A FIELD PROJECT REPORT ON

AI – Medical Assistant

Submitted in partial fulfillment of the requirements for the award of the degree

BACHELOR OF TECHNOLOGY
In
COMPUTER SCIENCE & ENGINEERING

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(Deemed to be University) - Estd. u/s 3 of UGC Act 1956

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CERTIFICATE

This is to certify that the field project entitled **"AI MEDICAL ASSISTANT"** is being submitted by **A. Bhavana (231FA04C31), V. Y. Sowmya (231FA04C34), M. Nikhitha (231FA04C43), and K. Jaswanth (231FA04C60)** in partial fulfilment of the requirements for the degree of **Bachelor of Technology** in the **Department of Computer Science and Engineering, Vignan's Foundation for Science, Technology & Research (Deemed to be University)**, Vadlamudi, Guntur District, Andhra Pradesh, India.

This is a Bonafide work carried out by the aforementioned students under my guidance and supervision.

Guide

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DECLARATION

Date: 26-04-2025

We hereby declare that the work presented in the field project titled **"AI MEDICAL ASSISTANT"** is the result of our own efforts and investigations.

This project is being submitted under the supervision of Dr. Nerella Sameera, Assistant Professor, in partial fulfilment of the requirements for the Bachelor of Technology (B.Tech.) degree in Computer Science and Engineering at Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur, Andhra Pradesh, India.

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CHAPTER-01
INTRODUCTION

INTRODUCTION

The AI Medical Assistant is a web-based application designed to provide intelligent healthcare support using artificial intelligence. It helps users manage medical emergencies, analyze medications, and suggest natural remedies based on symptoms. The system leverages AI-driven responses to enhance accessibility to medical guidance. Additionally, it offers video resources for first aid and medical education. With real-time assistance, it improves decision-making during healthrelated situations. The platform ensures user-friendly navigation for quick and effective medical support. By integrating AI technology, it enhances healthcare accessibility and awareness.

1.1 Problem Definition

In the face of medical emergencies, delayed medical attention, and limited access to healthcare professionals, many individuals lack immediate, reliable, and accessible support to manage urgent health situations. Traditional healthcare services often involve waiting times or limited availability, leaving patients vulnerable during critical moments. Additionally, individuals may struggle to understand the complexities of medication, proper first aid, or appropriate natural remedies without professional guidance.

1.2 Existing System

There are several existing systems that provide similar functionality to what is outlined for the AI Medical Assistant. These systems integrate artificial intelligence, machine learning, and real-time support to improve healthcare accessibility and user decision-making. Below are examples of existing systems in different categories related to medical emergencies, medication management, first aid, and natural remedies:

1. **Babylon Health**

- **Category:** Telemedicine / AI Health Consultation
- **Description:** Babylon Health uses AI to offer health consultations based on symptoms input by users. It can provide personalized health information, help diagnose illnesses, and suggest possible treatments. Babylon also offers video consultations with doctors, making it easier for users to access medical care from home.
- **Key Features:**
    - AI-powered symptom checker.
    - Video consultations with healthcare professionals.
    - Personalized health assessments.
    - Integration with health tracking data.

1.3 Proposed System:

The **AI Medical Assistant** is a web-based platform designed to provide comprehensive healthcare support using artificial intelligence. The system will be tailored to help users in emergency medical situations, manage medications, suggest natural remedies based on symptoms, and provide access to first aid education and real-time assistance. The system will integrate advanced AI technologies to ensure quick, accurate, and reliable responses in critical healthcare situations.

1.4 Literature Review

The integration of **artificial intelligence (AI)** in healthcare has gained significant momentum over the last decade, offering the potential to revolutionize medical services, improve patient outcomes, and enhance the accessibility of healthcare.

AI-powered systems can provide intelligent solutions to problems ranging from disease diagnosis to medication management, symptom analysis, and emergency response. This literature review examines existing AI-driven healthcare applications and their relevance to the proposed **AI Medical Assistant**, highlighting key trends, challenges, and opportunities in AI for healthcare

The integration of **Artificial Intelligence (AI)** in healthcare has gained tremendous traction in recent years, particularly with the rise of **Medical AI Assistants**. These AI-driven systems aim to assist healthcare professionals in diagnosing diseases, recommending treatments, automating administrative tasks, and improving patient care outcomes.

This literature review examines key contributions in the field of medical AI assistants, including their applications, challenges, benefits, and ethical concerns..

CHAPTER-02
SYSTEM REQUIREMENTS

2.1 Hardware & Software Requirements

To build and deploy the **AI Medical Assistant**, both hardware and software components need to be carefully chosen to ensure optimal performance, scalability, and security. Below is a detailed breakdown of the hardware and software requirements for the proposed system.

1. Hardware Requirements
User-Side (Client) Hardware Requirements:

These are the devices that end-users will use to access the AI Medical Assistant platform (e.g., smartphones, tablets, or computers).

- **Desktop/Laptop:**
  - **Operating System:** Windows 10 or later, macOS 10.12 or later, Linux (Ubuntu/Debian).
  - **Processor:** Intel Core i5 or AMD Ryzen 5 (minimum).
  - **RAM:** 8 GB (recommended 16 GB for smoother performance).
  - **Storage:** 100 GB of free space (SSD preferred for faster load times).
  - **Graphics:** Integrated GPU (or dedicated GPU for intensive media rendering such as video tutorials).
-

2.2 Software Requirements Specification (SRS):

A **Software Requirements Specification (SRS)** in the context of a **medical AI assistant** is a detailed document that describes the functionality, features, and constraints of the software system being developed. It serves as a blueprint for the design, development, and testing of the AI assistant and ensures that all stakeholders (including developers, medical professionals, and regulatory bodies) have a clear understanding of what the system is supposed to do.

1. **AI:** Artificial Intelligence
2. **API:** Application Programming Interface.

CHAPTER-03
SYSTEM DESIGN

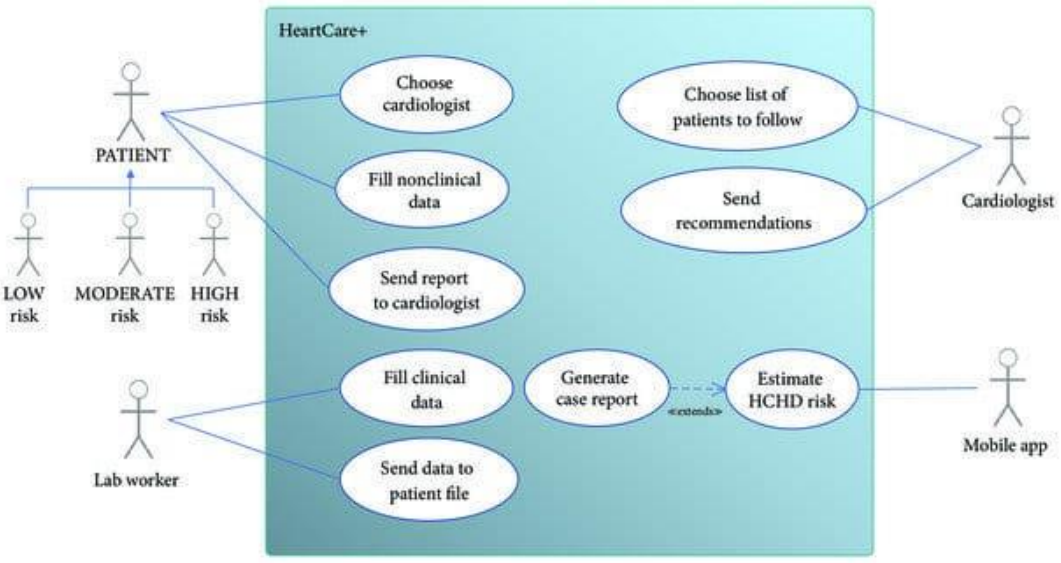
3.1 Modules of the System

This module provides natural or herbal remedies for various symptoms. It suggests safe and scientifically-backed remedies based on user input and symptoms.

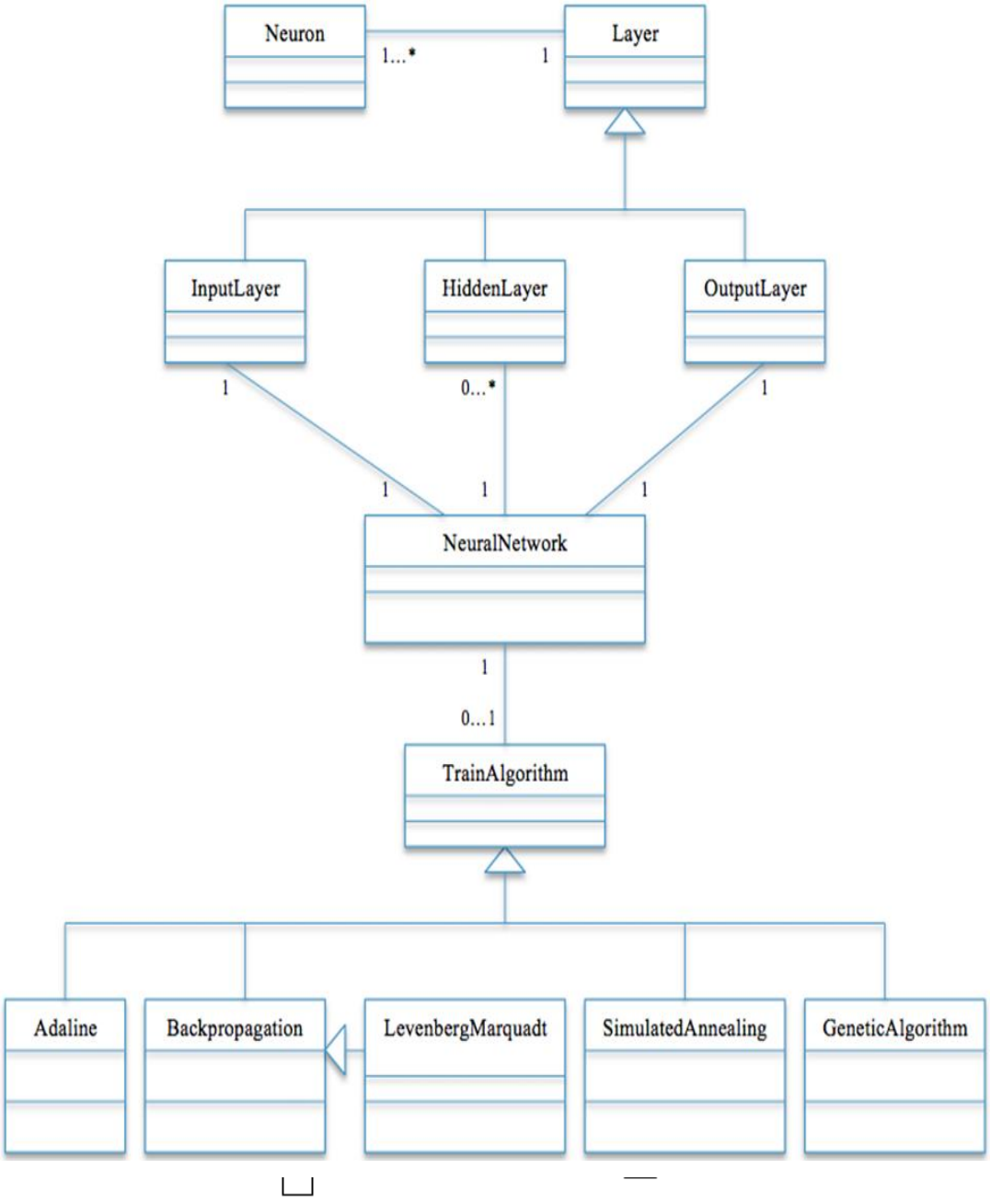
Key Features:

- **Remedy Suggestions:** Suggests herbal, home, or over-the-counter remedies based on the user's symptoms.
- **Safety Information:** Provides instructions on how to use remedies safely, including potential side effects or contraindications.
- **User Reviews:** Users can rate remedies and share their experiences, improving the accuracy of future suggestions.
- **Research-backed Data:** The module is powered by a database of research and clinical evidence supporting the suggested remedies**.**

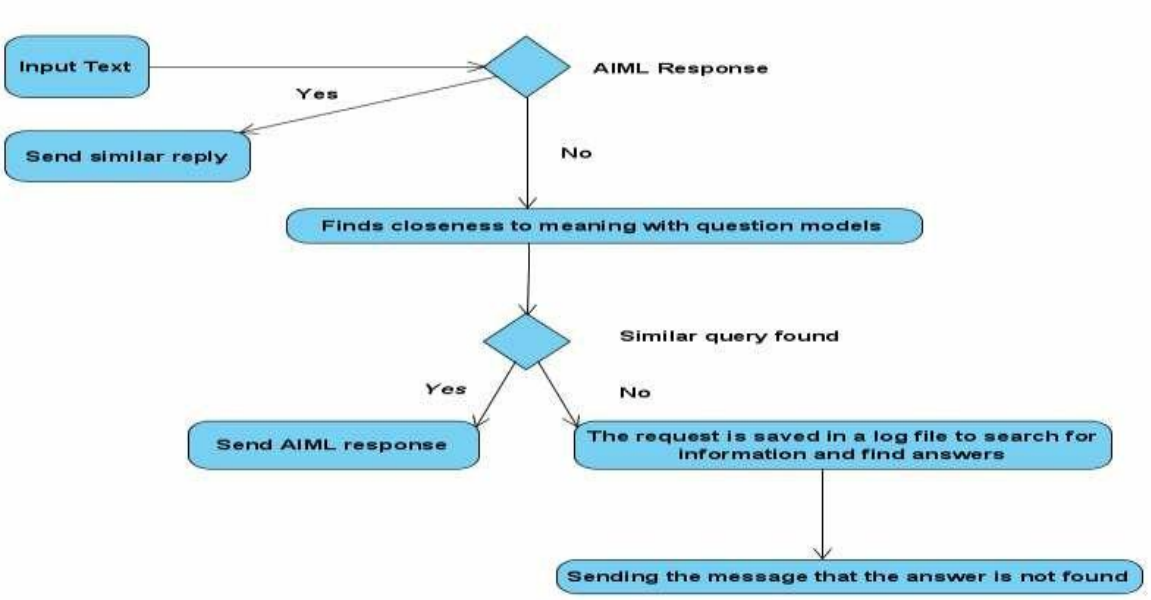
3.2 UML Diagrams



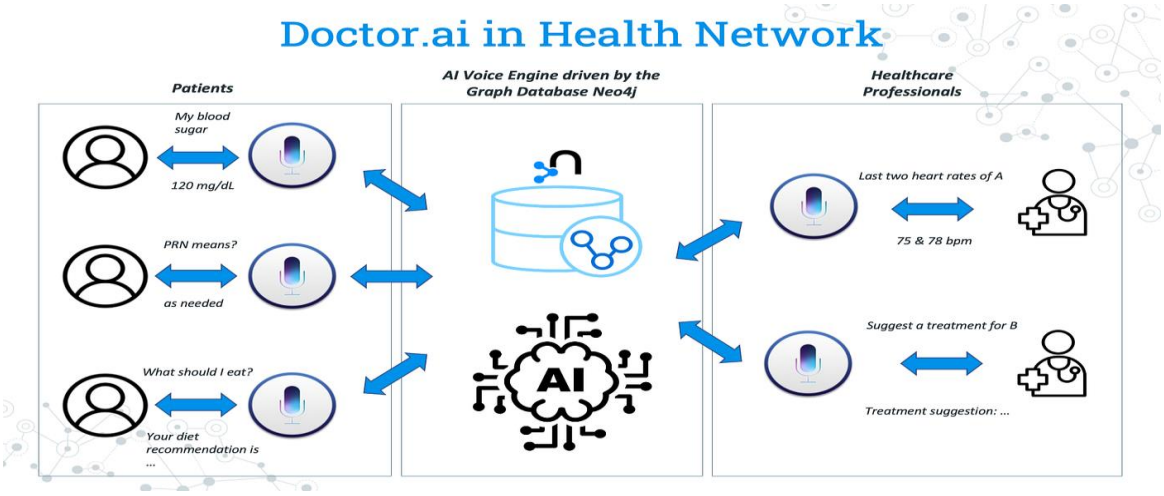
class diagram:



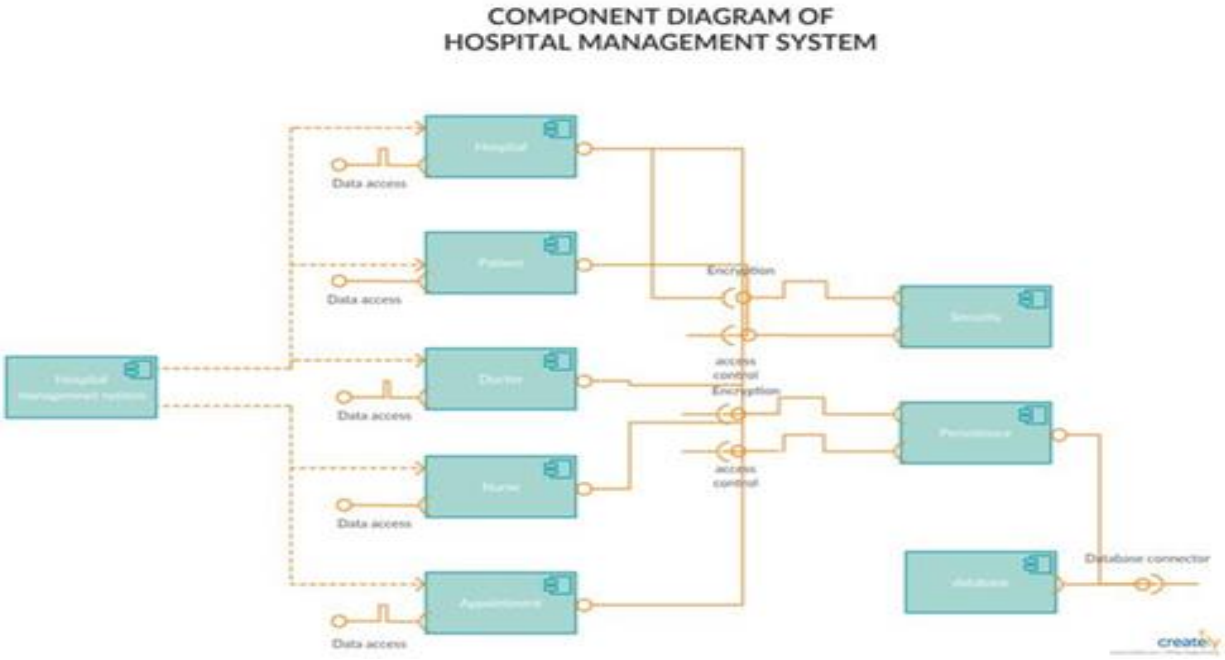
Activity Diagram (RSVP Process)



Activity Diagram:



Component Diagram:



CHAPTER-04
IMPLEMENTATION

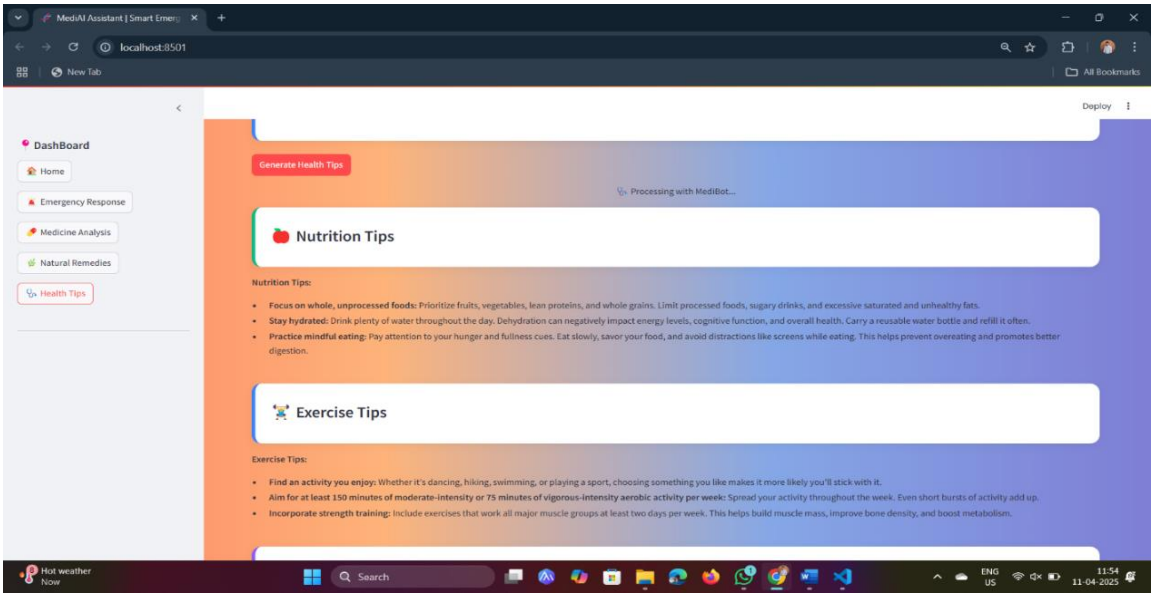
4.1 SAMPLE CODES:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <title>MediAI Dashboard</title>
  <style>
    body {
      margin: 0;
      font-family: sans-serif;
      transition: background 0.3s, color 0.3s;
    }

    .sidebar {
      width: 200px;
      background: #ccc;
      padding: 10px;
      height: 100vh;
      float: left;
      transition: width 0.3s;
    }

    .main {
      margin-left: 200px;
      padding: 20px;
      transition: margin-left 0.3s;
    }

    .sidebar.collapsed {
      width: 60px;
    }

    .main.collapsed {
      margin-left: 60px;
    }

    body.light {
```

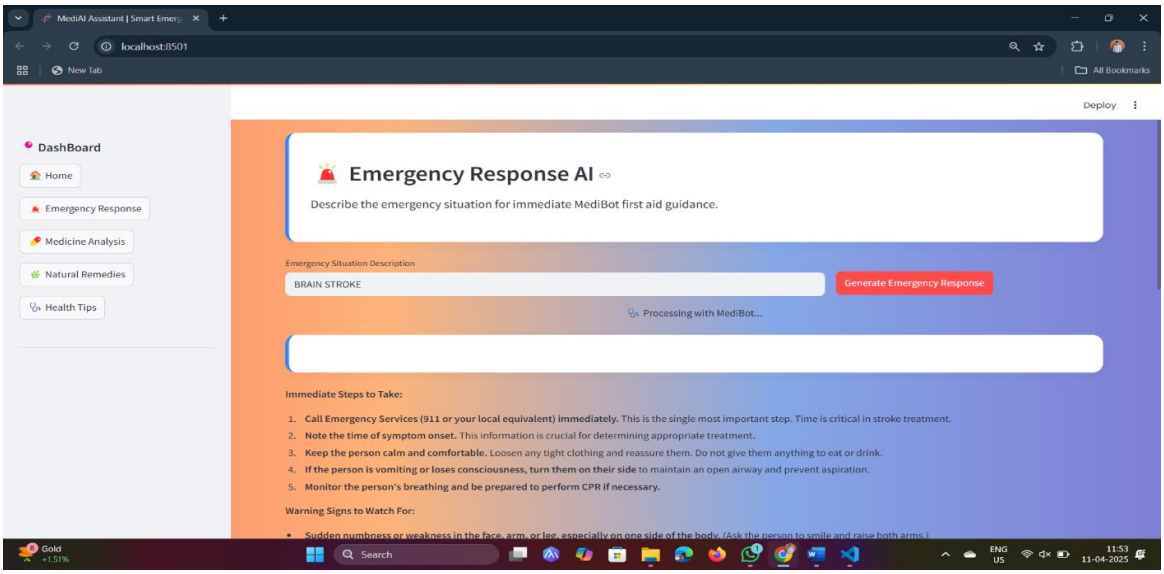
```
      background: #fff;
      color: #000;
    }

    body.dark {
      background: #111;
      color: #eee;
    }

    body.contrast {
      background: #000;
      color: #0f0;
    }

    nav a {
      display: block;
      margin: 10px 0;
      text-decoration: none;
      color: inherit;
    }

    #toggleSidebar {
      background: none;
      border: none;
      font-size: 20px;
      cursor: pointer;
    }
  </style>
</head>
<body class="light">
  <div class="sidebar">
    <button id="toggleSidebar">☰</button>
    <nav>
      <a href="#">Home</a>
      <a href="#">Patients</a>
      <a href="#">Reports</a>
    </nav>
  </div>
```

```
  <div class="main">
    <h1>Welcome to MediAI</h1>
    <label>Theme:
      <select id="themeSelector">
        <option value="light">Light</option>
        <option value="dark">Dark</option>
        <option value="contrast">High Contrast</option>
      </select>
    </label>
    <p>Medical Assistant at your service.</p>
  </div>

  <script>
    const sidebar = document.querySelector('.sidebar');
    const main = document.querySelector('.main');
    document.getElementById('toggleSidebar').onclick = () => {
      sidebar.classList.toggle('collapsed');
      main.classList.toggle('collapsed');
    };

    document.getElementById('themeSelector').onchang
e = (e) => {
      document.body.className = e.target.value;
    };


const=api


  </script>
</body>
</html>
```

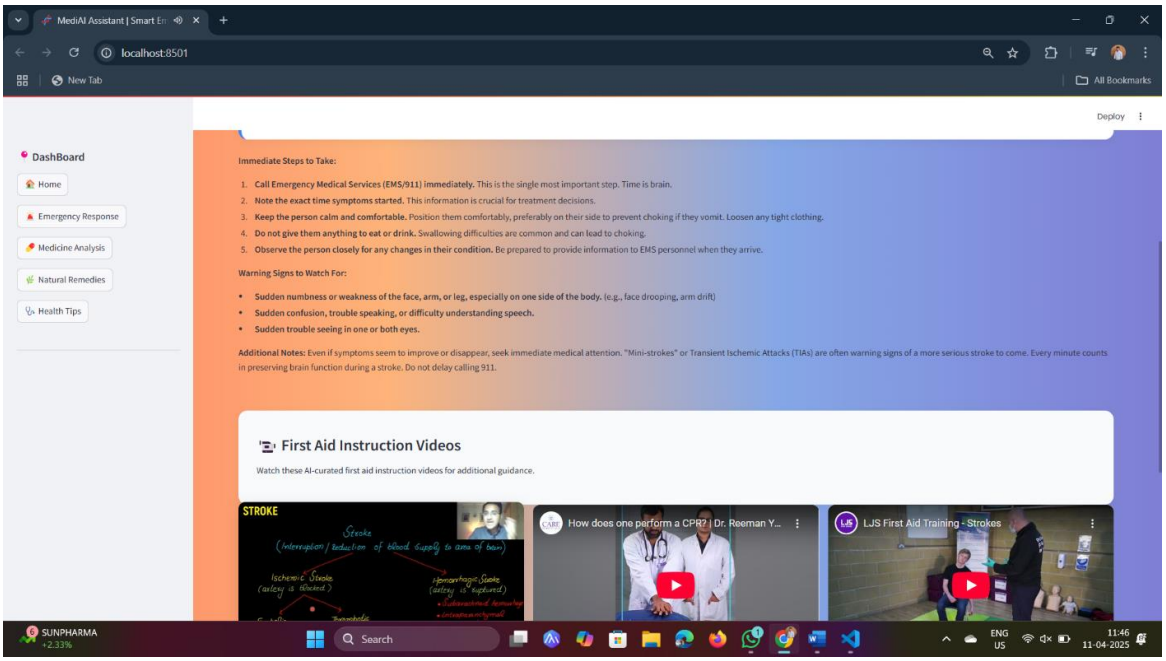
4.2 TEST CASES:



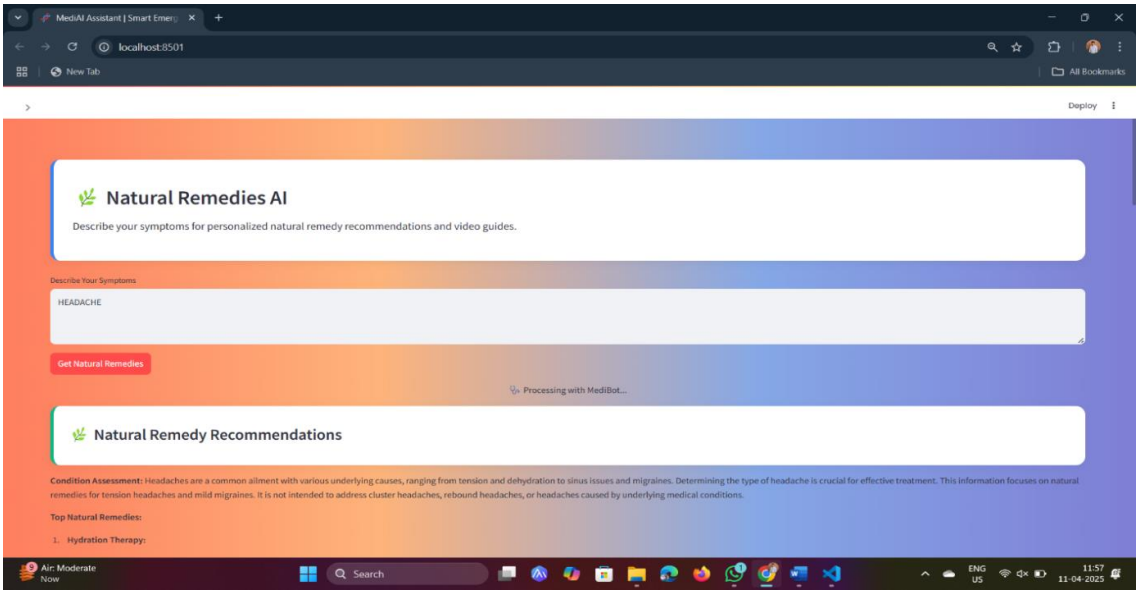
TEST CASE :1



TEST CASE :2



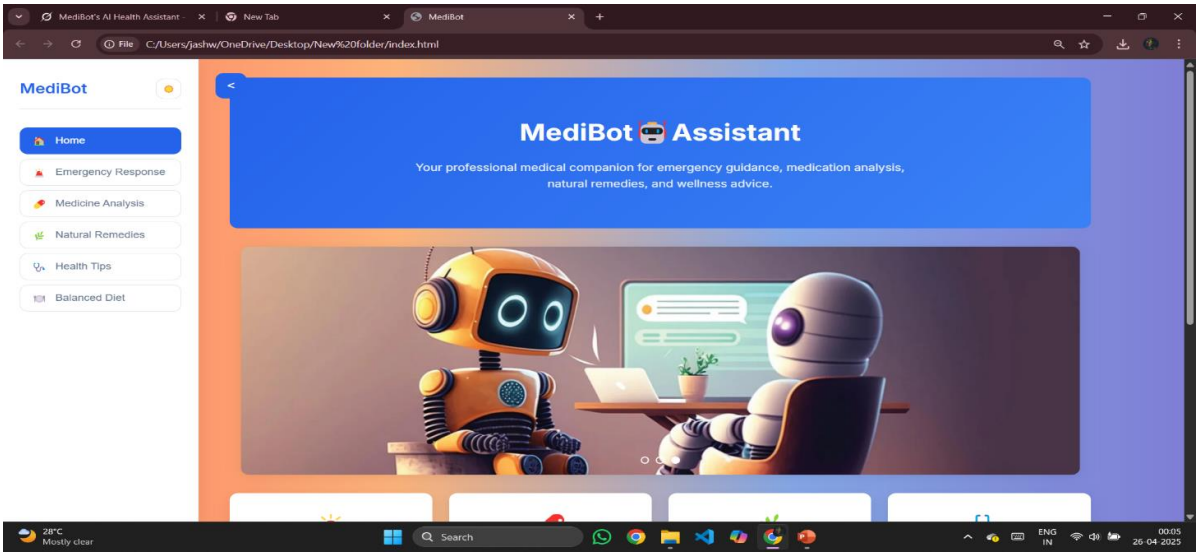
TEST CASE :3



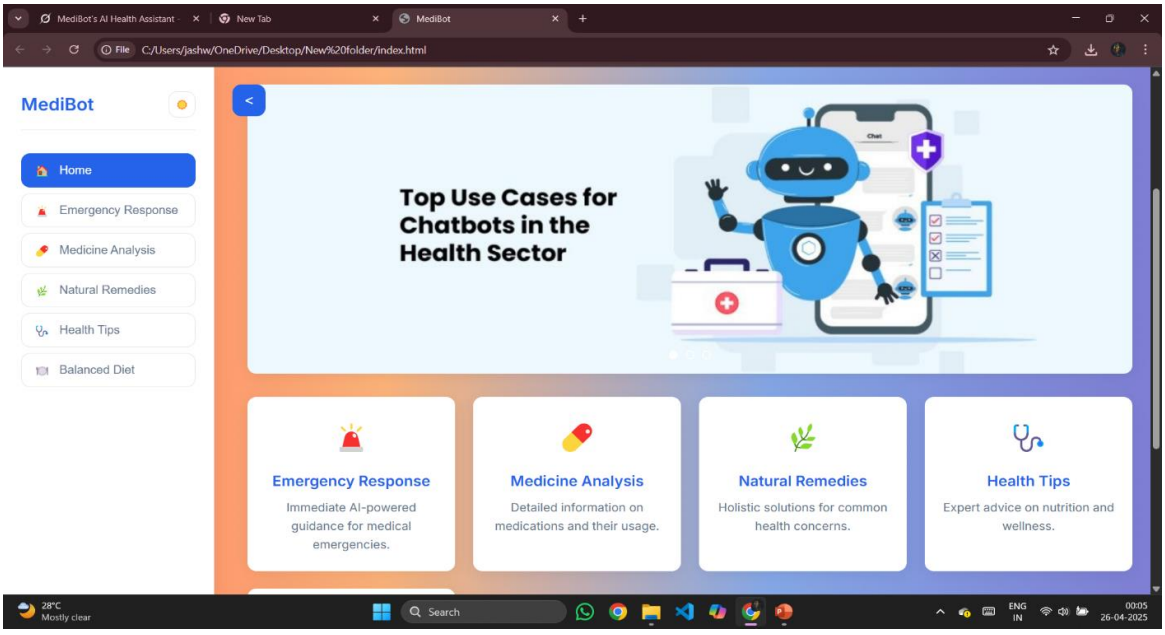
TEST CASE :4

CHAPTER-05
RESULTS

5.1 Output Screens:



The screenshot shows a web-based application interface for **MediBot Assistant**, an intelligent medical companion designed to assist users with medical emergencies, medication analysis, natural remedies, and health tips.



The second screenshot shows an updated version of the **MediBot Assistant** web application, running locally on localhost:8501. The interface is visually enhanced and introduces a **sidebar navigation menu**, improving usability and access to features.

CHAPTER-06
CONCLUSION

CONCLUSION:

The AI-Medical Assistant provides users with intelligent medical support, including emergency response, medicine analysis, and natural remedies. Emergency Response Section offers AI-driven first-aid guidance based on user input, helping in critical situations. Medicine Analysis Section provides detailed information about medications, including uses, side effects, and precautions. Natural Remedies Section suggests AI-generated holistic treatments for various health conditions. YouTube Video Integration enhances user experience with instructional videos for first-aid and home remedies. The platform ensures quick, AI-powered medical assistance with a user-friendly, responsive design, making healthcare information easily accessible.

REFERENCES:

Books and Academic Papers:

1. **"Artificial Intelligence in Healthcare" by Parashar, M., and Mishra, S.**
   - A comprehensive text on AI's applications in healthcare, covering everything from data processing to clinical decision support. This book is useful for understanding the scope of medical AI and its challenges.
   - Link to book
2. **"Artificial Intelligence in Health Care: A Report" by the National Institutes of Health (NIH)**
   - An authoritative report detailing various applications of AI in healthcare, including decision support systems, predictive models, and their integration into clinical workflows.

Websites and Online Resources:

1. **HealthIT.gov - AI in Healthcare**
   - A comprehensive online resource by the U.S. Department of Health and Human Services that discusses the role of AI in healthcare, including its potential to improve outcomes and streamline healthcare delivery.

Journals:

1. **Journal of Artificial Intelligence in Medicine**
   - A peer-reviewed journal focusing on the application of AI in medical fields. Articles cover various aspects such as decision support, machine learning models, and ethical issues surrounding AI in healthcare.

Project Link:

https://github.com/jash-jash/MediBot-Assistant.git