DOCUMENTATION FOR HEALTH AI -MEDICAL AI ASSISTANT

1. Introduction

Project Title: Health Ai (Medical AI Assistant)

Team Members: kathiresh, ajay, Venkatraman, mohammad farhan

2. Project Overview

Purpose:

Medical AI Assistant is an AI-powered web application designed to assist users with medical symptom analysis and personalized treatment suggestions. It offers an interactive interface for disease prediction based on symptoms and generates custom treatment plans while emphasizing the importance of consulting healthcare professionals.

Features:

Symptom-based disease prediction using AI

Personalized treatment plan generation based on patient details

Informative disclaimers for safe usage

User-friendly interface with support for input validation

Deployment via a web-based platform (Gradio)

3. Architecture

Component Structure:

Symptom Input Component: Allows users to input symptoms for disease analysis

Disease Prediction Module: Processes symptoms and generates possible conditions

Treatment Plan Input Component: Gathers medical condition, age, gender, and history

Treatment Plan Generator: Produces personalized treatment suggestions

Output Display Components: Show disease predictions and treatment plans

Disclaimer Section: Communicates the informational nature of the app

State Management:

The app uses internal state to manage user inputs and responses within the Gradio interface.

4. Setup Instructions

Install necessary packages using: !pip install transformers torch gradio -q

Import required libraries and load the model in Python environment

Run the Gradio interface code to launch the web app

Optional: Use Google Colab or local environment with compatible GPU for enhanced performance

5. Folder Structure

main.py or notebook containing the code

Model and tokenizer loaded from Hugging Face repository

Requirements file for dependencies

6. Component Documentation

generate_response: Function to generate AI outputs based on prompts

disease_prediction: Uses symptom input to generate possible conditions

treatment_plan: Creates treatment suggestions based on detailed patient data

Gradio UI: Organizes components into tabs and connects functions with buttons

7. User Interface and Styling

Simple, clean interface with text input boxes and buttons

Tabbed navigation between Disease Prediction and Treatment Plans

Outputs shown in multiline text boxes for easy readability

8. Testing

Manual testing with various symptom inputs and patient data

Validation for input types and response formats

9. Known Issues

Model outputs may not be medically exhaustive or accurate

Performance depends on availability of CUDA GPU acceleration

Certain complex cases may require further medical professional input

10. Future Enhancements

Integration with more advanced AI models for accuracy

Adding voice input and multilingual support with Incorporating user feedback.