# INTELLIGENT HEALTHCARE ANALYTICS

**PROJECT REPORT**

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***in partial fulfillment of the requirements for the degree of***

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**DR. MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY**

**AN AUTONOMOUS INSTITUTION**

**AFFILIATED TO ANNA UNIVERSITY**

**CHENNAI 600 025**

**MAY 2025**

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# ABSTRACT

**INTELLIGENT HEALTHCARE ANALYTICS**

# ABSTRACT

The Healthcare industry is increasingly emerging with new technologies to enhance patient care. Intelligent healthcare analytics is a system that has been designed for analyzing patient feedback, treatment outcomes and hospital resource management using Power BI Dashboard and AI Powered tools. This project utilizes a dataset that contains patient feedback about the hospital for the disease, recovery timelines within a defined date range who were benefited from it. The dataset has been derived from Kaggle. This project also ensures the patient with real- time feedback support about the hospital and the collected data were also reflected on the data derived dataset from Kaggle. By using Power BI, the data can be transformed into interactive dashboards that deliver insights about the treatment effectiveness of hospital with specific range, patient satisfaction and so on. It's also ensuring with AI based Support that makes the user by engaging with the Chatbot support with the integration from chatbase.co. This Chatbot provides the user with the query-based answers based on the analysis of the datasets collected. Finally, this project has a bed vacancy monitoring module, that has been used to monitor the number of beds and occupied beds in a hospital. This provides real-time functionality by integrating it with a hospital database. By integrating all the modules, Intelligent HealthCare Analytics has been serving as a modernized support for the patients in healthcare systems.

# ACKNOWLEDGEMENT

## ACKNOWLEDGEMENT

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# LIST OF ABBREVIATIONS

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| | |
|---|---|
| HTML | Hyper Text Markup Language |
| CSS | Cascading Style Sheets |
| JS | Java Script |
| SQL | Structured Query Language (Database Management System) |
| AI | Artificial Intelligence |
| ML | Machine Learning |
| DL | Deep Learning |

# CHAPTER 1
# INTRODUCTION

# CHAPTER 1

## 1.1 INTRODUCTION

In modern health systems, understanding patient feedback is extremely important for improving service quality and patient satisfaction. To improve this, intelligent healthcare analysis aims to efficiently collect, analyze and present patient feedback in a sensible way and to also utilize the Kaggle HealthCare Dataset. The system is built around a hospital dataset containing patient feedback, information about the diseases they were treated for, and their recovery timelines within a specific date range. Using Power BI, this data is analyzed and visualized through an interactive dashboard that offers valuable insights into patient satisfaction, treatment effectiveness, and recovery trends. To make these insights more accessible, a chatbot integrated via Chatbase.co allows users to interact with the system. The chatbot includes symptom testers that frequently enquire and respond to healthcare-related health care, allowing users to get into basic symptoms. This helps patients make healthy decisions before consulting with a healthcare professional. The project highlights the importance of technologies to bridge the communication gap between patients and health service providers, which will lead to better healthcare outcomes.

## 1.2 PROBLEM DEFINITION

In healthcare systems, patient feedback is often collected, but rarely analyzed effectively, leaving you missing opportunities to improve services and improve patient satisfaction. Traditional feedback systems do not have automation, real-time insights, or user-friendly visualizations. This makes it difficult for health service providers to act immediately. Additionally, patients often face challenges when accessing immediate support and assessing symptoms before seeking medical assistance. In addition to capturing and analyzing feedback, there is a need for an intelligent system that supports patients with intelligent chatbots and provides rapid responses and temporary symptom assessments.

## 1.3 PROJECT OVERVIEW/SPECIFICATIONS

Intelligent Healthcare Analytics is a comprehensive solution for improving healthcare services through effective collection, analysis and visualization of patient feedback. The purpose of this project is to create a platform that captures both structured and unstructured feedback and uses interactive Power BI dashboards to represent interactive performance. In addition to analysis, the system provides a chatbot that supports patients by answering frequently queries in the healthcare system and performs a basic symptom testing process.

**Project Specification:**

1. Feedback - Collection Module
2. Analysis by using Power BI
3. Chatbot integration
4. Bed Vacancy Checker

## 1.4 FEATURES

- Centralized Home Interface
- Digital Patient Survey System
- AI-Powered Chatbot
- Power BI Data Visualization
- Real-Time Bed Vacancy Checker

## 1.5 REQUIREMENTS

### 1.5.1 Hardware Requirement

- PROCESS: INTEL® CORE™ I5-8900K 3.20 GHZ
- RAM: 8 GB
- HARD DISK: 1 TB

### 1.5.2 Software Requirement

- PROGRAMMING LANGUAGE – PYTHON, HTML, CSS, JS, BOOTSTRAP
- TOOL USED – POWER BI, DJANGO, SQLITE
- DATASET – KAAGLE HEALTH CARE DATASET

# CHAPTER 2

# LITERATURE SURVEY

# CHAPTER 2

## 2.1 PATIENT FEEDBACK ANALYSIS IN HEALTHCARE

Analysis of patient feedback is extremely important for improving healthcare quality and patient satisfaction. Studies, such as those published in *the Journal of Medical Internet Research (2020),* have shown that hospitals implementing structured feedback systems experience better service outcomes and increase patient trust. However, many systems continue to rely on manual methods or simple digital forms that are rarely analyzed due to time and resource limitations. This limits the effectiveness of providing implementable knowledge.

## 2.2 MACHINE LEARNING IN HEALTHCARE ANALYTICS

Machine learning has acquired the importance of healthcare for tasks such as patient mood analysis, diagnostic prediction, and operational decision making. *Research by Chen et al. (2021) with IEEE access*, the effectiveness of the use of the NLP model to analyze health care system checks was achieved with high levels of accuracy in mood classification. Despite its success, such models often concentrate on public data records and are not optimized for real-time hospital feedback, limiting their immediate applicability in clinical settings.

## 2.3 CHATBOT APPLICATIONS IN HEALTHCARE

Chatbots are increasingly used in healthcare to provide immediate response to common queries, schedule dates and support in the event of preliminary diagnosis. A report by *Healthcare IT News (2019)* showed that virtual assistants can reduce workloads by employees by automating up to 30% of everyday interactions. Most existing chatbots are independent and are limited to answering FAQs with minimal integration into a wider health system or analytics platform.

## 2.4 VISUALIZATION TOOLS FOR HEALTHCARE DECISION-MAKING

Data visualization tools such as Power BI are becoming more widespread in healthcare to improve decision-making and operational oversight. *Study by Alharbi et al. (2020)* found that interactive dashboards can more quickly interpret large data records and improve health managers' response capabilities. However, the use of such tools primarily focuses on operational or financial metrics, not patient experience or feedback data.

## 2.5 INTEGRATION OF MULTI-FUNCTIONAL MODULES

Health technology is often a feedback system, an analytical motor, and a virtual assistant working independently. *Study by Zhang et al. Journal of Healthcare Engineering* (2022) highlighted the need for an integrated platform that integrates various functions for overall patient care and efficient service management. The lack of uniform solutions limits the possibilities of technologies that improve both clinical outcomes and patient commitment.

# CHAPTER 3
# SYSTEM ANALYSIS

# CHAPTER 3

## 3.1 EXISTING SYSTEM

Healthcare's current feedback systems are primarily based on manual methods such as paper research, basic online forms, and personal interviews. These methods help to gather patient opinions, but are often slow, inefficient and lacking in actual time processing functions. Feedback is collected and stored, but is usually analyzed manually, delaying the identification of service and patient issues. Furthermore, most systems lack intelligent features such as automated analysis and interactive data visualization, making it difficult for health service providers to respond immediately. Patient support tools such as AI chatbots and symptoms are rarely integrated, leading to slower responses to patient needs. Overall, existing systems are fragmented and do not offer a seamless, automated, patient-centric experience. This limits its effectiveness in improving service quality and improving health outcomes. In some advanced setups, hospitals can use simple analytical tools to create static reports, but these missing real-time knowledge and dynamic visualizations are available. Patient communication is usually limited to personal interactions, phone calls, or email. There is no AI chatbot or automated system integration to support patients with concerns or inquiries. Bed availability is typically managed by manual protocols or hospital management systems with limited patient access. Overall, existing systems implementations are still fundamental, dismantled, lacking automation, real-time feedback analysis, or intelligent support tools.

## Limitations in Existing System

In the current environment of healthcare systems, patient feedback collections are often performed by manual methods such as paper surveys, basic online forms, and personal interviews. These methods help to gather patient opinions but usually suffer from some limitations.

**Lack of Automation:** Feedback is collected but not analyzed in real-time. Manual

efforts are required to sort, categorize, and interpret responses, leading to delays in decision-making.

**Limited Data Utilization:** Many healthcare providers fail to leverage the full potential of the collected feedback, resulting in valuable insights being overlooked.

**Poor Visualization:** Most existing systems do not provide dynamic visual representations of feedback data. As a result, healthcare administrators find it challenging to quickly identify trends, issues, and areas for improvement.

**Absence of Immediate Patient Assistance:** Current systems do not offer real-time support to patients for symptom checking or answering queries. Patients must wait for human support, which can delay care and reduce satisfaction.

**Fragmented Systems:** Often, feedback collection, patient assistance, and data analysis are handled by separate platforms, leading to inefficiencies and poor integration.

## 3.2 PROPOSED SYSTEM

By combining data analytics, artificial intelligence, and real-time monitoring, the suggested system, Intelligent Healthcare Analytics, aims to modernize how hospitals handle patient feedback and allocate resources. A structured hospital dataset comprising patient feedback, treatment specifics, and recovery dates over a predetermined period forms the basis of the system. Microsoft Power BI is used to analyze this data, allowing for the development of an interactive dashboard that shows important metrics like recovery times, disease trends, treatment efficacy, and patient satisfaction levels. The system includes a Chatbase.co-powered chatbot to improve accessibility and user interaction. The chatbot gives users precise, data-driven answers based on the insights that have been analyzed. Additionally, the system has a Bed Vacancy Monitoring Module that tracks occupied and available beds in real time, enhancing operational effectiveness and supporting emergency response. By integrating these elements, the suggested system provides a scalable, intelligent way to enhance healthcare services, empowering medical professionals and hospital administrators to make timely, significant, and well-informed decisions.

### 3.2.1 Advantage

1. **Improved Decision-Making**

Through interactive Power BI dashboards, administrators can access real-time visualizations of patient satisfaction, service quality, and operational data, enabling quicker and more informed decisions.

2. **Enhanced Patient Engagement**

The AI-powered chatbot improves communication by assisting patients with common healthcare queries and offering a preliminary checker, thereby increasing patient involvement in their own healthcare journey.

3. **Enhanced Data Insights**

Uses Power BI to create interactive, real -time dashboards for the patient feedback , treatment outcomes based on the specified range.

4. **Centralized and Integrated Platform**

By combining feedback collection, analysis, visualization, and chatbot assistance into one unified system, the platform ensures seamless data flow and improved coordination among different departments.

5. **Scalable and Adaptable**

The system is designed to be scalable, making it adaptable to hospitals and healthcare institutions of various sizes. It can also be expanded to include additional modules or integration with existing hospital management systems.

# CHAPTER 4

# PROJECT DESCRIPTION

# CHAPTER 4

## 4.1 FLOW DIAGRAM

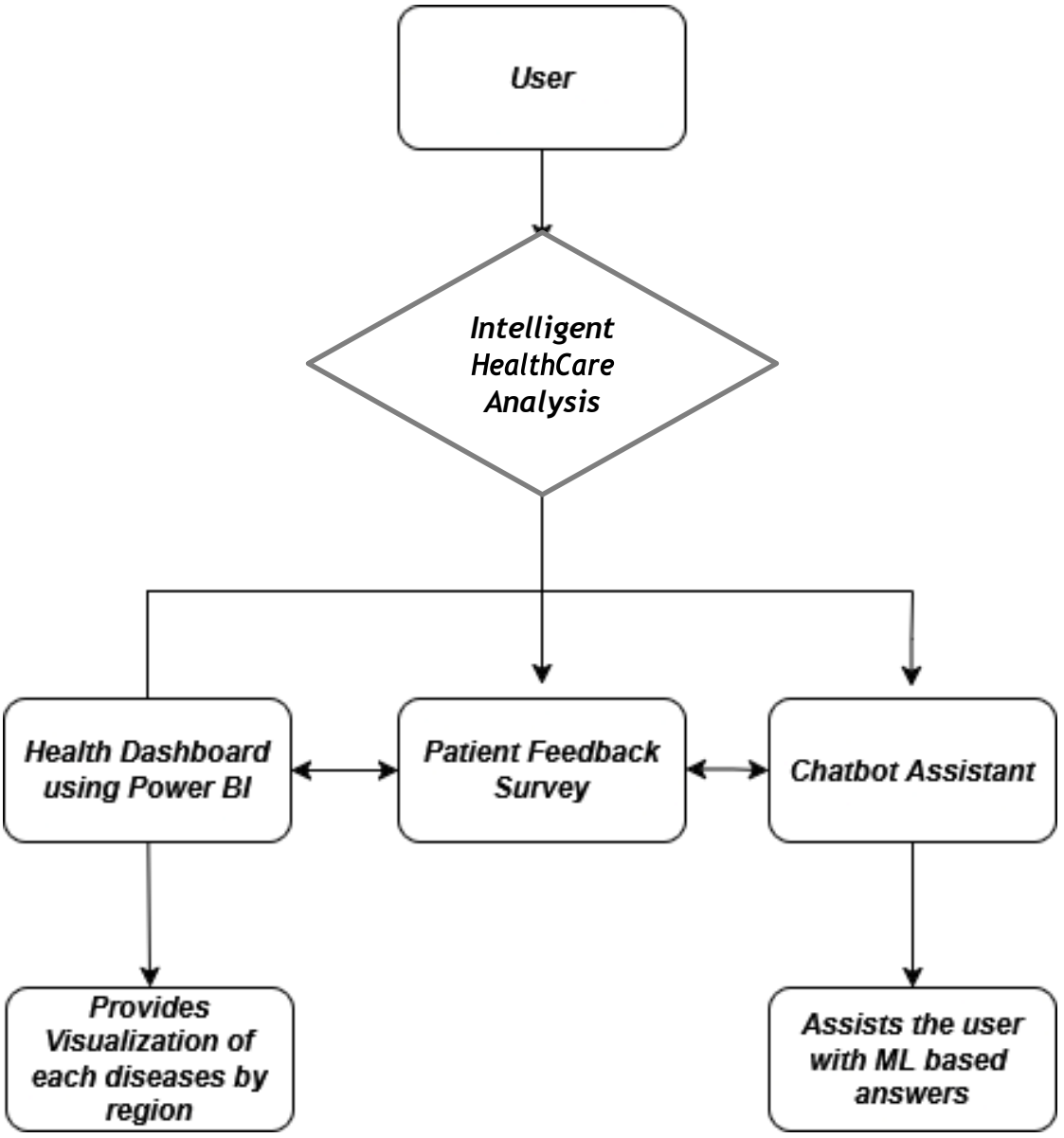


**Fig: 4. 1 Flow Diagram**

## 4.2 MODULES DESCRIPTION

### 4.2.1 Feedback Collection Module

This module is responsible for collecting patient feedback by using the digital survey form with the reference of Kaggle Dataset. Power BI is used to visualize this data along with information about the disease and recovery, giving clear insights into service performance and patient satisfaction levels. The module assists medical professionals in determining their areas of strength and growth. The system is interactive and easy to use thanks to its integration with an AI-powered chatbot that allows users to quickly query insights related to feedback.

### 4.2.2 Power BI Visualization Module

This module plays a key role in translating RAW patient feedback into implementable knowledge about interactive dashboards created in Microsoft Power BI. As soon as data on digital surveys and from the Kaggle Dataset are collected, it is processed, fed into the power BI and visualized using various forms such as bar diagrams, circular diagrams, line diagrams, and heating.

- **Real-time Dashboards:** The data collected and analyzed by the system is transformed into real-time visualizations that can be viewed on interactive dashboards. These dashboards are tailored to the needs of healthcare administrators and decision-makers.
- **Visual Representation of Data:** The Power BI dashboards display various visualizations such as:
    - **Charts (bar, pie, line)** for satisfaction trends.
    - **Heatmaps** to show areas with frequent complaints.
    - **Graphs** showing service quality metrics over time.

### 4.2.3 AI-Powered Chatbot Module

The AI-Powered Chatbot Module is intended to give users a conversational, intelligent interface through which they can engage with the healthcare data that has been analyzed. Utilizing Chatbase.co, the chatbot is trained on dataset insights,

including patient feedback, disease patterns, and recovery trends, and provide precise, instantaneous answers to user inquiries.

- **Frequently Asked Questions (FAQs):** The chatbot answers routine questions such as hospital services, appointment scheduling, visiting hours, and treatment options. This reduces the workload of hospital staff by handling common inquiries.
- **Feedback Collection:** Beyond providing general assistance, the chatbot gathers feedback from patients in a conversational format, encouraging users to share their experiences. This method of collection makes the feedback process more engaging and accessible for patients.

### 4.2.4 Bed Vacancy Checker Module

This module provides real-time information about the availability of beds within the hospital. By integrating with the hospital's internal bed management system, it offers an up-to-date view of vacant beds across various wards or departments. Patients and staff can access this information easily, ensuring that they can make informed decisions regarding admissions or transfers. This reduces unnecessary waiting times and supports better resource allocation, especially during peak times or emergencies.

- **Real-Time Bed Availability:** This module integrates with the hospital's internal bed management system to display up-to-date information on the availability of beds in various wards or departments (e.g., emergency, ICU, general ward).
- **Efficient Resource Allocation:** By providing accurate and timely information on bed vacancies, the module helps reduce waiting times and streamlines the admission process, especially during peak hours or emergencies.

# CHAPTER 5

# IMPLEMENTATION AND RESULT

# CHAPTER 5

## 5.1 IMPLEMENTATION

The Intelligent Healthcare Analytics system was implemented by integrating several functional modules aimed at improving patient commitment and optimizing monitoring of the healthcare system. The system starts with a digital feedback interface developed using HTML, CSS, JavaScript and Django as the backend framework. This web-based study allows patients to share their experiences with treatment, personnel behavior, and hospital facilities. All feedback is stored securely in the SQLite database for further processing. The Data is Processed in the Power BI Dashboard and in this module the data is gone through different analysis in real-time to visualize patient satisfaction. These dashboards allow healthcare administrators to filter data by department or hourly basis that supports data-controlled decisions. For interactive support, AI-related chatbots with the integration of chatbase.co have been developed and integrated into the web interface. This chatbot answers frequently asked questions and includes basic symptom testing based on suggestions based on user input. Additionally, real-time bed vacancy checkers have been implemented to help patients see available beds in different departments. This function calls data in the hospital database and dynamically updates the availability status of the user interface. Overall, the combination of real data visualization, intelligent automation and user-friendly digital tools ensures that the system not only improves operational efficiency but also improves the care and satisfaction of healthcare patients.

## 5.2 SCREENSHOTS

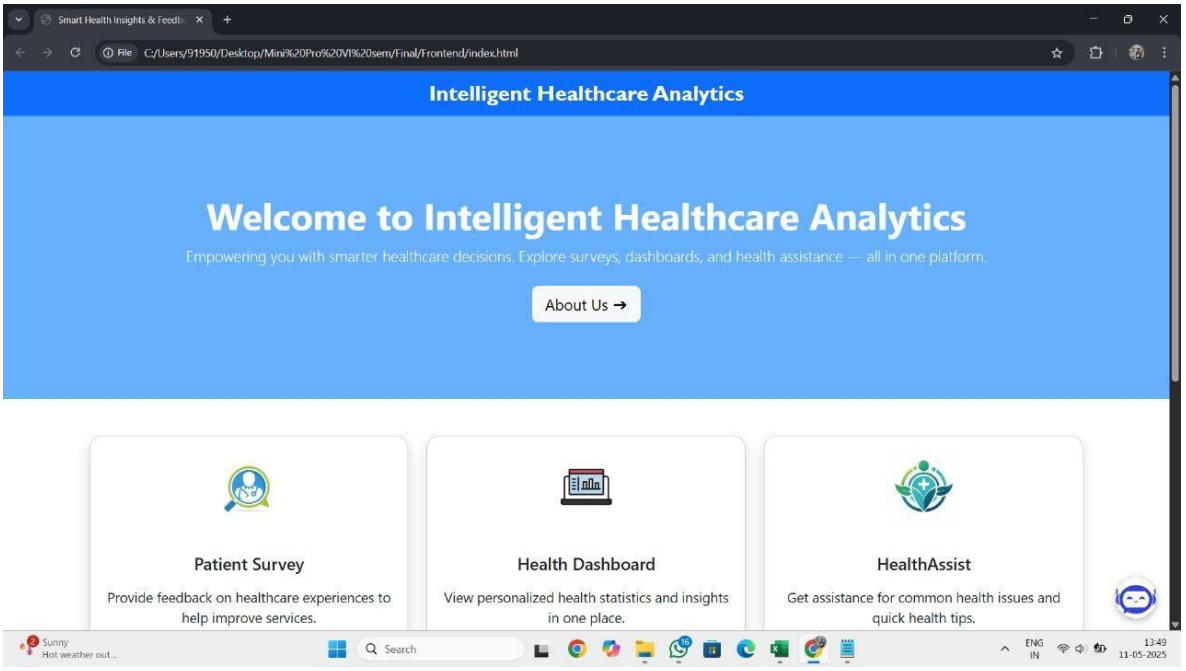


**Figure 5.1: Home Page**

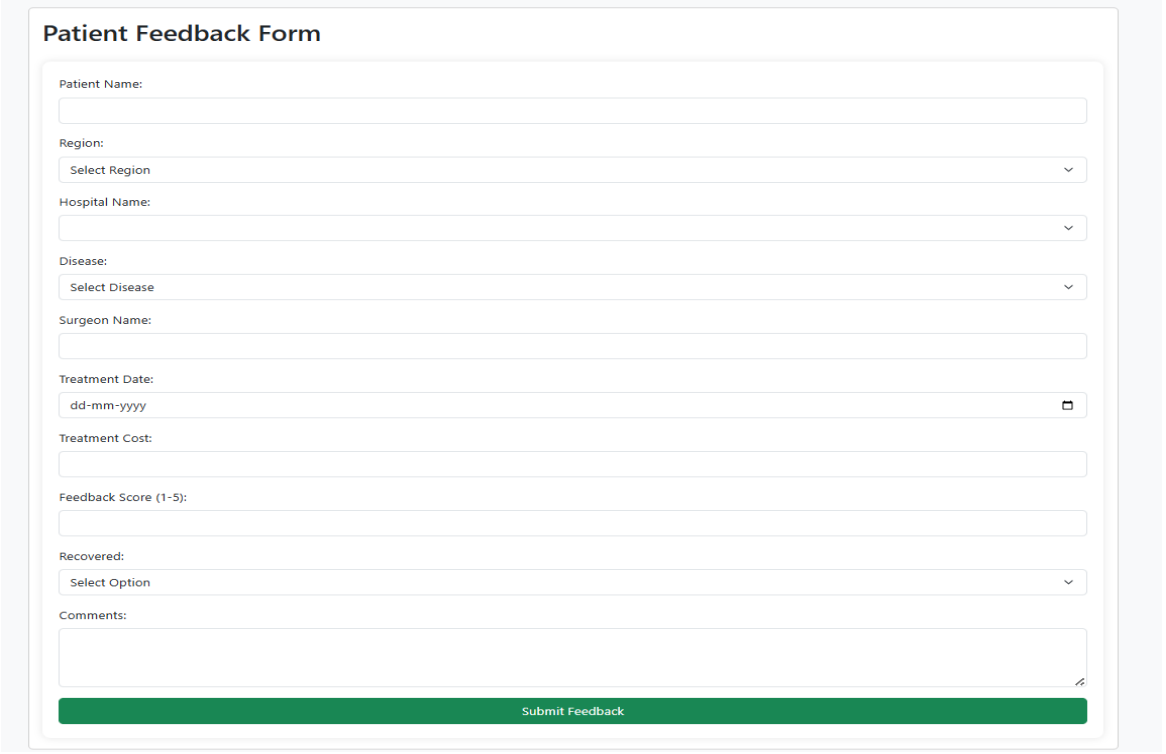


**Figure 5.2:Patient Survey page.**

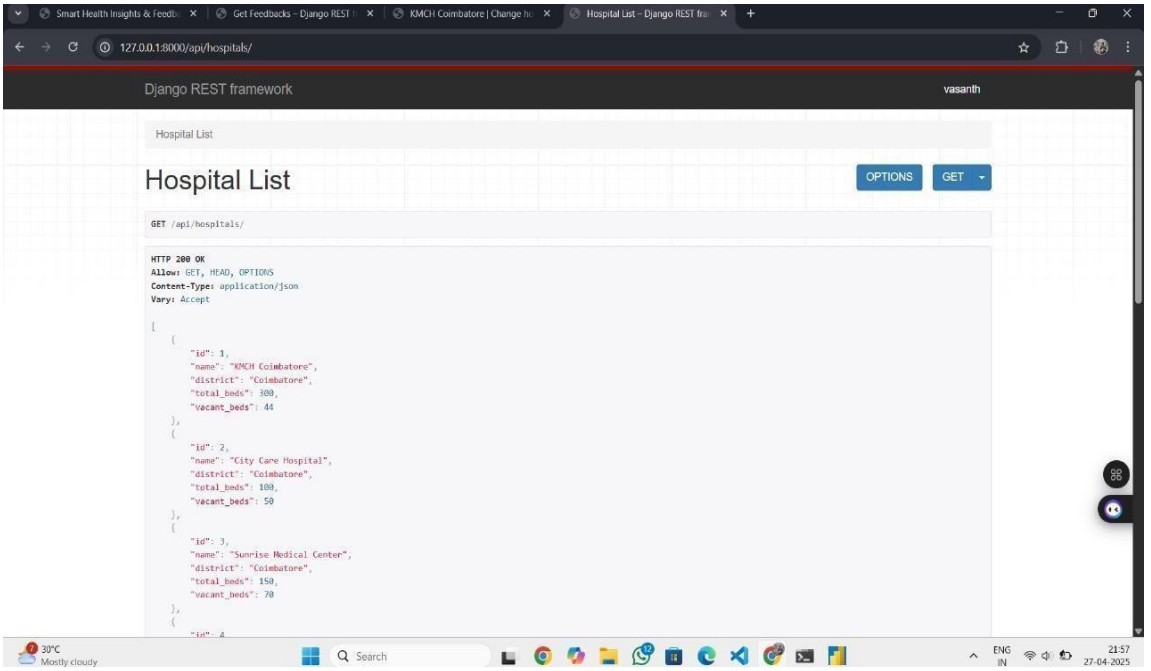


**Figure 5.3: Patient Survey Database**

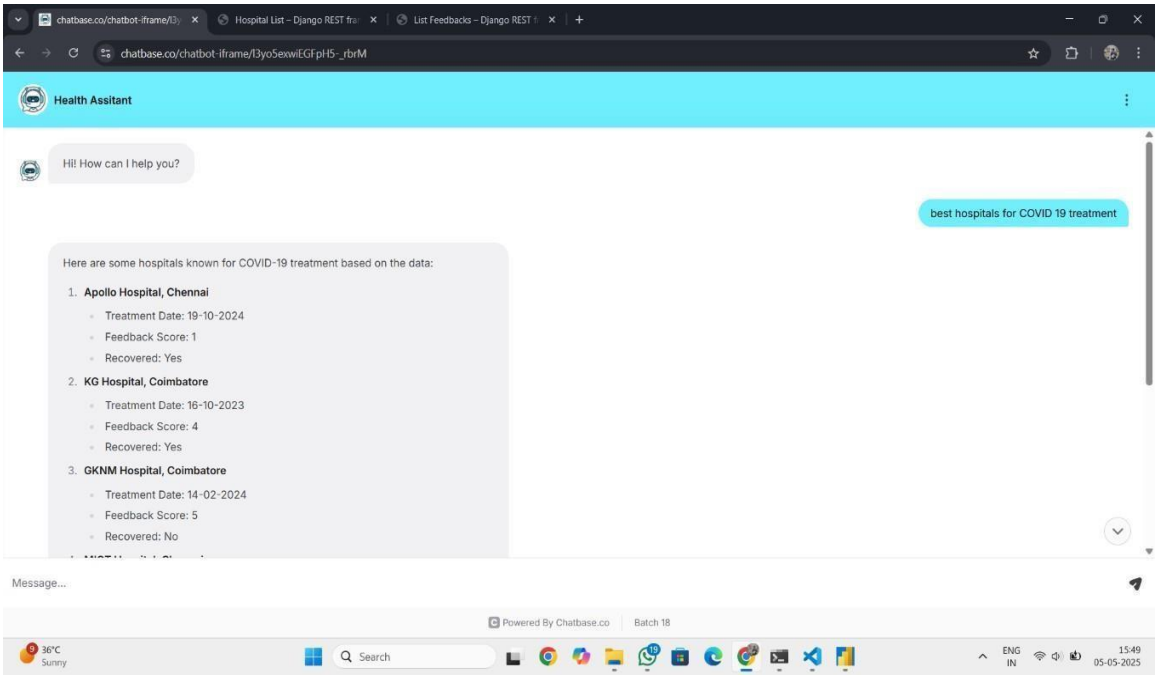


**Figure 5.4: Chatbot Implementation.**

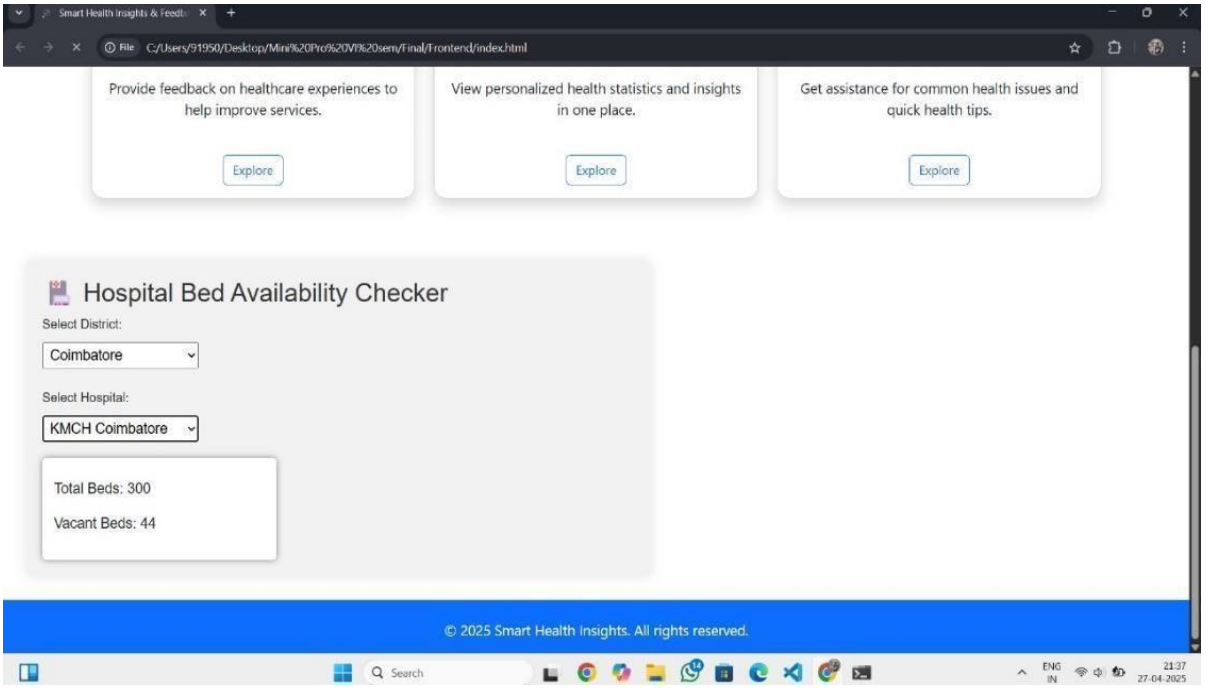


**Figure 5.5: Bed Vacancy**

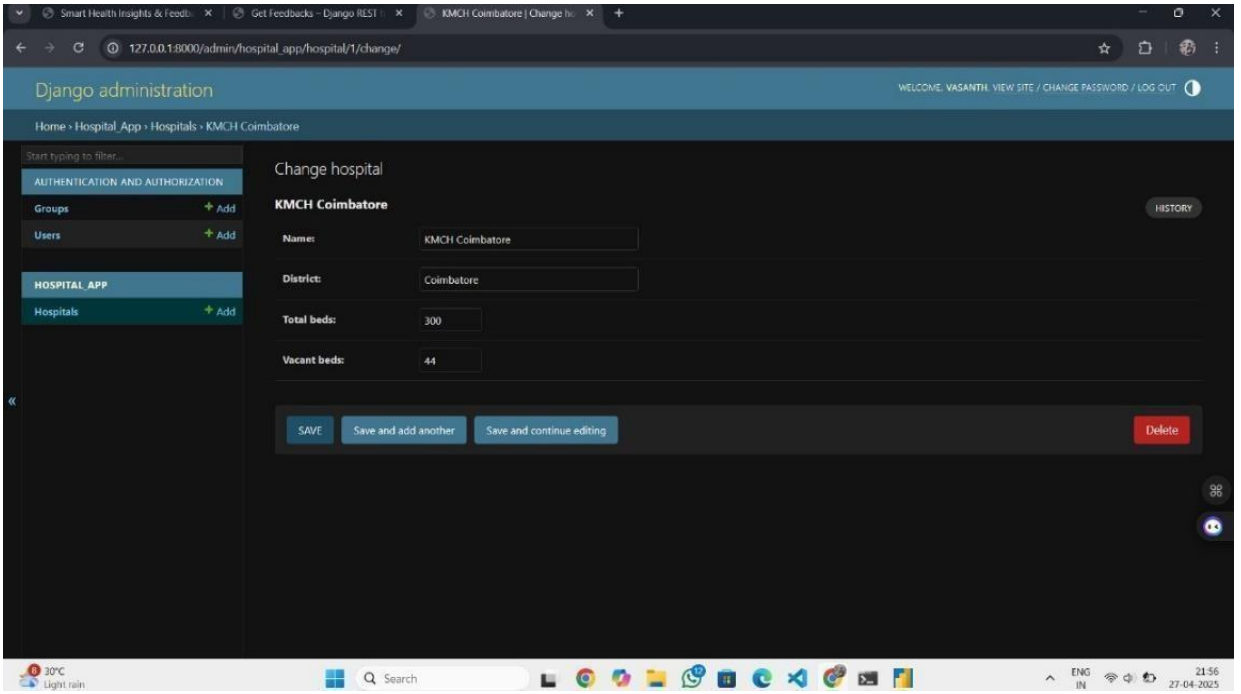


**Figure 5.6: Bed Vacancy Database**

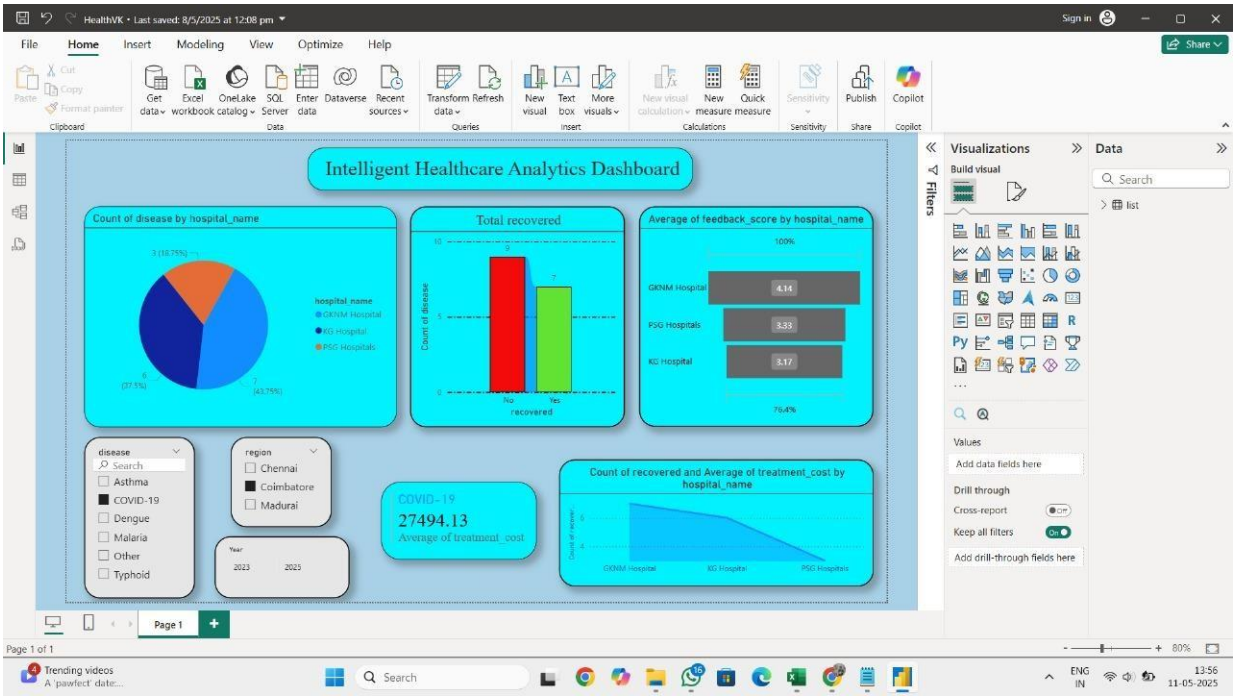


**Figure 5.7: Power BI Dashboard**

## 5.3 RESULT

The Intelligent Healthcare Analytics system's deployment has effectively illustrated the possibilities of combining real-time monitoring, AI , and data analytics in a healthcare environment. After processing the hospital dataset, which included patient feedback, treatment information, and recovery schedules, the system produced a fully functional Power BI dashboard that provides comprehensive insights into treatment outcomes over time, common diseases treated, and patient satisfaction. Users can engage with the system thanks to the AI-powered chatbot that was created with Chatbase.co and successfully integrated with the dataset. Because the chatbot provides pertinent data insights in response, the system is very interactive and easy to use. Additionally, the hospital's available and occupied bed counts are precisely tracked and displayed by the Bed Vacancy Monitoring Module. This feature is particularly valuable for emergency response, patient admission planning, and efficient resource allocation. It guarantees constant access to real-time hospital capacity data, which lessens manual labor and speeds up service. By providing a scalable, intelligent, and user-friendly system that improves feedback management, supports operational efficiency, and equips healthcare professionals with valuable insights derived from real-time data, the project ultimately succeeded in achieving its goals.

# CHAPTER 6

# CONCLUSION AND FUTURE ENHANCEMENT

# CHAPTER 6

## 6.1 CONCLUSION

Intelligent Health Analytics successfully demonstrates the seamless integration of advanced technologies such as artificial intelligence, real-time data analytics, and changing traditional feedback and service management processes in healthcare. By providing a comprehensive, uniform platform combining automated feedback collections, predictive health reviews, interactive data visualization, and AI-controlled patient support, the system introduces a more intelligent, more responsive and efficient approach to delivering healthcare. One of the core strengths of the system is its ability to process both structured and unstructured feedback from patients in real time, extract meaningful knowledge and present a visually intuitive performance dashboard. This allows healthcare managers to monitor patient satisfaction trends, identify operational gaps, and respond proactively to issues that arise. Additionally, real-time bed vacancies improve hospital logistics and patient convenience by enabling faster approval decisions. From a patient's perspective, the system ensures a safe, interactive and timely commitment, helping individuals to support and satisfy the care they receive based on more information. The modular and scalable architecture of the platform supported by cloud infrastructure ensures easy delivery, high availability, robust security and future scalability to meet growing institutional needs. While healthcare continues to evolve towards digital transformation, intelligent health analytics not only improve the current healthcare experience, but also provides future solutions based on more sophisticated, intelligent, patient-centered systems of the future. Successful implementation reflects the potential of technologies to bridge communication gaps, optimize healthcare system workflows, and achieve measurable improvements in both operational efficiencies and patient satisfaction in a variety of health environments.

## 6.2 FUTURE ENHANCEMENT

- **Sentiment Analysis Integration:**

  By applying natural language processing (NLP) techniques to sentiment analysis of patient feedback, it is possible to classify emotions (positive, neutral, and negative) and gain a better understanding of patient satisfaction and problem areas.

- **Mobile Application:**

  Creating a mobile version of the platform to give administrators, nurses, and physicians real-time access to dashboards, chatbot capabilities, and bed monitoring while they're on the go.

- **Role-Based Access Control:**

  To protect data privacy and restrict access according to user roles, role-based access control was introduced.

- **Automated Alert System:**

  Hospital employees' responsiveness can be enhanced by incorporating an alert/notification system that notifies them of important metrics, such as a sudden decline in patient satisfaction or a shortage of beds.

- **Voice-Assisted AI Chatbot:**

  Improving the chatbot to accept voice input and responses will increase the system's usability and accessibility, particularly for visually impaired users or field employees.

# CHAPTER 7

# REFERENCES

# 7 REFERENCE


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# CHAPTER 8

# APPENDIX

## 8.1 SOURCE CODE

**# index.html**

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Smart Health Insights & Feedback System</title>
    <link href="https://cdn.jsdelivr.net/npm/
    bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
        footer {
            background-color: #0d6efd;
            padding: 15px 0;
        }
        .card:hover {
            box-shadow: 0 8px 16px rgba(0, 123, 255, 0.3);
            transform: translateY(-5px);
            transition: all 0.3s ease;
            border: 1px solid #0d6efd;
        }
        #bedInfo {
            margin-top: 20px;
            padding: 15px;
            background: white;
            border-radius: 5px;
            box-shadow: 0 0 8px gray;
            width: 300px;
        }
        .hospital-bed-availability {
            max-width: 800px;
            margin: 0 auto;
            padding: 20px;
            background-color: #ffffff;
            border-radius: 8px;
```

```
        box-shadow: 0 0 15px rgba(0, 0, 0, 0.1);
        font-family: Arial, sans-serif;
        margin: 30px;
        background-color: #f2f2f2;
      }
    </style>
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-primary">
      <div class="container">
        <p class="nav1">Smart Health Insights & Feedback System</p>
      </div>
    </nav>
    <section class="hero-section text-center">
      <div class="container">
        <h1 class="display-5 fw-bold">Welcome to Smart Health Insights &
        Feedback System</h1>
        <p class="lead mb-4">Empowering you with smarter healthcare
        decisions. Explore surveys, dashboards, and health assistance — all in
        one platform.</p>
        <a href="#modules" class="btn btn-light btn-lg">About Us ➔</a>
      </div>
    </section>
    <section id="modules" class="py-5">
      <div class="container">
        <div class="row g-4 text-center">
          <div class="col-md-4">
            <div class="card h-100 shadow rounded-4">
              <div class="card-body d-flex flex-column align-items-center">
                <img
                src="https://media.istockphoto.com/id/1151608262/vector/illu
                stration-icon- with-the-concept-of-looking-for-health-
                information-by-consulting-a-doctor.jpg? =" alt="Patient
                Survey Logo" style="width: 100px; height: 100px;">
                <h5 class="card-title mt-3">Patient Survey</h5>
                <p class="card-text">Provide feedback on healthcare
                experiences to help improve services.</p>
```

```
            <a href="PatientSurvey.html" class="btn btn-outline-primary
            mt-auto">Explore</a>
          </div>
        </div>
      </div>
      <div class="col-md-4">
        <div class="card h-100 shadow rounded-4">
          <div class="card-body d-flex flex-column align-items-center">
            <img
            src="https://static.vecteezy.com/system/resources/previews/02
            0/274/037/large_2 x/dashboard-icon-for-your-website-design-
            logo-app-ui-free-vector.jpg" alt="Health Dashboard Logo"
            style="width: 100px; height: 100px;">
            <h5 class="card-title mt-3">Health Dashboard</h5>
            <p class="card-text">View personalized health statistics and
            insights in one place.</p>
            <a href="#" class="btn btn-outline-primary mt-
            auto">Explore</a>
          </div>
        </div>
      </div>
      <div class="col-md-4">
        <div class="card h-100 shadow rounded-4">
          <div class="card-body d-flex flex-column align-items-center">
            <img src="https://img.freepik.com/premium-vector/logo-
            featuring-cross-blue-green-colors-invent-simple-logo-
            virtual-healthcare- assistant-minimalist-simple-modern-
            vector-logo-design_538213- 48591.jpg?w=826"
            alt="Health Assist Logo" style="width: 100px; height:
            100px;">
            <h5 class="card-title mt-3">HealthAssist</h5>
            <p class="card-text">Get assistance for common health issues
            and quick health tips.</p>
            <a href="https://www.chatbase.co/chatbot-
            iframe/l3yo5exwiEGFpH5-_rbrM" class="btn btn-outline-
            primary mt-auto" onclick="openChatbot(); return
            false;">Explore</a>
          </div>
        </div> </div></div>
```

```
    </div>
</section>

<div class="hospital-bed-availability">
    <h2>Hospital Bed Availability Checker</h2>
    <label for="districtSelect">Select District:</label><br>
    <select id="districtSelect">
        <option value="">--Select District--</option>
        <option value="Coimbatore">Coimbatore</option>
        <option value="Chennai">Chennai</option>
        <option value="Madurai">Madurai</option>
        <option value="Tirunelveli">Tirunelveli</option>
    </select>
    <br><br>
    <label for="hospitalSelect">Select Hospital:</label><br>
    <select id="hospitalSelect">
        <option value="">--Select Hospital--</option>
    </select>
    <div id="bedInfo">
        <p id="totalBeds"></p>
        <p id="vacantBeds"></p>
    </div>
</div>

<footer class="text-white text-center">
    <p class="mb-0">&copy; 2025 Smart Health Insights. All rights
reserved.</p>
</footer>
<script>
    (function(){
        if(!window.chatbase||window.chatbase("getState")!=="initialized") {
            window.chatbase=(...arguments)=>{
                if(!window.chatbase.q){window.chatbase.q=[]}
                window.chatbase.q.push(arguments)};
            window.chatbase=new Proxy(window.chatbase,{get(target,prop){
                if(prop==="q"){return target.q}
```

```
            return(...args)=>target(prop,...args)}});
    }
    const onLoad=function(){
        const script=document.createElement("script");
        script.src="https://www.chatbase.co/embed.min.js";
        script.id="l3yo5exwiEGFpH5-_rbrM";
        script.domain="www.chatbase.co";
        document.body.appendChild(script)
    };

     if(document.readyState==="complete"){onLoad()}else{window.addEve
    ntListen er("load",onLoad)}
})();

document.addEventListener("DOMContentLoaded", function() {
    const districtSelect = document.getElementById('districtSelect');
    const hospitalSelect = document.getElementById('hospitalSelect');
    const totalBedsElem = document.getElementById('totalBeds');
    const vacantBedsElem = document.getElementById('vacantBeds');

    districtSelect.addEventListener('change', function() {
        const selectedDistrict = districtSelect.value;
        hospitalSelect.innerHTML = '<option value="">--Select Hospital--
 </option>';
        totalBedsElem.textContent = '';
        vacantBedsElem.textContent = '';
        if (selectedDistrict) {

        fetch(`http://127.0.0.1:8000/api/hospitals/?district=${selectedDistrict}`)
            .then(response => response.json())
            .then(data => {
                data.forEach(hospital => {
                    const option = document.createElement('option');
                    option.value = hospital.id;
                    option.textContent = hospital.name;
                    hospitalSelect.appendChild(option);
```

```
                });
            })
            .catch(error => console.error('Error fetching hospitals:', error));
        }
    });

    hospitalSelect.addEventListener('change', function() {
        const hospitalId = hospitalSelect.value;
        if (hospitalId) {
            fetch(`http://127.0.0.1:8000/api/hospitals/${hospitalId}/`)
                .then(response => response.json())
                .then(data => {
                    totalBedsElem.textContent = `Total Beds: ${data.total_beds}`;
                    vacantBedsElem.textContent = `Vacant Beds:
                    ${data.vacant_beds}`;
                })
                .catch(error => console.error('Error fetching hospital details:');

        } else {
            totalBedsElem.textContent = '';
            vacantBedsElem.textContent = '';
        }
    });
  });
</script>

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.j
s"></script>
</body>
</html>
```

**#patient_survey.html**

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

```
<head>
  <meta charset="UTF-8">
  <title>Simple Patient Survey</title>
</head>
<body>
  <h2>Patient Survey Form</h2>
  <form id="simpleSurveyForm">
    <label for="patient_name">Patient Name:</label><br>
    <input type="text" id="patient_name" required><br><br>
    <label for="region">Region:</label><br>
    <select id="region" required>
      <option value="">Select Region</option>
      <option value="Coimbatore">Coimbatore</option>
      <option value="Chennai">Chennai</option>
      <option value="Madurai">Madurai</option>
    </select><br><br>
    <label for="hospital_name">Hospital Name:</label><br>
    <input type="text" id="hospital_name" required><br><br>
    <label for="feedback_score">Feedback Score (1-5):</label><br>
    <input type="number" id="feedback_score" min="1" max="5"
required><br><br>
    <label for="comments">Comments:</label><br>
    <textarea id="comments" rows="4" required></textarea><br><br>
    <button type="submit">Submit</button>
  </form>
  <script>
    document.getElementById("simpleSurveyForm").addEventListener("submit",
function(event) {
      event.preventDefault();
      const surveyData = {
        patient_name: document.getElementById("patient_name").value,
        region: document.getElementById("region").value,
        hospital_name: document.getElementById("hospital_name").value,
        feedback_score: document.getElementById("feedback_score").value,
        comments: document.getElementById("comments").value
      };
```

```
    fetch("http://127.0.0.1:8001/api/submit/", {
      method: "POST",
      headers: { "Content-Type": "application/json" },
      body: JSON.stringify(surveyData)
    })
    .then(response => response.json())
    .then(data => {
      alert(data.message || "Survey submitted successfully!");
      document.getElementById("simpleSurveyForm").reset();
    })
    .catch(error => console.error("Error submitting survey:", error));
  });
 </script>
</body>
</html>
```

**#models.py in django**

```
from django.db import models
class Feedback(models.Model):
    patient_name = models.CharField(max_length=100)
    region = models.CharField(max_length=50)
    hospital_name = models.CharField(max_length=100)
    disease = models.CharField(max_length=50)
    surgeon_name = models.CharField(max_length=100)
    treatment_date = models.DateField()
    treatment_cost = models.DecimalField(max_digits=10, decimal_places=2)
    feedback_score = models.IntegerField()
    recovered = models.CharField(max_length=10)  # Yes or No
    comments = models.TextField()

    class Meta:
        app_label = 'feedback_project'

    def _str_(self):
        return f"{self.patient_name} - {self.hospital_name}"
```

**#views.py in django**

```
from rest_framework import status
from rest_framework.decorators import api_view
from rest_framework.response import Response
from .models import Feedback
from .serializers import FeedbackSerializer

@api_view(['POST'])
def submit_feedback(request):
    serializer = FeedbackSerializer(data=request.data)
    if serializer.is_valid():
        serializer.save()
        return Response({'message': 'Feedback submitted successfully!'},
status=status.HTTP_201_CREATED)
    return Response(serializer.errors, status=status.HTTP_400_BAD_REQUEST)

@api_view(['GET'])
def list_feedbacks(request):
    feedbacks = Feedback.objects.all().order_by('-id')
    serializer = FeedbackSerializer(feedbacks, many=True)
    return Response(serializer.data)
```

## 8. 2 APPENDIX:



# 5% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

### Match Groups

**13** Not Cited or Quoted 5%
Matches with neither in-text citation nor quotation marks

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Matches that have quotation marks, but no in-text citation

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Matches with in-text citation present, but no quotation marks

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  Matches that are still very similar to source material
- **0** Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- **0** Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

## Top Sources

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## Top Sources

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