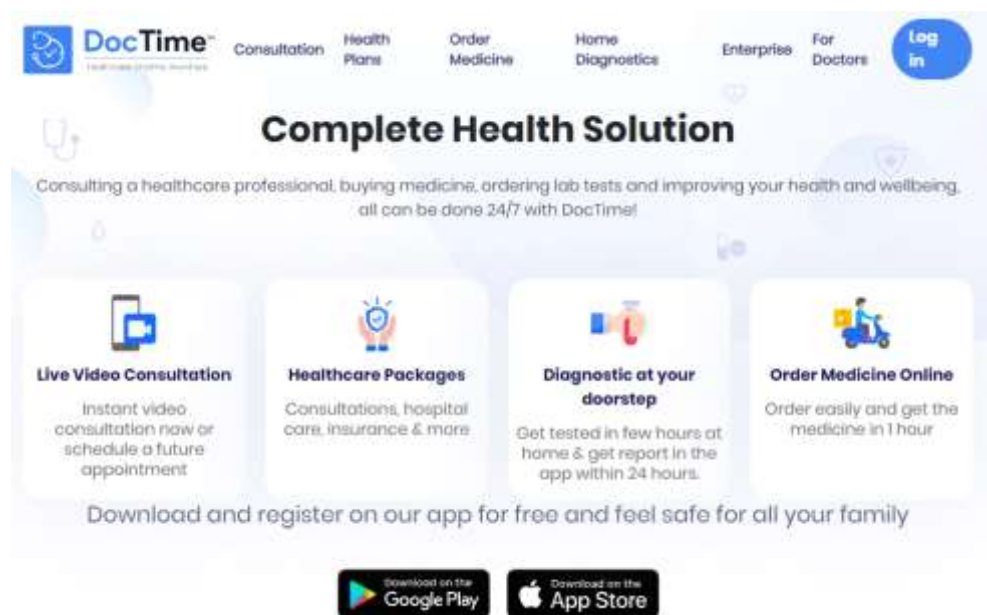


Figure 1: Sample page of Doctime.com.bd

1.3. Features of our product as Requirements:

The Doctor Appointment System includes a variety of features to meet the requirements of patients, doctors, and clinic staff. Some of the key features of our product include:

Admin Panel: Allows administrators to manage the system, such as adding or removing doctors, approving patients and doctor profiles, etc.

Registration and Login system: Allows patients and doctors to create profiles and access the system.

Patient and Doctor Profiles: Provides detailed information about patients and doctors, such as contact information, medical history, and qualifications.

Department-wise list of doctors: Allows patients to search for doctors based on their specialty or department.

Filter option for expert doctors: Allows patients to search for doctors based on specific criteria, such as experience, location, or rating.

Doctor Location and Timetable: Allows patients to view the location and availability of doctors.

Appointment notifications: Sends patients reminders and confirmations for their upcoming appointments.

Doctor Schedule based on patient: Allows doctors to manage their schedules and view upcoming appointments.

Consultant and Emergency services: Allows patients to seek medical assistance in case of urgent needs.

Review option: Allows patients to provide feedback on their experience and rate the service provided by the doctor.

These are some of the key features of the Doctor Appointment System that aims to make the process of booking doctor appointments more convenient and efficient for patients, while also helping medical staff to manage appointments more effectively.

1.3.1. Functional Requirement:

Functional requirements are specific features or capabilities that the Doctor Appointment System must have in order to meet the needs of its users. Here are some examples of functional requirements that the system might need to meet:

User registration: Patients and doctors must be able to create profiles and register for the system.

Appointment scheduling: Patients must be able to search for available doctors, view their schedules and book appointments online.

Doctor information: Patients must be able to view detailed information about doctors, such as their qualifications, experience, and ratings.

Search and filter options: Patients must be able to search for doctors based on criteria such as location, specialty, and availability.

Appointment & confirmations: Patients must receive reminders and confirmations for their upcoming appointments.

Consultation: Patients must be able to seek medical advice remotely via telemedicine feature

Rating and review system: Patients must be able to rate and review the service provided by doctors.

Admin panel: Administrators must be able to manage the system and approve patient and doctor profiles.

Secure login and data encryption: The system must ensure that patient and doctor data is kept secure and private.

These are just a few examples of functional requirements that the Doctor Appointment System might need to meet. The exact requirements will depend on the specific needs of the project and the users that will be using the system.

1.3.2. Non-functional Requirement:

Non-functional requirements are characteristics of a system that do not describe specific functionality, but rather the overall performance, scalability, security, and other attributes of the system. Here are some examples of non-functional requirements that the Doctor Appointment System might need to meet:

Performance: The system must respond quickly to user requests and be able to handle a large number of concurrent users.

Scalability: The system must be able to handle an increasing number of users and appointments over time.

Security: The system must protect patient and doctor data from unauthorized access and ensure compliance with relevant data privacy regulations.

Usability: The system must be easy to use and understand for patients and doctors of all ages and technical abilities.

Reliability: The system must be available and functioning correctly at all times to ensure that patients can schedule appointments and access healthcare services as needed.

Maintainability: The system must be easy to maintain and update over time to ensure that it continues to meet the needs of users.

Compliance: The system must comply with relevant healthcare regulations and industry standards..

Flexibility: The system must be able to adapt to changes in requirements or new technologies over time.

These are just a few examples of non-functional requirements that the Doctor Appointment System.

CHAPTER 2

REQUIREMENT ANALYSIS

Requirement analysis for a Doctor Appointment System involves identifying and defining the functional and non-functional requirements for a web-based platform that allows patients to schedule appointments with doctors online. This process begins by understanding the needs of patients, doctors and determining how the system can meet those needs. The goal of requirement analysis is to ensure that the system is designed and developed to meet the specific needs of the users. This information is then used to create a detailed understanding of the system's objectives, constraints, and functional and non-functional requirements.

2.1. User Roles

Table 1: User Roles Table

User Types	Description
Unregister User	We refer to people who are not logged in as unregistered users. They can view the profiles of the doctors and other sections. But they cannot book appointment.
Patient	They can create their profile and visit the profiles of the doctors and other sections. They can book appointment also.
Doctor	Doctor can create their profile. They can update their bio data.
Admin	The administrator will accept any attempts by non-registered users to create profiles or log in to the website. The administrator will control all of our website's activities and features.

2.2. Product Backlog Items:

Write product backlog items as several user-stories (remember that user-stories are what user wants to do with the website). For each user-story, create a card. The card will have two faces – front face and back face. Front face will contain user-story, estimation, priority and optionally annotation. Back face will contain acceptance tests (observe carefully how acceptance tests were designed in the below template). The template you will use to create your user-stories is the following:

Table 2: Product Backlog Item

User Story	Acceptance Tests
Unregistered users are able to access the main page and the doctor's profile. The user can visit the FAQ area and view top-rated doctors. Unregister user can take consultant service from the admin.	
Unregistered user can register in our website. After successfully registration, the registered user can login.	<ol style="list-style-type: none">1. Leave an input field blank (fail).2. Using banned email or existing Email. (fail)3. Using an already used Username (fail).4. SQL injection (fail).5. Photograph size is huge (fail).6. Correct username, password during login(pass)7. Incorrect username only, incorrect password only, incorrect both at login (fail)
Registered user can update the profile. That user can book an appointment of a doctor. The registered user can consult with the doctor and added to that, admin. The patient and doctor can create	Large size photo (fail)

their profile. After successfully registration, they will be able to login in the website. And they can update their profile information.	
Any non-registered users and doctors may be approved by the admin. The website's administrator has full access and can change any user information. Admin can delete any user or doctor's profile.	Every user needs to approval from admin after creating the profile. Without approval user can't take appointment from the doctor.
In patient profile section patient can give some health data (BP, heartbeat, diabetic's level). After analyzing these data the patient will notified about his health condition.*	Leave an input field blank(fail).
There will be several categories of the doctor. The patient can view department wise doctor list.	1. Unregister user can view doctor category (pass) 2. Register user can view doctor category (pass)
By using the doctor service, the patient can give rating to the doctor. It will help to the patient for searching top rated doctor.	1. Unregister can give rating (fail) 2. Register user (patient) who has taken appointment can give rating (pass)
While fileting the doctor's, the patient can find nearby doctors by comparing the patient location.	A nearby button is available on our website. When a patient clicks the button, nearby doctors are displayed. It will work if the patient's location is correctly submitted; otherwise, it will not (fail to check nearby doctor).
In the doctor's profile, there will be show a number that has been booked by the patient including patient list and by clicking patient ID doctor can visit that patient profile.	
There will be a landing page where	

patient can see top rated doctor's time schedule.	
The patient will get a notification after booking the appointment. The notification can be sent through the mail.	
The patient can communicate with a doctor or a service agent as a consultant service.	
There will be a section/button for emergency case. Here the patient can take appointment immediately from the available emergency doctor.	1. Blank health issue (fail) 2. Not selecting a doctor (fail)
The patient can provide review according to the doctor service.	
When users not well known to the system of our site. These, user can easily take appointment by submitting an appointment form.	1. SQL injection (fail) 2. Blank inputs such as name, age, health issue (fail) 3. Not selecting a doctor (fail)
In the FAQ section, the user can get his desired question answered.	
After taking the appointment, the patient will pay the appointment cost as a e-banking.	1. Blank transaction-ID for payment request (fail) 2. Blank bKash number for payment request (fail) 3. SQL injection (fail). 4. Blank Appointment Code (fail). 5. SQL injection. (fail)

CHAPTER 3

PLANNING

The planning for the doctor appointment system includes developing various features such as an admin panel for managing and approving user accounts and doctor profiles, a secure registration and login system for patients, patient and doctor profiles for managing personal information and availability, a department-wise doctor list with a filter option for expert doctors, a feature for searching doctors based on location, a timetable option for doctor's schedule, appointment notifications for patients, a consultant service, an emergency service, a review option, an automatic booking feature by submitting a form, a section for frequently asked questions and a payment gateway for online payments.

CHAPTER 4

MODELING AND DESIGN

Write an introductory paragraph here. For all diagrams in this section, use the UML notation.

4.1. The Entity Relationship Diagram

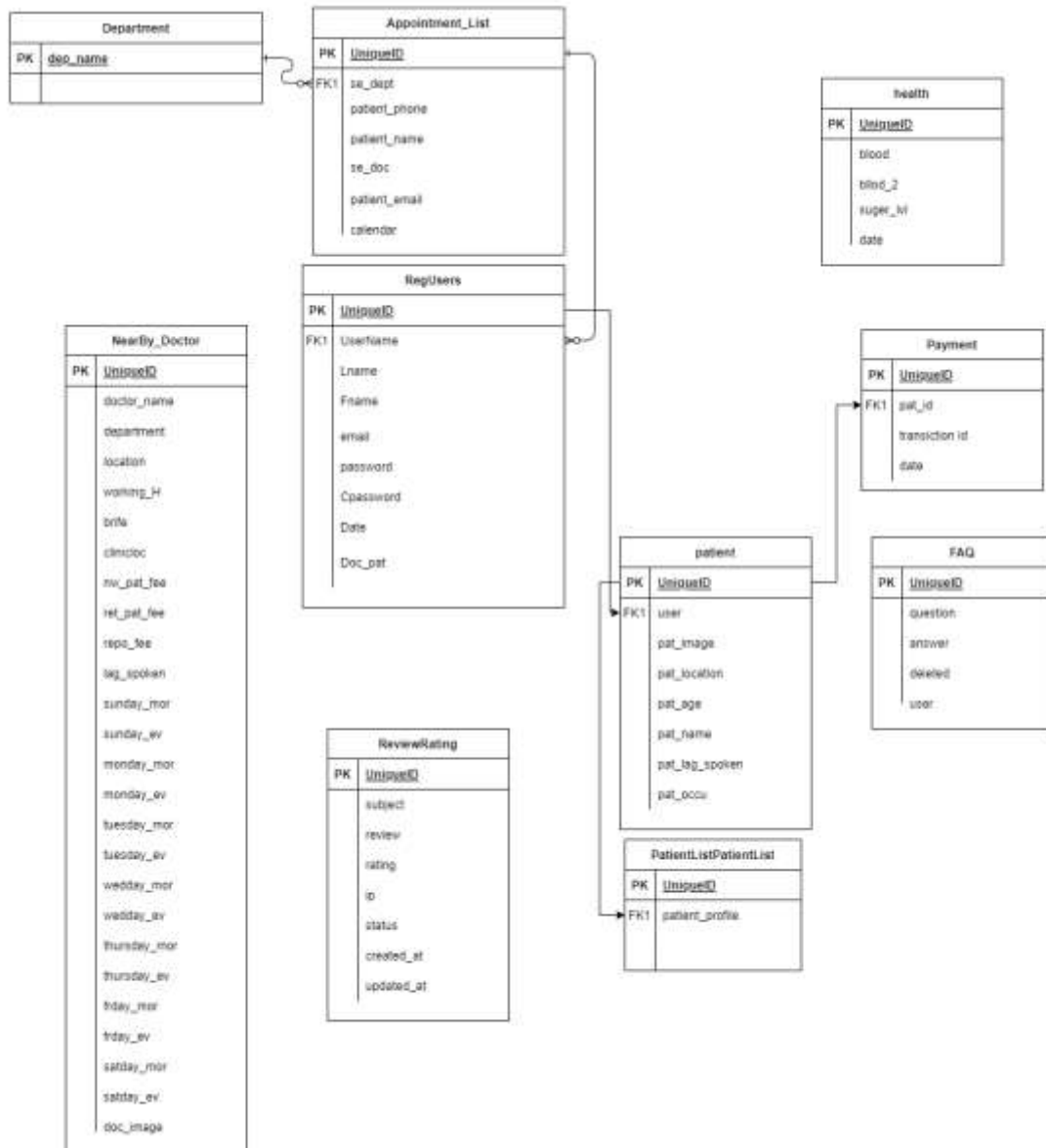


Figure 2: ERD Diagram

4.2. Sequence Diagrams

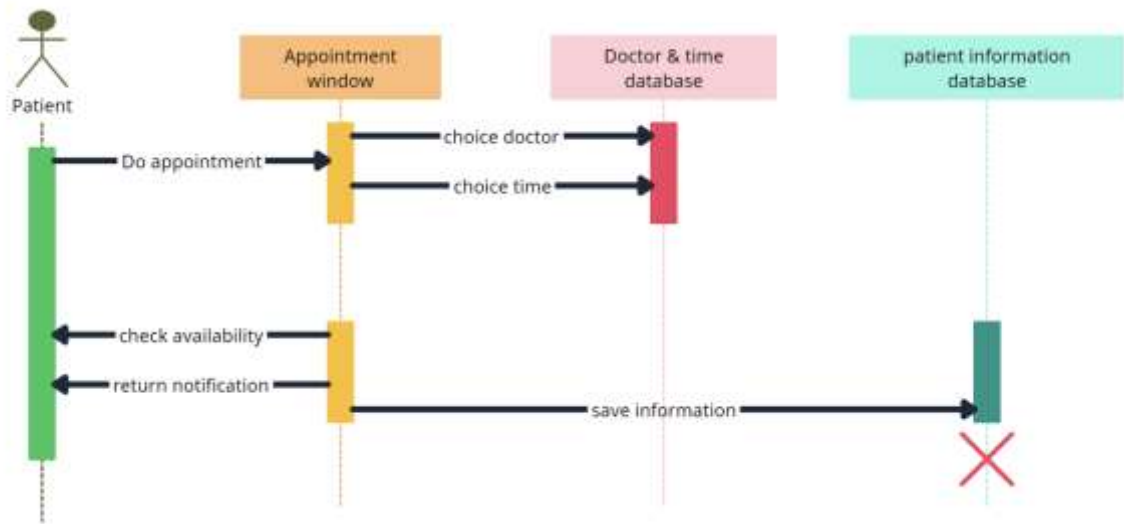


Figure 3: Sequence Diagram

4.3. Activity Diagrams

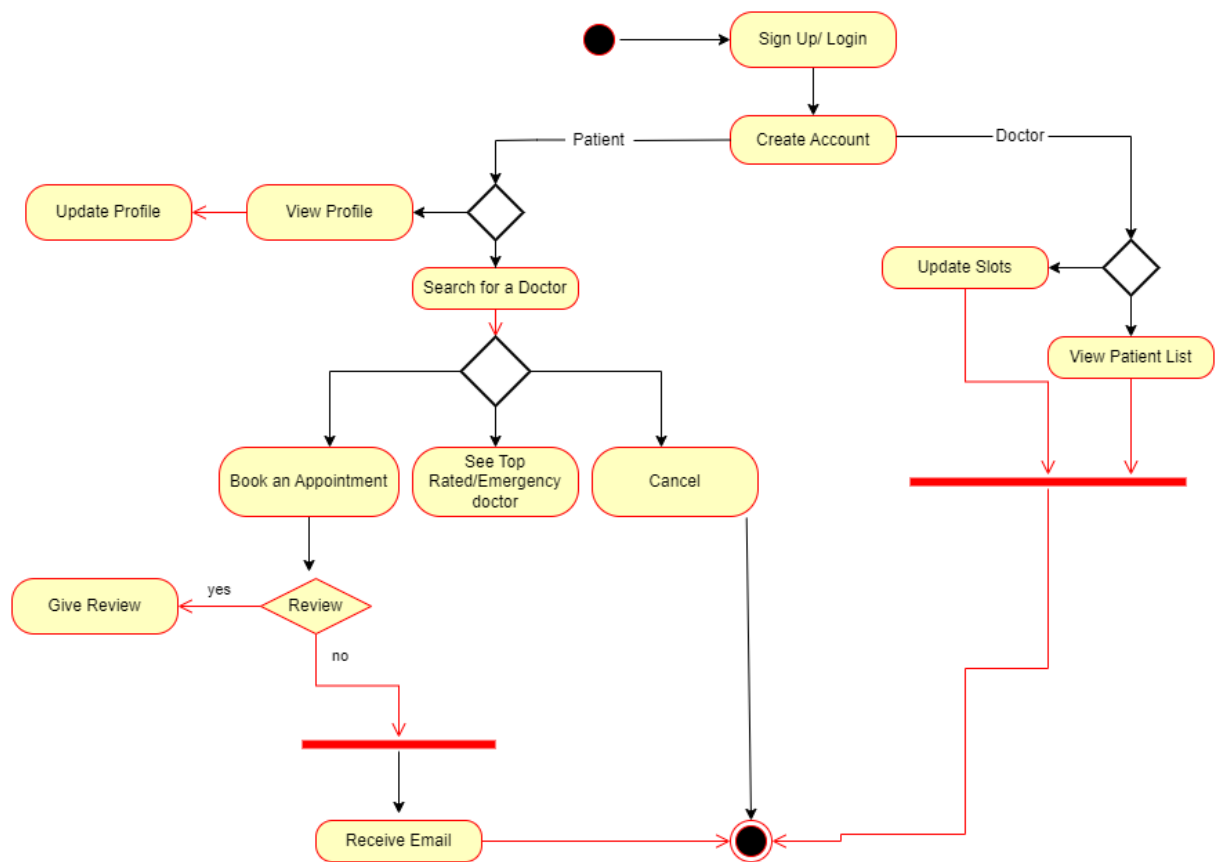


Figure 4: Activity Diagram

CHAPTER 5

CODING AND TESTING

Coding and testing are two crucial phases in the software development process. Coding involves writing the instructions that a computer will execute to perform a specific task, while testing is the process of evaluating the software to ensure that it meets the specified requirements and functions as intended. Together, coding and testing help to ensure that the final product is of high quality and meets the needs of the users.

5.1. Project Screenshots with Explanation

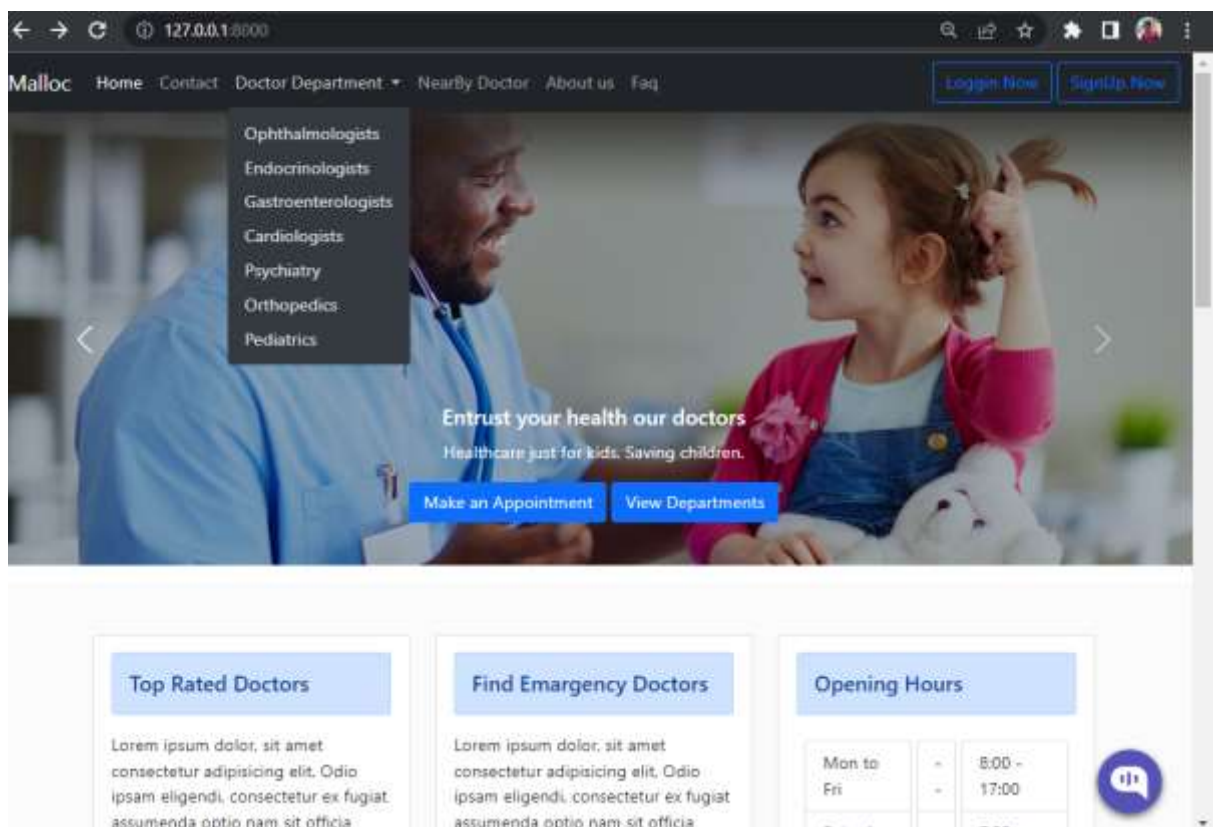
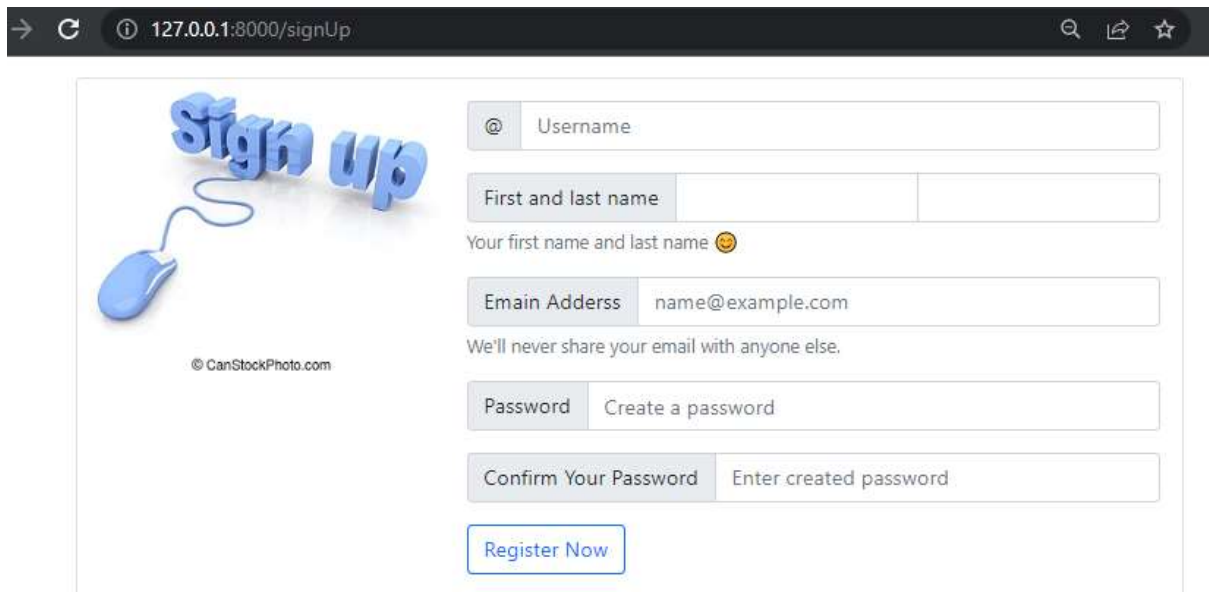


Figure 5: Home Page



→ 127.0.0.1:8000/signUp

Sign up

© CanStockPhoto.com

@ Username

First and last name

Your first name and last name 😊

Email Address name@example.com

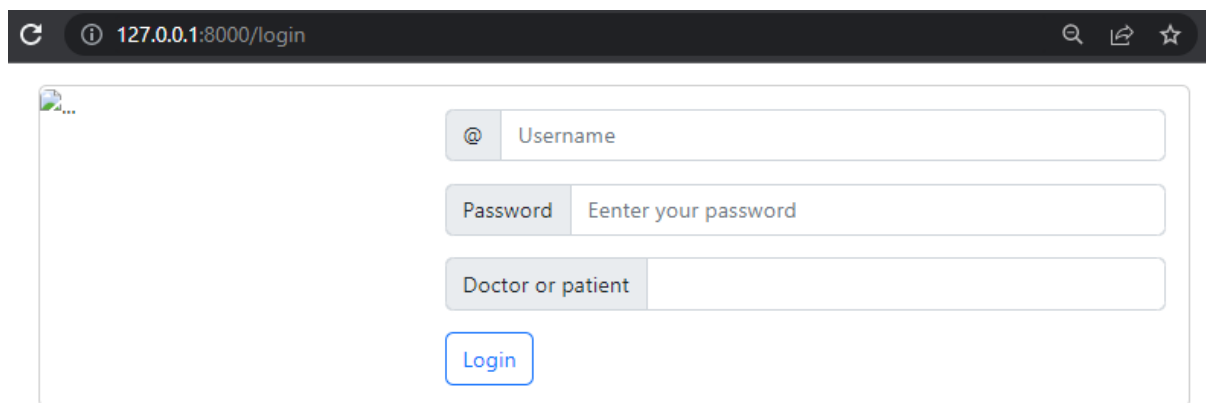
We'll never share your email with anyone else.

Password Create a password

Confirm Your Password Enter created password

Register Now

Figure 6: Sign Up



127.0.0.1:8000/login

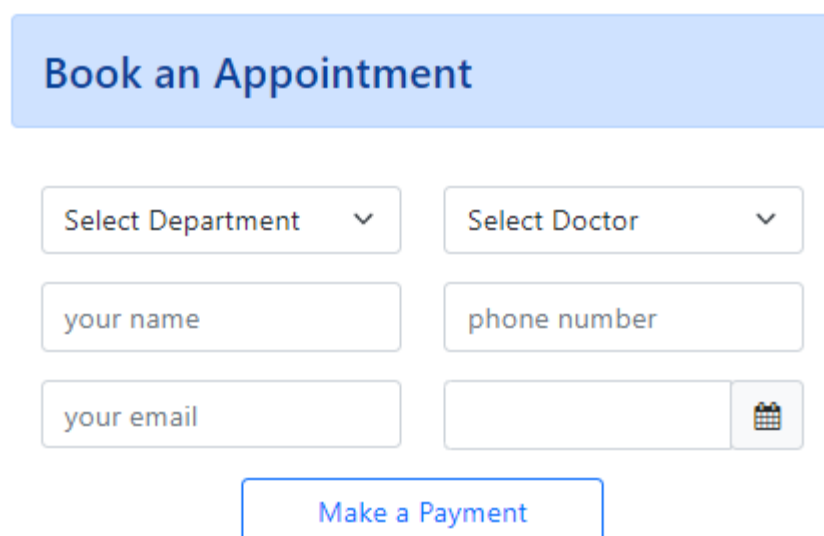
@ Username

Password Enter your password

Doctor or patient

Login

Figure 8: Login



Book an Appointment

Select Department ▼

Select Doctor ▼

your name

phone number

your email

Make a Payment

Figure 7: Book an Appointment

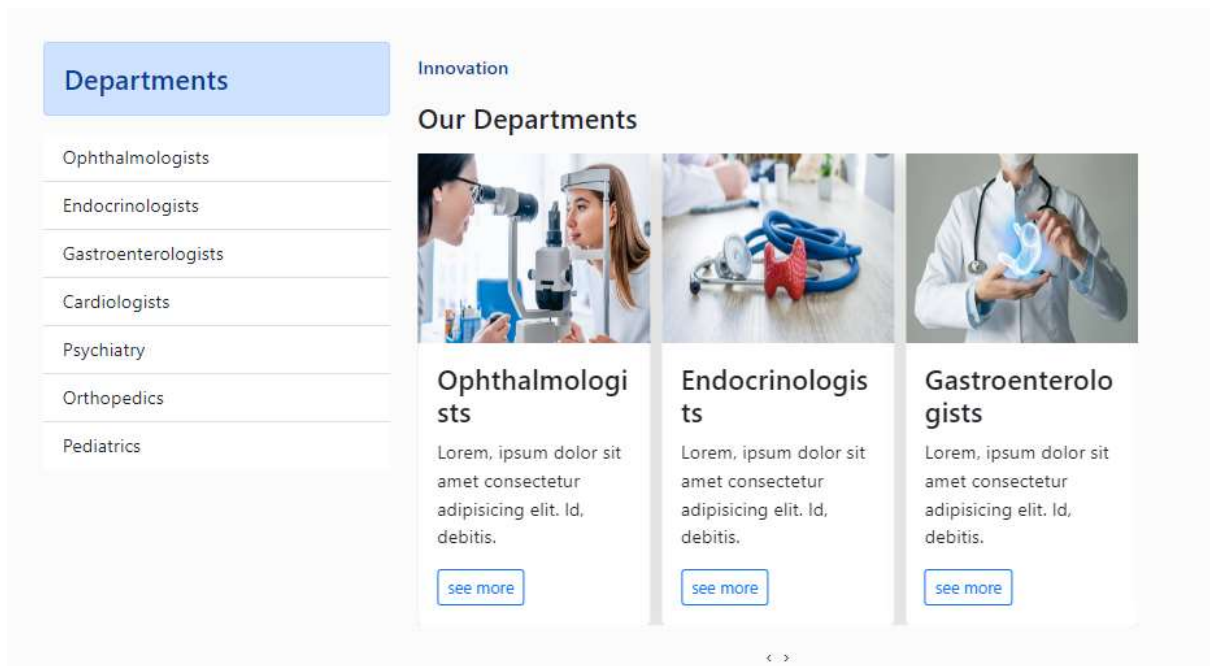


Figure 9: Doctor Departments

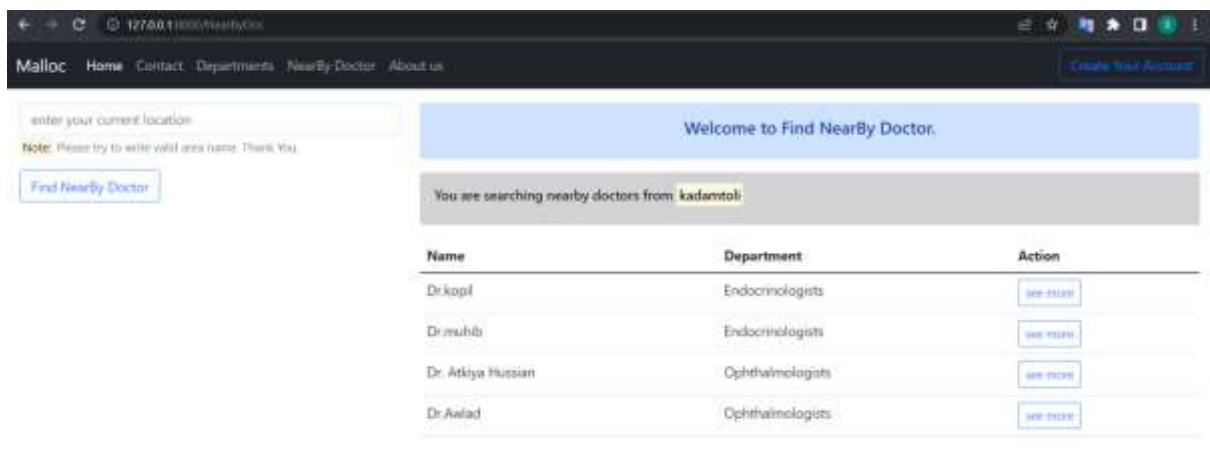


Figure 10: Nearby Doctor

5.2. Testing:

5.2.1 Unit Testing

This type of testing involves testing individual units or components of the system, such as the appointment scheduling feature, doctor search feature and so on, to ensure that they are functioning correctly. This can be done by writing test cases that cover all possible scenarios for each unit and running them using a testing framework.

Testing for a Doctor Appointment System involves thoroughly evaluating the system to ensure that it is functioning correctly and meets the requirements of its users. The process of testing includes several different types of testing, such as unit testing, integration testing, system testing, and acceptance testing.

5.2.2 Integration testing

After unit testing, the individual units are integrated and tested as a group. This helps to ensure that the units work together as expected and that there are no issues when integrating them into the larger system. This can be done by testing the integration of different features of the system like appointment scheduling and doctor search.

5.2.3 System testing

This type of testing involves testing the entire system as a whole. This can be done by testing the system end-to-end, including all the features and functionalities, to ensure that the system is functioning correctly and meets the requirements of its users.

Acceptance testing: This is the final stage of testing where the system is tested by the end-users or stakeholders to ensure that it meets their needs and requirements. A sample of the system can be provided to the stakeholders and they can test it and provide feedback. This can be done by getting feedback from patients and doctors on the system's usability, functionality, and overall performance.

5.2.4 Acceptance testing:

This is the final stage of testing where the system is tested by the end-users or stakeholders to ensure that it meets their needs and requirements. A sample of the system can be provided to the stakeholders and they can test it and provide feedback. This can be done by getting feedback from patients and doctors on the system's usability, functionality, and overall performance.

CHAPTER 6

CONCLUSION

The Doctor Appointment System is a one-stop solution for all healthcare needs, providing patients with the convenience of booking appointments with doctors online. The system comes with a range of features that cater to the needs of patients and doctors alike, such as appointment scheduling, doctor search and information, appointment reminders, online consultation, telemedicine consultation, and more. With this system, patients can easily find the right doctor, schedule appointments at their convenience, and get the healthcare they need, all from the comfort of their own home. The system also helps to increase efficiency for clinics and doctors, and improves the overall healthcare experience for patients by reducing waiting times and providing an easy-to-use interface. The development process includes requirement analysis, design, implementation, testing, and maintenance, all of which are aimed at ensuring that the system is user-friendly and meets the needs of all customers.