A Course Project Report

On

HOSPITAL MANAGEMENT SYSTEM

MINI PROJECT

CLASS: B.E CSE (AI&ML) SEM: IV

UNDER GUIDANCE OF

Dr. PARSI KALPANA

ASSOCIATE PROFESSOR

By

SPOORTHI VADLAKONDA 1602-21-748-052

VAMSI KRISHNA DESINEEDI 1602-21-748-059

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

IBRAHIMBAGH, HYDERABAD-31

TELANGANA

2022-23

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO OSMANIA UNIVERSITY)

HYDERABAD-500 031

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION BY THE CANDIDATE

I, SPOORTHI VADLAKONDA bearing hall ticket number 1602-21-748-052 and I, VAMSI KRISHNA DESINEEDI bearing hall ticket number 1602-21-748-059, hereby declare that the project report entitled HOSPITAL MANAGEMENT SYSTEM, Department of Computer Science & Engineering, VCE, Hyderabad, is submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Engineering in Computer Science & Engineering. This is a record of bonafide work carried out by me and the results embodied in this project report have not been submitted to any other university or institute for the award of any other degree or diploma.

SPOORTHI VADLAKONDA

1602-21-748-052

VAMSI KRISHNA DESINEEDI

1602-21-748-059

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO OSMANIA UNIVERSITY)

HYDERABAD-500 031

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

BONAFIDE CERTIFICATE

This is to certify that the project entitled **HOSPITAL MANAGEMENT SYSTEM** being submitted by **SPOORTHI VADALAKONDA** bearing 1602-21-748-052 and **VAMSI KRISHNA DESINEEDI** bearing 1602-21-748-059, in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Computer Science & Engineering is a record of bonafide work carried out by him/her under my guidance.

INTERNAL GUIDE	HEAD OF THE DEPARTMENT
Dr. Parsi Kalpana	Dr T. Adilakshmi
Associate Professor	Professor & HOD of CSE

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompanies the successful completion of any task would be incomplete without the mention of the people made it possible and whose encouragement and guidance have made our efforts withsuccess.

We are indebted to the Internal Guide, Dr. Parsi Kalpana, Associate professor, Computer Science & Engineering, VASAVI COLLEGE OF ENGINEERING, Ibrahim bagh, hyd-31 for her support and guidance throughout the project.

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We extend our deep sense of gratitude to the Principal, S.V. Ramana Rao, VASAVI COLLEGE OF ENGINEERING, Ibrahim bagh, hyd-31 permitting us to undertake this project.

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Abstract

The Hospital Management System (HMS) is an advanced software solution designed to enhance the efficiency and effectiveness of hospital operations, improve patient care, and optimize administrative processes. This abstract provides an overview of the key functionalities and benefits of the HMS code, highlighting its potential to revolutionize the management of healthcare facilities.

The HMS code encompasses a comprehensive suite of modules that address various aspects of hospital management, including patient registration, appointment scheduling, electronic health records (EHR), inventory and pharmacy management, billing and invoicing, and reporting. By leveraging this system, hospitals can streamline their workflows, reduce paperwork, eliminate manual errors, and enhance overall productivity.

One of the primary features of the HMS is the patient registration module, which enables seamless and accurate registration of new patients, capturing essential personal and medical information. The appointment scheduling module facilitates the efficient booking and management of patient appointments, minimizing waiting times and optimizing resource allocation.

The EHR module allows healthcare providers to maintain digital records of patient medical histories, diagnoses, prescriptions, and treatment plans. This promotes secure and centralized access to patient information, facilitating collaborative care, and ensuring continuity of treatment across different departments or healthcare professionals.

Efficient management of hospital resources, such as inventory and pharmacy, is crucial for smooth operations. The HMS code includes modules to track inventory levels, automate reordering processes, manage medicine dispensing, and monitor stock

availability. This helps minimize stockouts, reduce wastage, and ensure timely availability of medications and supplies.

The billing and invoicing module simplifies the financial management of the hospital by automating billing processes, generating accurate invoices, and integrating with payment gateways for seamless online transactions. Additionally, the reporting module provides comprehensive analytics and insights into key performance indicators, enabling data-driven decision-making and performance monitoring.

In conclusion, the Hospital Management System code offers a robust and integrated solution to enhance the efficiency and effectiveness of hospital operations. By implementing this system, healthcare facilities can streamline administrative processes, improve patient care, optimize resource utilization, and achieve better overall outcomes. The HMS code represents a significant advancement in hospital management and has the potential to revolutionize healthcare delivery systems worldwide.

1. Introduction:

1.1. Purpose:

The purpose of a Hospital Management System (HMS) is to streamline and automate the administrative and operational tasks of a hospital or healthcare facility. The system aims to improve the overall efficiency, effectiveness, and quality of healthcare services by integrating and centralizing various processes and information within the organization.

1.2. Scope:

The scope of a Hospital Management System (HMS) is wide-ranging, encompassing various areas and functionalities within a hospital or healthcare facility. The specific scope may vary depending on the requirements and needs of each organization, but generally, the HMS addresses the following areas:

1. Patient Management: The HMS includes modules for patient registration, appointment scheduling, electronic health records (EHR), medical history management, diagnosis and treatment planning, and patient tracking. It provides a centralized system for managing patient information and ensuring seamless coordination of care across different departments and healthcare professionals.

2. Administrative Functions: The HMS streamlines administrative tasks such as staff management, scheduling, and shift assignments. It includes features for managing employee information, attendance, payroll, and performance evaluation. The system may also facilitate communication and collaboration among staff members.

3. Clinical Operations: The HMS supports clinical workflows by providing functionalities for order entry, medication management, laboratory and diagnostic test tracking, and result

management. It assists in maintaining accurate and up-to-date clinical data, improving communication among healthcare providers, and enhancing patient safety.

4. Billing and Finance: The HMS incorporates billing and invoicing modules to handle patient billing, insurance claims processing, and financial transactions. It integrates with accounting systems and may include features for generating invoices, managing payments, tracking revenue, and providing financial reports.

5. Inventory and Pharmacy Management: The HMS includes modules for managing hospital inventory, tracking medical supplies, and optimizing stock levels. It enables efficient procurement, automates reordering processes, and ensures the availability of essential medications and supplies. Pharmacy management features may include medication dispensing, prescription tracking, and drug interaction checks.

6. Reporting and Analytics: The HMS generates comprehensive reports and provides analytics on various aspects of hospital operations, including patient demographics, clinical outcomes, resource utilization, financial performance, and compliance. It enables data-driven decision-making, performance monitoring, and quality improvement initiatives.

7. Security and Compliance: The HMS ensures the security and confidentiality of patient information by implementing appropriate access controls, data encryption, and user authentication mechanisms. It supports compliance with regulatory requirements, such as data privacy regulations (e.g., HIPAA), insurance standards, and industry guidelines.

It's important to note that the scope of an HMS can be expanded or customized based on specific organizational needs. Some hospitals may integrate additional modules or interfaces to support specialized departments, such as radiology, pathology, or surgery. The scalability and flexibility of the HMS allow for adaptations and enhancements to meet the evolving needs of the healthcare facility.

Overall, the scope of a Hospital Management System is comprehensive, covering a wide range

of administrative, clinical, and financial functions to streamline operations, improve patient care, optimize resource utilization, ensure compliance, and facilitate data-driven decision-making.

1.3. Overview:

An overview of a Hospital Management System (HMS) provides a high-level understanding of its features, functionalities, and benefits. Here is a general overview of an HMS:

1. Patient Registration and Management: The HMS allows hospitals to efficiently manage patient registrations, capturing essential personal and medical information. It facilitates the creation of unique patient identifiers and maintains a centralized database of patient records for easy access and retrieval.

2. Appointment Scheduling: The system enables seamless scheduling of patient appointments, optimizing resource allocation and reducing waiting times. It provides real-time availability of healthcare providers, facilities, and equipment, ensuring efficient utilization and improved patient experience.

3. Electronic Health Records (EHR): The HMS includes a module for electronic health records, enabling digital storage, retrieval, and management of patient medical information. It encompasses medical histories, diagnoses, treatment plans, medications, allergies, and other relevant data, ensuring comprehensive and accurate documentation.

4. Clinical Workflows and Decision Support: The HMS supports clinical workflows by providing features for order entry, medication management, laboratory test tracking, and decision support tools. It helps healthcare providers in making informed decisions based on evidence-based guidelines and best practices.

5. Billing and Invoicing: The HMS automates billing processes, generating accurate invoices for patient services, procedures, and treatments. It integrates with insurance systems, facilitates claims processing, and supports various payment methods, streamlining financial transactions

and ensuring timely reimbursement.

6. Inventory and Pharmacy Management: The system assists in managing hospital inventory, tracking medical supplies, and optimizing stock levels. It automates inventory control, alerts for stock replenishment, and tracks medication usage, reducing waste and ensuring timely availability of essential supplies.

7. Reporting and Analytics: The HMS provides comprehensive reporting and analytics capabilities, offering insights into key performance indicators, resource utilization, financial data, and clinical outcomes. It generates customizable reports and dashboards to facilitate data-driven decision-making and performance monitoring.

8. Security and Compliance: The HMS prioritizes data security and patient privacy by implementing access controls, encryption, and audit trails. It adheres to regulatory standards, such as HIPAA, to ensure the confidentiality, integrity, and availability of patient information.

9. Integration and Interoperability: The HMS integrates with other healthcare systems and external interfaces, such as laboratory systems, radiology systems, and health information exchanges. This enables seamless sharing and exchange of information, fostering interoperability and continuity of care.

The Hospital Management System streamlines administrative processes, optimizes resource utilization, enhances patient care and safety, improves operational efficiency, and supports informed decision-making. It ultimately contributes to the overall effectiveness of a healthcare facility by centralizing information, automating tasks, and promoting collaboration among healthcare providers.

2. Software Requirements Specification:

2.1 SOFTWARE REQUIREMENTS:

Frontend- HTML, CSS, Java Script, Bootstrap

Backend- XAMPP, PHP, MySQl, TCPDF

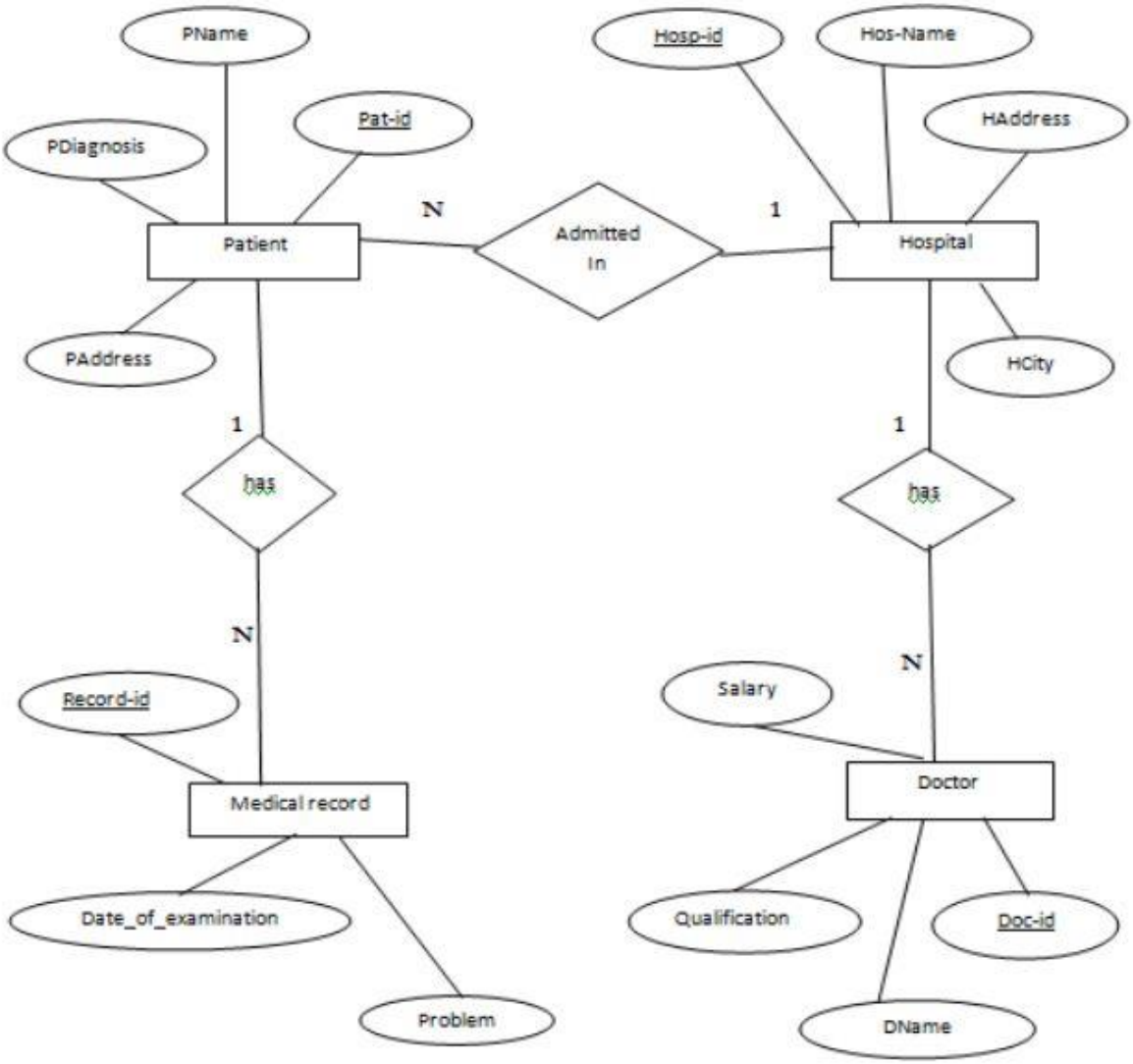
- Operating System: Windows 10
- Google Chrome/Internet Explorer
- XAMPP with APACHE2 Server and MySQL initialized
- Sublime Text editor

2.2 HARDWARE REQUIREMENTS:

- Computer with a 1.1 GHz or faster processor
- Minimum 2GB of RAM or more
- 2.5 GB of available hard-disk space
- 5400 RPM hard drive
- 1366 × 768 or higher-resolution display
- DVD-ROM drive

3. System Architecture:

ER diagram



4. Code:

Adminpanel.php

```
<!DOCTYPE html>
<?php
$con=mysqli_connect("localhost","root","","myhmsdb");

include('newfunc.php');

if(isset($_POST['docsub']))
{
  $doctor=$_POST['doctor'];
  $dpassword=$_POST['dpassword'];
  $demail=$_POST['demail'];
  $spec=$_POST['special'];
  $docFees=$_POST['docFees'];
  $query="insert into
doctb(username,password,email,spec,docFees)values('$doctor','$dpassword','$demail','$spec','$docFee
s')";
  $result=mysqli_query($con,$query);
  if($result)
    {
      echo "<script>alert('Doctor added successfully!');</script>";
  }
}


if(isset($_POST['docsub1']))
{
  $demail=$_POST['demail'];
  $query="delete from doctb where email='$demail';";
  $result=mysqli_query($con,$query);
```

```
  if($result)
    {
      echo "<script>alert('Doctor removed successfully!');</script>";
  }
  else{
    echo "<script>alert('Unable to delete!');</script>";
  }
}


?>
<html lang="en">
  <head>


    <!-- Required meta tags -->
    <meta charset="utf-8">
    <link rel="shortcut icon" type="image/x-icon" href="images/favicon.png" />
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <link rel="stylesheet" type="text/css" href="font-awesome-4.7.0/css/font-awesome.min.css">
    <link rel="stylesheet" href="style.css">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet" href="vendor/fontawesome/css/font-awesome.min.css">
    <link href="https://fonts.googleapis.com/css?family=IBM+Plex+Sans&display=swap"
rel="stylesheet">
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-
beta/css/bootstrap.min.css" integrity="sha384-
/Y6pD6FV/Vv2HJnA6t+vslU6fwYXjCFtcEpHbNJ0lyAFsXTsjBbfaDjzALeQsN6M"
crossorigin="anonymous">
      <nav class="navbar navbar-expand-lg navbar-dark bg-primary fixed-top">

        <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css" integrity="sha384-
ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQUOhcWr7x9JvoRxT2MZw1T"
```

```
crossorigin="anonymous">
  <a class="navbar-brand" href="#"><i class="fa fa-user-plus" aria-hidden="true"></i> Global
Hospital </a>
  <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false"
aria-label="Toggle navigation">
    <span class="navbar-toggler-icon"></span>
  </button>

  <script >
    var check = function() {
  if (document.getElementById('dpassword').value ==
    document.getElementById('cdpassword').value) {
    document.getElementById('message').style.color = '#5dd05d';
    document.getElementById('message').innerHTML = 'Matched';
  } else {
    document.getElementById('message').style.color = '#f55252';
    document.getElementById('message').innerHTML = 'Not Matching';
  }
}

    function alphaOnly(event) {
  var key = event.keyCode;
  return ((key >= 65 && key <= 90) || key == 8 || key == 32);
};
  </script>

  <style >
    .bg-primary {
    background: -webkit-linear-gradient(left, #3931af, #00c6ff);
}

.col-md-4{
  max-width:20% !important;
```

```
}

.list-group-item.active {
    z-index: 2;
    color: #fff;
    background-color: #342ac1;
    border-color: #007bff;
}
.text-primary {
    color: #342ac1!important;
}

#cpass {
  display: -webkit-box;
}

#list-app{
  font-size:15px;
}

.btn-primary{
  background-color: #3c50c1;
  border-color: #3c50c1;
}
  </style>

  <div class="collapse navbar-collapse" id="navbarSupportedContent">
     <ul class="navbar-nav mr-auto">
       <li class="nav-item">
        <a class="nav-link" href="logout1.php"><i class="fa fa-sign-out" aria-
hidden="true"></i>Logout</a>
      </li>
       <li class="nav-item">
        <a class="nav-link" href="#"></a>
```

```
      </li>
    </ul>
  </div>
</nav>
  </head>
  <style type="text/css">
    button:hover{cursor:pointer;}
    #inputbtn:hover{cursor:pointer;}
  </style>
  <body style="padding-top:50px;">
   <div class="container-fluid" style="margin-top:50px;">
    <h3 style = "margin-left: 40%; padding-bottom: 20px;font-family: 'IBM Plex Sans', sans-serif;">
WELCOME RECEPTIONIST </h3>
    <div class="row">
  <div class="col-md-4" style="max-width:25%;margin-top: 3%;">
    <div class="list-group" id="list-tab" role="tablist">
      <a class="list-group-item list-group-item-action active" id="list-dash-list" data-toggle="list"
href="#list-dash" role="tab" aria-controls="home">Dashboard</a>
      <a class="list-group-item list-group-item-action" href="#list-doc" id="list-doc-list"  role="tab"
aria-controls="home" data-toggle="list">Doctor List</a>
      <a class="list-group-item list-group-item-action" href="#list-pat" id="list-pat-list"  role="tab"
data-toggle="list" aria-controls="home">Patient List</a>
      <a class="list-group-item list-group-item-action" href="#list-app" id="list-app-list"  role="tab"
data-toggle="list" aria-controls="home">Appointment Details</a>
      <a class="list-group-item list-group-item-action" href="#list-pres" id="list-pres-list"  role="tab"
data-toggle="list" aria-controls="home">Prescription List</a>
      <a class="list-group-item list-group-item-action" href="#list-settings" id="list-adoc-list"
role="tab" data-toggle="list" aria-controls="home">Add Doctor</a>
      <a class="list-group-item list-group-item-action" href="#list-settings1" id="list-ddoc-list"
role="tab" data-toggle="list" aria-controls="home">Delete Doctor</a>
      <a class="list-group-item list-group-item-action" href="#list-mes" id="list-mes-list"  role="tab"
data-toggle="list" aria-controls="home">Queries</a>

    </div><br>
```

```
</div>
<div class="col-md-8" style="margin-top: 3%;">
  <div class="tab-content" id="nav-tabContent" style="width: 950px;">



    <div class="tab-pane fade show active" id="list-dash" role="tabpanel" aria-labelledby="list-dash-list">
      <div class="container-fluid container-fullw bg-white" >
        <div class="row">
          <div class="col-sm-4">
            <div class="panel panel-white no-radius text-center">
              <div class="panel-body">
                <span class="fa-stack fa-2x"> <i class="fa fa-square fa-stack-2x text-primary"></i> <i class="fa fa-users fa-stack-1x fa-inverse"></i> </span>
                <h4 class="StepTitle" style="margin-top: 5%;">Doctor List</h4>
                <script>
                  function clickDiv(id) {
                    document.querySelector(id).click();
                  }
                </script>
                <p class="links cl-effect-1">
                  <a href="#list-doc" onclick="clickDiv('#list-doc-list')">
                    View Doctors
                  </a>
                </p>
              </div>
            </div>
          </div>

          <div class="col-sm-4" style="left: -3%">
            <div class="panel panel-white no-radius text-center">
              <div class="panel-body" >
                <span class="fa-stack fa-2x"> <i class="fa fa-square fa-stack-2x text-primary"></i> <i
```

```
class="fa fa-users fa-stack-1x fa-inverse"></i> </span>
                <h4 class="StepTitle" style="margin-top: 5%;">Patient List</h4>

                <p class="cl-effect-1">
                  <a href="#app-hist" onclick="clickDiv('#list-pat-list')">
                    View Patients
                  </a>
                </p>
              </div>
            </div>
          </div>


          <div class="col-sm-4">
            <div class="panel panel-white no-radius text-center">
              <div class="panel-body" >
                <span class="fa-stack fa-2x"> <i class="fa fa-square fa-stack-2x text-primary"></i> <i
class="fa fa-paperclip fa-stack-1x fa-inverse"></i> </span>
                <h4 class="StepTitle" style="margin-top: 5%;">Appointment Details</h4>

                <p class="cl-effect-1">
                  <a href="#app-hist" onclick="clickDiv('#list-app-list')">
                    View Appointments
                  </a>
                </p>
              </div>
            </div>
          </div>
          </div>

          <div class="row">
          <div class="col-sm-4" style="left: 13%;margin-top: 5%;">
            <div class="panel panel-white no-radius text-center">
              <div class="panel-body" >
```

```
            <span class="fa-stack fa-2x"> <i class="fa fa-square fa-stack-2x text-primary"></i> <i class="fa fa-list-ul fa-stack-1x fa-inverse"></i> </span>
            <h4 class="StepTitle" style="margin-top: 5%;">Prescription List</h4>

            <p class="cl-effect-1">
              <a href="#list-pres" onclick="clickDiv('#list-pres-list')">
                View Prescriptions
              </a>
            </p>
          </div>
        </div>
      </div>


      <div class="col-sm-4" style="left: 18%;margin-top: 5%">
        <div class="panel panel-white no-radius text-center">
          <div class="panel-body" >
            <span class="fa-stack fa-2x"> <i class="fa fa-square fa-stack-2x text-primary"></i> <i class="fa fa-plus fa-stack-1x fa-inverse"></i> </span>
            <h4 class="StepTitle" style="margin-top: 5%;">Manage Doctors</h4>

            <p class="cl-effect-1">
              <a href="#app-hist" onclick="clickDiv('#list-adoc-list')">Add Doctors</a>
               |
              <a href="#app-hist" onclick="clickDiv('#list-ddoc-list')">
                Delete Doctors
              </a>
            </p>
          </div>
        </div>
      </div>
    </div>
```

```
      </div>
    </div>
```

```
<div class="tab-pane fade" id="list-doc" role="tabpanel" aria-labelledby="list-home-list">


    <div class="col-md-8">
<form class="form-group" action="doctorsearch.php" method="post">
  <div class="row">
  <div class="col-md-10"><input type="text" name="doctor_contact" placeholder="Enter Email ID" class = "form-control"></div>
  <div class="col-md-2"><input type="submit" name="doctor_search_submit" class="btn btn-primary" value="Search"></div></div>
</form>
</div>
    <table class="table table-hover">
      <thead>
        <tr>
          <th scope="col">Doctor Name</th>
          <th scope="col">Specialization</th>
          <th scope="col">Email</th>
          <th scope="col">Password</th>
          <th scope="col">Fees</th>
        </tr>
```

```
          </thead>
          <tbody>
           <?php
             $con=mysqli_connect("localhost","root","","myhmsdb");
             global $con;
             $query = "select * from doctb";
             $result = mysqli_query($con,$query);
             while ($row = mysqli_fetch_array($result)){
               $username = $row['username'];
               $spec = $row['spec'];
               $email = $row['email'];
               $password = $row['password'];
               $docFees = $row['docFees'];

               echo "<tr>
                 <td>$username</td>
                 <td>$spec</td>
                 <td>$email</td>
                 <td>$password</td>
                 <td>$docFees</td>
               </tr>";
             }

           ?>
          </tbody>
        </table>
    <br>
  </div>


<div class="tab-pane fade" id="list-pat" role="tabpanel" aria-labelledby="list-pat-list">

   <div class="col-md-8">
  <form class="form-group" action="patientsearch.php" method="post">
```

```
      <div class="row">
      <div class="col-md-10"><input type="text" name="patient_contact" placeholder="Enter Contact" class = "form-control"></div>
      <div class="col-md-2"><input type="submit" name="patient_search_submit" class="btn btn-primary" value="Search"></div></div>
    </form>
  </div>

        <table class="table table-hover">
          <thead>
            <tr>
            <th scope="col">Patient ID</th>
              <th scope="col">First Name</th>
              <th scope="col">Last Name</th>
              <th scope="col">Gender</th>
              <th scope="col">Email</th>
              <th scope="col">Contact</th>
              <th scope="col">Password</th>
            </tr>
          </thead>
          <tbody>
            <?php
              $con=mysqli_connect("localhost","root","","myhmsdb");
              global $con;
              $query = "select * from patreg";
              $result = mysqli_query($con,$query);
              while ($row = mysqli_fetch_array($result)){
                $pid = $row['pid'];
                $fname = $row['fname'];
                $lname = $row['lname'];
                $gender = $row['gender'];
                $email = $row['email'];
                $contact = $row['contact'];
                $password = $row['password'];
```

```
            echo "<tr>
              <td>$pid</td>
              <td>$fname</td>
              <td>$lname</td>
              <td>$gender</td>
              <td>$email</td>
              <td>$contact</td>
              <td>$password</td>
            </tr>";
           }

         ?>
        </tbody>
      </table>
  <br>
</div>


<div class="tab-pane fade" id="list-pres" role="tabpanel" aria-labelledby="list-pres-list">

 <div class="col-md-8">

  <div class="row">



      <table class="table table-hover">
        <thead>
          <tr>
          <th scope="col">Doctor</th>
            <th scope="col">Patient ID</th>
            <th scope="col">Appointment ID</th>
            <th scope="col">First Name</th>
```

```
    <th scope="col">Last Name</th>
    <th scope="col">Appointment Date</th>
    <th scope="col">Appointment Time</th>
    <th scope="col">Disease</th>
    <th scope="col">Allergy</th>
    <th scope="col">Prescription</th>
  </tr>
</thead>
<tbody>
  <?php
    $con=mysqli_connect("localhost","root","","myhmsdb");
    global $con;
    $query = "select * from prestb";
    $result = mysqli_query($con,$query);
    while ($row = mysqli_fetch_array($result)){
      $doctor = $row['doctor'];
      $pid = $row['pid'];
      $ID = $row['ID'];
      $fname = $row['fname'];
      $lname = $row['lname'];
      $appdate = $row['appdate'];
      $apptime = $row['apptime'];
      $disease = $row['disease'];
      $allergy = $row['allergy'];
      $pres = $row['prescription'];


      echo "<tr>
        <td>$doctor</td>
        <td>$pid</td>
        <td>$ID</td>
        <td>$fname</td>
        <td>$lname</td>
        <td>$appdate</td>
```

```
                <td>$apptime</td>
                <td>$disease</td>
                <td>$allergy</td>
                <td>$pres</td>
              </tr>";
            }

          ?>
        </tbody>
      </table>
    <br>
  </div>
  </div>
  </div>

  <div class="tab-pane fade" id="list-app" role="tabpanel" aria-labelledby="list-pat-list">

    <div class="col-md-8">
  <form class="form-group" action="appsearch.php" method="post">
    <div class="row">
    <div class="col-md-10"><input type="text" name="app_contact" placeholder="Enter Contact" class = "form-control"></div>
    <div class="col-md-2"><input type="submit" name="app_search_submit" class="btn btn-primary" value="Search"></div></div>
  </form>
 </div>

      <table class="table table-hover">
        <thead>
          <tr>
          <th scope="col">Appointment ID</th>
```

```
  <th scope="col">Patient ID</th>
    <th scope="col">First Name</th>
    <th scope="col">Last Name</th>
    <th scope="col">Gender</th>
    <th scope="col">Email</th>
    <th scope="col">Contact</th>
    <th scope="col">Doctor Name</th>
    <th scope="col">Consultancy Fees</th>
    <th scope="col">Appointment Date</th>
    <th scope="col">Appointment Time</th>
    <th scope="col">Appointment Status</th>
  </tr>
</thead>
<tbody>
  <?php

    $con=mysqli_connect("localhost","root","","myhmsdb");
    global $con;

    $query = "select * from appointmenttb;";
    $result = mysqli_query($con,$query);
    while ($row = mysqli_fetch_array($result)){
  ?>
      <tr>
        <td><?php echo $row['ID'];?></td>
        <td><?php echo $row['pid'];?></td>
        <td><?php echo $row['fname'];?></td>
        <td><?php echo $row['lname'];?></td>
        <td><?php echo $row['gender'];?></td>
        <td><?php echo $row['email'];?></td>
        <td><?php echo $row['contact'];?></td>
        <td><?php echo $row['doctor'];?></td>
        <td><?php echo $row['docFees'];?></td>
        <td><?php echo $row['appdate'];?></td>
```

```
                <td><?php echo $row['apptime'];?></td>
                <td>
              <?php if(($row['userStatus']==1) && ($row['doctorStatus']==1))
              {
                echo "Active";
              }
              if(($row['userStatus']==0) && ($row['doctorStatus']==1))
              {
                echo "Cancelled by Patient";
              }

              if(($row['userStatus']==1) && ($row['doctorStatus']==0))
              {
                echo "Cancelled by Doctor";
              }
                ?></td>
              </tr>
              <?php } ?>
            </tbody>
          </table>
      <br>
    </div>

<div class="tab-pane fade" id="list-messages" role="tabpanel" aria-labelledby="list-messages-list">...</div>

    <div class="tab-pane fade" id="list-settings" role="tabpanel" aria-labelledby="list-settings-list">
      <form class="form-group" method="post" action="admin-panel1.php">
        <div class="row">
              <div class="col-md-4"><label>Doctor Name:</label></div>
              <div class="col-md-8"><input type="text" class="form-control" name="doctor" onkeydown="return alphaOnly(event);" required></div><br><br>
              <div class="col-md-4"><label>Specialization:</label></div>
              <div class="col-md-8">
```

```
                <select name="special" class="form-control" id="special" required="required">
                  <option value="head" name="spec" disabled selected>Select Specialization</option>
                  <option value="General" name="spec">General</option>
                  <option value="Cardiologist" name="spec">Cardiologist</option>
                  <option value="Neurologist" name="spec">Neurologist</option>
                  <option value="Pediatrician" name="spec">Pediatrician</option>
                 </select>
                 </div><br><br>
               <div class="col-md-4"><label>Email ID:</label></div>
               <div class="col-md-8"><input type="email"  class="form-control" name="demail"
required></div><br><br>
               <div class="col-md-4"><label>Password:</label></div>
               <div class="col-md-8"><input type="password" class="form-control"  onkeyup='check();'
name="dpassword" id="dpassword"  required></div><br><br>
               <div class="col-md-4"><label>Confirm Password:</label></div>
               <div class="col-md-8"  id='cpass'><input type="password" class="form-control"
onkeyup='check();' name="cdpassword" id="cdpassword" required>   <span
id='message'></span> </div><br><br>


               <div class="col-md-4"><label>Consultancy Fees:</label></div>
               <div class="col-md-8"><input type="text" class="form-control"  name="docFees"
required></div><br><br>
              </div>
        <input type="submit" name="docsub" value="Add Doctor" class="btn btn-primary">
       </form>
     </div>

     <div class="tab-pane fade" id="list-settings1" role="tabpanel" aria-labelledby="list-settings1-
list">
       <form class="form-group" method="post" action="admin-panel1.php">
        <div class="row">

               <div class="col-md-4"><label>Email ID:</label></div>
```

```
            <div class="col-md-8"><input type="email"  class="form-control" name="demail"
required></div><br><br>

            </div>
        <input type="submit" name="docsub1" value="Delete Doctor" class="btn btn-primary"
onclick="confirm('do you really want to delete?')">
      </form>
    </div>


     <div class="tab-pane fade" id="list-attend" role="tabpanel" aria-labelledby="list-attend-
list">...</div>

     <div class="tab-pane fade" id="list-mes" role="tabpanel" aria-labelledby="list-mes-list">

       <div class="col-md-8">
    <form class="form-group" action="messearch.php" method="post">
      <div class="row">
      <div class="col-md-10"><input type="text" name="mes_contact" placeholder="Enter Contact"
class = "form-control"></div>
      <div class="col-md-2"><input type="submit" name="mes_search_submit" class="btn btn-
primary" value="Search"></div></div>
    </form>
  </div>

          <table class="table table-hover">
            <thead>
              <tr>
                <th scope="col">User Name</th>
                <th scope="col">Email</th>
                <th scope="col">Contact</th>
                <th scope="col">Message</th>
              </tr>
            </thead>
```

```
            <tbody>
              <?php

                $con=mysqli_connect("localhost","root","","myhmsdb");
                global $con;

                $query = "select * from contact;";
                $result = mysqli_query($con,$query);
                while ($row = mysqli_fetch_array($result)){

                  #$fname = $row['fname'];
                  #$lname = $row['lname'];
                  #$email = $row['email'];
                  #$contact = $row['contact'];
              ?>
                  <tr>
                    <td><?php echo $row['name'];?></td>
                    <td><?php echo $row['email'];?></td>
                    <td><?php echo $row['contact'];?></td>
                    <td><?php echo $row['message'];?></td>
                  </tr>
                <?php } ?>
              </tbody>
            </table>
        <br>
      </div>



    </div>
  </div>
</div>
  </div>
   <!-- Optional JavaScript -->
```

```
    <!-- jQuery first, then Popper.js, then Bootstrap JS -->
    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js" integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.11.0/umd/popper.min.js"
integrity="sha384-
b/U6ypiBEHpOf/4+1nzFpr53nxSS+GLCkfwBdFNTxtclqqenISfwAzpKaMNFNmj4"
crossorigin="anonymous"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta/js/bootstrap.min.js"
integrity="sha384-
h0AbiXch4ZDo7tp9hKZ4TsHbi047NrKGLO3SEJAg45jXxnGIfYzk4Si90RDIqNm1"
crossorigin="anonymous"></script>
   <script src="https://cdnjs.cloudflare.com/ajax/libs/limonte-
sweetalert2/6.10.1/sweetalert2.all.min.js"></script>
  </body>
</html>
```

5.RESULTS

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. Fig 1.1 shows the ‘Home’ page of our project.

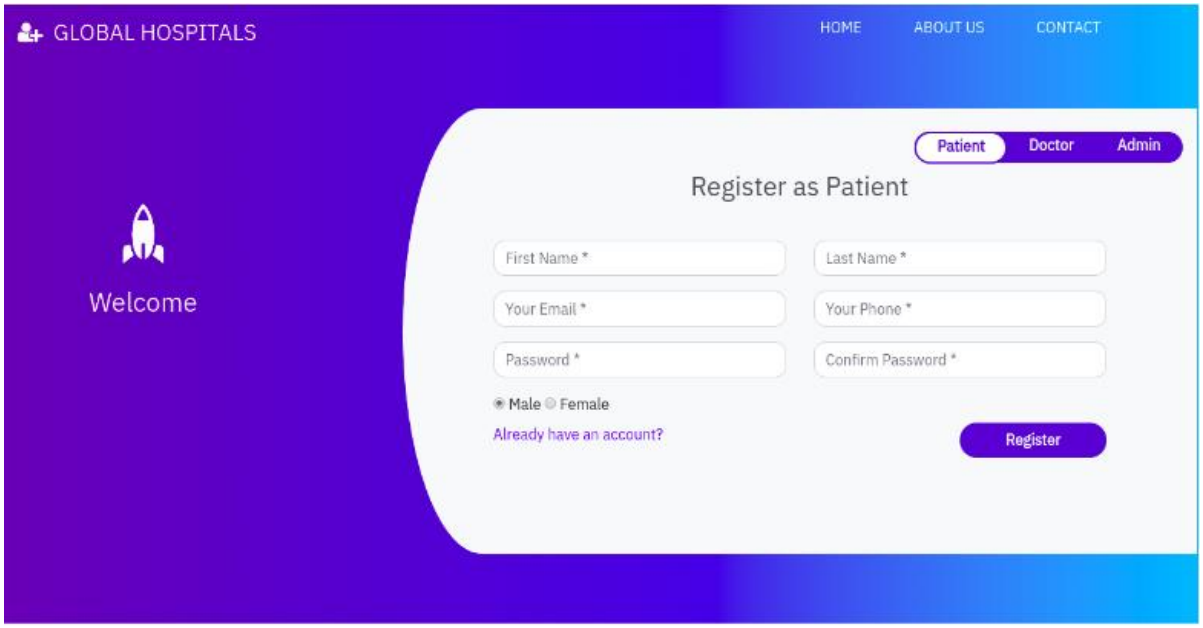


Fig 1.1

'About Us' page (Fig 1.2) allows us to get some more information about the quality and services of the hospital.

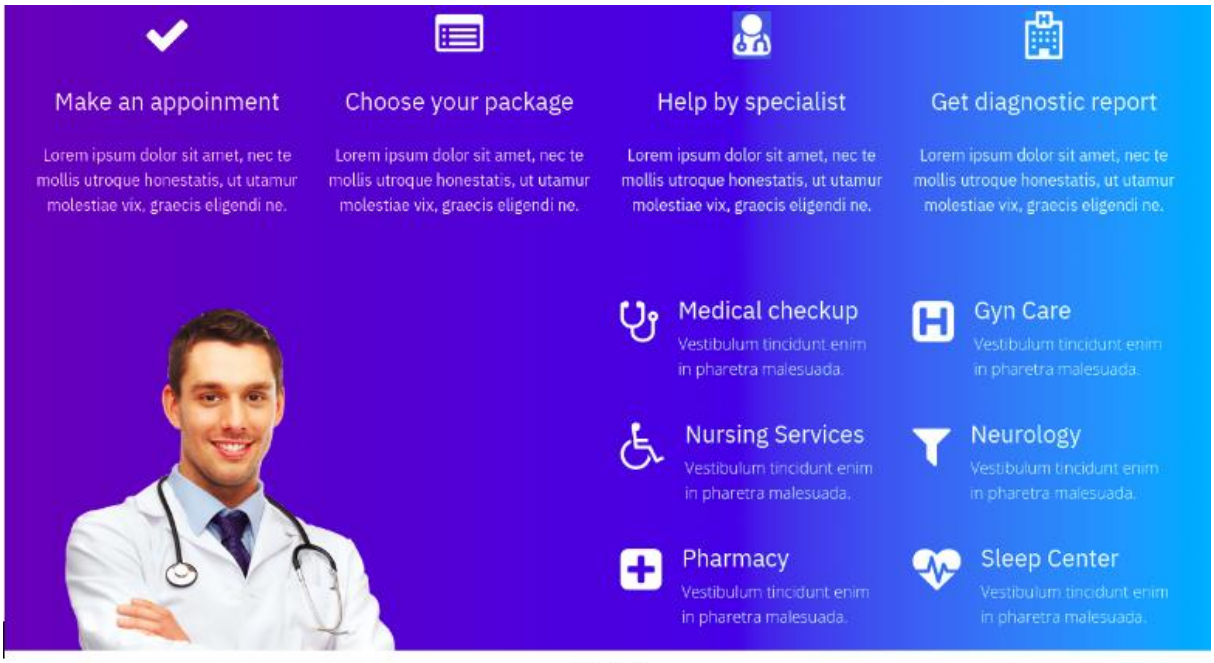


Fig 1.2

Contact' page allows users to provide feedback or queries about the services of the hospital. Fig 1.3 shows the 'Contact' page.

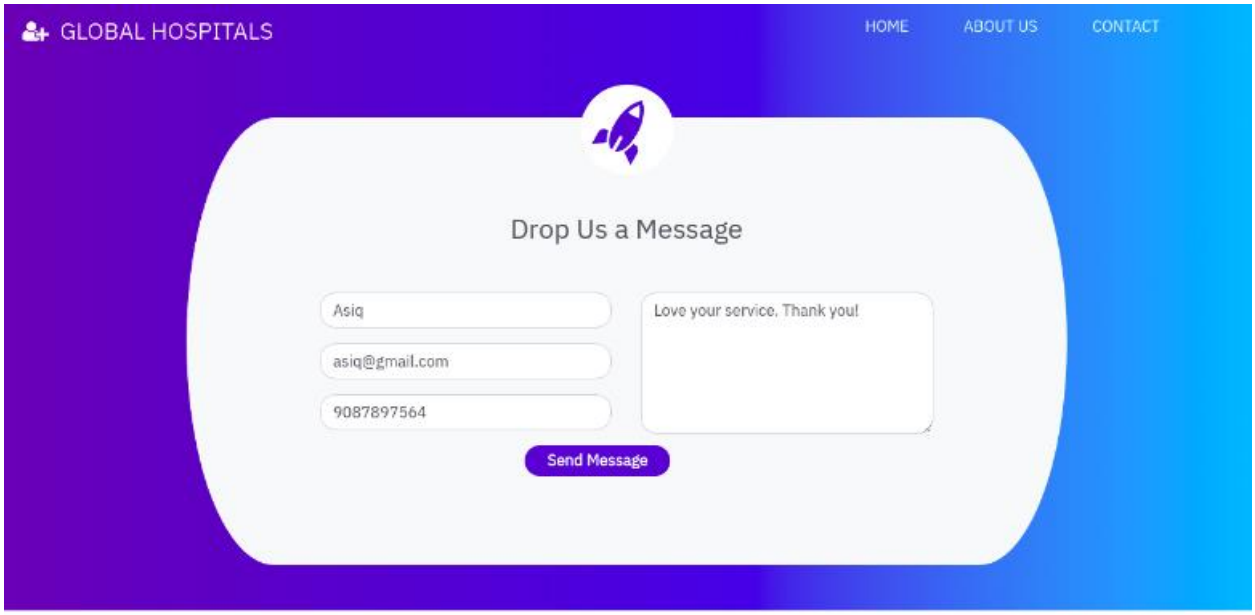


Fig 1.3

The ‘Home’ page consists of 3 modules:

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

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.

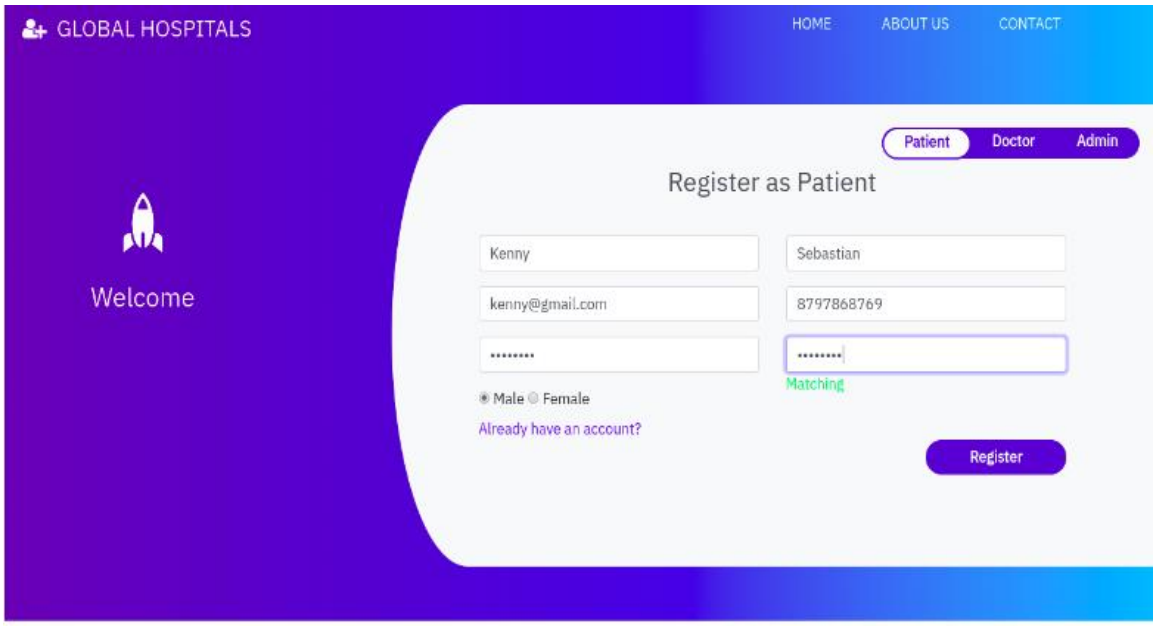


Fig 1.4

Once the patient has created his/her own account after clicking the ‘Register’ button, then he will be redirected to his/her Dashboard(Fig 1.5).

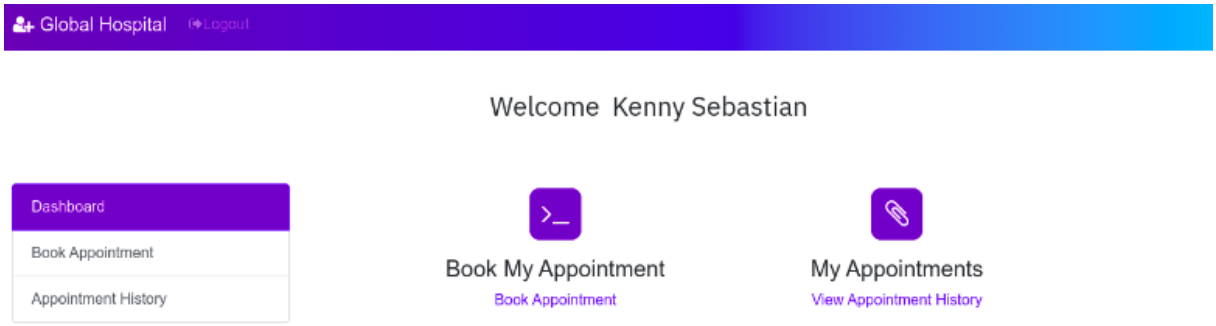


Fig 1.5

The Dashboard page allows patients to perform two operations:

1. Book his/her appointment:

Here, the patients can able to book their appointments to see a doctor. The appointment form(Fig 1.6) 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

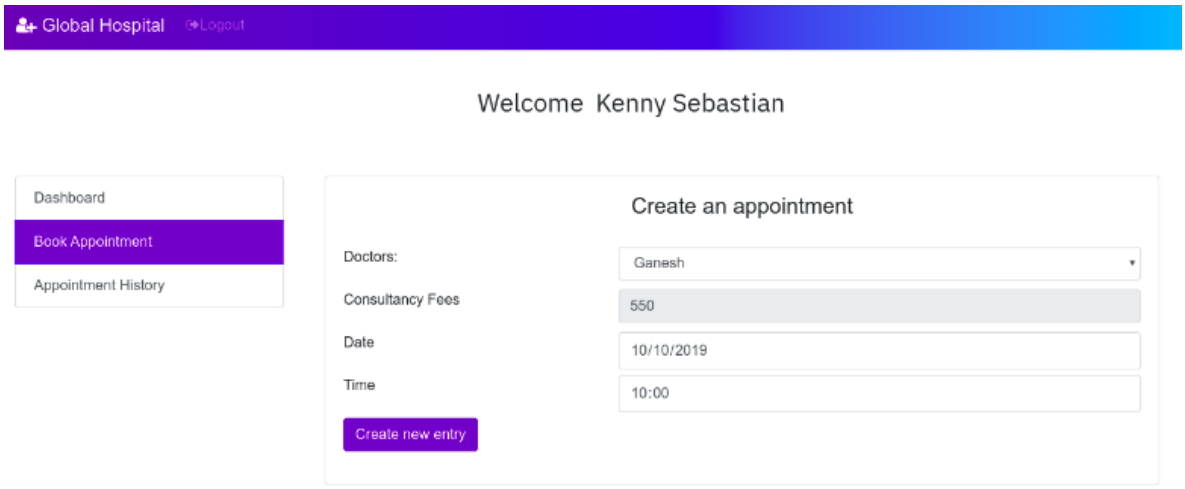


Fig 1.6

acknowledges the successful appointment of the patient.(See Fig 1.7)

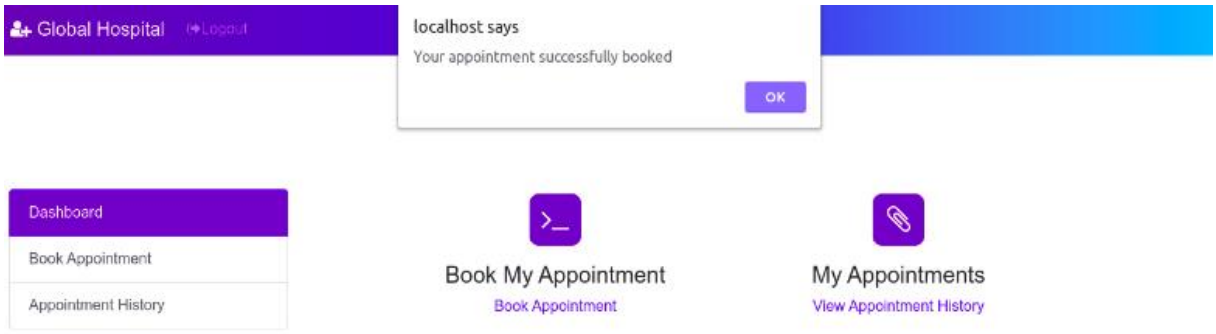


Fig 1.7

2. View patients' Appointment History:

Here, the patient can see their appointment history which contains Doctor Name, Consultancy Fee, Appointment Date and Time.(See Fig 1.8).

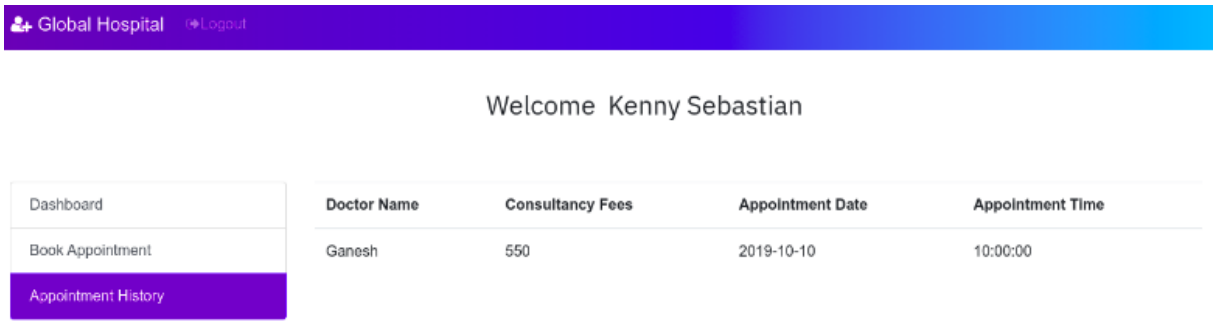


Fig 1.8

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. Fig 1.9 shows the login page. Clicking on 'Login' button will redirect the patient to his dashboard page which we have seen earlier (Fig 1.5)

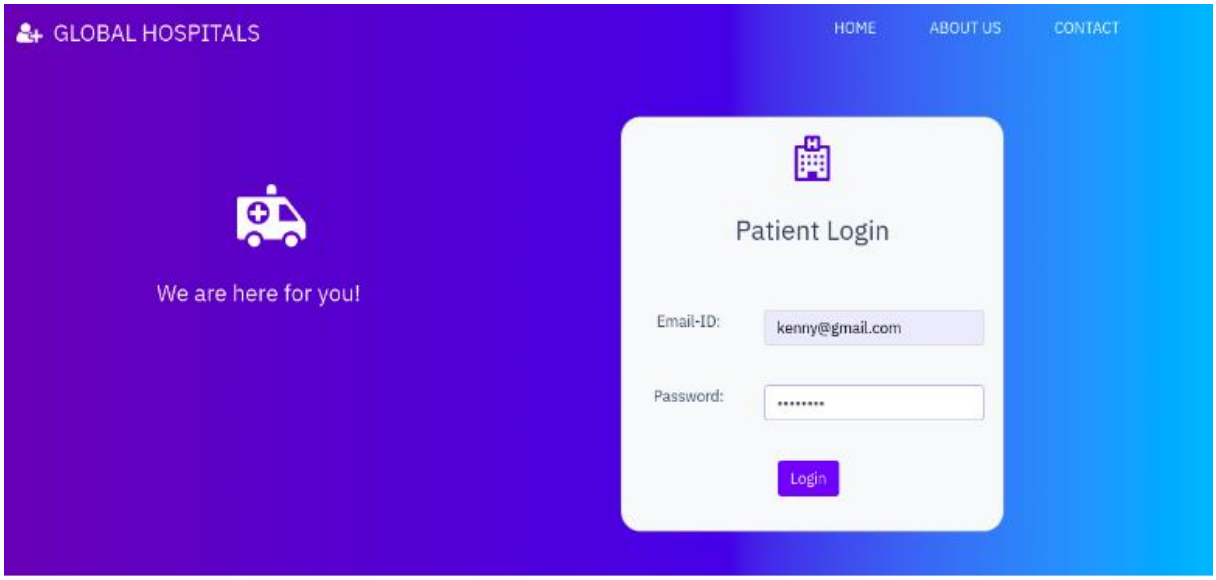


Fig 1.9

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.

Doctor Module:

The doctors can login into their account which can be done by toggling the tab from 'Patient' to 'Doctor'. Fig 1.10 shows the login form for a doctor. Registration of a doctor account can be done only by admin. We will discuss more about this in Admin Module.

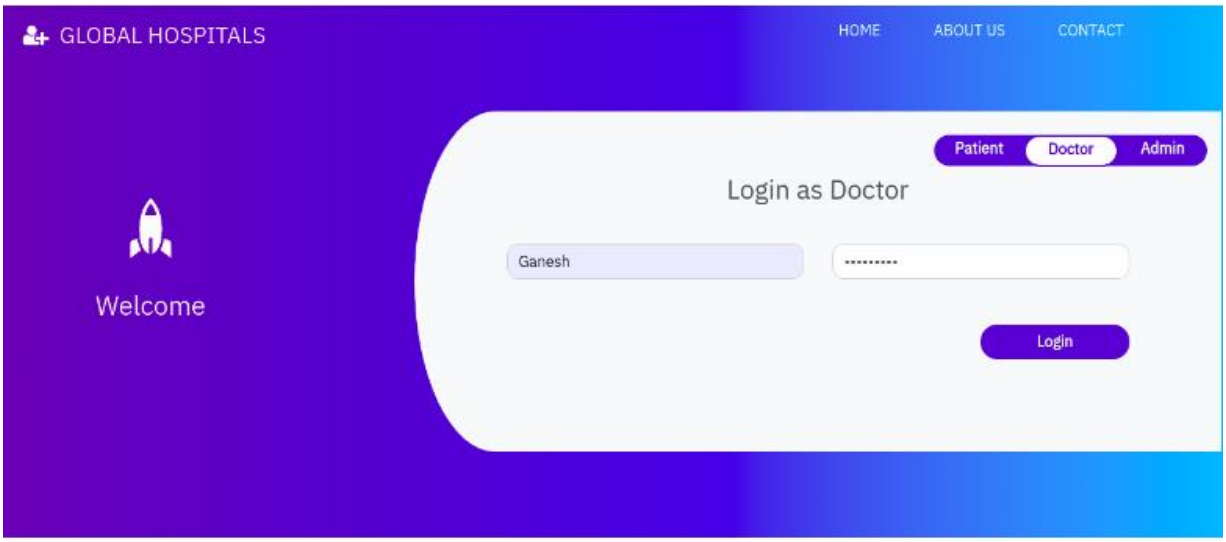


Fig 1.10

Once the doctor clicking the 'Login' button, they will be redirected to their own dashboard which is shown in Fig 1.11

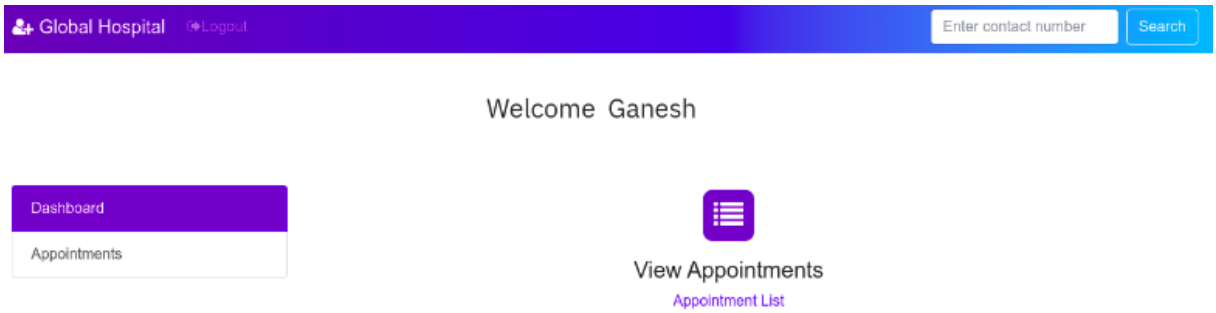


Fig 1.11

In this page, doctor can able to see their appointments which has been booked by the patients. Fig 1.12 shows the appointment of the doctor 'Ganesh' which has been booked by the patient 'Kenny Sebastian' (Fig 1.6). This means that the doctor 'Ganesh' will have an appointment with the patient 'Kenny Sebastian' on 10-10-2019 10AM.

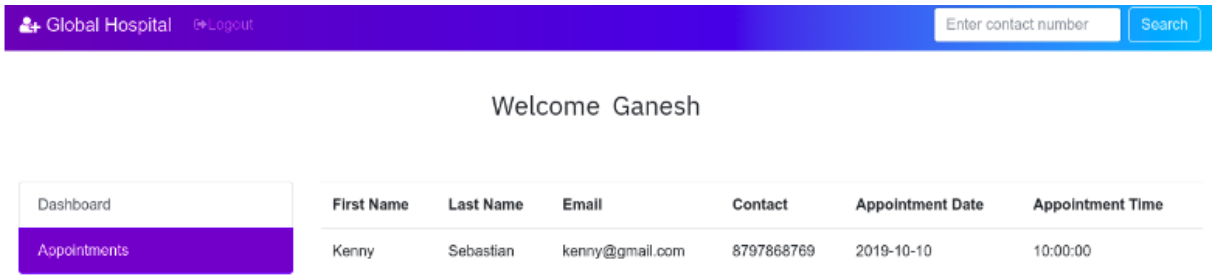


Fig 1.12

In real-time, the doctors will have thousands of appointments. It will be easier for a doctor to search for appointment in the case of more appointments. To make it easier, I have a 'Search' box in the navigation bar (See Fig 1.12) 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.

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. Fig 1.13 shows the login page for admin. username: admin, password: admin123

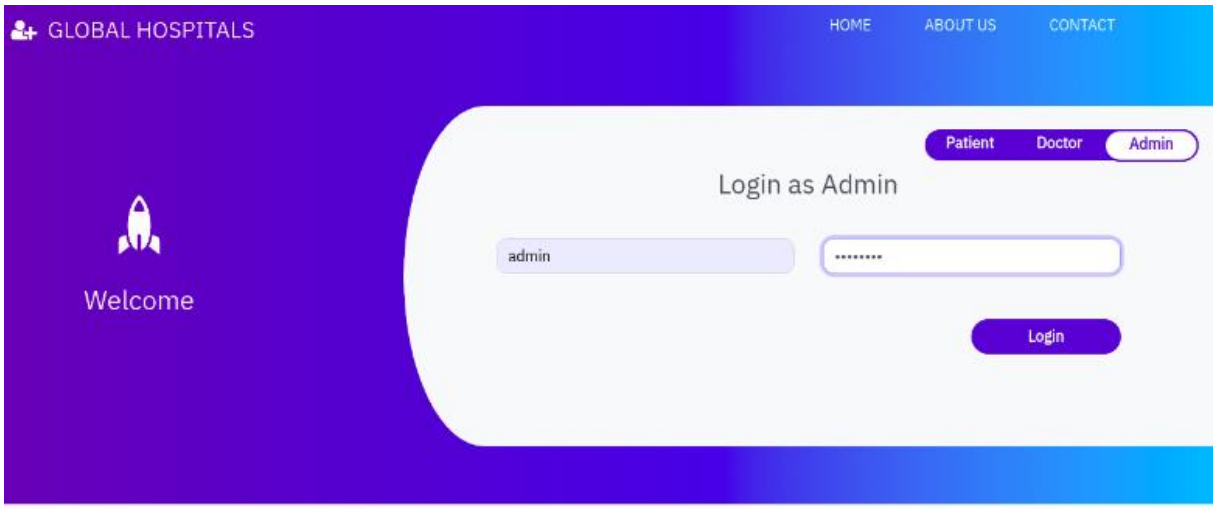


Fig 1.13

On clicking the ‘Login’ button, the admin will be redirected to his/her dashboard as shown in Fig 1.14.

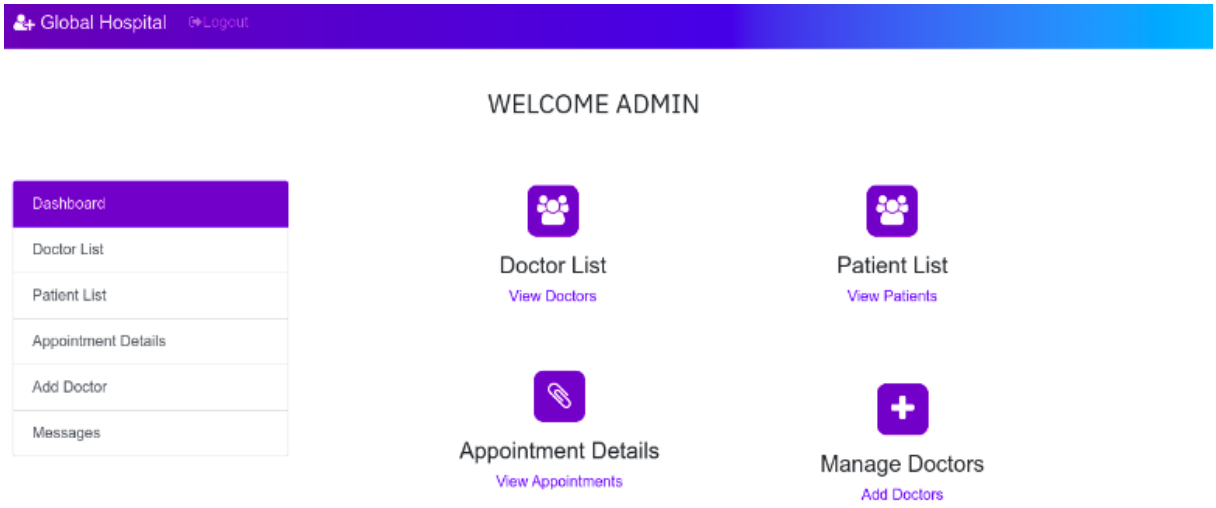


Fig 1.14

This module allows admin to perform five major operations:

1. View the list of all patients registered:

Admin can able to view all the patients registered. This includes the patients’ First Name, Last Name, Email ID, Contact Number and Password. (See Fig 1.15).As like in doctor module, admin can also search for a patient by their contact number in the search box.

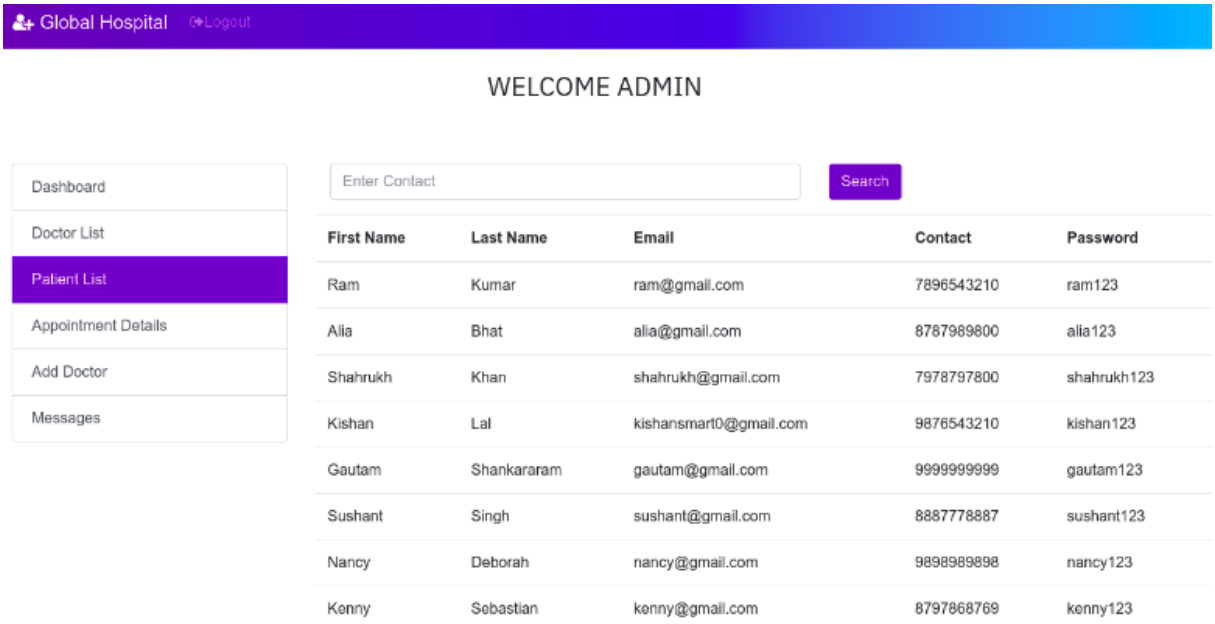


Fig 1.15

2. View the list of all doctors registered:

Details of the doctors can also be viewed by the admin. This details include the Name of the doctor, Password, Email and Consultancy fees, shown in Fig 1.16. Searching for a doctor can be done by using the doctor's Email ID in the search box.

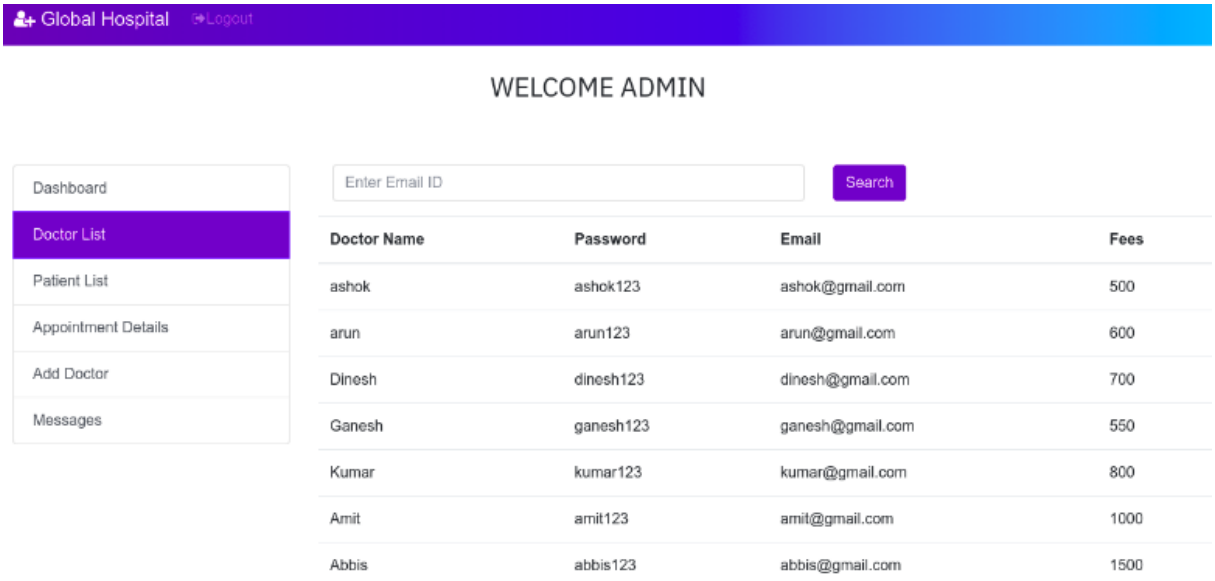


Fig 1.16

3. View the Appointment lists:

Admin can 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. (See Fig 1.17).

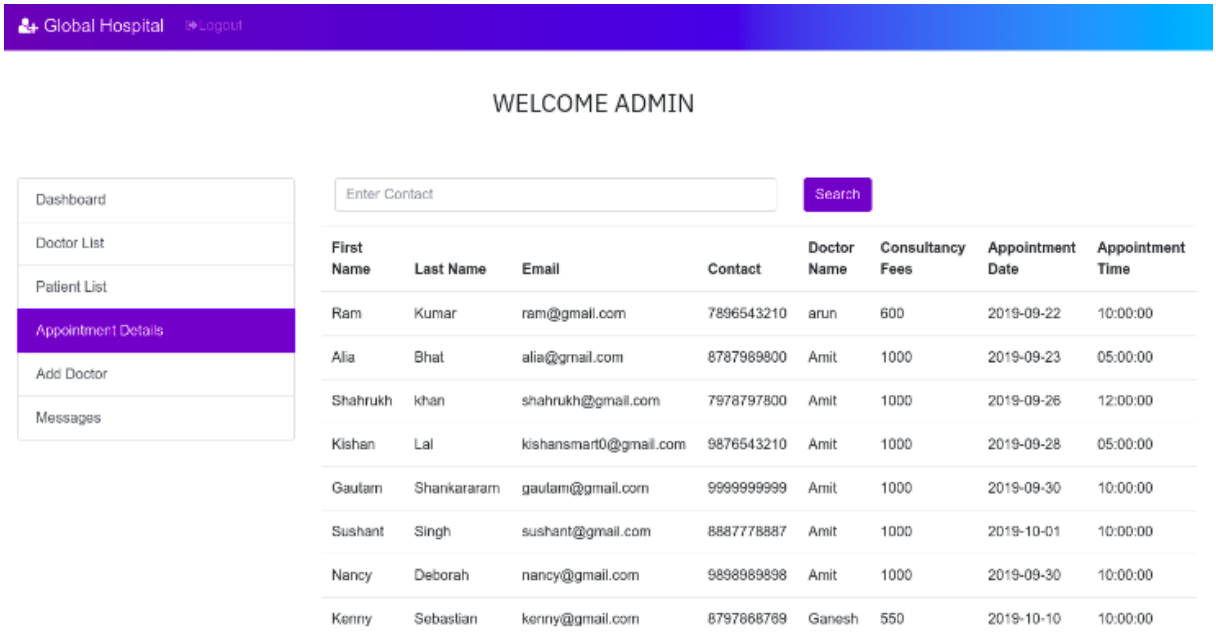


Fig 1.17

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 Doctor's Name, Email ID, Password and his/her Consultancy Fees.(See Fig 1.18)

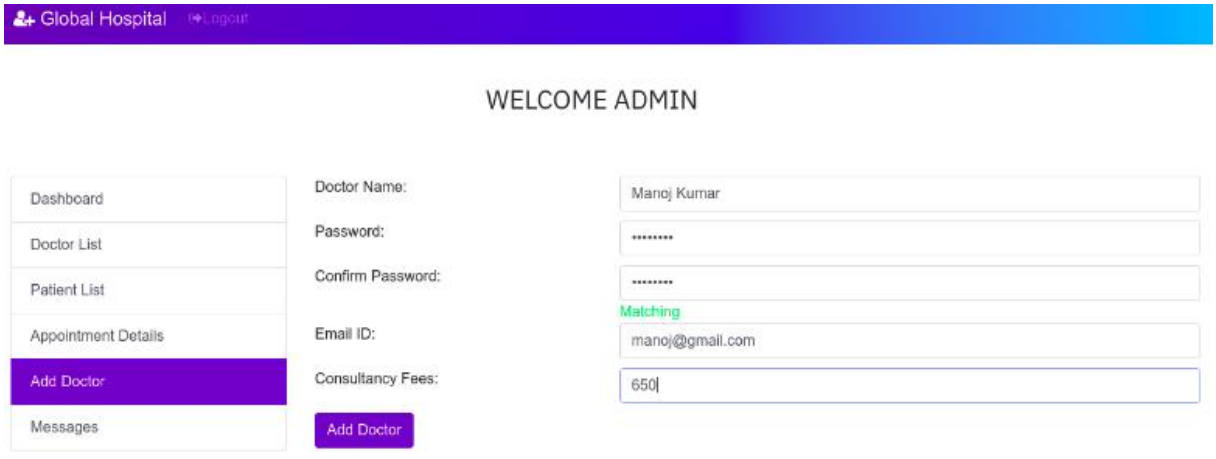


Fig 1.18

After adding a new doctor, if we check the doctor's list, we will see the details of new doctor is added to the list as shown in the Fig 1.19

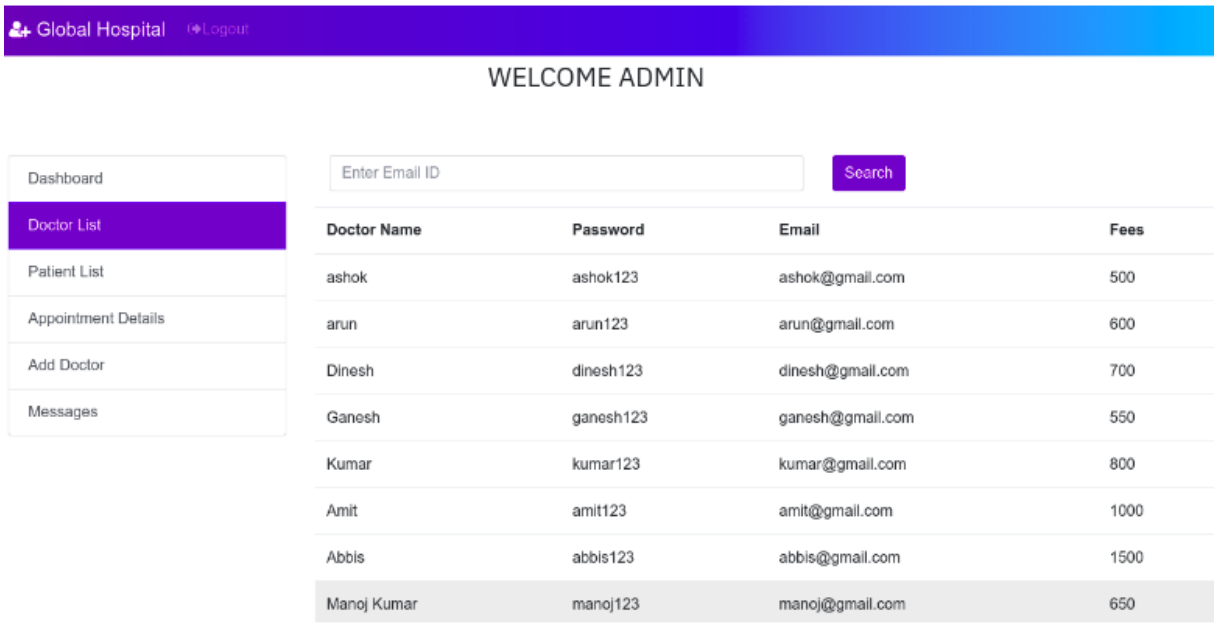


Fig 1.19

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 (Refer Fig 1.3). This includes User's Name, Email Id, Contact Number and the message(Feedback/ Query) as shown in the Fig 1.20.

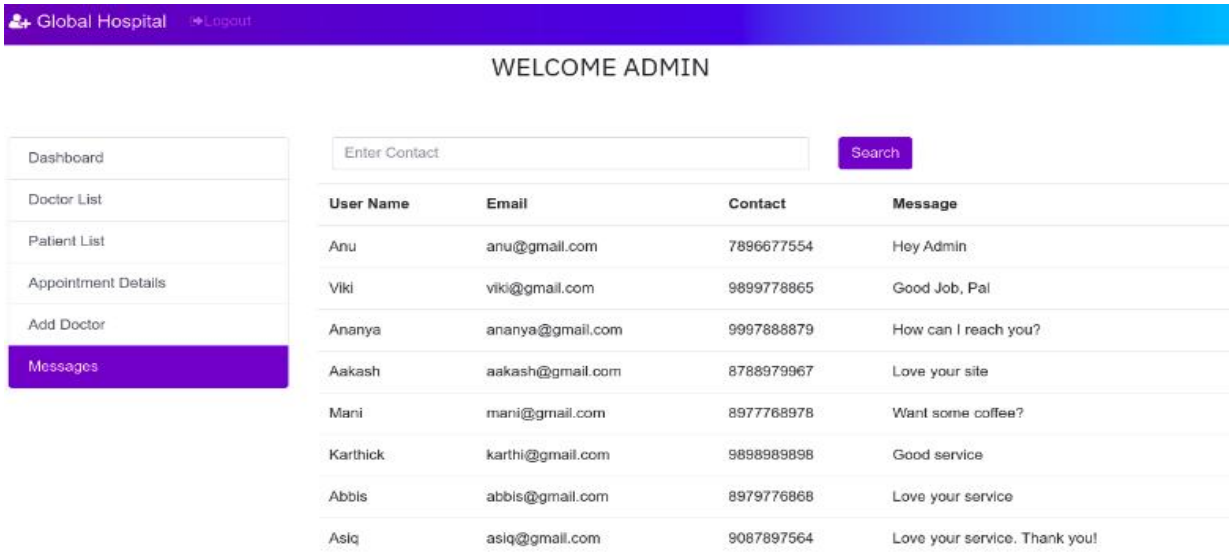


Fig 1.20

Taking everything into consideration, admin can able to 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.

Future Enhancements:

The future enhancements of a Hospital Management System (HMS) are likely to be driven by advancements in technology and evolving healthcare needs. Here are some potential future enhancements:

1. Artificial Intelligence (AI) and Machine Learning: Integration of AI and machine learning algorithms can enhance the HMS by analyzing large amounts of patient data to identify patterns, predict outcomes, and support clinical decision-making. AI-powered chatbots and virtual assistants can also assist patients with basic inquiries and appointment scheduling.

2. Internet of Things (IoT) Integration: The HMS can leverage IoT devices to monitor patient vital signs, track medication adherence, and automate data collection. IoT-enabled medical devices can seamlessly integrate with the system, providing real-time data for improved patient monitoring and proactive healthcare interventions.

3. Telemedicine and Remote Patient Monitoring: As telemedicine continues to gain prominence, future HMS versions can incorporate advanced telehealth features. This includes video consultation capabilities, remote patient monitoring integration, and secure communication channels for virtual healthcare interactions.

4. Mobile Applications: The development of mobile applications can extend the reach and accessibility of the HMS. Patients can use mobile apps for appointment scheduling, access to medical records, medication reminders, and remote consultations. Healthcare providers can also benefit from mobile apps for efficient data capture, remote access to patient information, and secure communication.

5. Data Analytics and Predictive Analytics: Enhanced data analytics capabilities can provide deeper insights into hospital operations, patient outcomes, and resource utilization. Predictive analytics algorithms can help forecast patient demand, optimize scheduling, and identify potential risks to improve decision-making and resource allocation.

6. Integration with Wearable Devices: Integrating wearable devices, such as fitness trackers and smartwatches, with the HMS can enable continuous monitoring of patient health metrics. This data can be incorporated into the patient's electronic health records, providing a comprehensive view of their health status and enabling personalized care.

7. Blockchain Technology: The integration of blockchain technology can enhance data security, integrity, and interoperability within the HMS. Blockchain-based systems can provide secure sharing of patient data across healthcare providers, ensuring privacy and facilitating seamless data exchange.

8. Predictive Maintenance: Implementing predictive maintenance algorithms within the HMS can enable proactive equipment maintenance and reduce downtime. By analyzing data from medical devices and systems, potential equipment failures can be identified in advance, allowing for timely repairs or replacements.

9. Enhanced Patient Engagement: Future HMS versions can focus on improving patient engagement through patient portals, personalized health education resources, and interactive features. This can empower patients to actively participate in their healthcare management, leading to better health outcomes.

10. Integration with Genomic Data: With the rise of precision medicine, incorporating genomic data into the HMS can enable personalized treatment plans based on a patient's genetic profile. Integrating genomic data analysis capabilities can facilitate targeted therapies and improved treatment outcomes.

It's important to note that the future enhancements of an HMS will depend on technological advancements, industry trends, regulatory requirements, and the specific needs of healthcare organizations. Flexibility, scalability, and adaptability will be key considerations to ensure the HMS can effectively evolve and meet the changing demands of the healthcare landscape.

Conclusion:

HOSPITAL MANAGEMENT SYSTEM automates administrative tasks, centralizes patient data, enhances scheduling, improves resource utilization, and streamlines operations.

Using MySQL as the database is highly beneficial as it is free to download, popular and can be easily customized. The data stored in the MySQL database can easily be retrieved and manipulated according to the requirements with basic knowledge of SQL.

With the theoretical inclination of our syllabus it becomes very essential to take the atmost advantage of any opportunity of gaining practical experience that comes along. The building blocks of this Major Project "Hospital Management System" was one of these opportunities. It gave us the requisite practical knowledge to supplement the already taught theoretical concepts thus making us more competentas a computer engineer. The project from a personal point of view also helped us in understanding the following aspects of project development:

- The planning that goes into implementing a project.
- The importance of proper planning and an organized methodology.
- The key element of team spirit and co-ordination in a successful project.

REFERENCES

- https://www.youtube.com/
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