

# **HOSPITAL MANAGEMENT SYSTEM**

## **A MINI-PROJECT REPORT**

*Submitted by*

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*in partial fulfillment of the award of the degree*

*of*

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**RAJALAKSHMI ENGINEERING COLLEGE**

**AUTONOMOUS, CHENNAI**

**NOV/DEC, 2023**

## **BONAFIDE CERTIFICATE**

Certified that this mini project **“HOSPITAL MANAGEMENT SYSTEM”** is the bonafide work of **“CHARULATA.M.G and DARSHITA.M”** who carried out the project work under my supervision.

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**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

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## **ABSTRACT**

The Hospital Management System (HMS) is a robust web-based application built using PHP, CSS and MYSQL, designed to streamline patient-doctor interactions and optimize appointment scheduling. This system allows hospitals to manage doctor and patient records, appointments and basic contact services within a secure and user-friendly platform.

The system enables doctors to register and manage their profiles efficiently. Once registered, doctors can view a list of patients, access patient details, and check scheduled appointments. This functionality helps doctors prepare for consultations and maintain patient records for improved healthcare services. By providing doctors with a centralized system for appointment management, the HMS ensures streamlined workflows and better care for our patients.

Patients, on the other hand, can register and access personalized profiles to book appointments with their chosen doctors. The platform offers flexibility for patients to reschedule or cancel appointments as needed. The appointment view feature allows patients to track upcoming and past appointments, making it easier to manage their healthcare interactions. The system also includes a “Contact Us” page to address user inquiries or support requests, ensuring accessibility and addressing potential issues.

HMS offers a visually appealing, accessible, and mobile-friendly experience, adaptable across devices and screen sizes. This Hospital Management System aims to minimize administrative burdens, improve patient-doctor communication, and ensure efficient appointment scheduling for better healthcare delivery.

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# **CHAPTER 1**

## **1.1 INTRODUCTION**

The Hospital Management System (HMS) is an innovative web application designed to improve healthcare administration by providing a streamlined platform for managing patient and doctor interactions. Built with PHP, CSS, and MySQL this system enhances traditional healthcare processes by offering a solution for doctors and patients to manage appointments, maintain records, and communicate effectively. For doctors, HMS offers a simple yet powerful interface to register, view patient details, and keep track of upcoming appointments and patients benefit from a personalized experience where they can register, book appointments, reschedule, or cancel as needed. This flexibility empowers patients to manage their healthcare journey with ease and reliability.

## **1.2 SCOPE OF THE WORK**

The Hospital Management System (HMS) is designed as a comprehensive platform to streamline hospital operations, primarily focusing on patient and doctor management, appointment scheduling, and efficient communication. The scope of this system includes several key functionalities that cater to both doctors and patients. Doctors can register within the system, creating profiles that display their specialization, contact details, and availability, while also accessing patient records and managing appointment schedules. Patients, on the other hand, can register to create personal profiles, which they use to book, reschedule, or cancel appointments with ease. The HMS provides a view of all upcoming and past appointments for patients, allowing them to keep track of their healthcare interactions seamlessly.

## **1.3 PROBLEM STATEMENT**

In traditional hospital settings, managing patient-doctor interactions, scheduling appointments, and maintaining medical records often involves extensive paperwork and time-consuming manual processes. These inefficiencies can lead to scheduling conflicts, delayed or missed appointments, data inaccuracies, and difficulty in accessing patient records, all of which compromise the quality of healthcare delivery. Furthermore, the lack of a centralized system for both patients and doctors to view and manage appointments can result in communication gaps and inconsistent patient care. This Hospital Management System (HMS) project seeks to address these issues by developing a streamlined, web-based solution that enhances administrative efficiency and patient satisfaction.

By integrating a secure MySQL database to store patient and doctor information, and utilizing responsive design techniques for accessibility on any device, the HMS aims to reduce operational burdens, prevent scheduling errors, and improve the overall quality of patient care. This system addresses the need for a reliable, scalable, and efficient digital solution for healthcare provider.

## **1.4 AIM AND OBJECTIVES OF THE PROJECT**

The aim of the Hospital Management System (HMS) is to create an integrated, web-based solution that centralizes hospital operations to enhance patient care and streamline administrative processes. By focusing on patient and doctor interactions, appointment scheduling, and information management, HMS aims to improve healthcare accessibility, accuracy, and efficiency. The system's objectives include developing a secure, user-friendly registration and login process for both patients and doctors, where profiles can be easily created, updated, and managed to ensure accurate data representation. For appointment management, the HMS provides flexible booking, rescheduling, and cancellation options for patients, enabling them to coordinate with doctor availability and avoid scheduling conflicts. Additionally, doctors can access an intuitive dashboard to view and manage appointments, monitor patient records, and prepare in advance, facilitating effective care delivery.

The HMS is designed to provide a centralized and easily navigable appointment tracking system, allowing both doctors and patients to review appointment history and upcoming visits, thereby enhancing communication and ensuring smoother interactions. A key feature of the system is its secure MySQL database, which safeguards sensitive data, supports efficient storage and retrieval, and is backed by regular backups for data reliability and continuity. The HMS incorporates a responsive, cross-platform interface built using CSS and Bootstrap, ensuring compatibility with various devices, including desktops, tablets, and mobile phones, making it accessible for users in different settings.

Other key objectives include ensuring the scalability of the system to accommodate growing patient and doctor databases, providing role-based access control to restrict sensitive information, and implementing user activity logs for tracking actions within the system, which enhances accountability and security. Ultimately, the HMS aims to reduce administrative workload, minimize errors associated with manual scheduling, and foster a collaborative environment for better patient outcomes, positioning itself as a comprehensive solution for modern hospital management needs.

## **CHAPTER 2**

### **SYSTEM SPECIFICATIONS**

#### **2.1 HARDWARE SPECIFICATIONS**

Processor	:	Pentium IV Or Higher
Memory Size	:	8GB RAM (Minimum)
HDD	:	256 GB (Minimum)

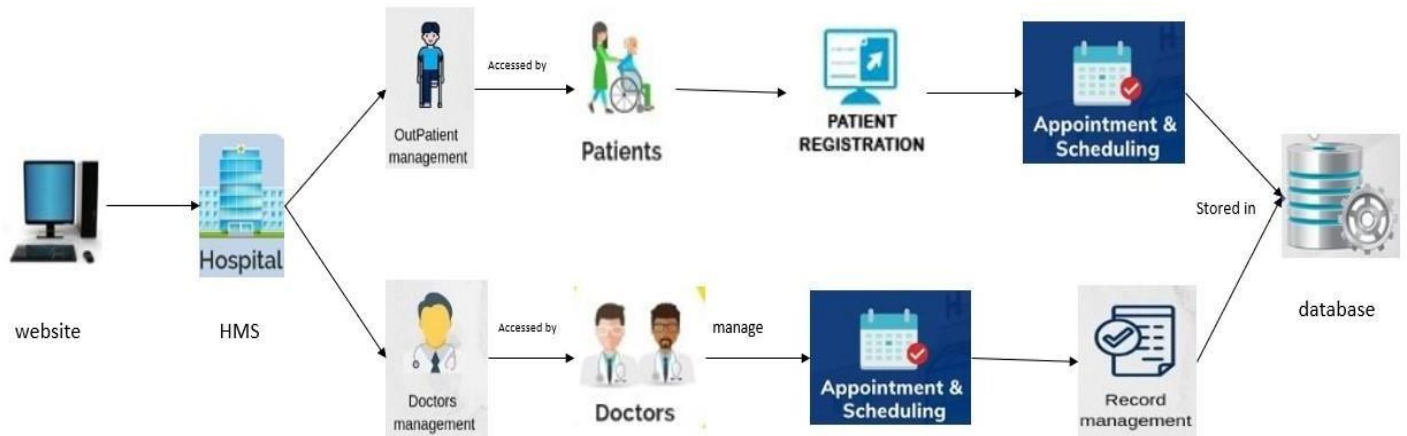
#### **2.1 SOFTWARE SPECIFICATIONS**

Operating System	:	WINDOWS 7 OR HIGHER
Front – End	:	HTML, CSS, JAVASCRIPT
Back – End	:	PHP, MYSQL



## CHAPTER 3

### ARCHITECTURE DIAGRAM



The architecture of the Hospital Management System (HMS) is designed using a **Client-Server Model** to ensure seamless integration, security, and scalability. It comprises three primary layers: the **Presentation Layer**, **Application Layer**, and **Database Layer**. The **Presentation Layer**, built using HTML, CSS, and JavaScript, provides an intuitive user interface for patients, doctors, and administrators to interact with the system via web browsers or mobile devices. The **Application Layer**, developed with PHP, acts as a middleware, processing user requests, enforcing business rules, and managing core functionalities like authentication, appointment scheduling, and billing. The **Database Layer**, powered by MySQL, stores and manages critical data such as patient records, doctor profiles, and financial information, ensuring secure and efficient data retrieval and backup. Communication between these layers occurs securely through HTTP/HTTPS protocols, while additional components like notifications and analytics interact with the core system to enhance functionality. This architecture ensures modularity, efficiency, and adaptability, meeting the diverse needs of modern healthcare facilities.

## CHAPTER 4

### MODULE DESCRIPTION

#### 4.1. Appointment Scheduling Module:

The **Appointment Scheduling Module** centralizes appointment management, enabling patients to view doctor availability, book, reschedule, or cancel appointments. Both patients and doctors receive real-time updates on appointments. This module simplifies the booking process and improves time management for both patients and doctors.

#### 4.2. Patient Management Module

The **Patient Management Module** organizes patient data, storing details like personal information, contact data, medical history, and appointment records. This module allows doctors to access comprehensive patient profiles, giving them insight into a patient's past medical background, ongoing treatments, and history of appointments, facilitating more informed consultations.

#### 4.3. Doctor Management Module:

The **Doctor Management Module** helps doctors maintain their profiles, including their specialization, qualifications, and availability. Doctors can also view their schedule of appointments and access patient records directly through this module, ensuring they have the necessary information for each consultation and can manage their time effectively.

#### 4.4. Contact Us Module:

The **Contact Us Module** enables users to reach out with inquiries, complaints, or support requests through a centralized form. Administrators can manage these inquiries, responding to users directly within the system, which improves communication and ensures user concerns are addressed promptly.

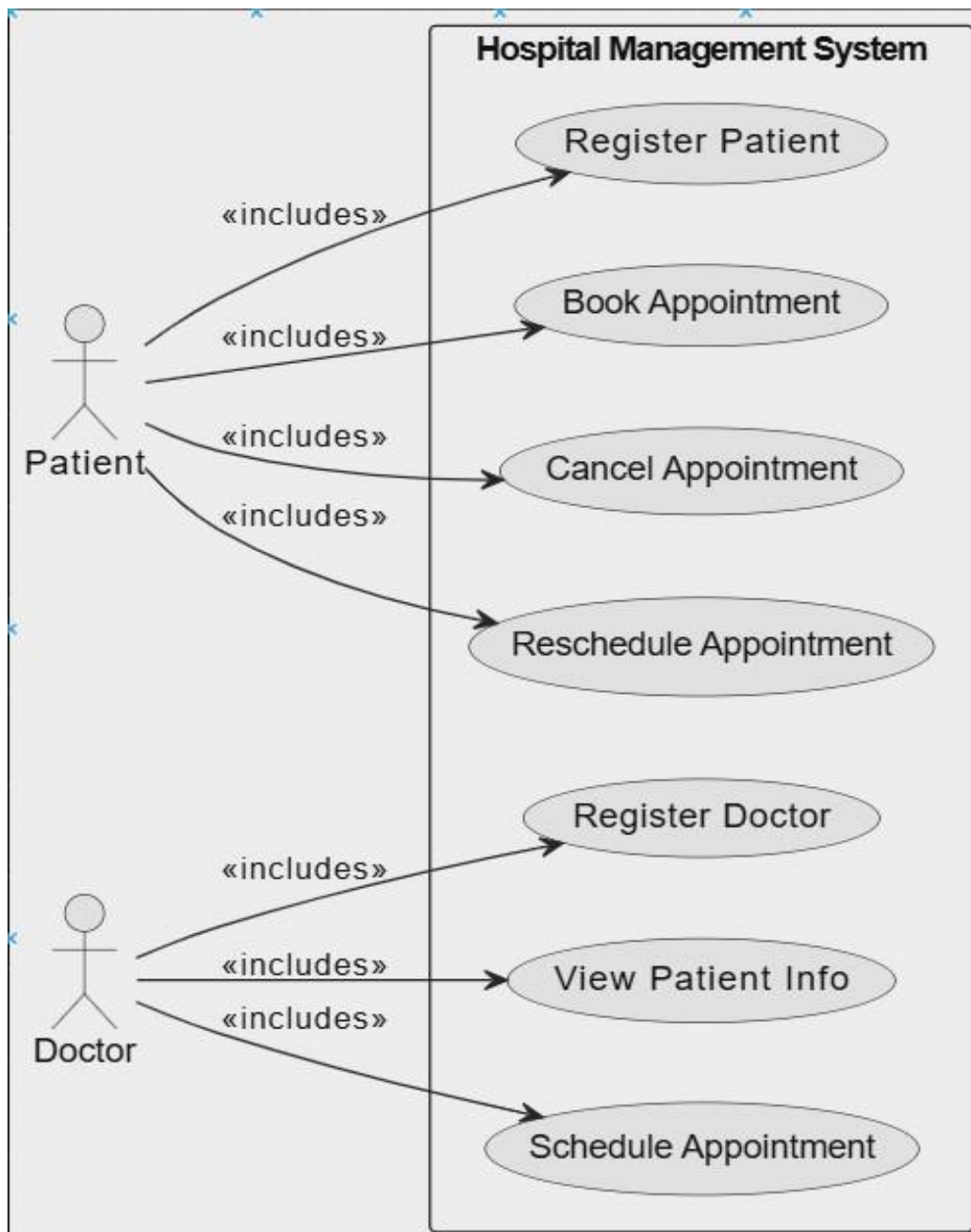
#### 4.5. Review Module:

The **Reports and Analytics Module** generates valuable insights on hospital operations, including data on patient demographics, doctor activity, appointment statistics, and revenue. These reports assist the hospital in making data-driven decisions and identifying patterns in patient care and service usage.

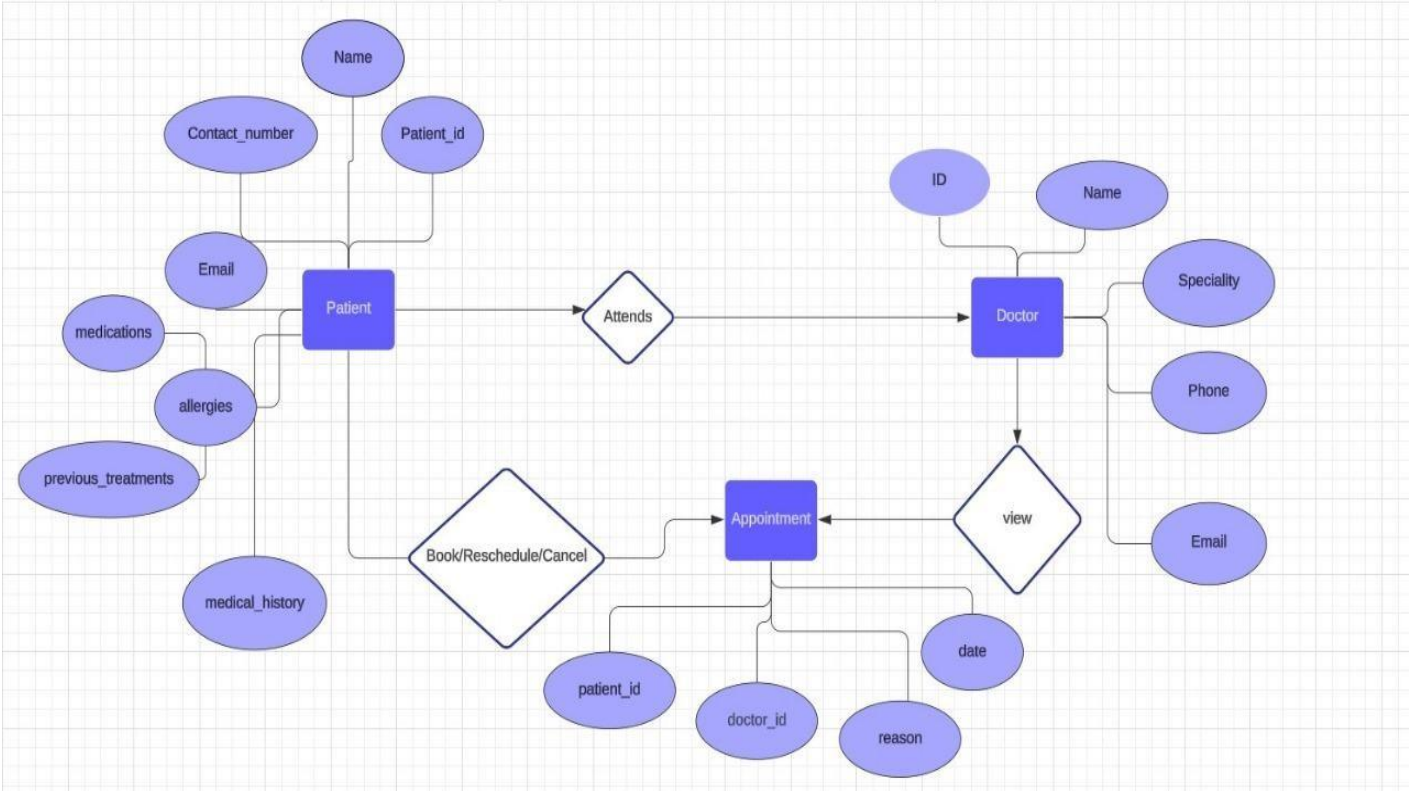
## CHAPTER 5

### SYSTEM DESIGN

#### 5.1 USE CASE DIAGRAM

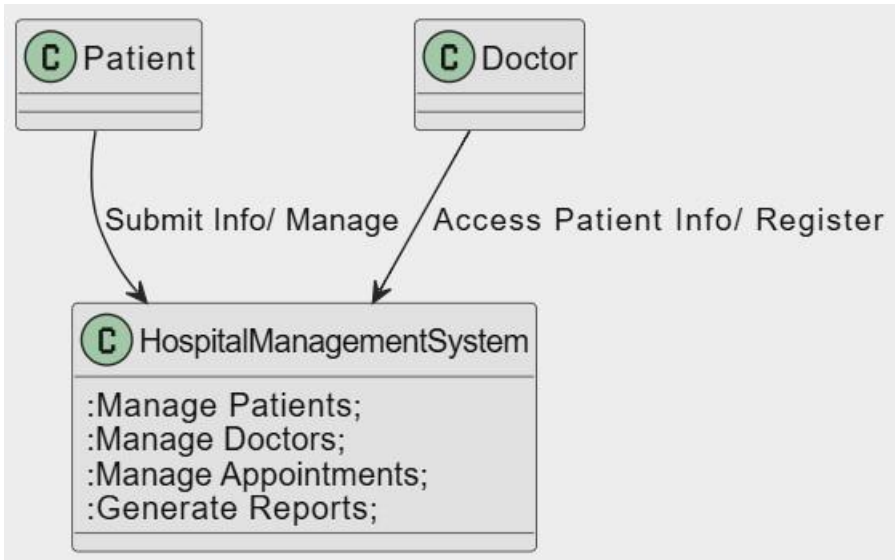


5.2 ER DIAGRAM

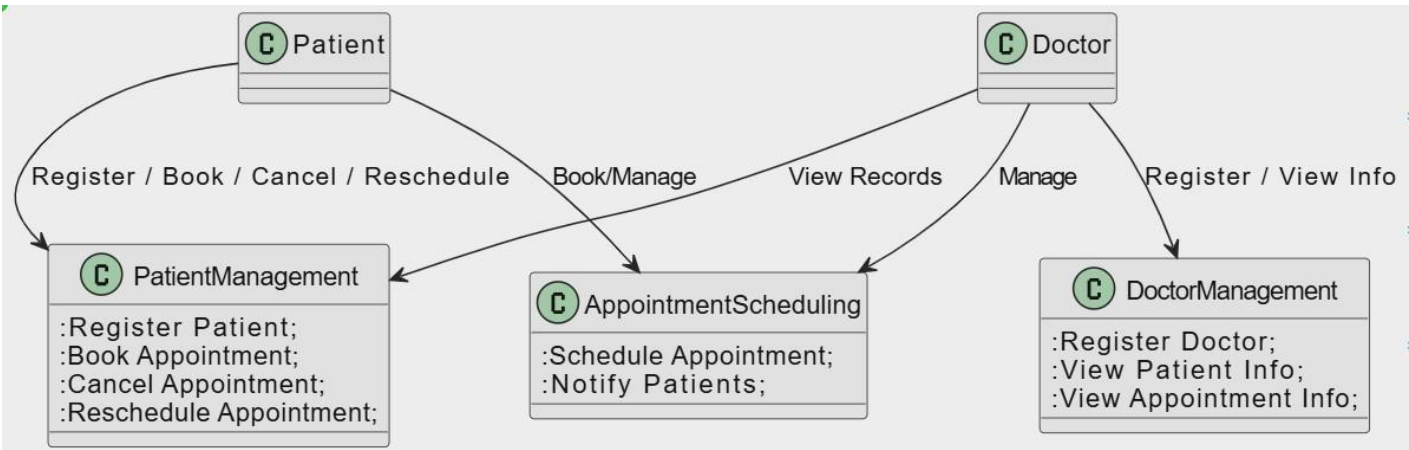


5.3 DFD DIAGRAM

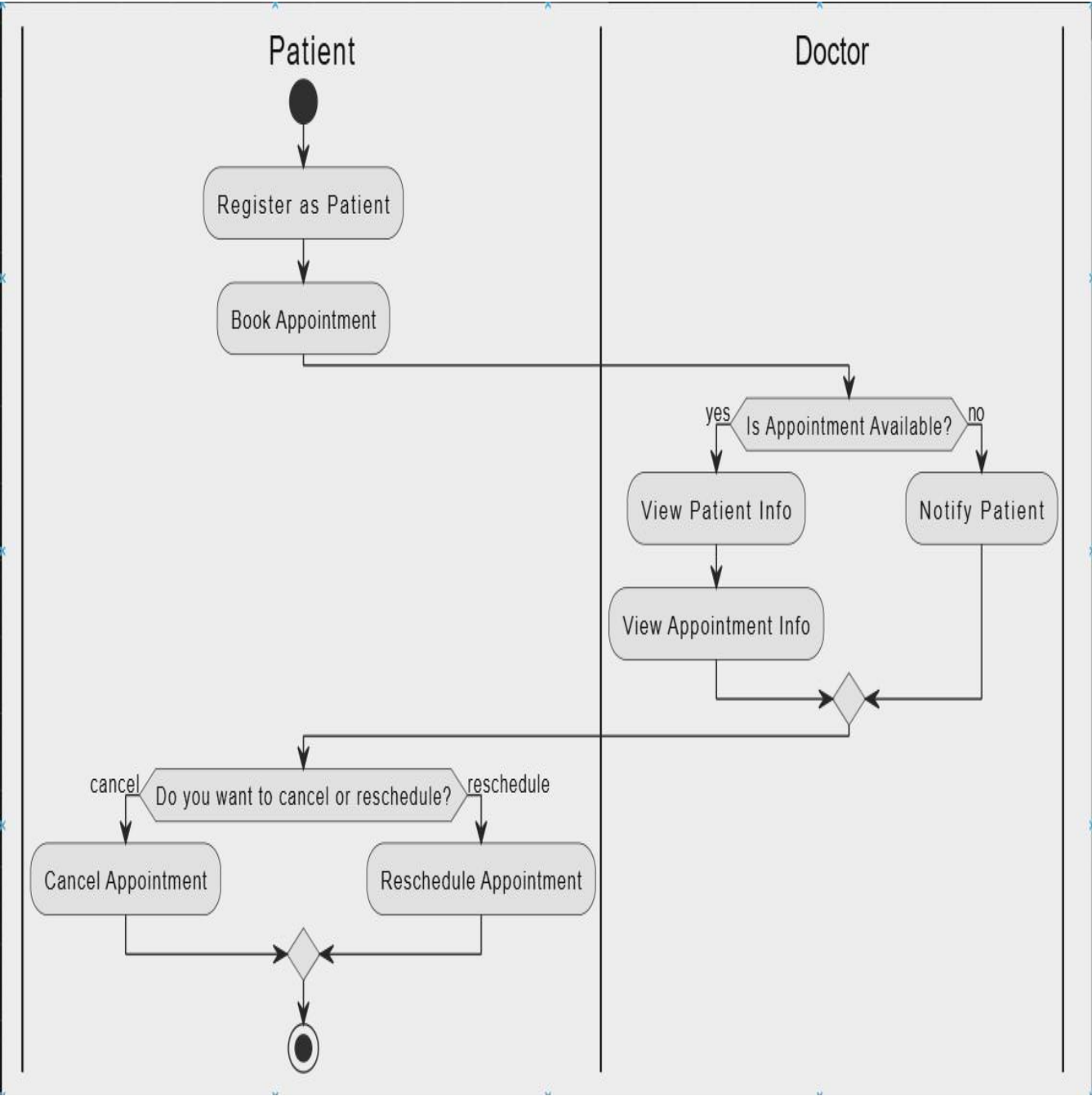
DFD Level-0 Diagram



DFD Level-1 Diagram



5.4 ACTIVITY DIAGRAM



## CHAPTER 6

### SAMPLE CODING

Viewappointment.php

```
<?php
// Database connection
$servername = "localhost";
$username = "root";
$password = ""; // Add your password if any
$dbname = "hms";
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection if ($conn->connect_error) { die("Connection failed:
" . $conn->connect_error);
}
// Query to get appointments
$sql = "SELECT a.id, p.name AS patient_name, d.name AS
doctor_name, a.appointment_date, a.reason FROM appointments a
JOIN patients p ON a.patient_id = p.id
JOIN doctors d ON a.doctor_id = d.id";
$result = $conn->query($sql);
?>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-
scale=1.0">
<link rel="stylesheet" href="style.css">
<title>View Appointments</title>
<style> body {
font-family: Arial, sans-serif;
margin: 20px;
}
h1 {
text-align: center;
}
```

```

table {
width: 100%; border-collapse: collapse; margin-top: 20px;
}
table, th,
td { border: 1px solid #ddd;
}
th,
td {
padding: 10px; text-align: left; }
th { background-color: #f2f2f2;
}
a {
display: block; margin: 20px 0;
text-align: center; text-decoration: none; background-color: #4CAF50;
color: white; padding: 10px; border-radius: 5px; }
a:hover {
background-color: #45a049;
}
</style>
</head>
<body>
<h1>View Appointments</h1>
<table>
<tr>
<th>Appointment ID</th>
<th>Patient Name</th>
<th>Doctor Name</th>
<th>Appointment Date</th>
<th>Reason</th>
</tr> <?php if ($result->num_rows > 0) {
while ($row = $result->fetch_assoc()) {
echo "<tr>
<td>" . $row["id"] . "</td>
<td>" . $row["patient_name"] . "</td>
<td>" . $row["doctor_name"] . "</td>

```



```

<td>" . $row["appointment_date"] . "</td>
<td>" . $row["reason"] . "</td>
</tr>"; }
} else { echo "<tr><td colspan='5'>No appointments found</td></tr>";
}
?>
</table>
<a href="doctor_form.php">Go back to home</a>
</body>
</html>
<?php
$conn->close(); ?>
Viewpatient.php
<?php
// Database connection
$servername = "localhost";
$username = "root";
$password = ""; // Add your password if any
$dbname = "hms";
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection if ($conn->connect_error) {
die("Connection failed: " . $conn->connect_error);
}
// Query to get patients
$sql = "SELECT id, name, email, phone, address FROM patients";
$result = $conn->query($sql); ?>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-
scale=1.0">
<link rel="stylesheet" href="style.css">
<title>View Patients</title>
<style> body {

```

```

font-family: Arial, sans-serif;
margin: 20px;
}
h1 {
text-align: center;
}
table {
width: 100%; border-collapse: collapse; margin-top: 20px;
}
table, th,
td { border: 1px solid #ddd;
}
th,
td {
padding: 10px; text-align: left; }
th { background-color: #f2f2f2;
}
a {
display: block; margin: 20px 0;
text-align: center; text-decoration: none; background-color: #4CAF50;
color: white; padding: 10px; border-radius: 5px; }
a:hover {
background-color: #45a049;
}
</style>
</head>
<body>
<h1>View Patients</h1>
<table>
<tr>
<th>Patient ID</th>
<th>Name</th>
<th>Email</th>
<th>Phone</th>
<th>Address</th>

```

```

</tr> <?php if ($result->num_rows > 0) {
while ($row = $result->fetch_assoc()) {
echo "<tr>
<td>" . $row["id"] . "</td>
<td>" . $row["name"] . "</td>
<td>" . $row["email"] . "</td>
<td>" . $row["phone"] . "</td>
<td>" . $row["address"] . "</td>
</tr>";
}
} else { echo "<tr><td colspan='5'>No patients found</td></tr>";
}
?>
</table>
<a href="doctor_form.php">Go back to home</a>
</body>
</html>
<?php
$conn->close();

?>

```

# CHAPTER 7

## SCREEN SHOTS

The screenshot shows the 'Patient's Home Page' of a 'Hospital Management System'. At the top is a blue header with the title 'Hospital Management System' and a navigation menu with links: 'Add Patient', 'Book Appointments', 'View Appointments', and 'Contact Us'. Below the header is a light gray box with a 'Welcome to the Hospital Management System' message and a user ID 'by 220701053,220701055'. Below this are two white boxes: 'Patients' with a description of the project's purpose, and 'Appointments' with a note that users can book, reschedule, and cancel appointments. At the bottom is a blue footer with the copyright notice '© 2024 Hospital Management System ip project'.

**Fig. 7.1.Patient’s Home Page**

The screenshot shows the 'Add Patient' form. It is a vertical stack of input fields on a light gray background. The fields are labeled: 'Patient ID:', 'Name:', 'Contact Number:', 'Email:', 'Medical History:', 'Allergies:', 'Medications:', and 'Previous Treatments:'. Each label is followed by a text input field. At the bottom of the form is a green button labeled 'Add Patient'.

**Fig. 7.2. To Add Patients**

### Book Appointment

Patient ID:

Appointment Date:

Reason for Appointment:

**Fig. 7.3. Appointment Booking**

### Contact Us

Name:

Email:

Message:

**Fig. 7.4. Contact Us**

## View Appointments

ID	Patient ID	Doctor Name	Appointment Date	Reason	Actions
1	1		2024-10-02 12:50:00	fever	<a href="#">Reschedule</a>   <a href="#">Cancel</a>

**Fig. 7.5. To View Appointments**

## Reschedule Appointment

Appointment Date:

Reason:

Reschedule Appointment

**Fig. 7.6. To Reschedule Appointments**

## Cancel Appointment

Are you sure you want to cancel the following appointment?

**Appointment Date:** 2024-10-02 12:50

**Reason:** fever

Yes, Cancel Appointment

No, Go Back

**Fig.7.7.To Cancel Appointments**

## View Patients

Patient ID	Name	Email	Phone	Address
1	aaa	aaa@gmail.com	12345	chennai

Go back to home

**Fig.7.8 To View Patients**

## Manage Doctors

Doctor's Name:

Specialty:

Phone:

Email:

[Submit](#)

### Check

- [View Patients](#)
- [View Appointments](#)
- [Contact Us](#)

**Fig.7.9.To Manage Doctors**

## View Appointments

Appointment ID	Patient Name	Doctor Name	Appointment Date	Reason
1	aaa	DARSHITA M	2024-10-02 12:50:00	fever

[Go back to home](#)

**Fig.7.10 . To View Appointments**



## Contact Us

Name

Email

Message

**Fig.7.11 contact page**

## **CHAPTER 8**

### **CONCLUSION**

In conclusion, the Hospital Management System (HMS) is a comprehensive solution designed to streamline the various operations within a healthcare facility, enhancing efficiency, security, and user experience for patients, doctors, and administrators. By implementing robust modules such as Patient Management, Doctor Management, Appointment Scheduling, and, the system addresses core needs for patient care coordination and doctors efficiency. Additional features, including the Contact Us and Security strengthen the system's capabilities by ensuring data-driven decision-making, effective communication, and secure data management.

The HMS not only improves the overall operational workflow but also enhances patient satisfaction by offering easy access to appointments and medical records. Doctors benefit from organized access to patient information, which aids in delivering quality care. Overall, the HMS bridges the gaps in hospital management processes, promoting a more organized, transparent, and efficient healthcare environment. This project is a significant step towards modernizing healthcare management, allowing hospitals to provide high-quality care with enhanced operational support.

## REFERENCES

HTML , CSS , JS – [www.w3schools.com](http://www.w3schools.com)

PHP, MYSQL – [www.youtube.com](http://www.youtube.com)

