HOSPITAL MANAGEMENT WITH ONLINE BOOKING SYSTEM

A completed project and thesis that partially satisfies the criteria for a engineering and computer science bachelor's degree.

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APPROVAL

This Project titled **"Hospital Management with Online Booking System"**, submitted by Name, ID No: **201-15-13646** to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on **14 May, 2025**.

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DECLARATION

I hereby declare that this project "**Hospital Management with Online Booking System**" represents my own work which has been done in the laboratories of the Department of Computer Science and Engineering under the Faculty of Engineering of Daffodil International University in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering, and has not been previously included in a thesis or dissertation submitted to this or any other institution for a degree, diploma or other qualifications. I have attempted to identify all the risks related to this research that may arise in conducting this research, obtained the relevant ethical and/or safety approval (where applicable), and acknowledged my obligations and the rights of the participants.

Signature of the candidates

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I would also want to thank all of our friends for helping to make our endeavor a success and for sharing information. Thank you also for lending us the equipment and tools.

I want to express our sincere love and thanks to our cherished family for their unwavering support, as well as for inspiring and motivating us while we were studying at this university.

ABSTRACT

The proposed project, **"Hospital Management with Online Booking System,"** is a web-based solution designed to simplify the process of searching for and booking appointments with doctors. It addresses the common issue of manually managing and scheduling appointments, which can be time-consuming and inefficient for both patients and medical staff. Through this system, users—primarily patients—can easily view available time slots and select a preferred day and time that aligns with their schedule.

This application provides individual login access for both doctors and patients. Patients can browse available doctors, book appointments based on availability, and even cancel bookings if necessary. Doctors, on the other hand, can manage their schedules, approve or reject appointments, and maintain a list of confirmed consultations. This system reduces the burden on hospital staff and allows patients to receive timely care without long waiting times.

The system is built using modern web technologies including **HTML, CSS, JavaScript, jQuery, Bootstrap**, and server-side scripting with **PHP** and **Laravel framework** for secure and scalable backend processing. Overall, the system promotes efficient hospital operations, enhances user experience, and ensures smoother communication between doctors and patients through digital automation.

CHAPTER 1
INTRODUCTION

1.1 Overview

All public health facilities still schedule patient appointments by phone or on a first-come, first-served basis today. This procedure has been adjusting to change in a way that is acceptable as a result of technical progress and advancement. The conventional approach, however, is still in use in all public hospitals today. Similarly, only first-level facilities and a few second-level hospitals in certain specialties still use the old-fashioned telephone-based appointment scheduling paradigm. All public hospitals still use the old-fashioned method of scheduling appointments, although it is not the same as the old-fashioned method.

Inconveniences are frequently reported, such as the loss of medical appointment records, which causes a delay when the patient arrives at the health center on time, or the doctor not finding his reservation record in the system, where the patient is seen as an additional patient after seeing all scheduled patients. Additionally, the health facility provides the patient with a printed appointment reservation voucher; however, they are not always entirely trustworthy because they have occasionally been digitally altered. Patients experience bewilderment and difficulties as a result of this systemic dysfunction. The actor, who is always active in one or more appointments, does the majority of the tasks required in appointment management.For instance, the administrator makes the measurement schedules when a user cancels an appointment, when a work shift is set up, or when an employee makes an appointment.

In light of the general rise in medical costs, researchers in the field of sustainable public health development are becoming more and more concerned with how to guarantee that patients can get high-quality healthcare services promptly.

The majority of patients remained registered using the traditional technique of orderly queuing, despite the advantages of using modern technologies. This suggests that health facilities and healthcare practitioners should encourage and promote the use of the technology. Because they highlight crucial factors to take into account, such promoting

system usage and the critical role that doctors play in the process of putting the online appointment booking system into place, these results were helpful in the conception and development of the suggested system.

The fact that not all clinics now employ an online appointment management system is one of the potential reasons of this circumstance. The majority of public health institutions continue to register people via phone or on a first-come, first-served basis. A registry that maintains the doctors' schedules and delivers appointment requests straight to the system might save the needless hassle of traveling to the clinic hours in advance. It's not always feasible to use an online appointment management system.

Many hospitals now allow people to make appointments using their own online application. This will only be helpful for a certain hospital. As a result, patients may visit the doctors who are available at the specific hospital and not others. Information about other medical facilities or physicians is not possible. Connecting all physicians and hospitals is crucial. so that the patient may quickly find the subject matter experts and the search is simple. Obtaining consent from all physicians and hospitals is another crucial matter. Doctors and hospitals find it difficult to communicate with one another.They can be hesitant to accept the suggestion we provide to them in other hospitals or by other physicians if a hospital or doctor accepts it readily. We must persuade physicians and hospital staff to agree to our plan to use a web application for scheduling appointments. To cut down on waiting times, doctors ought to suggest it to their patients.

First of all, it draws attention to the patient's main issue, which is the waiting time delay. High-level businesspeople don't have time to go to the hospital. They must plan their appointment in advance to avoid any disruptions to their hectic schedule.

The primary goal of this study is to create a web application that will help patients wait less time in the hospital. The patient has the option to provide feedback to the hospital as well as the physicians who have treated him. Therefore, the patient must be familiar with the physicians in a certain specialty. This web application allows users to locate a certain doctor of interest.

1.2 Problem Statement

In many hospitals, patient management and appointment scheduling are still handled manually, leading to inefficiencies, long waiting times, and errors in record keeping. Patients often face difficulties in booking appointments, while hospital staff struggle with managing large volumes of data and coordinating between departments. These issues result in poor service delivery and decreased patient satisfaction. The lack of a centralized, automated system also hampers data security and timely access to medical information. This project aims to address these challenges by developing an integrated Hospital Management System with an Online Booking feature to ensure efficient, accurate, and user-friendly healthcare service management.

1.3 Scope of Study

The scope of the project is rather extensive compared to other online medical appointment platforms. Few of them are

- The patient and the doctor scheduled a meeting time.
- The amount of information on doctors is enormous.
- A mechanism for online payments.

1.4 Justification of study

The deployment of this solution will improve the user experience. Using this strategy is not too difficult. employing state-of-the-art technologies to create a connection instantly. The user does not have to refresh or reload the page to see the update. This system is compatible with laptops, tablets, mobile phones, and other user devices. As a result, anybody, anywhere, may readily access the system. Since this method is so straightforward and user-friendly, anyone can apply it.

1.5 Objectives

The objectives of this project are:

- To Enable patients to book appointments online.
- To Manage doctor schedules effectively.
- To Maintain secure patient medical and personal records.
- To Automate report generation, billing, and pharmacy management.
- To Provide separate login panels for Admin, Doctors, and Patients.
- To Ensure a user-friendly, mobile-responsive interface.

1.6 Organization of Book

There are five chapters in this project book.

Chapter 01: Introduction The overview, scope, justification, study goals, and project structure are all included in this first chapter.

Chapter 02: Literature Review Chapter 2 provides a summary of the literature.

Chapter 3-System Description In Chapter 3, the software used to complete this project is described.

Chapter 04 - Result & Discussion : In this chapter provides software testing and Advantages, Application.

Chapter 05 - Conclusion: In the final chapter, Cover Conclusion and Future Scope.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of our Hospital Management with Online Booking System. It highlights the system's purpose and relevance. Additionally, it discusses related research and existing systems. In the following sections, we review previous literature to identify gaps and justify the need for our proposed solution.

2.2 Literature Review

The management of the emergency clinic should create code that is simpler for the client to comprehend and carry out the basics fast, according to Digvijay et al. [1]. Numerous patient and specialty characteristics are considered. The framework stores all data and recovers as necessary. A chairman can access the board structure of the emergency clinic by using the client's name and secret key. The information is kept safe for any use. The board structure of the medical clinic is crucial for storing the staff, patient, and specialist details, among other things. These endeavors subsequently made the task easier and freed up part-time time.[2] If we need to see a specialist for an examination, we must wait till the specialist is available and make arrangements. However, with the advancement of portable technology, it is now easy to make arrangements with specialists. By preserving the schedule-related records of the arrangements, the portable program recognizes them. Prior to the arrangement, Notifications are sent to the consumer according to the current defined time. This program is simple and sensitive to the demands of the user. Here, the administrator will deal with the subtleties of the patient and the specialist. IrinSherly. A patient can use the online programming framework of S [3] to fix and schedule an online appointment by just visiting the website or web application. The patient is free to choose the time that is most convenient for them. The patient can schedule an appointment with the specialist of their choice.

Patients, experts, and office personnel can all benefit from online reservation and planning systems since they save time. Instead of leaving for the hospital, it is usually completed easily by using PCs and creating an arrangement. Tufailmaryam [4] demonstrates We made the clinical arrangements by going to the clinic and waiting in line

until it was our time. The patient is occasionally disturbed by it. The growth of internet framework administrations for arrangements This clever tool allows us to receive emergency medical examinations. Here, people may choose among nearby medical clinics and professionals.With the help of this clever program, we may save time and obtain this arrangement efficiently on our phones. Khamisi Kalele and Godphrey G. Kyambille [5] The booking framework for arrangements is a portable application. This includes the effective for If the adaptable application is used, there won't be a time shortage. For the benefit of patient planning, the flexible application considers the full day. One way to demonstrate tolerance is to set aside specific time to visit the specialist or perhaps to stay tight for a longer period of time. [6] Many people will have bad luck with their medical examinations, wasting time over time. We may now schedule a medical examination online in this highly developed and motivated culture.You may choose a specialist on your own using this app, which also provides information on medical clinics and specialists. The patient can handle their own arrangements with this. Prior to the day of their arrangement, they will receive a reminder via email or SMS. Such capabilities will reduce the amount of arrangements that are wasted. In an emergency, we can readily establish arrangements. It saves the season for both the patient and the specialist. An online arrangement framework, according to Nazia S. and Ekta Sarda [7], is one that makes it simple for patients to visit the website and schedule appointments. In this way, the doctor can set up the essential data and the patient may provide the expert further information when they come. Therefore, an online arrangement structure might be advantageous to both employees and patients.

The rationale for developing the online arrangement planning system is to make routine checks easier for the patient. It is more efficient to use a computer, Instead of traveling to the clinic and standing in line for a long time, go online and schedule an appointment. S. Sri Gowthem and K.P. Kaliyamurthie [8] state that most medical institutions employ paper arrangements for patient enrollment. When patients arrive for medical services, they wait in line for a long time. Web-based planning software may be used to conduct a thorough reservation framework for patients.It provides a straightforward way to make reservations in accordance with patient accommodations and provides information about the medical clinic and patient data on a single website. [9] This is an excellent foundation for health care examinations that includes patient enrollment.

2.3 Summary

This literature helps us gain a clear understanding of the Hospital Management with Online Booking System. It shows that many researchers and developers have attempted similar projects, highlighting its importance and demand. These studies guide our system design and help us improve on existing models to create a more efficient solution.

CHAPTER 3

SYSTEM DESCRIPTION

3.1 Introduction

Our project is described in depth in this chapter, including its working principle, system functionality, and the technologies used. It covers both the front-end and back-end development aspects, along with relevant diagrams to illustrate system flow, architecture, and module interactions, giving a clear understanding of the entire project structure.

3.2 Waterfall Model

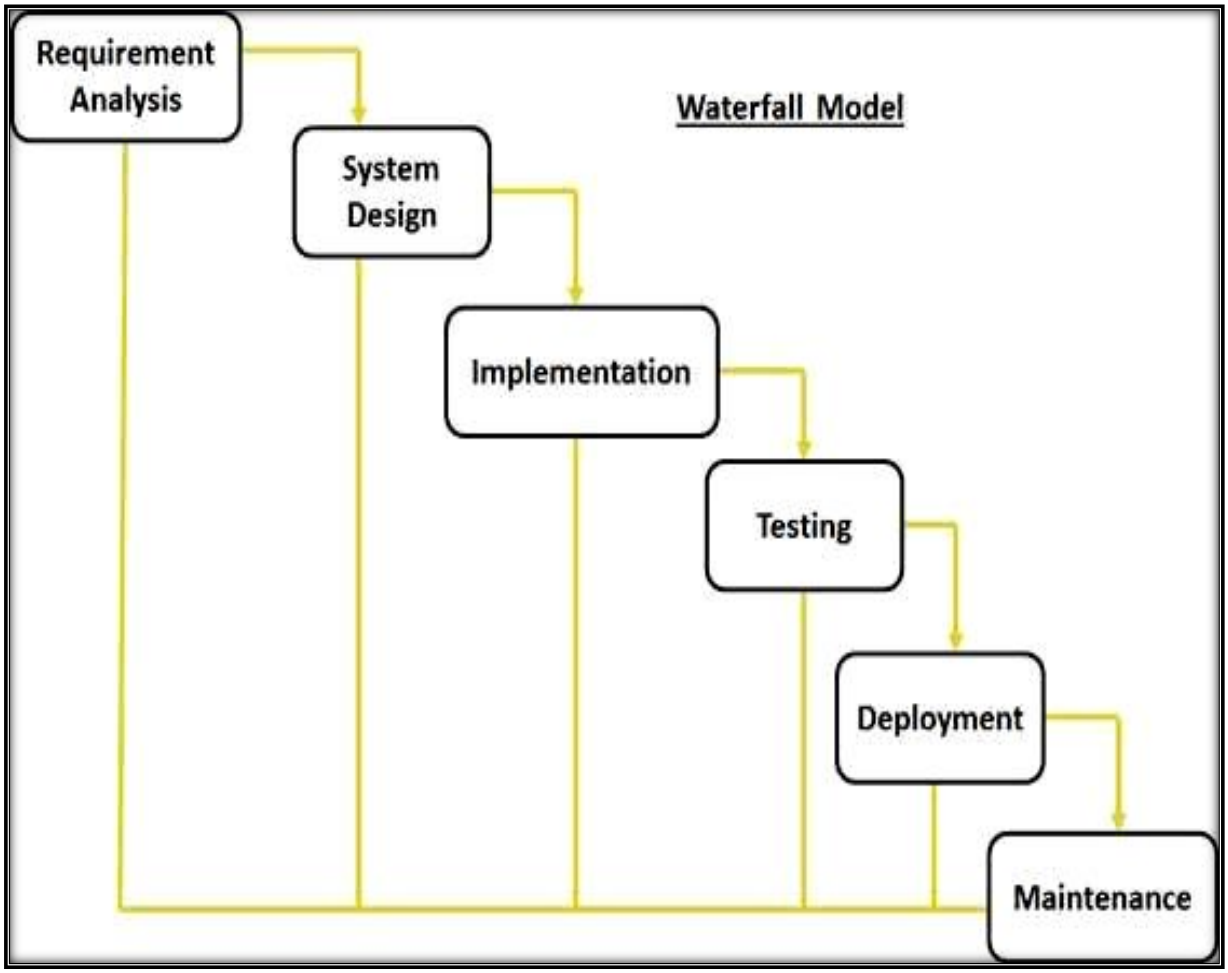

Figure 3.1: Waterfall Model of Our System

3.3 Model and Discussion of Patient Use Cases

Everyone agrees to make a use case diagram in order to better comprehend the features of the system. For describing the components of the system and documenting its requirements, the use case chart is essential. Use case diagrams make it easier to understand how the client utilizes the system.

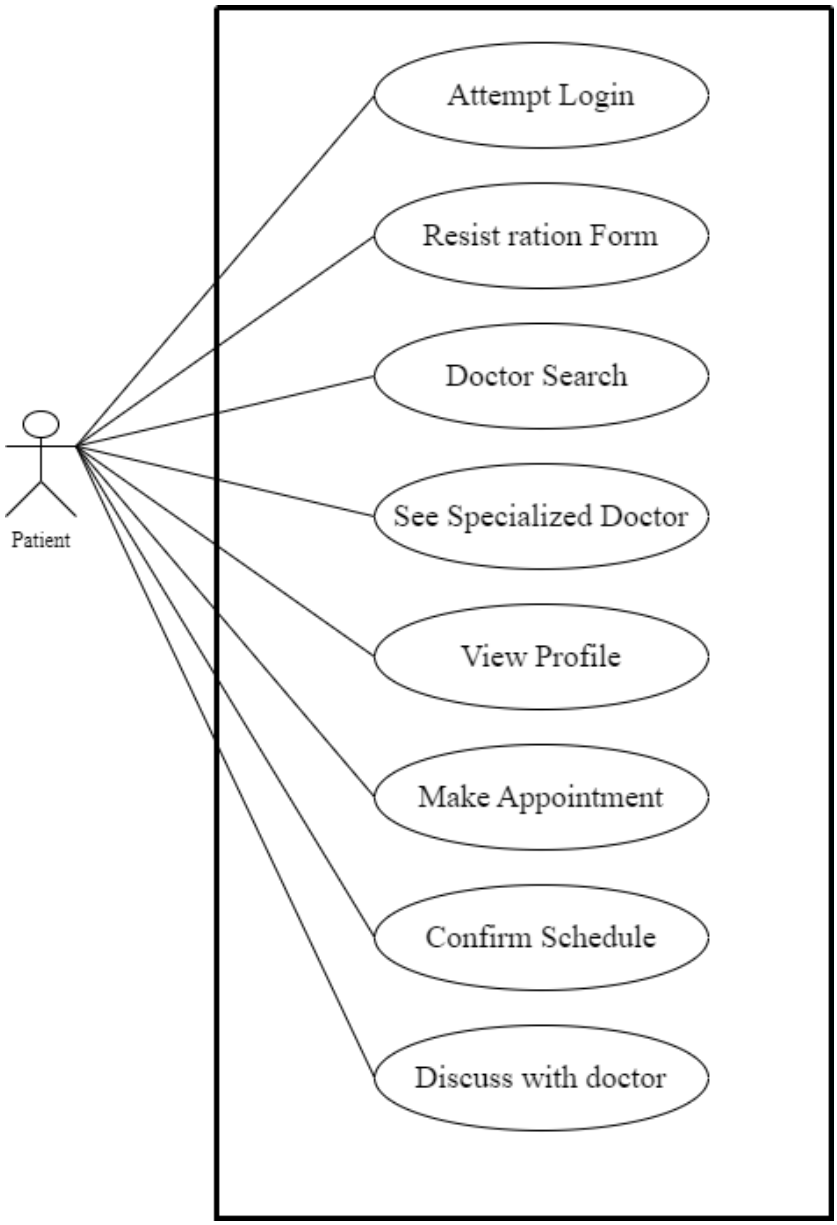

Figure 3.2: Patient Use-case Diagram

3.3.1 Doctor Use Case Diagram

Figure 3.3 displays the use case diagram for the doctor system. This image shows how a user may sign up, make an appointment with a doctor to treat a certain illness, and have the appointment approved by an administrator.

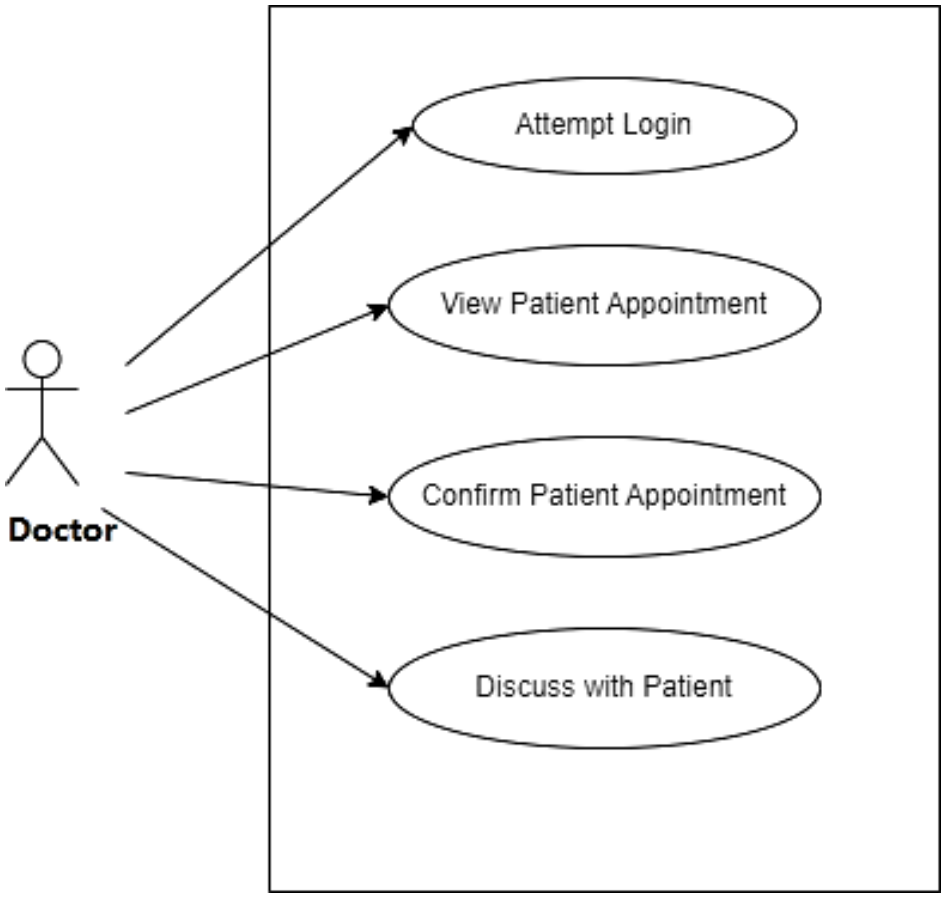

Figure 3.3: Doctor Use Case Diagram

3.3.2 Admin Use Case Diagram

The system's admin use case diagram is shown in Figure 3.4. According to this illustration, a user may sign up to book a doctor's appointment at any location, and the administrator has the ability to confirm or cancel the appointment.

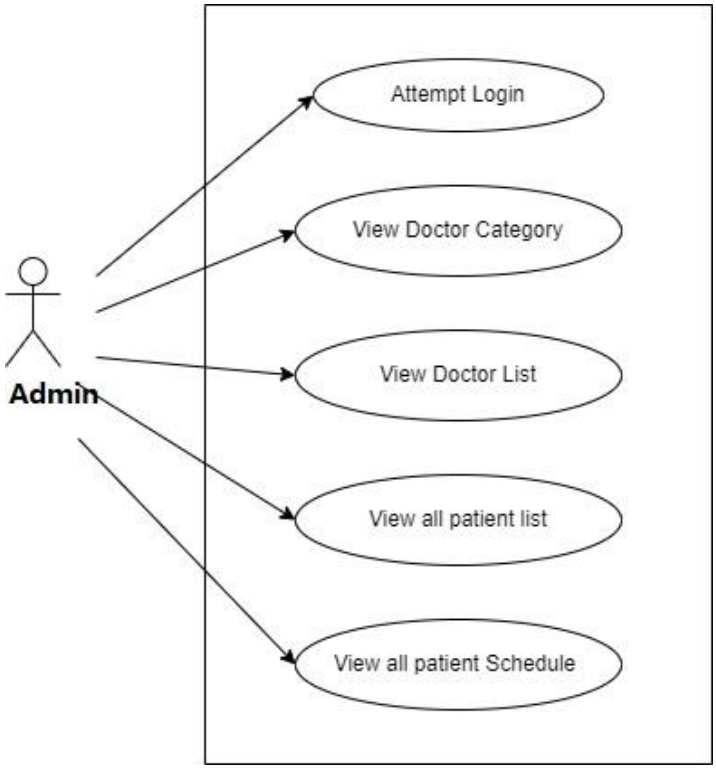

Figure 3.4: Use Case Diagram for Administration

3.4 Module

3.4.1 Login Module

Our system login module procedure is depicted in Figure 3.5.

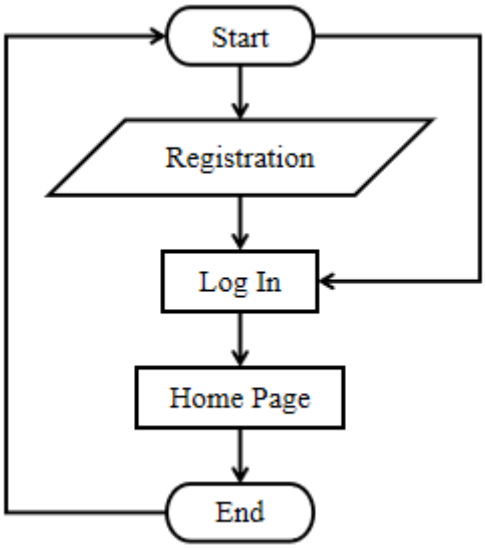

Figure 3.5: Login Module of Our System

3.4.2 Finding and Scheduling Module for Doctors

Our system's doctor category module procedure is depicted in Figure 3.6.

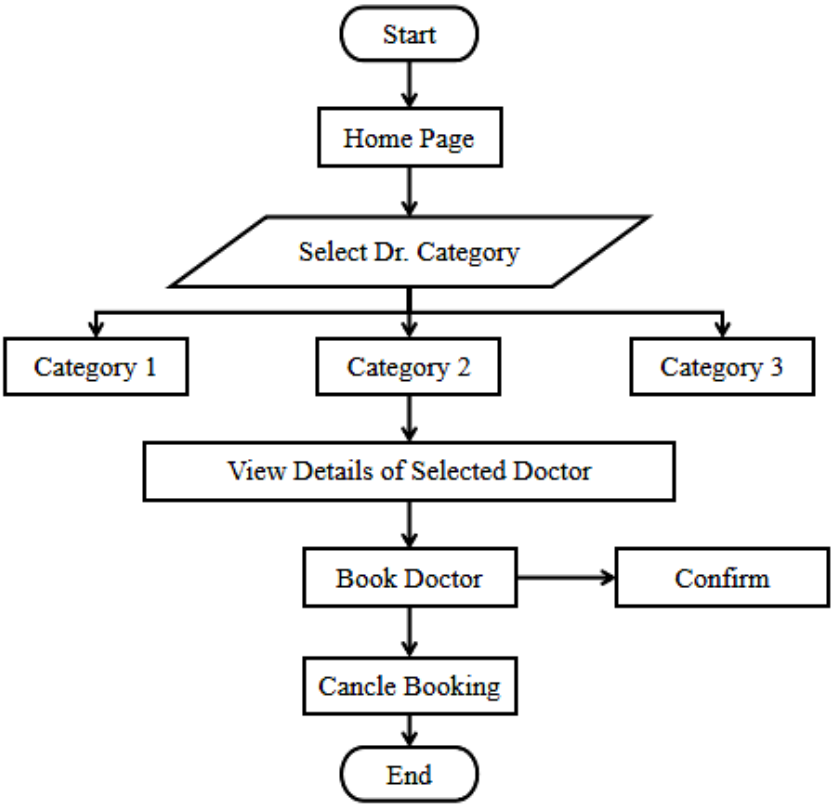

Figure 3.6: Our System's Doctor Locating and Scheduling Module

3.5 Working Principle

The front-end design of the Hospital Management with Online Booking System is user-friendly and easy to navigate. Upon launching the application, patients can register by entering their details and then log in to access the system. When booking an appointment, patients select their preferred doctor, date, and time from the available options. Doctors use their dedicated portal to manage and confirm appointments. The admin panel allows administrators to monitor patient records, doctor profiles, feedback, and overall system activity.The back-end system is powered by a central database server, which securely stores information related to registered patients, doctors, appointment schedules, and transaction history. This ensures that all data is organized, retrievable, and protected. At the scheduled time, patients and doctors can engage in consultation, which may include online interaction and payment processing. This system enables patients to receive medical services conveniently from home, making the healthcare experience more efficient and accessible.

3.6 Front-end Design

The front-end design essentially represents the user interface. However, it also combines the elements of web development and web design. We utilized PHP, JavaScript, CSS, and HTML to make this viewable. Our constant goal was to make It is more scalable, flexible, and extendable. We also tried to maintain its resilience.

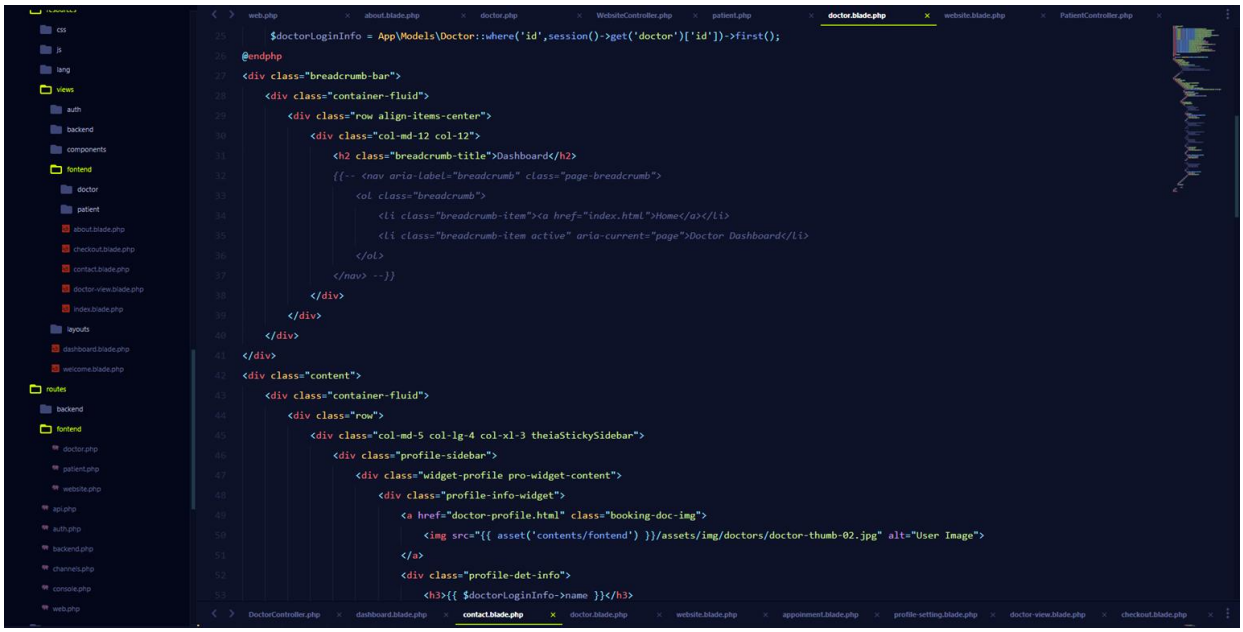

Figure 3.7: Front End Design

3.6.1 Home Page Design

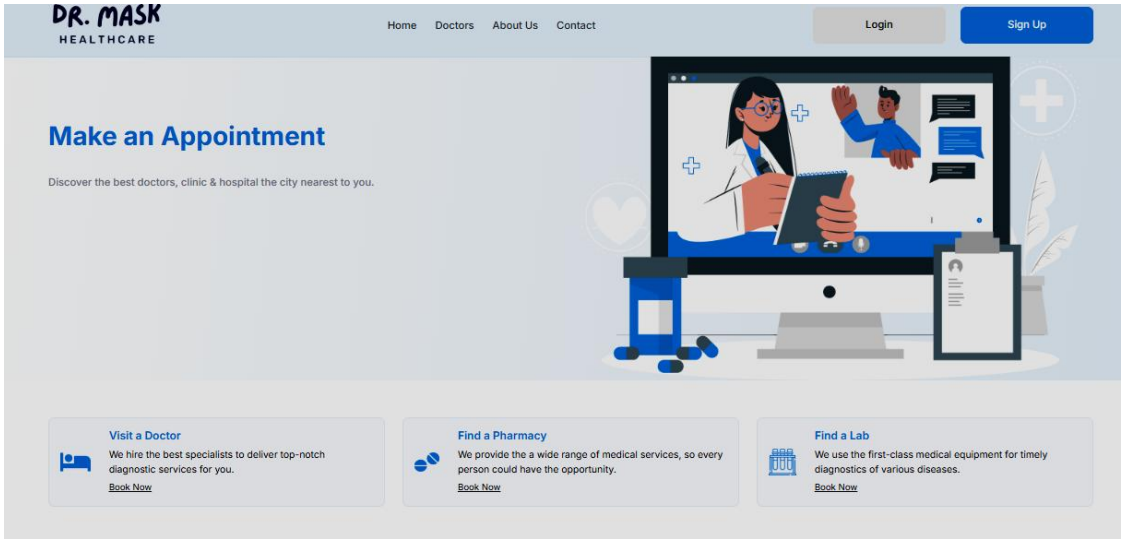

Figure 3.8: Home Page

3.6.2 Patient Login Interface

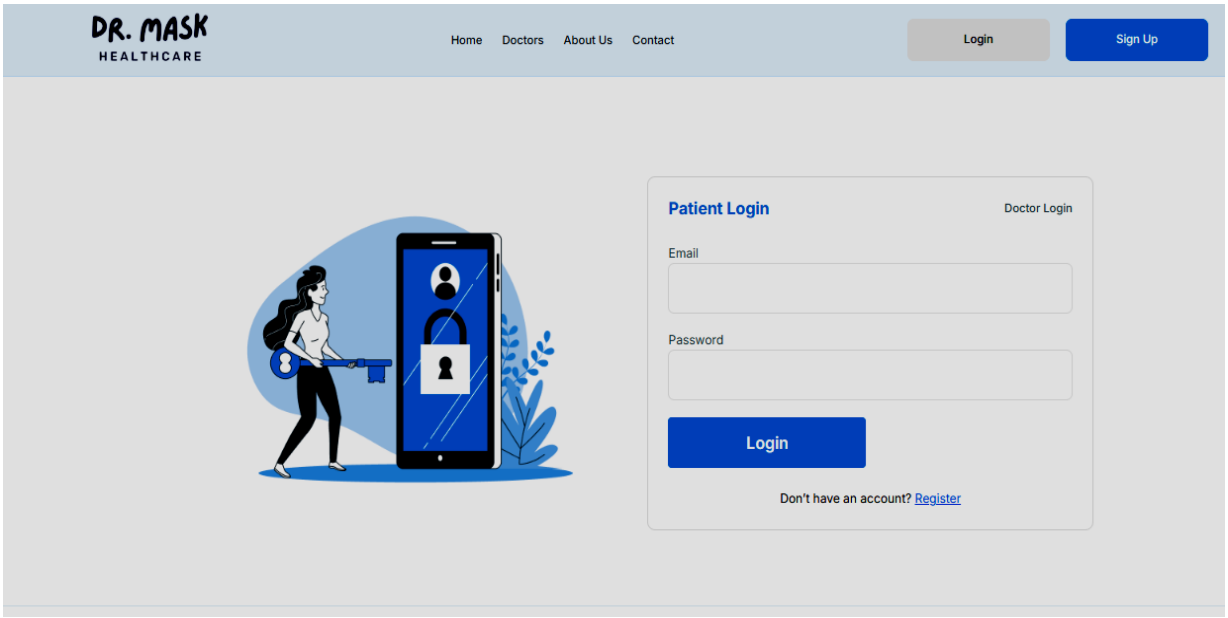

Figure 3.9: Patient Login Interface

3.6.3 Patient Registration Interface

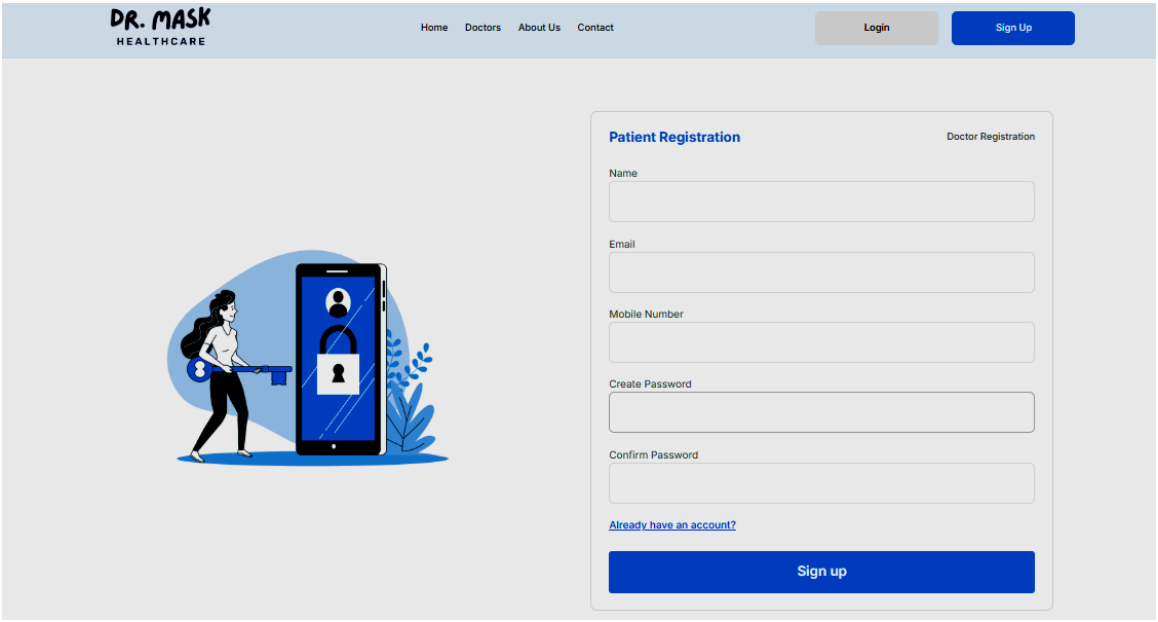

Figure 3.10: Patient Registration Interface

3.6.4 Doctor Login Interface

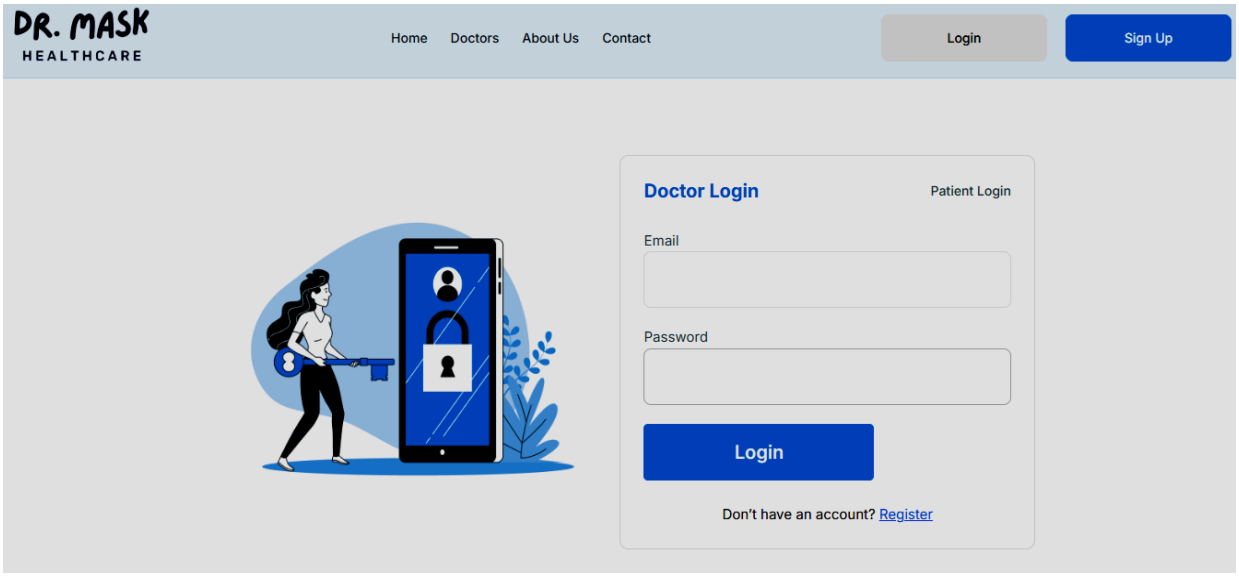

Figure 3.11: Doctor Login Interface

3.6.5 Doctor Registration Interface

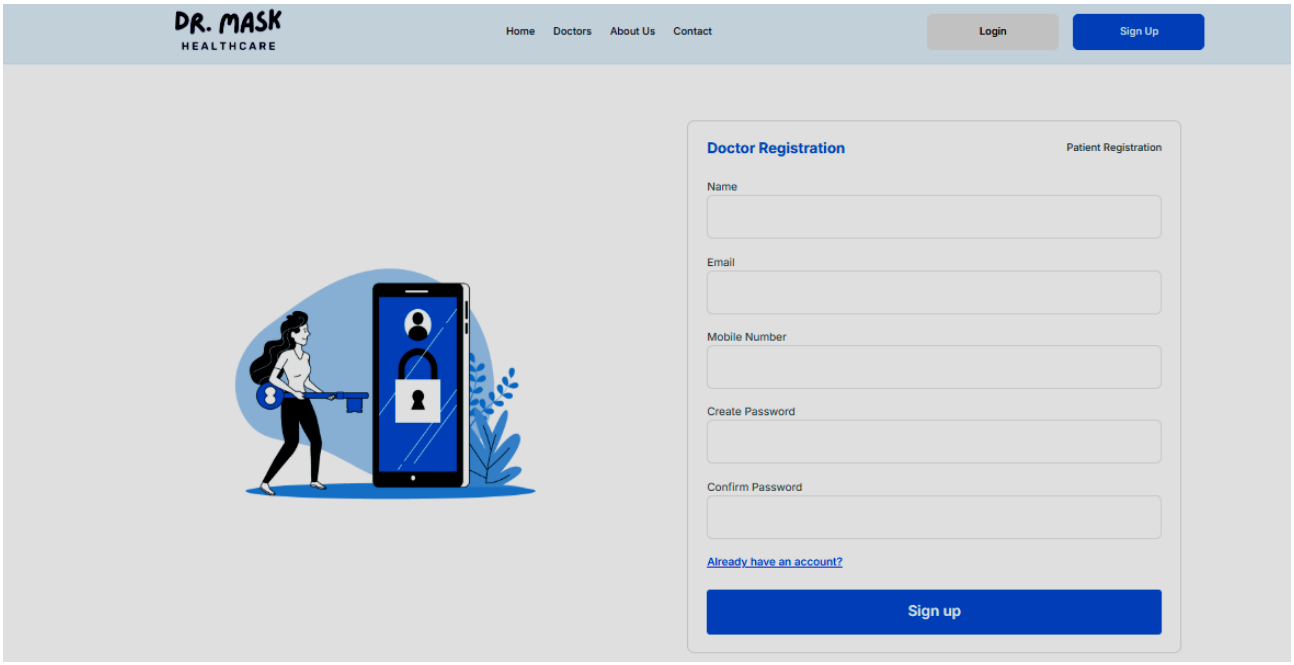

Figure 3.12: Doctor Registration Interface

3.7 Back-end Design

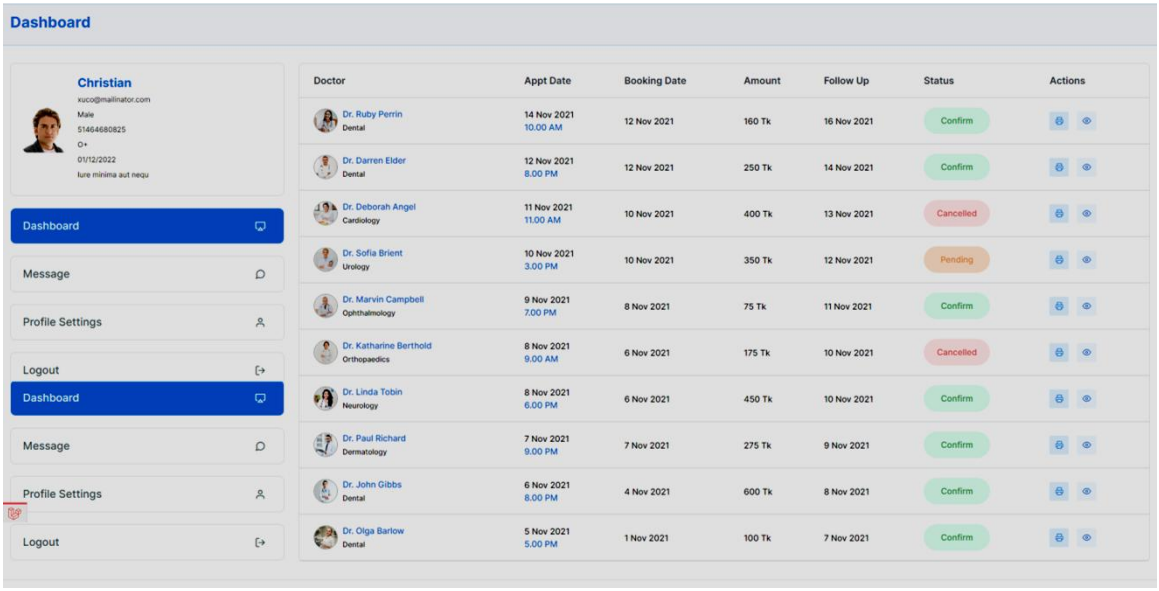

Figure 3.13: Back-end design

3.8 User Experience (UX) and Interaction Design

The Basic Structure of User Experience is depicted in Figure 3.12 below.

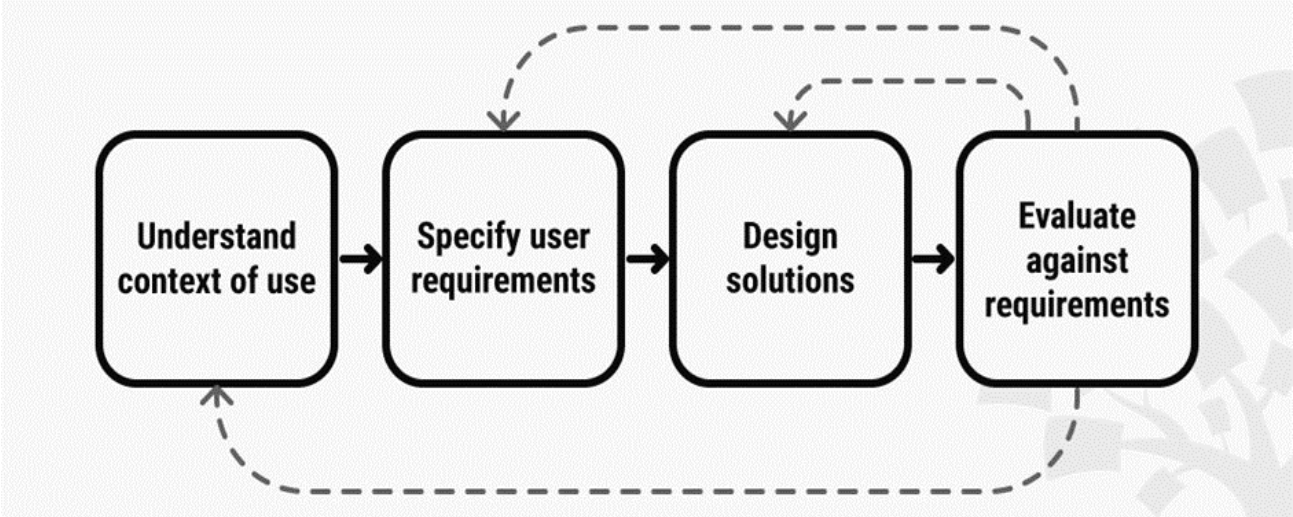

Figure 3.14: Design for User Experience (UX)

3.9 Database Design

The Basic Structure of User Experience is depicted in Figure 3.15 below.

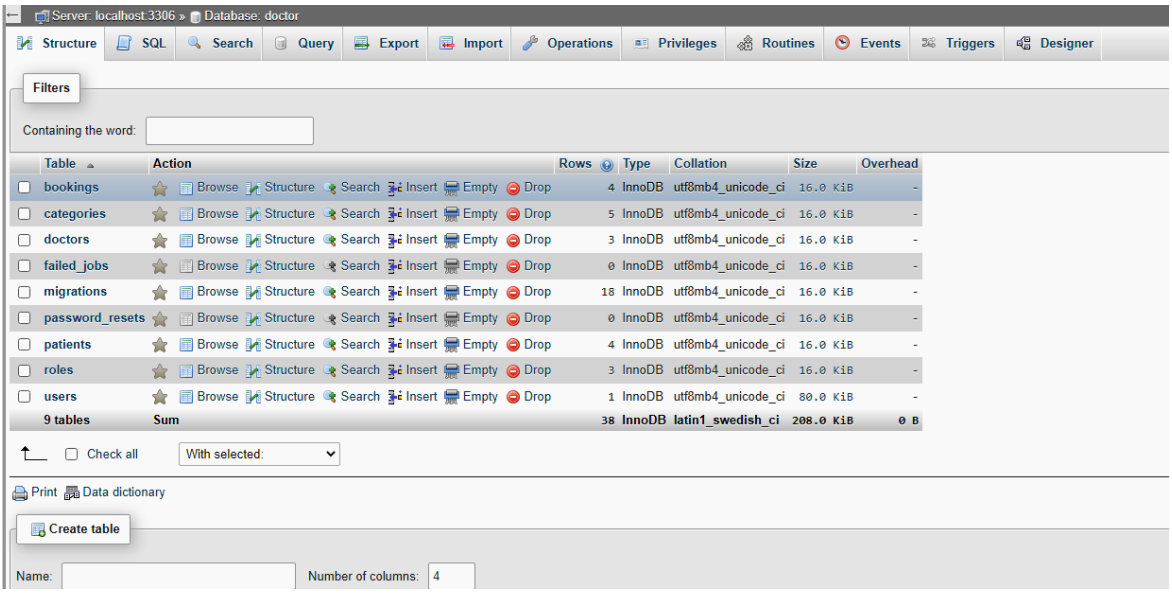

Figure 3.15: Database Design

3.9.1 Database Table of Tour Packages

The Database Doctor category table is displayed in figure 3.16 below.

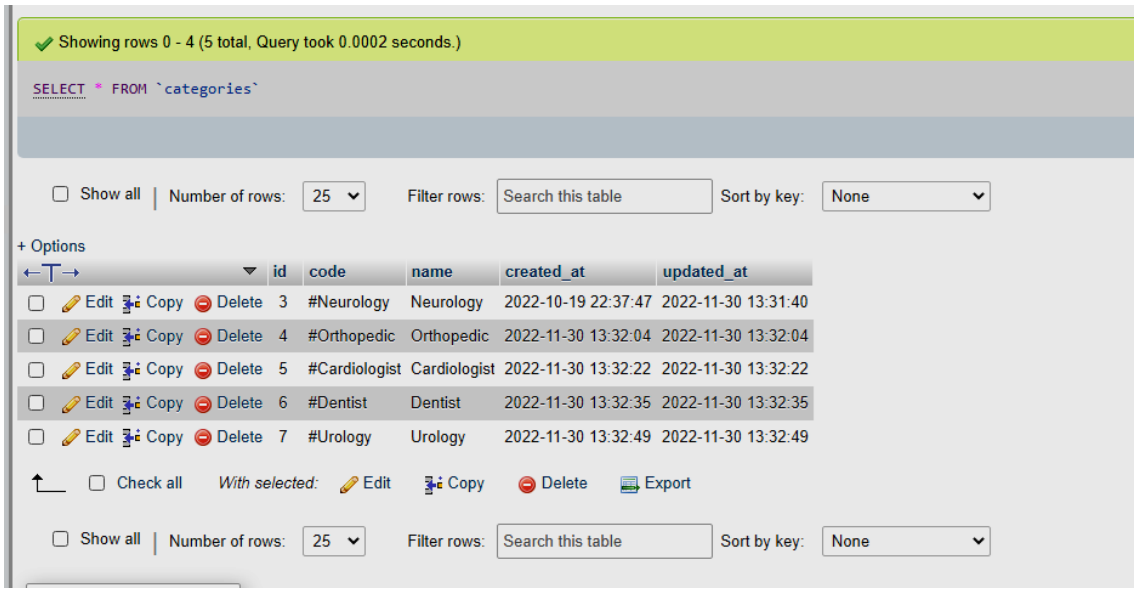

Figure 3.16: Database Doctor Category Table

3.9.2 Database Table of Doctor Booking

The doctor's booking details are displayed in figure 3.17 below.

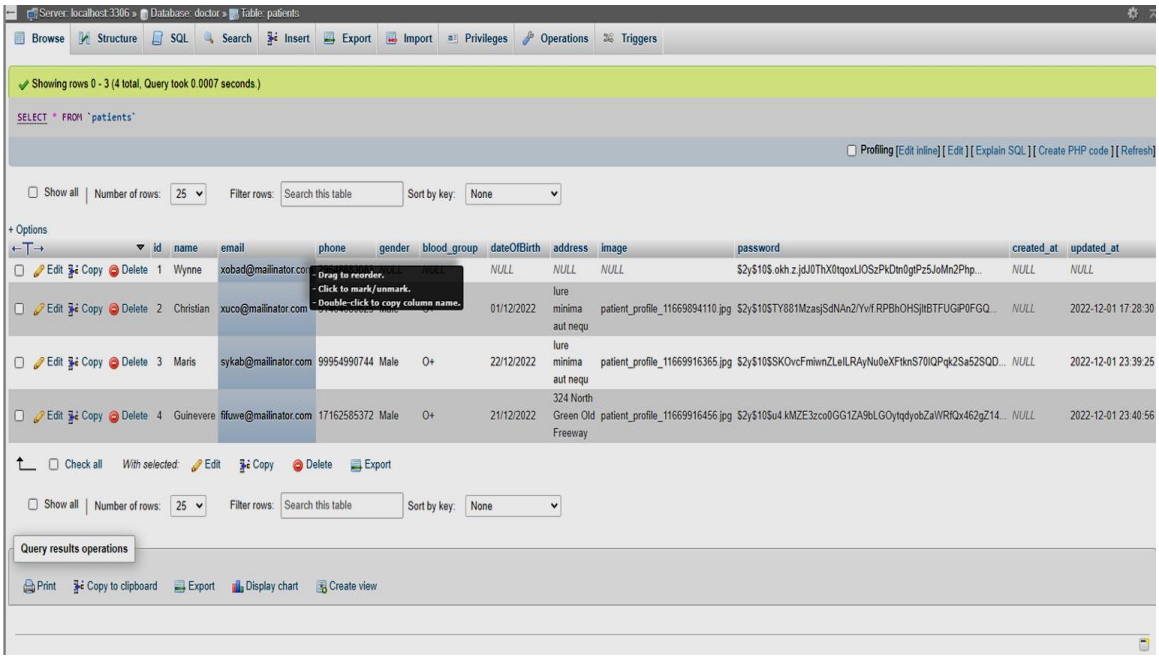

Figure 3.17: Doctor Booking Details

3.10 Used Technologies

3.10.1 Frontend

Every piece of software or hardware that goes into creating the user interface is included in the backend layer, which is where the frontend stays at the top. People and digital users may log in to the web program, access the many features of the website's front end, and interact with them directly.

HTML

By default, texts intended for web browser viewing are identified using HTML. Technologies like Cascading Style Sheets (CSS) and programming languages like JavaScript can help with this. Web browsers display HTML scripts on multimedia web pages after retrieving them from a web server or local memory. HTML first describes the structure of a web page statistically and includes cues for how a content should look.HTML pages are generated by HTML components. Other items, such pictures and interactive layouts, can be added to the display page using HTML structures.Titles, paragraphs, lists, links, quotations, and other components may all have their textual

meaning defined by HTML, which gives users the ability to create organized documents. Square brackets are used to indicate tags, which are used to divide HTML components. Tags that add material directly to the page include <img/>and<input/>. A document's content is surrounded and given information by additional tags, such <p>, which can also be included as tiny components. Instead of displaying HTML tags, They are used by the browser to interpret the content of the page. Web page behavior and content can be influenced by scripting tools like JavaScript that HTML can install. The type of content and its arrangement are determined via CSS integration.Since 1997, open presentation from CSS to HTML has been promoted by The World Wide Web Consortium (W3C), which used to maintain HTML and practice CSS standards Data and video are displayed using an HTML form known as HTML5. Audio, mostly integrated with Java script through the use of <canvas>elements.

```
  <!doctype html>
<html>
  <head>
    <title>Document title</title>
  </head>
  <body style="background-color:black;">
     <center>
       <img src="https://www.mywebsite.com/logo_banner.png>
       <br>
       <a href="https://www.mywebsite.com/home><img src=
       "https://www.mywebsite.com/home_button.jpg>
       <a href="https://www.mywebsite.com/page2><img src=
       "https://www.mywebsite.com/next_button.jpg>
        </center>
        <br>
        <h1 style="color:white;">About Us</ht>
        <br>
        <p style='color:white;">A little about us...</p>
        <hr>
     </body>
</html>
```

Figure 3.18: HTML

Development

Contractor for CERN Tim Berners-Lee, a scientist, created the ENQUIRE model in the 1980s as a tool that researchers at CERN could use and share. The Internet-based hypertext system was initially explained by Berners-Lee in his 1989 biography. Berners-Lee explained HTML, browsers, and server programming in the late 1990s. Although Berners-Lee and Robert Cailliau, a data engineer at CERN, worked together on a joint venture proposal that year, CERN did not formally authorize the initiative. He cites the first encyclopedia and mentions "Some places where hypertext is used" in his 1990 personal essay.

When HTML was first brought up in public, it was in "HTML Tages." Tim Berner-Lee was the first to mention it in late 1991. explains 18 parts, including the simplest version of the original HTML design. The SGML Guide, the standard internal markup language (SGML) based on the CERN document format, has a significant effect on these as well as linking tags. HTML 4 also contains these eleven things.

online browsers use a particular language called HTML to produce and transform text, pictures, and other elements into visual or aural online pages. Each HTML markup item's default standards are set by the browser; the web page designer can use additional CSS to change or enhance these specifications. The 1988 ISO technical paper on TR 9537 SGML usage techniques served as the basis for the CTSS's textual content formatting elements, such as the RUNOFF command, which was created in the early 1960s. influences most of the elements related to textual content. The distribution device's operating system: These formatting standards are derived from the manual formatting instructions used by typeographers.With CSS, HTML has progressively followed this direction. Currently, however, the SGML notion of generalized labeling focuses mostly on structure and labeling factors (the range of annotation embarrassment via attributes) and printing effects.

CSS

CSS stands for Cascading Style Sheet. A sign language document, like an HTML page, can use this style sheet. This technology, along with HTML and Java Script, forms the foundation of the World Wide Web. Fonts, colors, and layout are examples of CSS that may be used to differentiate between presentation and content. This segmentation can improve information on a specific site and provide greater flexibility and control over presentation features. Additionally, allow the.css file to be saved in order to improve the pace at which pages load between file-sharing pages.

The same tag page can be shown in many formats, including screen, print, voice (using a screen reader or speech-based browser), and Braille, by formatting and dividing the material. touch-sensitive gadgets. Additionally, CSS has distinct formatting guidelines for material shown on mobile devices. In order to decide which pattern rules are used when many rules match a certain element, the CSS is named after the intended program. There is predictability in this cascading priority program. The World Wide Web Consortium

(W3C) is in charge of upholding the CSS standard. Internet Media Types (MIME TEX) Text/CSS are registered for use with CSS in RFC 2318 (March 1998). W3C uses a free CSS validation service for CSS documents.

Java Script

JavaScript, which stands for JOne of the key technologies on the World Wide Web, along with HTML and CSS, is the computer language JavaScript. Custom JavaScript is used on more than 97% of websites, frequently with third-party libraries, for page layout. Custom JavaScript engines are available in all of the main web browsers to run code on user devices.

Combining many sophisticated languages, Javascript complies with ECMAScript requirements. Prototype-based configuration, first-phase operation, and strong typing are its features. An important kind of system is being worked on using a multi-level paradigm that supports dynamic planning. Text, dates, time statements, standard data formats, and Document Object (DOM) types may all be processed using its application programming interface (API).

```
<html>
  <head>
    <div>
          <div>

              <form method="post" action="#" id="formvalue" onkeyup="
              drawChart()" />

              </form>
          </div>
    </div>



    <script type="text/javascript" src="https://www.google.com/jsapi"></
      script>
    <script type="text/javascript">

    var bid = 43;
    var ask = 21;


      google.load("visualization", "1", {packages:["corechart"]});
      google.setOnLoadCallback(drawChart);
      function drawChart() {
        var data = google.visualization.arrayToDataTable([
          ['Price', 'Quantity'],
          ['Value #1', bid],
          ['Value #2', ask],
        ]);
```

Figure 3.19: Java Script

Bootstrap (Front End Framework)

A CSS programming kit called Bootstrap guides the development of mobile-friendly websites. includes HTML, CSS, and (optionally) Java Script-built templates for buttons, keys, genres, text, and other applications. With 152,000 stars as of August 2021, Bootstrap is a 10-star GitHub project that supports a number of other projects, including the free Code Camp (328,000 stars), Vue.js framework, React Library, and TensorFlow.

Features

Its main source is the jQuery plugin, which includes a number of JavaScript elements. They mainly provide a range of user interface elements, including tools, discussion boxes, and carousels.

A variety of JavaScript components are also included in Bootstrap as jQuery plugins. They provide additional UI elements including dialog windows, tools, and carousels. HTML format, CSS declarations, and sometimes JavaScript code are all included in every Bootstrap component. They also enhance the functionality of other interface elements, such as input field auto-complete.

Because they impact the whole web page, Bootstrap's structural elements are its most notable characteristics. The "Container" is a section of the primary structure since certain page elements are positioned there. Both Builders have access to both a container of stable space and a container of liquid space. However, the latter always uses the five preset widths according to the screen size that corresponds to the previous page, even if it always complements the webpage's width.

Smaller than 576 pixels

- 576–768 pixels
- 768–992 pixels
- 992–1200 pixels
- Larger than 1200 pixels

Once loaded, components of the remaining Bootstrap template Apply the Flexbox CSS style by defining rows and columns. Any project may use pre-built Bootstrap versions that come in three JavaScript file types and one CSS file. Developers can further alter and

improve the size of Bootstrap raw forms. Because this raw format is modular, the author may modify unassembled Sass files, utilize themes, and remove extraneous components.

Laravel (Frame Work)

Laravel is open to contributions from everyone to make it better because it's an open-source project. Contributors are welcome regardless of their nationality, gender, color, religion, or degree of expertise. The creation of a vibrant and diverse community is one of the framework's core tenets!

Currently, To foster active development, Laravel only accepts pull requests, not bug reports cooperation. "Bug reports" can be sent as pull requests that include a unit test that is failing. As an alternative, you might Pull requests should be sent to the primary Laravel repository with an example of the problem in a sandbox Laravel application. A failed sandbox application or unit test gives the development team "proof" that the issue exists and, once the bug has been solved, is a trustworthy signal that the bug is still fixed.

Each Laravel project has its own repository on Github where the Laravel source code is stored.

- Laravel Framework
- Laravel Application
- Laravel Documentation
- Laravel Cashier
- Laravel Envoy
- Laravel Homestead
- Laravel Homestead Build Scripts
- Laravel Website
- Laravel Art

Learning a new framework may be exciting, but it can also be daunting. To make your transition easier, we've tried to provide extremely concise and understandable Laravel documentation.

- Installation and Configuration
- Routing

- Requests & Input
- Views & Responses
- Controllers

Laravel Philosophy

The syntax of the web application framework Laravel is elegant and expressive. We think that for progress to be truly meaningful, it needs to be a fun and imaginative process.Laravel claims to simplify development by simplifying typical activities that are utilized by most online applications, such as caching, sessions, routing, and authentication. While preserving the functionality of the application, Laravel aims to enhance the developer experience. The best code is written by contented programmers. We have attempted to do this by incorporating the best aspects of several web frameworks, including those created in different languages like Ruby on Rails, ASP.NET MVC, and Sinatra. Laravel is a readily accessible framework that provides the robust features needed for big,complicated projects. You have the resources necessary to build whatever application you are tasked with creating because of an outstanding team. Support for tightly integrated unit testing that utilizes an inversion of control container and an expressive migration mechanism.

Laravel Forge

Any cloud service, such as Linode, DigitalOcean, Rackspace, or Amazon EC2, may be used to easily construct and operate PHP servers with a new web tool called Laravel Forge. The creation of Laravel queue workers, SSH key access, Nginx configuration automation, Cron jobs, "Push To Deploy," server monitoring with NewRelic & Papertrail, and more are supported features.

Laravel Homestead

Laravel. For developing dependable PHP and Laravel apps, Homestead is the official Vagrant environment. Before the box is packed for distribution, the great majority of the provisioning requirements are satisfied, enabling a speedy bootup. Homestead includes PHP 5.6, Nginx 1.6, Grunt, Bower, Redis, Memcached, MySQL, Postgres, Gulp, Beanstalk, and Node.js. Homestead includes a simple Homestead.yaml configuration file for managing several Laravel apps on a single server. The app/config/local/database.php

configuration file that is included with the basic Laravel 4.2 installation now includes the Homestead database preconfigured, which simplifies the initial setup and configuration of Laravel.

Laravel Cashier

Laravel Cashier is a straightforward, expressive module for handling Stripe subscription billing. With the release of Laravel 4.2, we are also offering Cashier documentation in addition to the standard Laravel documentation, even if installing the component is still optional. Numerous problems have been resolved, Cashier now supports different currencies and is compliant with the most recent Stripe API.

3.10.2 Backend

A computer program's backend is the portion of its code that makes it functional but unavailable to users. The computer system's end stores and retrieves more data and performance syntax.

3.10.3 Database

The term database refers to organized data or data that is often stored in an electronic format within a computer system. Typically, a database management system (DBMS) is used to manage databases.

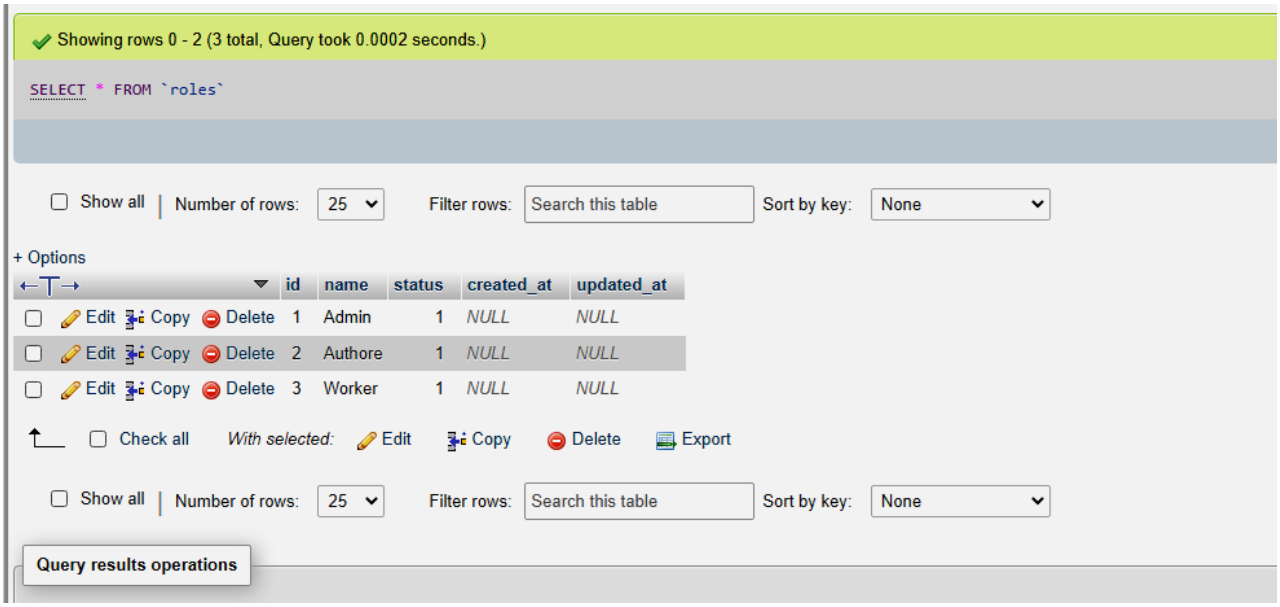

Figure 3.20: Database Table

In computers, a database is a collection of data that can be stored and retrieved electronically. While tiny databases could be stored on a file system, larger databases are found in computer clusters or cloud storage. Database design addresses a number of computational difficulties, including data modeling, efficient data display and storage, query languages, security and confidentiality of private information, concurrent access, and fault tolerance.

Database management systems (DBMSs) are networked computers used for database gathering and analysis, applications, and end users. The DBMS software also comes with the essential tools for database management. Data warehouse systems include general data warehouses, database management systems, and associated applications. The term "database" is commonly used to refer to any application that is connected to a database, database system, or database management system.

Database management systems can be categorized by computer scientists according to the kinds of databases they support. The integrated database gained significant traction in the 1980s. Many of these data structures employ SQL to record and query data, and they show up as rows and columns in successive tables. Unconnected databases, known as NoSQL because of its many query languages, gained popularity in the 2000s.

SQLite

SQLite is a standalone, serverless library that alters the SQL database engine without the need for a server or settings. Like any other database system, a database is an invariant. We may examine the SQLite engine based on our needs, but it lacks the real-time functionality of other databases. SQLite files are among its backups. The SQLite database is quite easy to use. SQLite Open does not have an integrated setup procedure as other database systems do.

History

the work of D. Richard Hipp I worked with General and got to know SQLite. Dynamics on a project for the US Navy in the spring of 2000. Hipp is developing the software for the lead-arrow killers-based malicious operating system, which at initially employed an IBM Informix platform and HP-UX as a backend. Beginning as a Tcl extension, SQLite.

Installing a database management system or using a database manager is not necessary for the product to function with SQLite. Hipp is a format and keyword system built on top of PostgreSQL 6.5. August 2000 saw the introduction of SQLite version 1.0, which stored data in gdbm. (GNU Database Manager). In SQLite 2.0, a customized B-tree implementation took the role of Gdbm, expanding the options for communication. With America Online financing, SQLite 3.0 was enhanced with globalization, signaling, and other important features. In 2011, Hipp disclosed its plans to develop UnQLite is a document-like database that offers a NoSQL interface for SQLite databases that can handle JSON documents. The Library of Congress has authorized four formats for long-term database storage, including SQLite.

CHAPTER 4

RESULT OUTPUT

4.1 Result Output

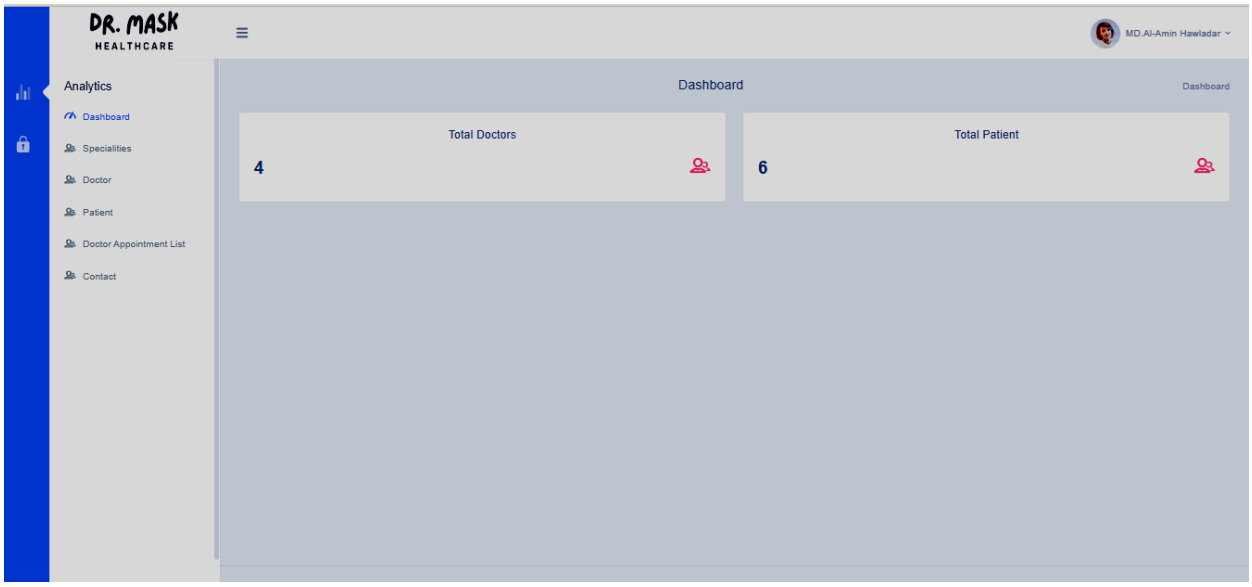

Figure 4.1: Software Admin Backend Design

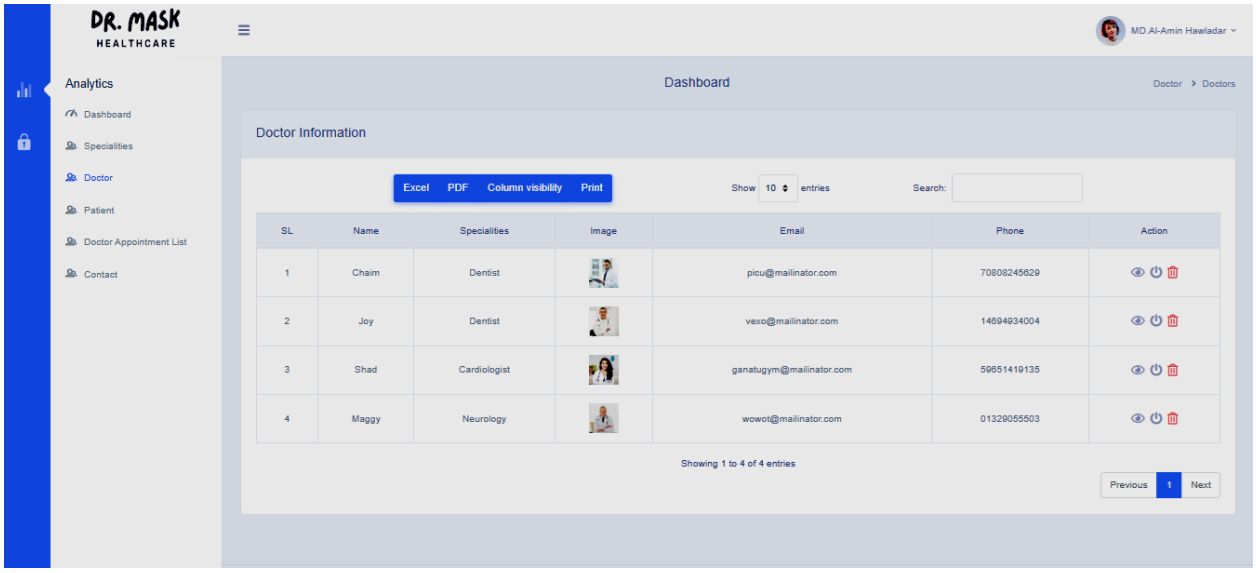

Figure 4.2: Doctor Category Information

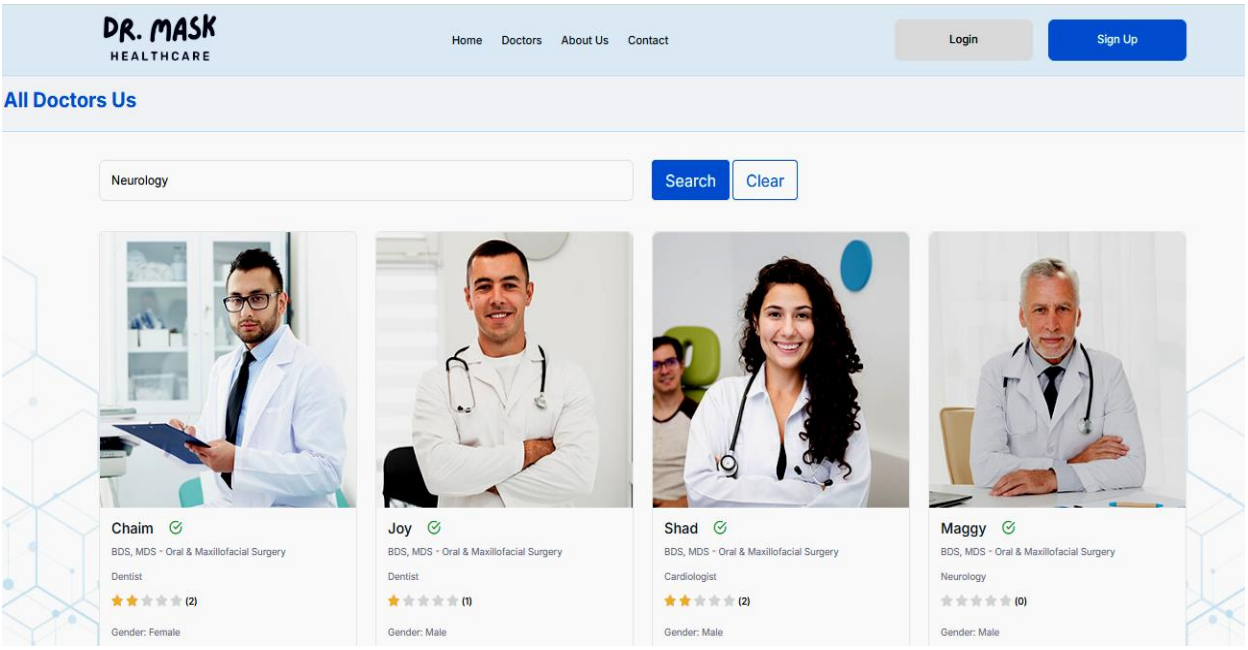

Figure 4.3: Doctor Category View

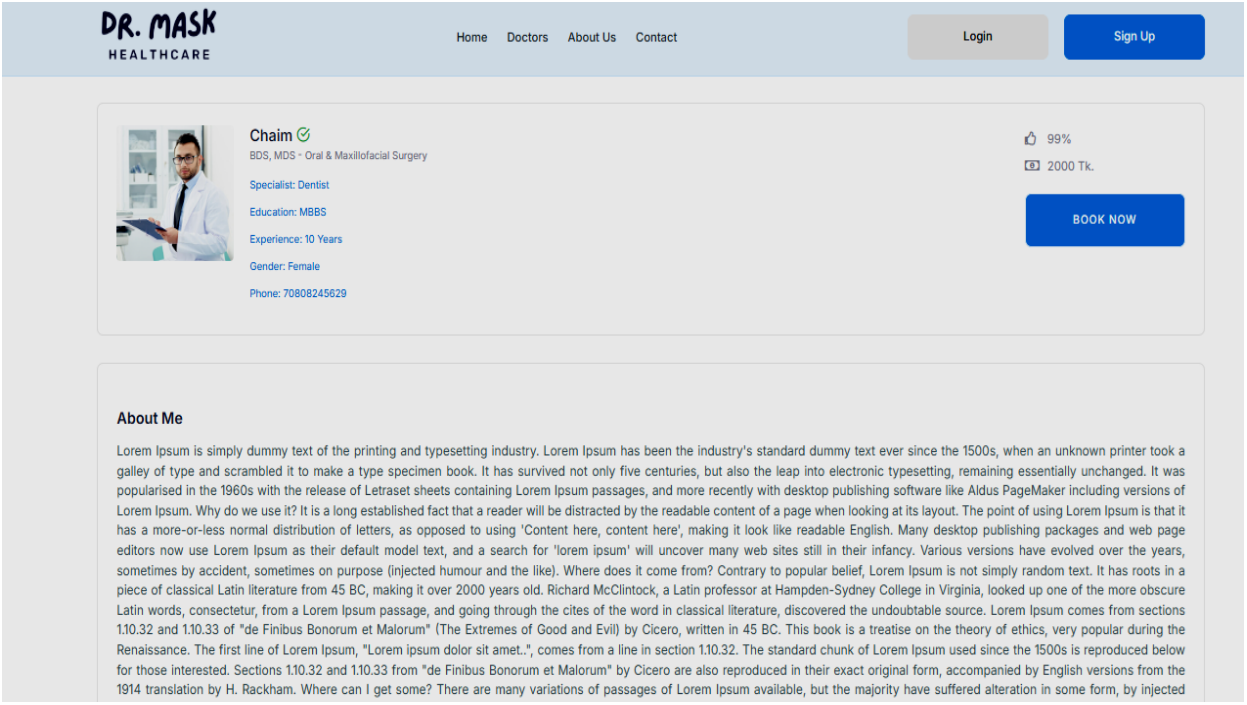

Figure 4.4: Doctor Profile View

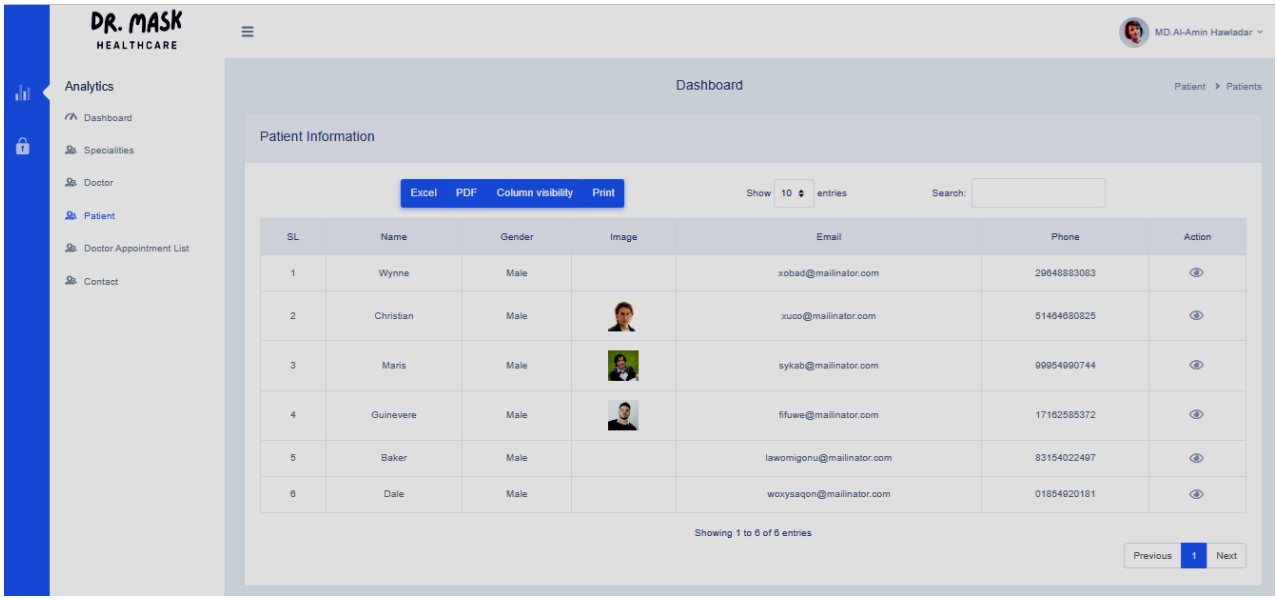

Figure 4.5: Patient Information

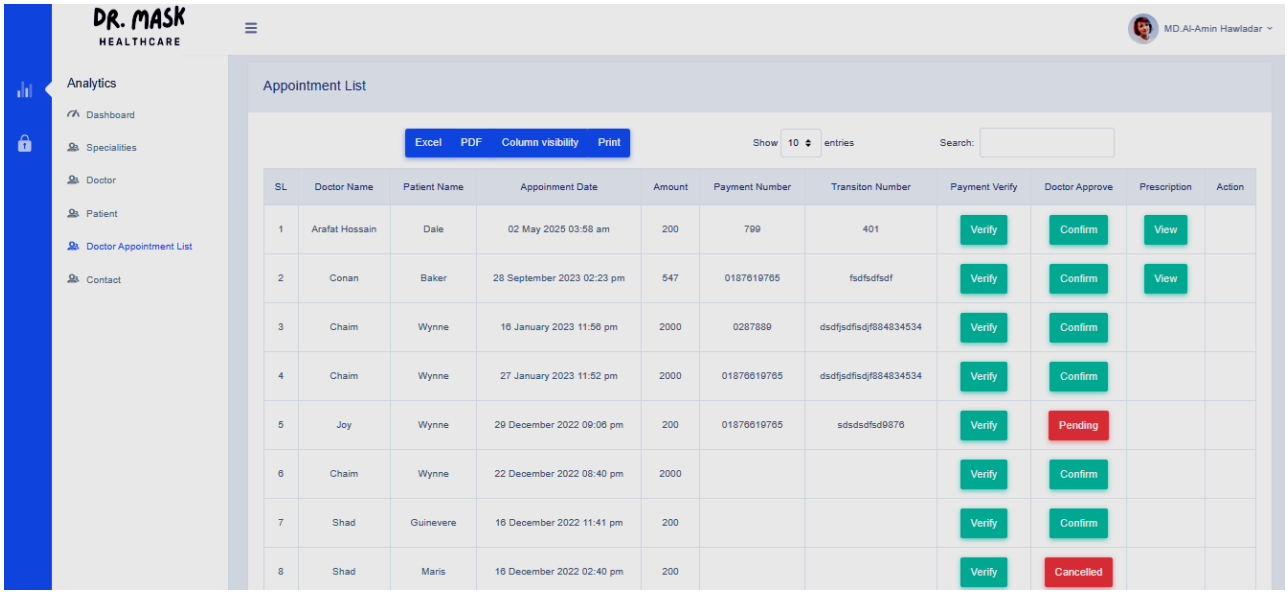

Figure 4.6: Appoinment List

4.2 Advantages

Our system's benefits are listed below:

- This approach lessens harassment of patients.
- During the COVID-19 pandemic, it will be extremely beneficial for patient and physician safety.
- There is an online payment mechanism accessible.
- No need to go to see a doctor.
- Streamlined hospital operations.
- Easy access to appointment booking for patients from home.
- Reduced dependency on paper records.
- Secure data storage with fast accessibility.
- Enhanced communication between doctors and patients.

4.3 Application

- Hospitals and clinics can use the project.
- It may be used by organizations and businesses (including hospitals, schools, and colleges) to automate their parking systems.

CHAPTER 5
CONCLUSION

5.1 Conclusion

The computerization of the Hospital Management with online Booking System significantly reduces the challenges and inconveniences patients face when scheduling medical appointments. By offering a user-friendly interface, the system simplifies the process of locating doctors and booking consultations, improving overall patient experience. The future development of this system aims to enhance its functionality by expanding admin and doctor modules within the app. This would allow doctors to manage their profiles, appointments, and patient interactions directly from the mobile application. Likewise, administrators could oversee patient and doctor information more efficiently through the app rather than relying solely on the website. To prevent misuse of the system—such as users registering accounts without genuine intent—a payment or booking charge could be introduced. This measure would help ensure that only serious users access appointment features. Additionally, further improvements to the patient module are being considered, including features such as appointment reminders and integration with calendar systems. These enhancements will promote better time management and reduce missed appointments. Overall, this system not only streamlines hospital management but also brings convenience, accountability, and efficiency to both patients and healthcare providers, contributing to a more modern and reliable healthcare service.

5.2 Future Scope of Works

There are some scopes for further work in improving the IoT online Irrigtion System**:**

- In future develop mechanism for gathering reports online.
- In future develop The doctor and patient use a video calling method.
- In future develop several payment methods, such as online and bank payments.
- In future develop AI-based doctor recommendations
- In future develop Multi-language user interface
- In future develop Emergency appointment booking feature

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