HOSPITAL MANAGEMENT SYSTEM

A MINI PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report **" Hospital Management System"** is the bonafide work of **"ANUKANKSHA AASHI[RA2011003010824] ,JIGYASA SHARMA[RA2011003010832] and CHINMOYEE GOGOI[RA2011003010884]"** of III Year/VI Sem B.tech(CSE) who carried out the mini project work under my supervision for the course 18CSC303J- Database Management systems in SRM Institute of Science and Technology during the academic year 2022-2023(Even sem).

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ABSTRACT

The purpose of the project entitled as “HOSPITAL MANAGEMENT SYSTEM” is to computerise the Front Office Management of Hospital to develop software which is user friendly, simple, fast, and cost– effective. It deals with the collection of patient’s information, diagnosis details, etc. Traditionally, it was done manually.

The main function of the system is to register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen.

The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data is well protected for personal use and makes the data processing very fast.

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ABBREVIATIONS

DB	Data Base
UI	User Interface
HSM	Hospital Management System
EHR	Electronic Health Records
DSS	Decision Support Systems
HTML	Hypertext Markup Language
PHP	Hypertext Preprocessor
CSS	Cascading Style Sheet

CHAPTER1

INTRODUCTION

1.1 INTRODUCTION

A hospital management system is a software application that helps hospitals and other healthcare facilities manage their operations efficiently. This system is designed to automate the administrative and clinical tasks involved in running a hospital, from patient registration and admission to billing and inventory management.

The hospital management system provides a centralised platform for hospital staff to manage all aspects of patient care, including medical records, appointments, prescriptions, and test results. It also enables healthcare providers to communicate with each other and with patients in real-time, ensuring timely and effective care.

The system is designed to improve the quality of healthcare services, reduce administrative workload, and enhance patient satisfaction. It helps hospitals to streamline their operations, reduce errors, and increase efficiency, ultimately leading to better patient outcomes.

The hospital management system is an essential tool for modern healthcare facilities, enabling them to deliver high-quality care and improve patient outcomes.

1.2 PROBLEM STATEMENT

1. **Inefficient Patient Management:**

Traditional paper-based systems are slow and prone to errors, which can lead to inefficient patient management. This includes long wait times, delays in appointments, incorrect medication dosages, and misdiagnosis.

2. **Lack of Coordination**: Lack of coordination between departments can cause delays in patient care and result in communication gaps between medical staff. For example, the pharmacy may not receive the prescription orders on time, leading to delays in administering medication.

3. **Inaccurate Billing:**

Billing errors can lead to incorrect charges, which can be frustrating for patients and lead to legal issues for the hospital. This can include issues such as incorrect billing codes, incorrect insurance information, and incorrect pricing.

4. **Data Security:**

Hospitals are required to maintain patient data confidentiality and securely. The lack of a proper system to store and secure patient data can lead to data breaches, which can result in financial loss and legal issues for the hospital.

1.3 OBJECTIVES

1. **Streamlining hospital operations:** The system aims to automate administrative and clinical tasks involved in running a hospital, reducing workload and enhancing efficiency.

2. **Improving patient care:** The system ensures timely and effective care, enabling healthcare providers to communicate with patients and each other in real-time.

3. **Enhancing patient satisfaction:** The system ensures a seamless experience for patients, from registration to discharge, improving their overall satisfaction.

4. **Accurate record-keeping:** The system maintains accurate and up-to-date medical records of patients, enabling healthcare providers to make informed decisions.

5. **Simplifying billing and payment:** The system simplifies billing and payment processes, reducing errors and enhancing transparency.

6. **Inventory management:** The system tracks inventory levels of medical supplies, enabling hospitals to manage their supplies efficiently and avoid shortages.

7. **Enhancing data security:** The system ensures the security and privacy of patient data, preventing unauthorised access or misuse.

8. **Generating reports and analytics**: The system generates reports and analytics on hospital operations, enabling hospital administrators to make data-driven decisions.

1.4 SCOPE AND APPLICATIONS

1. **Patient Management:** The system allows healthcare providers to manage patient information, including medical history, treatment plans, medication, and test results. It also enables healthcare providers to track patient appointments, visits, and discharge.

2. **Clinical Management:** The system enables healthcare providers to manage clinical tasks, including diagnosis, treatment, and medication. It also facilitates communication between healthcare providers and patients in real-time.

3. **Administrative Management:** The system enables hospital administrators to manage administrative tasks, including billing, payment, inventory management, and staff scheduling.

4. **Reporting and Analytics:** The system generates reports and analytics on hospital operations, enabling hospital administrators to make data-driven decisions.

5. **Billing and Payment:** The system simplifies billing and payment processes, reducing errors and enhancing transparency.

6. **Security and Privacy:** The system ensures the security and privacy of patient data, preventing unauthorised access or misuse.

1.5 General and Unique Services in the database application

General Services:

1. **Patient Information Management:** The system can store and manage patient data, including personal information, medical history, lab results, diagnoses, and treatment plans.
2. **Appointment Scheduling**: The system can help schedule appointments, send reminders, and track patient no-shows and cancellations.
3. **Billing and Insurance Management:** The system can track billing and insurance information, process payments, and generate reports.
4. **Inventory Management:** The system can keep track of medical supplies, equipment, and medications, including stock levels, usage, and expiration dates.
5. **Staff Management:** The system can manage employee information, schedules, and payroll, including clinical and non-clinical staff.

Unique Services:

1. **Electronic Health Records (EHRs):** The system can provide a secure and centralized repository for all patient health information, accessible to authorized healthcare providers in real-time. This can improve patient safety, care coordination, and data analytics.
2. **Decision Support Systems (DSS):** The system can provide clinical decision support, including alerts, reminders, guidelines, and best practices, to help clinicians make informed and evidence-based decisions.
3. **Telemedicine and Remote Patient Monitoring:** The system can support telemedicine and remote patient monitoring, allowing patients to access care from anywhere, reducing the need for in-person visits, and improving patient outcomes and satisfaction.
4. **Quality Management:** The system can track and analyze clinical and operational data, identify areas for improvement, and implement quality improvement initiatives, including accreditation and regulatory compliance.
5. **Research and Analytics:** The system can support research and analytics, including clinical trials, outcomes research, population health management, and business intelligence, to improve healthcare outcomes and operations.

1.7 SOFTWARE REQUIREMENTS

1. VS CODE
2. XAMPP
3. MySQL
4. TCPDF (to generate PDFs)

CHAPTER 2

LITERATURE SURVEY

2.1 EXISTING SYSTEM

1. The Existing system was paper-based.

2. keeping track of all the activities (like records of itspatients, doctors and other staff personals) and their records on paper 1s very cumbersome and error prone.

3. It was very inefficient and a time-consuming process. Observing the continuous increase in population and number of people visiting the hospital. Recording and maintaining all these records on paper were highly unreliable, inefficient and error-prone.

4. It is too slow and cannot provide updated lists of required things within a reasonable timeframe.

5. It is also not economically & technically feasible to maintain these records on paper.

2.2 PROPOSED SYSTEM

Hospitals are the essential part of our lives, providing best medical facilities to people suffering from various ailments, which may be due to change in climatic conditions, increased work-load, emotional trauma, stress etc. It 1s necessary for the hospitals to keep track of its day-to-day activities & records of its patients, doctors that keep the hospital running smoothly & successfully. Our objective is to digitise all the versions of the manual system , and we named 1t as “Hospital Management System”.

The main aim of our project is to provide a paperless hospital up to 90%. It also aims at providing low-cost reliable digitalization of the existing systems. The proposed system also provides excellent security of data at every level of user-system interaction and also provides robust & reliable storage facility. The purpose of this project 1s to digitise the process of day-to-day activities like Registering New Patients, Assigning a Doctor to a new patient, Adding new staff members, and finally compute the bill etc.

As the proposed software product 1s the Hospital Management system (HMS). The system will be used in any hospital (only in OPD cases), clinic etc. Hospitals (small to medium scale) can use it to get the information from the patients and then storing that data for future usages. The intention of the system is to reduce overtime pay and increase the number of patients that can be treated accurately. Requirement statements in these documents are both functional and non-functional.
We have tried best to make the complicated process of the Hospital Management System as simple as possible using Structured & Modular technique & Menu oriented interface. We have tried to design the software in such a way that doctors may not have any difficulty in using this package & further expansion is possible without much effort.

2.3 Comparison of Existing vs Proposed system

Existing Hospital Management System:

1. **Limited functionality:** The existing system may lack some critical features and functionalities, making it challenging to manage hospital operations effectively.

2. **Manual processes:** The existing system may still rely on manual processes, leading to errors, delays, and inefficiencies.

3. **Limited accessibility:** The existing system may only be accessible from specific locations, making it challenging for healthcare providers to access patient information remotely.

4. **Limited scalability:** The existing system may not be scalable, making it challenging to expand its functionalities to accommodate new requirements.

Proposed Hospital Management System:

1. **Comprehensive functionality:** The proposed system offers a wide range of features and functionalities, making it easy to manage hospital operations effectively.

2. **Automation:** The proposed system automates various hospital processes, reducing errors, delays, and inefficiencies.

3. **Remote access**: The proposed system is accessible from anywhere, enabling healthcare providers to access patient information remotely.

4. **Scalability:** The proposed system is scalable, making it easy to add new features and functionalities to meet changing requirements.

5. **Improved user experience:** The proposed system has an intuitive user interface, making it easy for healthcare providers to use and manage patient information.

6. **Improved data security:** The proposed system ensures the security and privacy of patient data, preventing unauthorised access or misuse.

CHAPTER 3

SYSTEM ARCHITECTURE AND DESIGN

3.1 ARCHITECTURE DIAGRAM

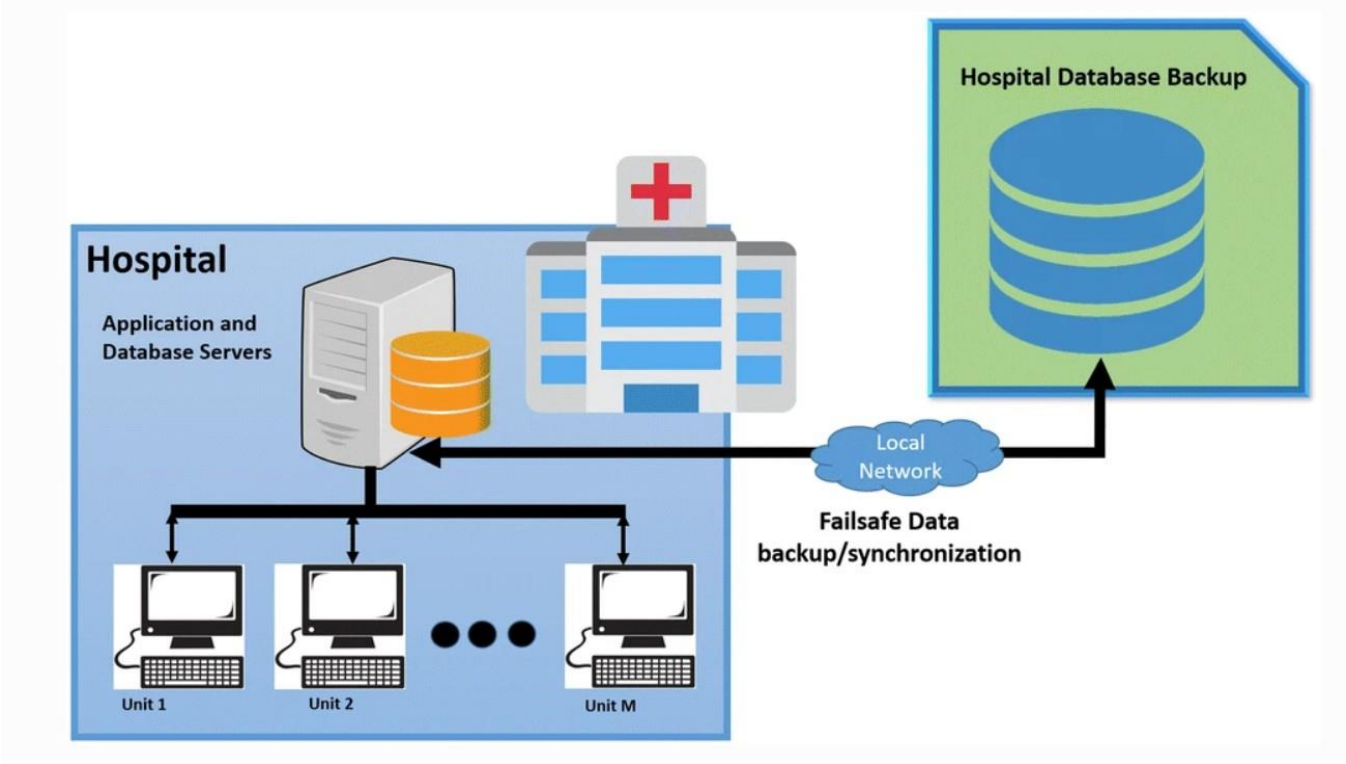

Fig. 3.1

The architecture consists of four main layers:

1. **User Interface:** This layer is responsible for displaying the user interface of the system to the user. It uses HTML5/CSS3 and JavaScript to create a dynamic and responsive user interface.

2. **Web Server:** This layer provides a platform for hosting the hospital management system. It uses XAMPP, which is a web server by Apache Friends, to run the PHP code and communicate with the database.

3. **Application Layer:** This layer consists of PHP, MySQL, and TCPDF libraries. PHP is used to create dynamic content, while MySQL is used to store and retrieve data. TCPDF library is used to generate PDF documents.

4. **Database Layer:** This layer is responsible for managing data storage and retrieval. It uses MySQL, which is an RDBMS that uses SQL.

3.1.1 FRONT END(UI) DESIGN

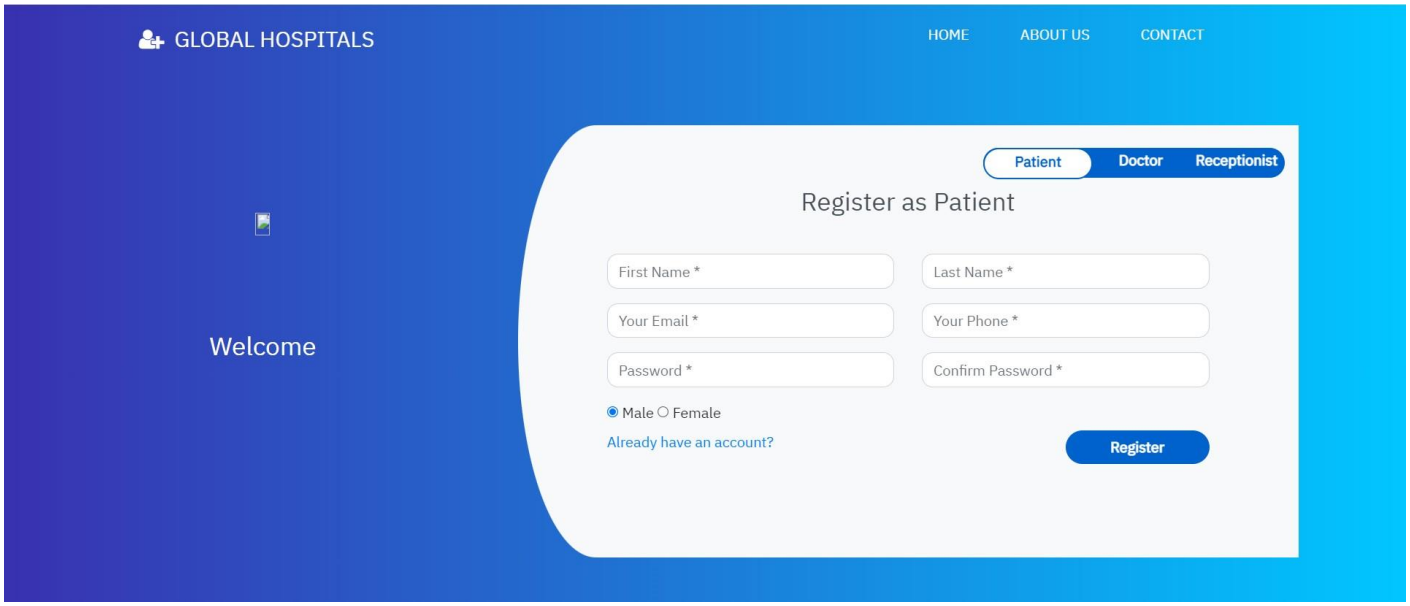

Fig 3.2

3.1.2 BACKEND(DATABASE) DESIGN

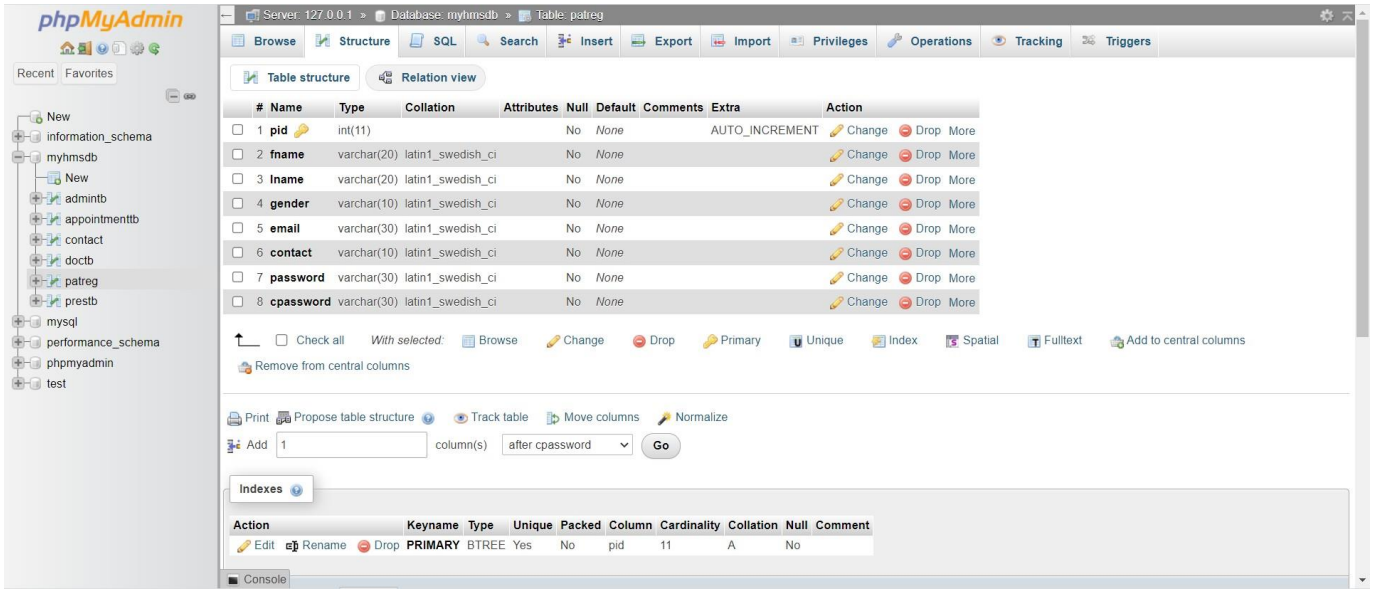

Fig. 3.3

3.2 ER DIAGRAM AND USE CASE DIAGRAM

ER DIAGRAM

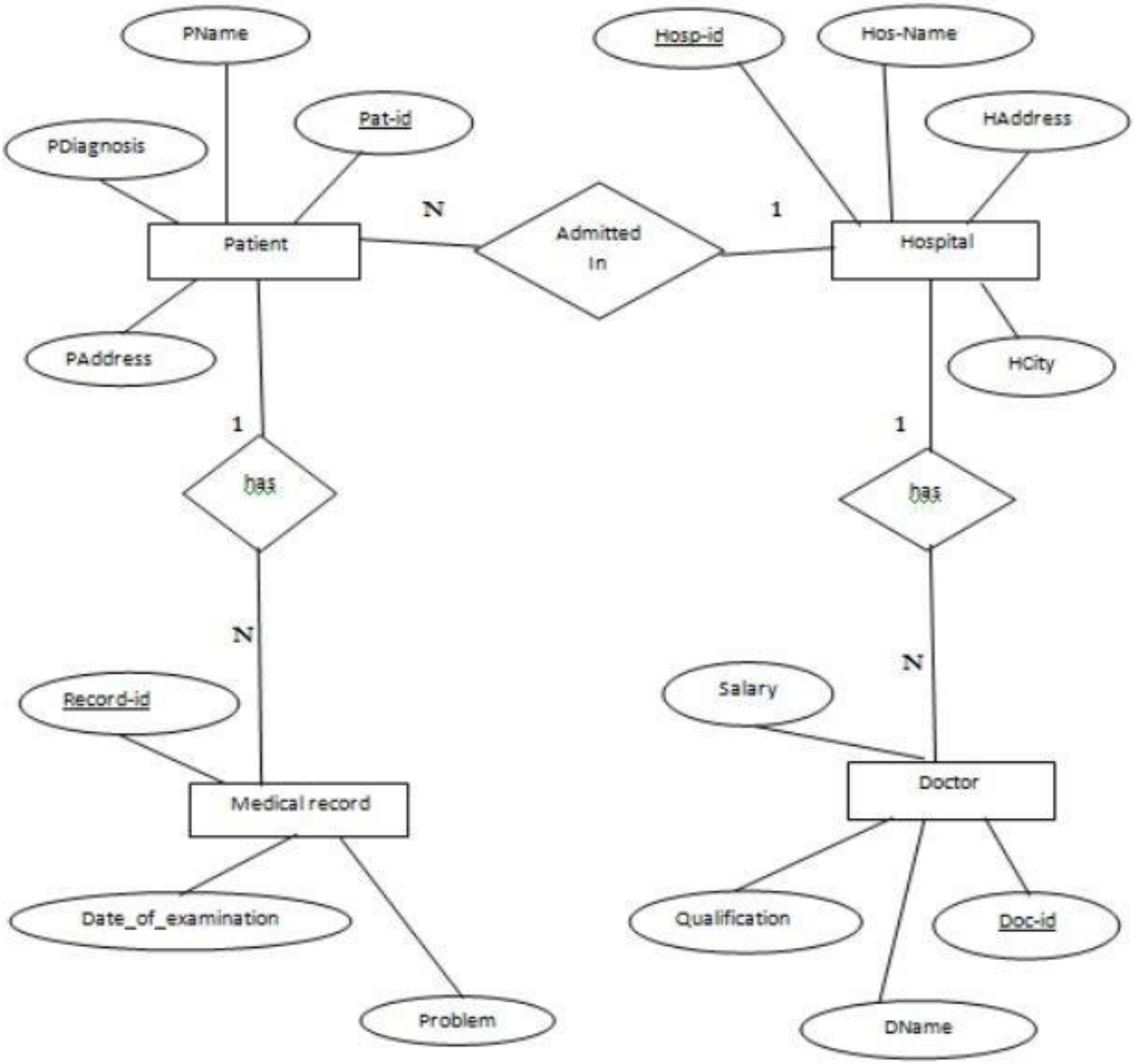

Fig.3.4

USE CASE DIAGRAM

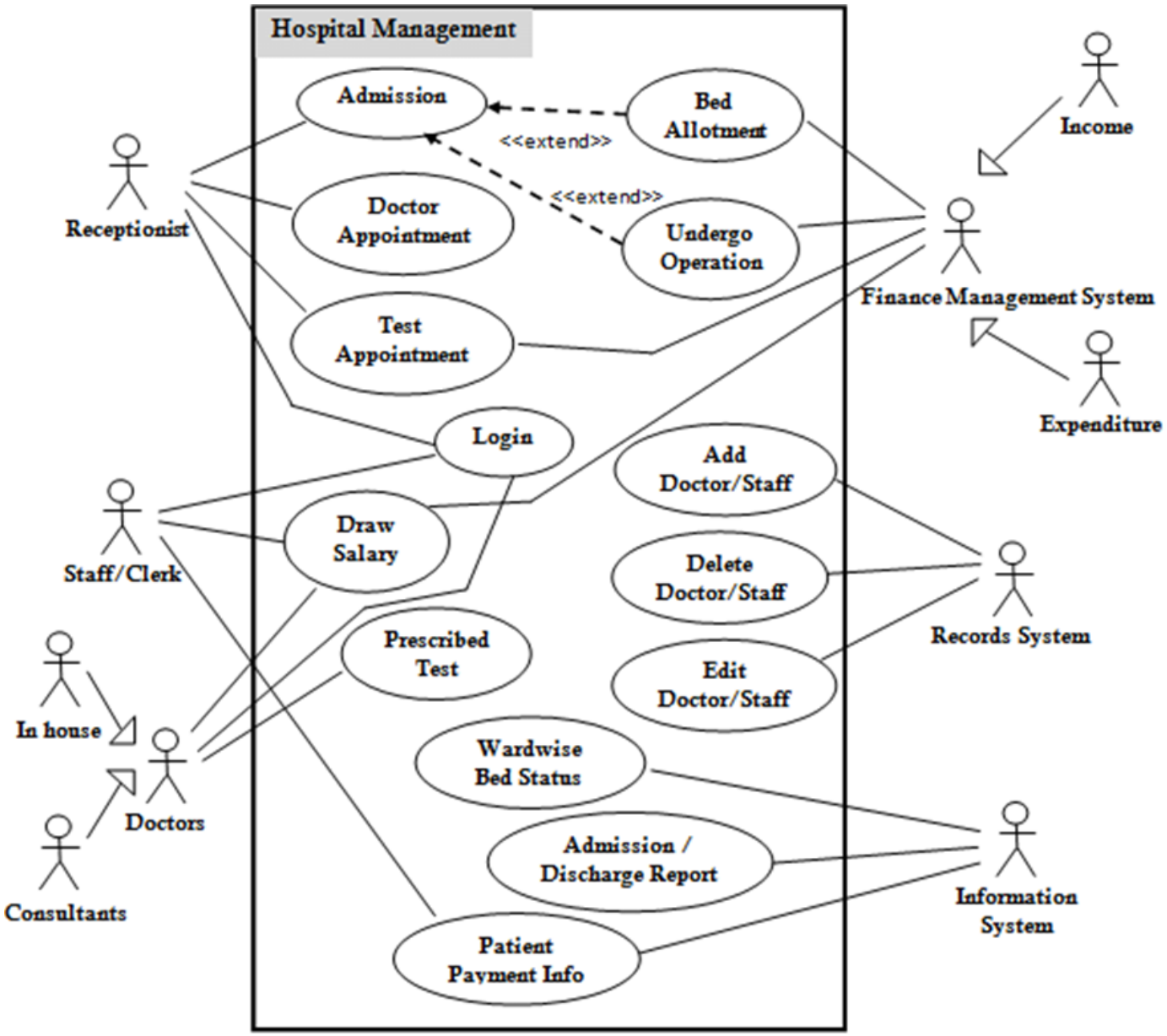

Fig.3.5

CHAPTER 4

MODULES AND FUNCTIONALITIES

4.1 MODULE:

Hospital Management System in php and mysql. This system has a 'Home' page from where the patient, doctor & administrator can login into their accounts by toggling the tabs accordingly
The 'Home' page consists of 3 modules:

1. Patient Module
2. Doctor Module
3. Admin Module

4.1.1. PATIENT MODULE:

This module allows patients to create their account, book an appointment to see a doctor and see their appointment history. The registration page(in the home page itself) asks patients to enter their First Name, Last Name, Email ID, Contact Number, Password and radio buttons to select their gender.

Once the patient has created his/her own account after clicking the 'Register' button, then he will be redirected to his/her Dashboard.

The Dashboard page allows patients to perform two operations:

1. **Book his/her appointment**: Here, the patients are able to book their appointments to see a doctor. The appointment requires patients to select the doctor that they want to see, Date and Time that they want to meet with the doctor. The consultancy fee will be shown accordingly to the patient as it was already determined by the doctor.After clicking on the 'Create new entry' button, the patient will receive an alert that acknowledges the successful appointment of the patient.

2. **View patients' Appointment History**: Here, the patient can see their appointment history which contains Doctor Name, Consultancy Fee, Appointment Date and Time.Once the patient has logged out of his account, if he wants to go into his account again, he can login his account, instead of register his account again. the login page. Clicking on the 'Login' button will redirect the patient to his dashboard page which we have seen earlier.This is how the patient module works. On the whole, this module allows patients to register their account or login their account(if he/she has one), book an appointment and view his/her appointment history.

4.1.2 DOCTOR MODULE:

The doctors can login into their account which can be done by toggling the tab from ‘Patient’ to ‘Doctor’. Registration of a doctor account can be done only by admin. We will discuss more about this in the Admin Module.Once the doctor clicks the ‘Login’ button, they will be redirected to their own dashboardIn this page, doctors are able to see their appointments which have been booked by the patients.

In real-time, the doctors will have thousands of appointments. It will be easier for a doctor to search for appointments in the case of more appointments. To make it easier, I have a ‘Search’ box in the navigation bar which allows doctors to search for a patient by their contact number. Once everything is done, the doctor can logout of their account. Thus, in general, a doctor can login into his/her account, view their appointments and search for a patient. This is all about Doctor Module.

4.1.3 ADMIN MODULE:

This module is the heart of our project where an admin can see the list of all patients. Doctors and appointments and the feedback/queries received from the ‘Contact’ page. Also admin can add doctor too.Login into admin account can be done by toggling into admin tab of the Home page.On clicking the ‘Login’ button, the admin will be redirected to his/her dashboard.

This module allows admin to perform five major operations:

1. **View the list of all patients registered:** Admin is able to view all the patients registered. This includes the patients’ First Name, Last Name, Email ID, Contact Number and password. As like in doctor module, admin can also search for a patient by their contact number in the search box.

2. **View the list of all doctors registered:** Details of the doctors can also be viewed by the admin. These details include the Name of the doctor, Password, Email and Consultancy fees. Searching for a doctor can be done by using the doctor’s Email ID in the search box.

3. **View the Appointment lists:** Admin is also able to see the entire details of the appointment that shows the appointment details of the patients with their respective doctors. This includes the First Name, Last Name, Email and Contact Number of patients, doctor’s name, Appointment Date, Time and the Consultancy Fees.

4. **Add Doctor:** Admin alone can add a new doctor since anyone can register as a doctor if we put this section on the home page. This form asks for a Doctor's Name, Email ID, Password and his/her Consultancy Fees.After adding a new doctor, if we check the doctor’s list, we will see the details of the new doctor added to the list.

5. **View User’s feedback/Queries:** Admin is allowed to view the feedback/Query that has been given by the user in the ‘Contact’ page.This includes User’s Name, Email Id, Contact Number and the message(Feedback/ Query) Taking everything into consideration, admin can view the details of patients and doctors, appointment details, Feedback by the user and can add a new doctor. Once everything is done, the admin can logout from his account.

4.2 CONNECTIVITY USED FOR DATABASE ACCESS:

For a Hospital Management System using HTML5/CSS3, JavaScript, Bootstrap, XAMPP, PHP, MySQL, and TCPDF, the connectivity used to access the database is typically through PHP code. PHP is a server-side scripting language that is commonly used to connect to a MySQL database and perform queries.

To establish the database connectivity, the PHP code would typically include the following information:

- Hostname: the name of the server where the database is located
- Username: the username used to access the database
- Password: the password used to access the database
- Database name: the name of the database to be accessed

Once the connectivity has been established, the PHP code can be used to perform queries and retrieve data from the database. This data can then be used to dynamically update the content on the front-end using JavaScript and Bootstrap.

PHP and MySQL are a powerful combination for database connectivity and manipulation in a web-based system, and can be easily integrated with HTML5/CSS3, JavaScript, Bootstrap, XAMPP, and TCPDF to create a robust Hospital Management System.

CHAPTER 5

CODING AND TESTING

5.1 CODING

5.1.1 HTML

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Services</title>

  <!-- css -->
  <link rel="shortcut icon" type="image/x-icon" href="images/favicon.png" />
  <link href="css/bootstrap.min.css" rel="stylesheet" type="text/css">

  <link href="font-awesome/css/font-awesome.min.css" rel="stylesheet" type="text/css" />
 <link rel="stylesheet" href="vendor/fontawesome/css/font-awesome.min.css">
  <link href="css/animate.css" rel="stylesheet" />
  <link href="https://fonts.googleapis.com/css?family=IBM+Plex+Sans&display=swap" rel="stylesheet">
  <link href="css/style.css" rel="stylesheet">

  <!-- boxed bg -->
  <link id="bodybg" href="bodybg/bg1.css" rel="stylesheet" type="text/css" />
  <!-- template skin -->
  <link id="t-colors" href="color/default.css" rel="stylesheet">

<style >
  .bg-skin {
    background: #0062cc;

  }


  .nav>li>a:hover, .nav>li>a:focus {
    text-decoration: none;
    background-color: #251f1f00;
    /* color: blue; */
}

.btn-skin {
  background-color: #0062cc;
    border-color: #0062cc;
}
.box h4 {
    font-size: 24px;
    color: white;
    font-family: 'IBM Plex Sans', sans-serif;
}
.service-desc h5 {
    margin-bottom: 10px;
     color: white;
    font-family: 'IBM Plex Sans', sans-serif;
}
.fa-stethoscope:before {
  color: white;
}
```

```
.fa-h-square:before {
   color: white;
}

.fa-wheelchair:before {
   color: white;
}

.fa-filter:before {
   color: white;
}

.fa-plus-square:before {
   color: white;
}

.fa-user-md:before {
   color: white;
   background: #00ffff2b;
}

.fa-check:before {
   background: #084dbe;
}

.fa-list-alt:before {
   background: #005cd0;
}

.fa-hospital-o:before {
   background: #0eacf0de
}

.fa-heartbeat:before {
   color: white;
}

footer .widget h5 {
   font-size: 20px;
   margin-bottom: 10px;
   text-transform: uppercase;
   color: white;
}

.intro-content {
   /*background: url(../img/dummy/bg1.jpg) no-repeat top center;*/
   background:-webkit-linear-gradient(left, #3931af, #00c6ff);
   padding: 200px 0 60px;
}


</style>
</head>


<body>

  <div class="container navigation" style="background: -webkit-linear-gradient(left, #3931af, #00c6ff);width: 98.85vw;height: 70px;padding-top: 10px;">

       <div class="navbar-header page-scroll">
         <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-main-collapse">
                <i class="fa fa-bars"></i>
            </button>
        <a class="navbar-brand js-scroll-trigger" href="index.php" style="margin-top: 0px;font-family: 'IBM Plex Sans', sans-serif;"><h5 style="color: white;"><i class="fa fa-user-plus" aria-hidden="true"></i>  GLOBAL HOSPITALS</h5></a>
```

```
      </div>

      <div class="collapse navbar-collapse navbar-right navbar-main-collapse">
        <ul class="nav navbar-nav">
          <li class="active" style="margin-right: 40px;font-family: 'IBM Plex Sans', sans-serif;"><a href="index.php" style="color: white">HOME</a></li>
          <li class="active" style="margin-right: 40px;font-family: 'IBM Plex Sans', sans-serif;"><a href="services.html" style="color: white">ABOUT US</a></li>
          <li><a href="contact.html" style="margin-right: 40px;font-family: 'IBM Plex Sans', sans-serif;color: white">CONTACT</a></li>
            </ul>
      </div>

    </div>


  <div id="wrapper">

<section id="intro" class="intro"  style="font-family: 'IBM Plex Sans', sans-serif;">
    <div class="intro-content" style="padding-top: 75px;">
      <div class="container">
        <div class="row">
          <div class="col-lg-6">
            <div class="wow fadeInDown" data-wow-offset="0" data-wow-delay="0.1s">
              <h2 style="font-family: 'IBM Plex Sans', sans-serif;color: white">GLOBAL HOSPITALS</h2>
            </div>
            <div class="wow fadeInUp" data-wow-offset="0" data-wow-delay="0.1s">
              <h4 class="h-light" style="font-family: 'IBM Plex Sans', sans-serif;color: #efe1e1">Provide best quality healthcare for you</h4>
            </div>
            <div class="well well-trans" style="background:#ffffff00;color: white">
              <div class="wow fadeInRight" data-wow-delay="0.1s">

                <ul class="lead-list">
                  <li><span class="fa fa-check-square-o fa-2x icon-success"></span> <span class="list"><strong>Affordable monthly premium packages</strong><br />Lorem ipsum dolor sit amet, in verterem persecuti vix, sit te meis</span></li>
                  <li><span class="fa fa-check-square-o fa-2x icon-success"></span> <span class="list"><strong>Choose your favourite services</strong><br />Lorem ipsum dolor sit amet, in verterem persecuti vix, sit te meis</span></li>
                  <li><span class="fa fa-check-square-o fa-2x icon-success"></span> <span class="list"><strong>Only use friendly environment</strong><br />Lorem ipsum dolor sit amet, in verterem persecuti vix, sit te meis</span></li>
                </ul>
                <p class="text-right wow bounceIn" data-wow-delay="0.4s">
                  <a href="#" class="btn btn-skin btn-lg" style="background:white;color:#006ccf">Learn more <i class="fa fa-angle-right"></i></a>
                </p>
              </div>
            </div>


          </div>
          <div class="col-lg-6">
            <div class="wow fadeInUp" data-wow-duration="2s" data-wow-delay="0.2s">
              <img src="img/dummy/img-1.png" class="img-responsive" alt="" />
            </div>
          </div>
        </div>
      </div>
    </div>
  </section>


   <section id="boxes" class="home-section paddingtop-80" style="background: -webkit-linear-gradient(left, #3931af, #00c6ff);color: white;font-family: 'IBM Plex Sans', sans-serif;">

    <div class="container">
      <div class="row">
```

```
        <div class="col-sm-3 col-md-3">
          <div class="wow fadeInUp" data-wow-delay="0.3s">
            <div class="box text-center">

              <i class="fa fa-check fa-3x bg-skin"></i>
              <h4>Make an appoinment</h4>
              <p>
                Lorem ipsum dolor sit amet, nec te mollis utroque honestatis, ut utamur molestiae vix, graecis eligendi ne.
              </p>
            </div>
          </div>
        </div>
        <div class="col-sm-3 col-md-3">
          <div class="wow fadeInUp" data-wow-delay="0.5s">
            <div class="box text-center">

              <i class="fa fa-list-alt fa-3x bg-skin"></i>
              <h4>Choose your package</h4>
              <p>
                Lorem ipsum dolor sit amet, nec te mollis utroque honestatis, ut utamur molestiae vix, graecis eligendi ne.
              </p>
            </div>
          </div>
        </div>
        <div class="col-sm-3 col-md-3">
          <div class="wow fadeInUp" data-wow-delay="0.7s">
            <div class="box text-center">
              <i class="fa fa-user-md fa-3x bg-skin"></i>
              <h4>Help by specialist</h4>
              <p>
                Lorem ipsum dolor sit amet, nec te mollis utroque honestatis, ut utamur molestiae vix, graecis eligendi ne.
              </p>
            </div>
          </div>
        </div>
        <div class="col-sm-3 col-md-3">

          <div class="wow fadeInUp" data-wow-delay="0.9s">
            <div class="box text-center">

              <i class="fa fa-hospital-o fa-3x bg-skin"></i>
              <h4>Get diagnostic report</h4>
              <p>
                Lorem ipsum dolor sit amet, nec te mollis utroque honestatis, ut utamur molestiae vix, graecis eligendi ne.
              </p>
            </div>
          </div>
        </div>
      </div>
    </div>

  </section>


  <section id="service" class="home-section nopadding paddingtop-60" style="background: -webkit-linear-gradient(left, #3931af, #00c6ff);color: white" style="height: 80%;" >
  <div class="container">

      <div class="row">
        <div class="col-sm-6 col-md-6">
          <div class="wow fadeInLeft" data-wow-delay="0.2s">
            <img src="img/dummy/img-6.png" class="img-responsive" alt="" />
          </div>
        </div>
        <div class="col-sm-3 col-md-3">
```

```
 <div class="wow fadeInRight" data-wow-delay="0.1s">
  <div class="service-box">
   <div class="service-icon">
    <span class="fa fa-stethoscope fa-3x" style="color:#0062cc"></span>
   </div>
   <div class="service-desc">
    <h5 class="h-light">Medical checkup</h5>
    <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
   </div>
  </div>
 </div>

 <div class="wow fadeInRight" data-wow-delay="0.2s">
  <div class="service-box">
   <div class="service-icon">
    <span class="fa fa-wheelchair fa-3x" style="color:#0062cc"></span>
   </div>
   <div class="service-desc">
    <h5 class="h-light">Nursing Services</h5>
    <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
   </div>
  </div>
 </div>
 <div class="wow fadeInRight" data-wow-delay="0.3s">
  <div class="service-box">
   <div class="service-icon">
    <span class="fa fa-plus-square fa-3x" style="color:#0062cc"></span>
   </div>
   <div class="service-desc">
    <h5 class="h-light">Pharmacy</h5>
    <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
   </div>
  </div>
 </div>


</div>
<div class="col-sm-3 col-md-3">

 <div class="wow fadeInRight" data-wow-delay="0.1s">
  <div class="service-box">
   <div class="service-icon">
    <span class="fa fa-h-square fa-3x" style="color:#0062cc"></span>
   </div>
   <div class="service-desc">
    <h5 class="h-light">Gyn Care</h5>
    <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
   </div>
  </div>
 </div>

 <div class="wow fadeInRight" data-wow-delay="0.2s">
  <div class="service-box">
   <div class="service-icon">
    <span class="fa fa-filter fa-3x" style="color:#0062cc"></span>
   </div>
   <div class="service-desc">
    <h5 class="h-light">Neurology</h5>
    <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
   </div>
  </div>
 </div>
 <div class="wow fadeInRight" data-wow-delay="0.3s">

  <div class="service-box">
   <div class="service-icon">
```

```
            <span class="fa fa-heartbeat fa-3x"></span>
          </div>
          <div class="service-desc">
            <h5 class="h-light">Sleep Center</h5>
            <p>Vestibulum tincidunt enim in pharetra malesuada.</p>
          </div>
        </div>
      </div>

    </div>

  </div>
 </div>
</section>

<footer style="background: -webkit-linear-gradient(left, #3931af, #00c6ff);color: #e4d6d6">

 <div class="container">
  <div class="row">
   <div class="col-sm-6 col-md-4">
    <div class="wow fadeInDown" data-wow-delay="0.1s">
     <div class="widget">
      <h5>About Global Hospitals</h5>
      <p>
       Lorem ipsum dolor sit amet, ne nam purto nihil impetus, an facilisi accommodare sea
      </p>
     </div>
    </div>
    <div class="wow fadeInDown" data-wow-delay="0.1s">
     <div class="widget">
      <h5>Information</h5>
      <ul >
       <li><a style="color: #e4d6d6" href="#">Home</a></li>
       <li><a style="color: #e4d6d6" href="#">Laboratory</a></li>
       <li><a style="color: #e4d6d6"href="#">Medical treatment</a></li>
       <li><a style="color: #e4d6d6" href="#">Terms & conditions</a></li>
      </ul>
     </div>
    </div>
   </div>
   <div class="col-sm-6 col-md-4">
    <div class="wow fadeInDown" data-wow-delay="0.1s">
     <div class="widget">
      <h5>Global Hospitals</h5>
      <p>
       Nam leo lorem, tincidunt id risus ut, ornare tincidunt naqunc sit amet.
      </p>
      <ul>
       <li>
        <span class="fa-stack fa-lg">
       <i class="fa fa-calendar-o fa-stack-1x fa-inverse"></i>
      </span> Monday - Saturday, 8am to 10pm
       </li>
       <li>
        <span class="fa-stack fa-lg">
       <i class="fa fa-phone fa-stack-1x fa-inverse"></i>
      </span> +62 0888 904 711
       </li>
       <li>
        <span class="fa-stack fa-lg">
       <i class="fa fa-envelope-o fa-stack-1x fa-inverse"></i>
      </span> global@hospitals.com
       </li>

      </ul>
     </div>
```

```
          </div>
        </div>
        <div class="col-sm-6 col-md-4">
          <div class="wow fadeInDown" data-wow-delay="0.1s">
            <div class="widget">
              <h5>Our location</h5>
              <p>The Suithouse V303, Kuningan City, Jakarta Indonesia 12940</p>

            </div>
          </div>
          <div class="wow fadeInDown" data-wow-delay="0.1s">
            <div class="widget">
              <h5>Follow us</h5>
              <ul class="company-social">
                <li class="social-facebook"><a href="#"><i class="fa fa-facebook"></i></a></li>
                <li class="social-twitter"><a href="#"><i class="fa fa-twitter"></i></a></li>
                <li class="social-google"><a href="#"><i class="fa fa-google-plus"></i></a></li>
                <li class="social-vimeo"><a href="#"><i class="fa fa-vimeo-square"></i></a></li>
                <li class="social-dribble"><a href="#"><i class="fa fa-dribbble"></i></a></li>
              </ul>
            </div>
          </div>
        </div>
      </div>
    </div>

  </footer>


 </div>


 <!-- Core JavaScript Files -->
 <script src="js/jquery.min.js"></script>
 <script src="js/bootstrap.min.js"></script>
 <script src="js/jquery.easing.min.js"></script>
 <script src="js/wow.min.js"></script>
 <script src="js/jquery.scrollTo.js"></script>
 <script src="js/jquery.appear.js"></script>
 <script src="js/stellar.js"></script>
 <script src="plugins/cubeportfolio/js/jquery.cubeportfolio.min.js"></script>
 <script src="js/owl.carousel.min.js"></script>
 <script src="js/nivo-lightbox.min.js"></script>
 <script src="js/custom.js"></script>
</body>
</html>
```

5.1.2 CSS

```
body {
   background: -webkit-linear-gradient(left, #3931af, #00c6ff);
   background-size: cover;
}

.register{

   margin-top: 3%;
   padding: 3%;
}
.register-left{
   text-align: center;
   color: #fff;
   margin-top: 4%;
}
.register-left input{
```

```
    border: none;
    border-radius: 1.5rem;
    padding: 2%;
    width: 60%;
    background: #f8f9fa;
    font-weight: bold;
    color: #383d41;
    margin-top: 30%;
    margin-bottom: 3%;
    cursor: pointer;
}
.register-right{
    background: #f8f9fa;
    border-top-left-radius: 10% 50%;
    border-bottom-left-radius: 10% 50%;
}
.register-left img{
    margin-top: 15%;
    margin-bottom: 5%;
    width: 25%;
    -webkit-animation: mover 2s infinite  alternate;
    animation: mover 1s infinite  alternate;
}
@-webkit-keyframes mover {
    0% { transform: translateY(0); }
    100% { transform: translateY(-20px); }
}
@keyframes mover {
    0% { transform: translateY(0); }
    100% { transform: translateY(-20px); }
}
.register-left p{
    font-weight: lighter;
    padding: 12%;
    margin-top: -9%;
}
.register .register-form{
    padding: 10%;
    margin-top: 10%;
}
.btnRegister{
    float: right;
    margin-top: 10%;
    border: none;
    border-radius: 1.5rem;
    padding: 2%;
    background: #0062cc;
    color: #fff;
    font-weight: 600;
    width: 50%;
    cursor: pointer;
}
.register .nav-tabs{
    margin-top: 3%;
    border: none;
    background: #0062cc;
    border-radius: 1.5rem;
    width: 28%;
    float: right;
}
```

```
.register .nav-tabs .nav-link{
    padding: 1%;
    height: 34px;
    font-weight: 600;
    color: #fff;
    border-top-right-radius: 1.5rem;
    border-bottom-right-radius: 1.5rem;
}
.register .nav-tabs .nav-link:hover{
    border: none;
}
.register .nav-tabs .nav-link.active{
    width: 120px;
    color: #0062cc;
    border: 2px solid #0062cc;
    border-top-left-radius: 1.5rem;
    border-bottom-left-radius: 1.5rem;
}
.register-heading{
    text-align: center;
    margin-top: 8%;
    margin-bottom: -15%;
    color: #495057;
}
```

5.1.3 PATIENT MODULE

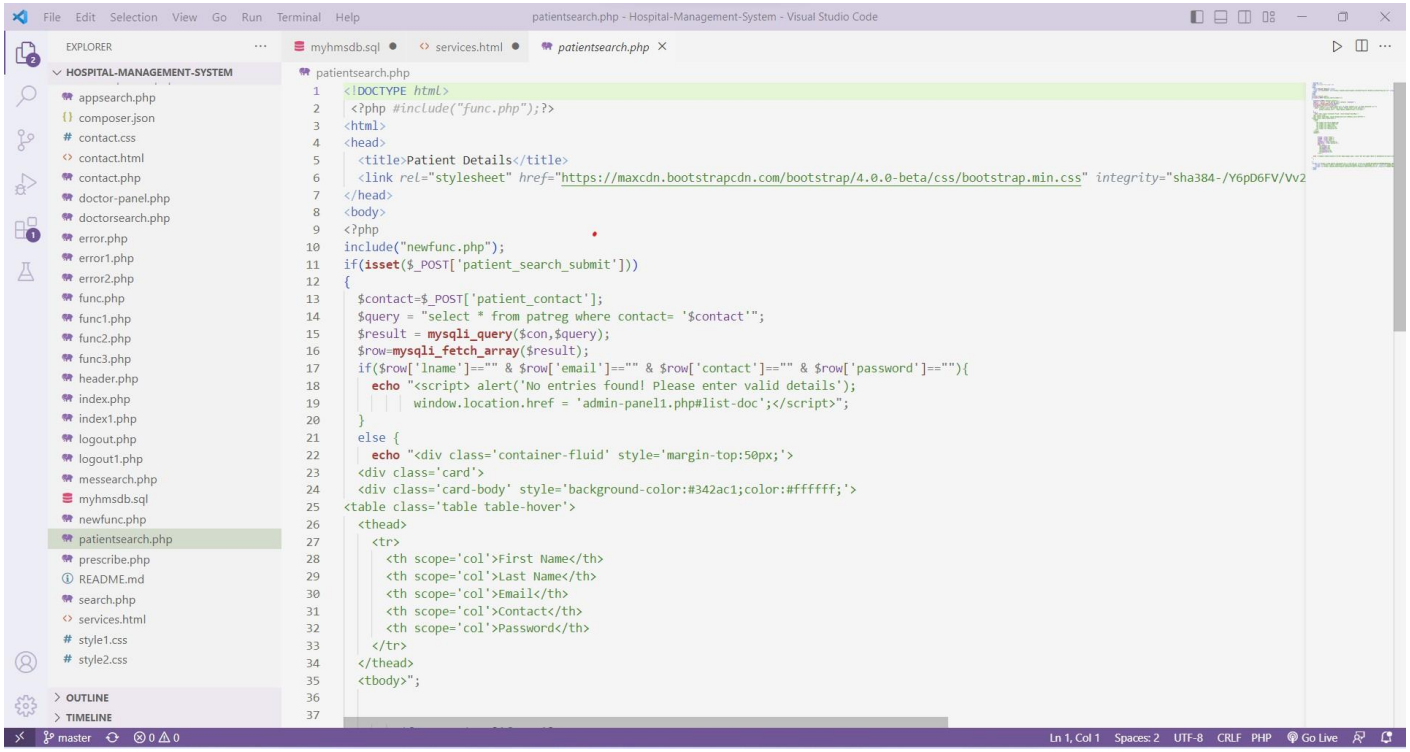

Fig.5.1

5.1.4.DOCTOR MODULE

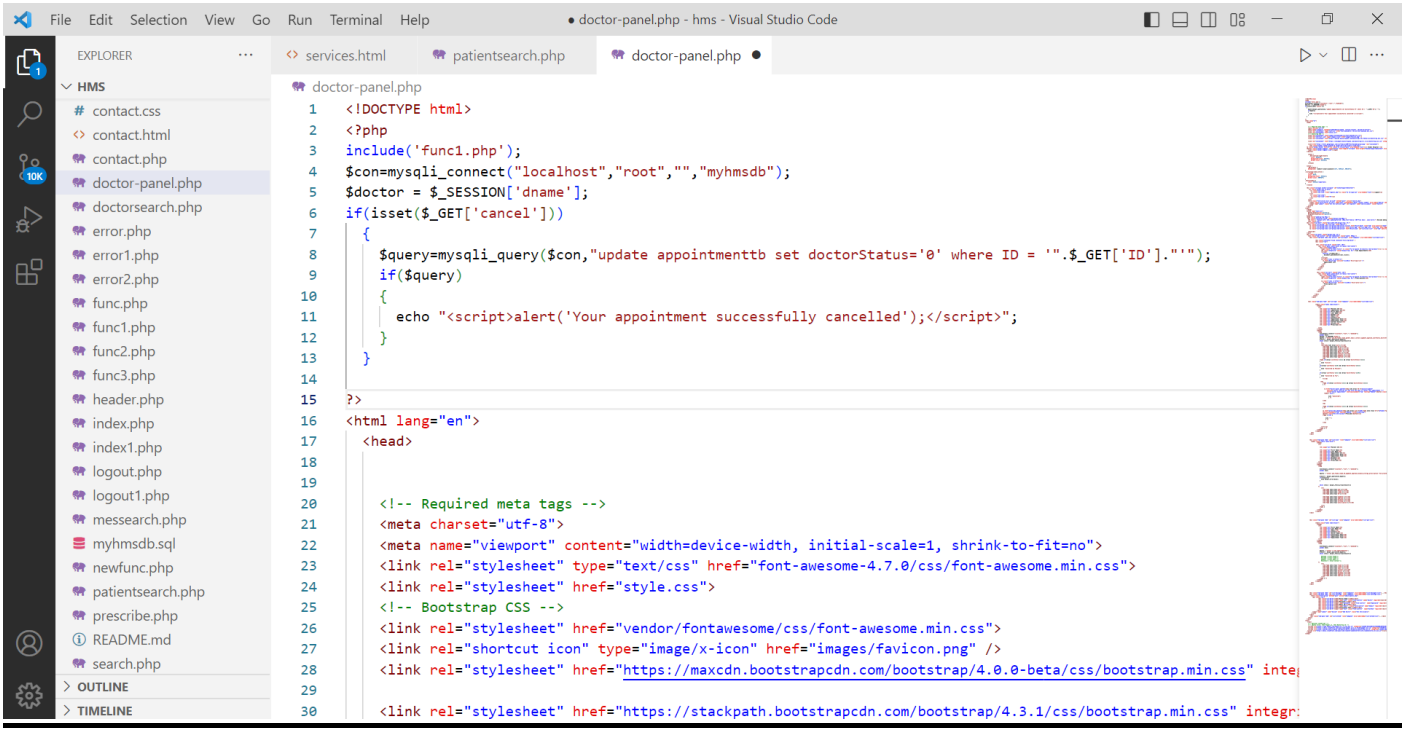

Fig.5.2

5.1.5.DATABASE MODULE

```
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";
CREATE TABLE `admintb` (
  `username` varchar(50) NOT NULL,
  `password` varchar(30) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `admintb` (`username`, `password`) VALUES
('admin', 'admin123');
CREATE TABLE `appointmenttb` (
  `pid` int(11) NOT NULL,
  `ID` int(11) NOT NULL,
  `fname` varchar(20) NOT NULL,
  `lname` varchar(20) NOT NULL,
  `gender` varchar(10) NOT NULL,
  `email` varchar(30) NOT NULL,
  `contact` varchar(10) NOT NULL,
  `doctor` varchar(30) NOT NULL,
  `docFees` int(5) NOT NULL,
  `appdate` date NOT NULL,
  `apptime` time NOT NULL,
  `userStatus` int(5) NOT NULL,
  `doctorStatus` int(5) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
INSERT INTO `appointmenttb` (`pid`, `ID`, `fname`, `lname`, `gender`, `email`, `contact`, `doctor`, `docFees`, `appdate`, `apptime`,
`userStatus`, `doctorStatus`) VALUES
(4, 1, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Ganesh', 550, '2020-02-14', '10:00:00', 1, 0),
(4, 2, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Dinesh', 700, '2020-02-28', '10:00:00', 0, 1),
(4, 3, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Amit', 1000, '2020-02-19', '03:00:00', 0, 1),
(11, 4, 'Shraddha', 'Kapoor', 'Female', 'shraddha@gmail.com', '9768946252', 'ashok', 500, '2020-02-29', '20:00:00', 1, 1),
(4, 5, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Dinesh', 700, '2020-02-28', '12:00:00', 1, 1),
(4, 6, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Ganesh', 550, '2020-02-26', '15:00:00', 0, 1),
(2, 8, 'Alia', 'Bhatt', 'Female', 'alia@gmail.com', '8976897689', 'Ganesh', 550, '2020-03-21', '10:00:00', 1, 1),
(5, 9, 'Gautam', 'Shankararam', 'Male', 'gautam@gmail.com', '9070897653', 'Ganesh', 550, '2020-03-19', '20:00:00', 1, 0),
(4, 10, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Ganesh', 550, '0000-00-00', '14:00:00', 1, 0),
```

```
(4, 11, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'Dinesh', 700, '2020-03-27', '15:00:00', 1, 1),
(9, 12, 'William', 'Blake', 'Male', 'william@gmail.com', '8683619153', 'Kumar', 800, '2020-03-26', '12:00:00', 1, 1),
(9, 13, 'William', 'Blake', 'Male', 'william@gmail.com', '8683619153', 'Tiwary', 450, '2020-03-26', '14:00:00', 1, 1);
CREATE TABLE `contact` (
  `name` varchar(30) NOT NULL,
  `email` text NOT NULL,
  `contact` varchar(10) NOT NULL,
  `message` varchar(200) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `contact` (`name`, `email`, `contact`, `message`) VALUES
('Anu', 'anu@gmail.com', '7896677554', 'Hey Admin'),
(' Viki', 'viki@gmail.com', '9899778865', 'Good Job, Pal'),
('Ananya', 'ananya@gmail.com', '9997888879', 'How can I reach you?'),
('Aakash', 'aakash@gmail.com', '8788979967', 'Love your site'),
('Mani', 'mani@gmail.com', '8977768978', 'Want some coffee?'),
('Karthick', 'karthi@gmail.com', '9898989898', 'Good service'),
('Abbis', 'abbis@gmail.com', '8979776868', 'Love your service'),
('Asiq', 'asiq@gmail.com', '9087897564', 'Love your service. Thank you!'),
('Jane', 'jane@gmail.com', '7869869757', 'I love your service!');

CREATE TABLE `doctb` (
  `username` varchar(50) NOT NULL,
  `password` varchar(50) NOT NULL,
  `email` varchar(50) NOT NULL,
  `spec` varchar(50) NOT NULL,
  `docFees` int(10) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `doctb` (`username`, `password`, `email`, `spec`, `docFees`) VALUES
('ashok', 'ashok123', 'ashok@gmail.com', 'General', 500),
('arun', 'arun123', 'arun@gmail.com', 'Cardiologist', 600),
('Dinesh', 'dinesh123', 'dinesh@gmail.com', 'General', 700),
('Ganesh', 'ganesh123', 'ganesh@gmail.com', 'Pediatrician', 550),
('Kumar', 'kumar123', 'kumar@gmail.com', 'Pediatrician', 800),
('Amit', 'amit123', 'amit@gmail.com', 'Cardiologist', 1000),
('Abbis', 'abbis123', 'abbis@gmail.com', 'Neurologist', 1500),
('Tiwary', 'tiwary123', 'tiwary@gmail.com', 'Pediatrician', 450);

CREATE TABLE `patreg` (
  `pid` int(11) NOT NULL,
  `fname` varchar(20) NOT NULL,
  `lname` varchar(20) NOT NULL,
  `gender` varchar(10) NOT NULL,
  `email` varchar(30) NOT NULL,
  `contact` varchar(10) NOT NULL,
  `password` varchar(30) NOT NULL,
  `cpassword` varchar(30) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `patreg` (`pid`, `fname`, `lname`, `gender`, `email`, `contact`, `password`, `cpassword`) VALUES
(1, 'Ram', 'Kumar', 'Male', 'ram@gmail.com', '9876543210', 'ram123', 'ram123'),
(2, 'Alia', 'Bhatt', 'Female', 'alia@gmail.com', '8976897689', 'alia123', 'alia123'),
(3, 'Shahrukh', 'khan', 'Male', 'shahrukh@gmail.com', '8976898463', 'shahrukh123', 'shahrukh123'),
(4, 'Kishan', 'Lal', 'Male', 'kishansmart0@gmail.com', '8838489464', 'kishan123', 'kishan123'),
(5, 'Gautam', 'Shankararam', 'Male', 'gautam@gmail.com', '9070897653', 'gautam123', 'gautam123'),
(6, 'Sushant', 'Singh', 'Male', 'sushant@gmail.com', '9059986865', 'sushant123', 'sushant123'),
(7, 'Nancy', 'Deborah', 'Female', 'nancy@gmail.com', '9128972454', 'nancy123', 'nancy123'),
(8, 'Kenny', 'Sebastian', 'Male', 'kenny@gmail.com', '9809879868', 'kenny123', 'kenny123'),
(9, 'William', 'Blake', 'Male', 'william@gmail.com', '8683619153', 'william123', 'william123'),
(10, 'Peter', 'Norvig', 'Male', 'peter@gmail.com', '9609362815', 'peter123', 'peter123'),
(11, 'Shraddha', 'Kapoor', 'Female', 'shraddha@gmail.com', '9768946252', 'shraddha123', 'shraddha123');

CREATE TABLE `prestb` (
  `doctor` varchar(50) NOT NULL,
  `pid` int(11) NOT NULL,
```

```
  `ID` int(11) NOT NULL,
  `fname` varchar(50) NOT NULL,
  `lname` varchar(50) NOT NULL,
  `appdate` date NOT NULL,
  `apptime` time NOT NULL,
  `disease` varchar(250) NOT NULL,
  `allergy` varchar(250) NOT NULL,
  `prescription` varchar(1000) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `prestb` (`doctor`, `pid`, `ID`, `fname`, `lname`, `appdate`, `apptime`, `disease`, `allergy`, `prescription`) VALUES
('Dinesh', 4, 11, 'Kishan', 'Lal', '2020-03-27', '15:00:00', 'Cough', 'Nothing', 'Just take a teaspoon of Benadryl every night'),
('Ganesh', 2, 8, 'Alia', 'Bhatt', '2020-03-21', '10:00:00', 'Severe Fever', 'Nothing', 'Take bed rest'),
('Kumar', 9, 12, 'William', 'Blake', '2020-03-26', '12:00:00', 'Sever fever', 'nothing', 'Paracetamol -> 1 every morning and night'),
('Tiwary', 9, 13, 'William', 'Blake', '2020-03-26', '14:00:00', 'Cough', 'Skin dryness', 'Intake fruits with more water content');

ALTER TABLE `patreg`
  ADD PRIMARY KEY (`pid`);

ALTER TABLE `appointmenttb`
  MODIFY `ID` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=14;
ALTER TABLE `patreg`
  MODIFY `pid` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=12;
COMMIT;
```

5.2 TESTING

UNIT TESTING: Unit testing performed on each module or block of code during development. Unit testing is normally done by the programmer who writes the code.

INTEGRATION TESTING: Integration testing done before, during and after integration of a new module into the main software package. This involves testing of each individual code module. One piece of software can contain several modules which are often created by several different programmers. It 1s crucial to test each module's effect on the entire program model. After integration testing the project works successfully.

SYSTEM TESTING: System testing done by a professional testing agent on the completed software product before it is introduced to the market.

ACCEPTANCE TESTING: Acceptance testing is a beta testing of the product done by the actual end user.

SECURITY TESTING: Security Testing is a variant of Software Testing which ensures that systems and applications in an organisation are free from any loopholes that may cause a big loss. Security testing of any system is about finding all possible loopholes and weaknesses of the system which might result in a loss of information at the hands of the employees or outsiders of the Organization .

FUNCTIONAL TESTING: Functional Testing also known as functional completeness testing. Functional Testing involves trying to think of any possible missing functions. Testers might make a list of additional functionalities that a product could to improve it during functional testing.

RECOVERY TESTING: Recovery testing is done to demonstrate a software salutation is reliable, trustworthy and can successfully recoup from possible crashes.

HARDWARE/SOFTWARE TESTING: BM refers to Hardware/Software testing as “HW/SW Testing”. This is when the tester focuses his/her attention on the interactions between the hardware and software during system testing.

CHAPTER 6

RESULTS AND DISCUSSION

SAMPLE OUTPUT

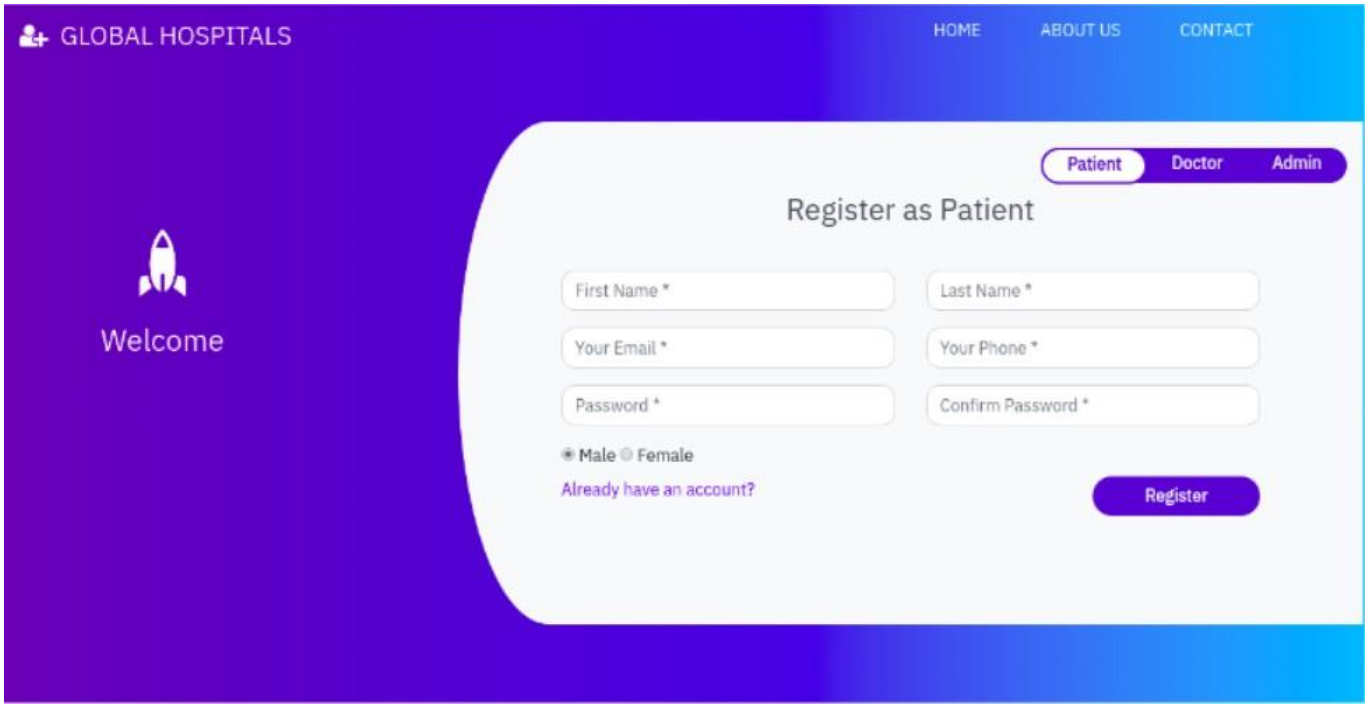

Fig.6.1

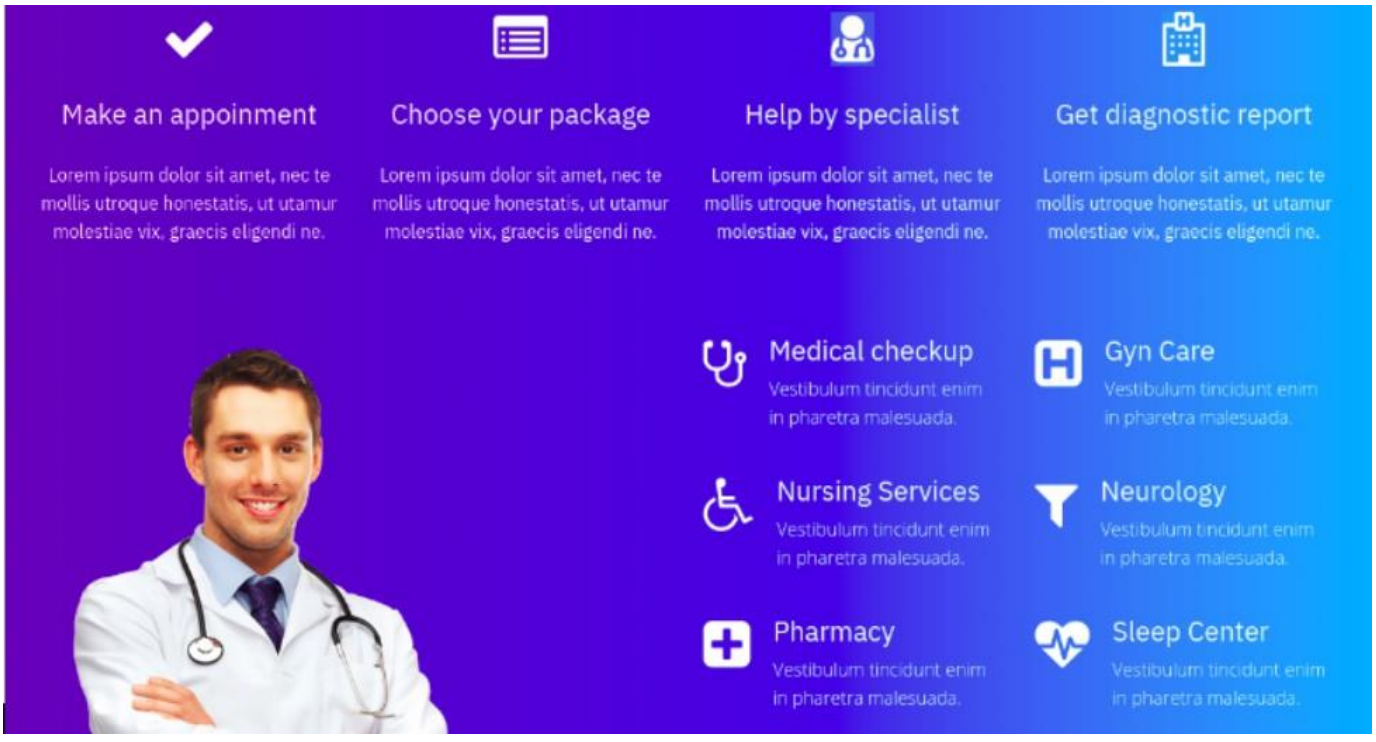

Fig.6.2

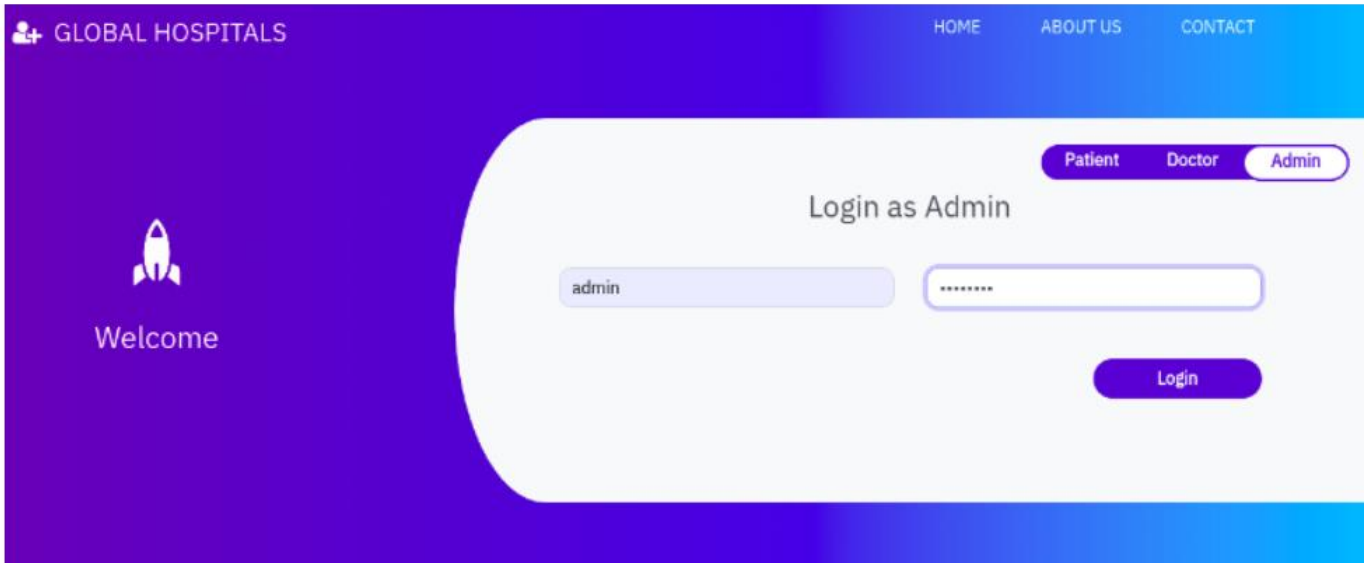
GLOBAL HOSPITALS
HOME
ABOUT US
CONTACT
Patient
Doctor
Admin
Login as Admin
admin
Welcome
Login

Fig.6.3

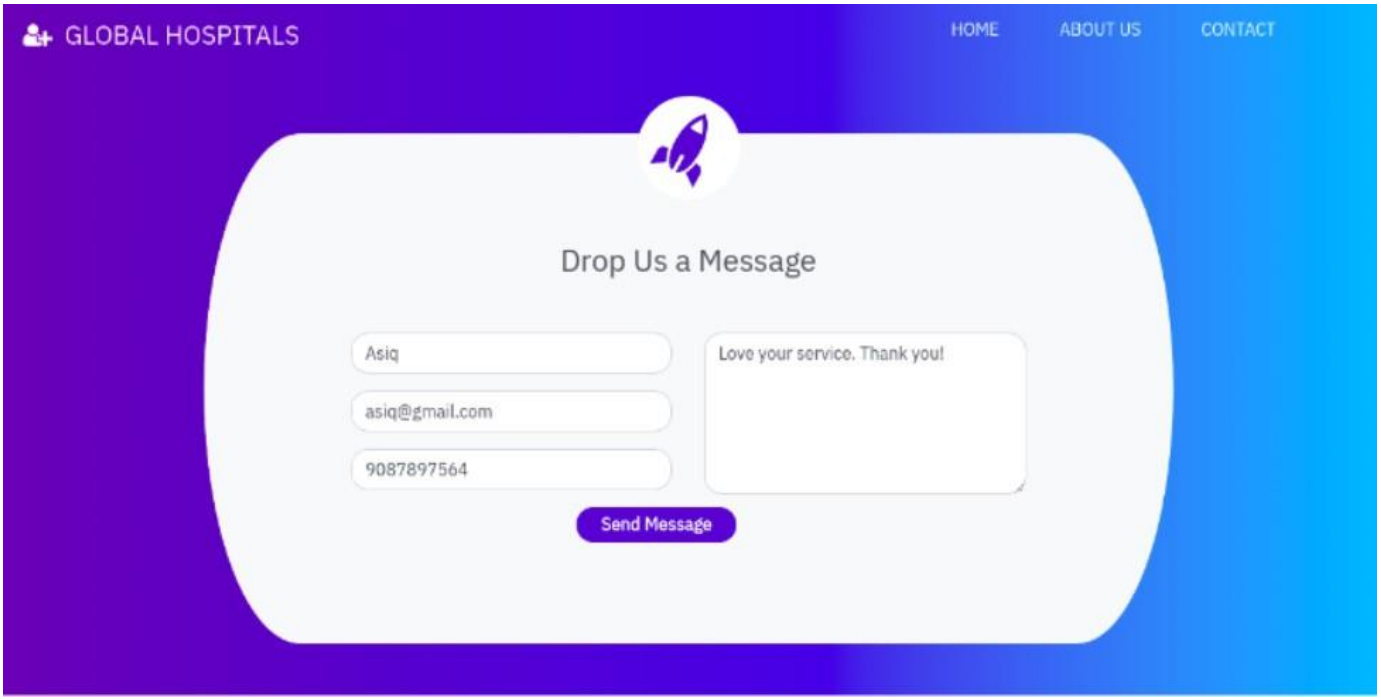
GLOBAL HOSPITALS
HOME
ABOUT US
CONTACT
Drop Us a Message
Asiq
asiq@gmail.com
9087897564
Love your service. Thank you!
Send Message

Fig.6.4

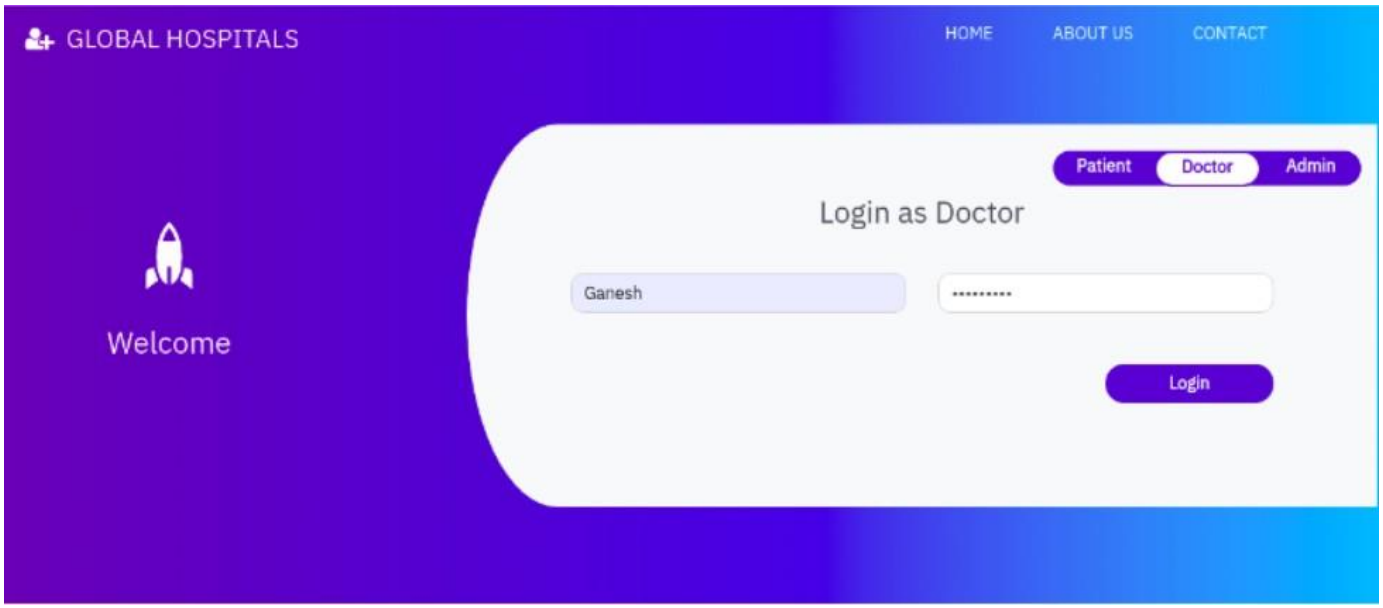
GLOBAL HOSPITALS
HOME
ABOUT US
CONTACT
Welcome
Patient
Doctor
Admin
Login as Doctor
Ganesh
Login

Fig.6.5

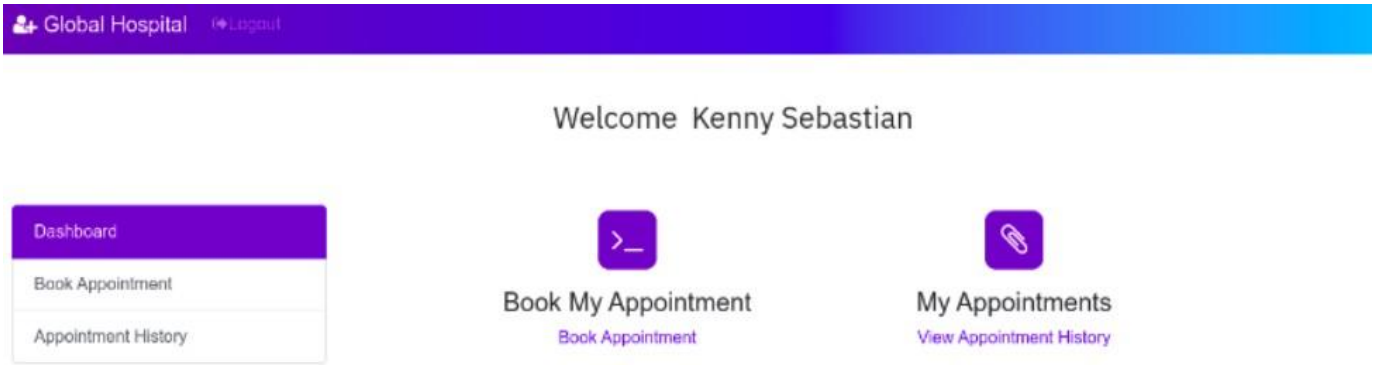
Global Hospital
Logout
Welcome Kenny Sebastian
Dashboard
Book Appointment
Appointment History
Book My Appointment
Book Appointment
My Appointments
View Appointment History

Fig.6.6

CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENTS

7.1 FUTURE ENHANCEMENTS

1. Ability to accept the appointment by the doctor to acknowledge the patient that their appointment has been approved.

2. Users should not be allowed to register if he/she tries to provide the already registered email ID.

3. The password should be encrypted and the password field shouldn't be displayed in the admin panel.

4. Implementation of pagination for all the list views across the application.

5. Bug fix - Bill payment receipt contains multiple records if the patient has associated with the same doctor multiple times.

6. Addition of more fields in the prescription statement to make it a more specific one.

7. Addition of more details on payment - such as date of the payment made, amount paid, etc.

8.. Implementation of export button in admin module to export all details to an excel sheet.

7.2 CONCLUSION

In conclusion, a Hospital Management System using HTML5/CSS3, JavaScript, Bootstrap, XAMPP, PHP, MySQL, and TCPDF can provide a robust and efficient solution for managing various operations in a hospital setting. The system can be used to store and manage patient data, appointment scheduling, inventory management, billing and payment processing, and generate various reports.The use of HTML5/CSS3 and Bootstrap can create an intuitive and user-friendly interface for easy navigation and data visualisation. The dynamic updating feature provided by JavaScript can ensure real-time updates and notifications to users.XAMPP, PHP, and MySQL offer a reliable and secure platform for database connectivity and manipulation, while TCPDF can be used to generate PDF reports for various operations.

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