HealthAI Project Documentation

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1. Introduction

The HealthAI project is an intelligent healthcare assistant designed to provide users with quick access to health-related information, basic medical guidance, and wellness support. By leveraging
AI technologies, the system aims to assist patients, students, and healthcare professionals with symptom checking, health education, and preventive care suggestions.

2. Project Overview

HealthAI integrates AI-driven language models with an interactive user interface to create a reliable
healthcare companion. The system allows users to input health-related queries and receive informative, human-like responses.

3. Objectives of the Project

- To provide AI-powered health information and guidance.
- To offer an easy-to-use web-based interface.
- To implement symptom-checking and health education modules.
- To encourage preventive care and awareness.

4. Key Features

- Symptom Checker
- Health Information Bot
- Wellness Tips
- Interactive UI
- Scalable Deployment

5. System Architecture
Frontend: Gradio Web Interface
Backend: AI model (IBM Granite / Hugging Face transformer model)
Data Source: Pre-trained medical knowledge models & curated health datasets
Deployment Environment: Google Colab / Cloud hosting with GPU support

6. Technologies Used
Python
- Gradio
- Hugging Face Transformers
- IBM Granite Models
- Google Colab
- GitHub

7. Pre-requisites
- Basic knowledge of Python programming
- Familiarity with AI/ML concepts
- Experience using Gradio
- Understanding of GitHub
- Access to Google Colab with GPU

8. Setup Instructions
1. Open Google Colab and create a new notebook.
2. Change runtime type to T4 GPU.
3. Install dependencies:
!pip install transformers torch gradio -q
4. Import the model and tokenizer.
5. Run the application and launch the Gradio UI.

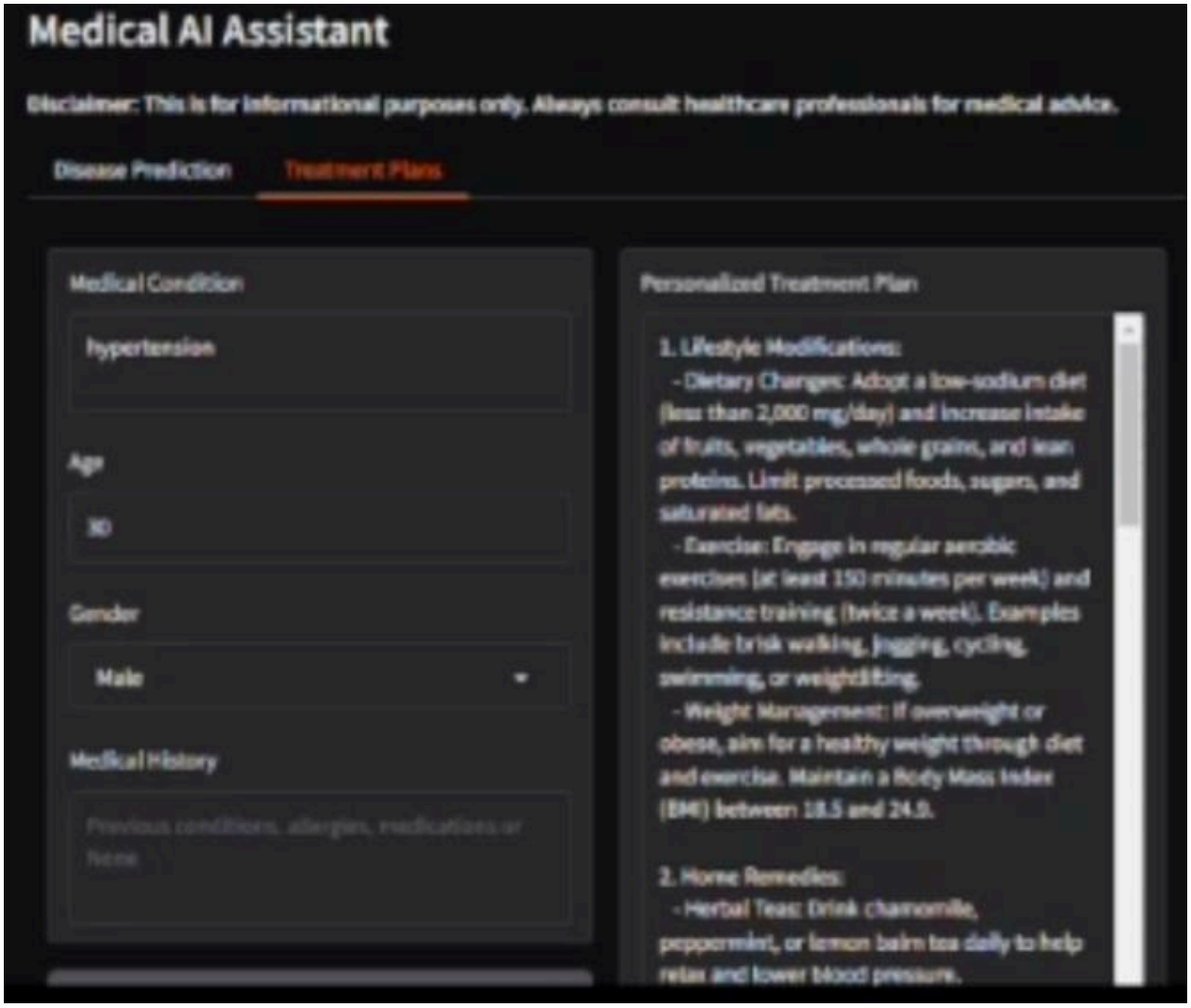
9. Folder Structure
HealthAI/
■
■■■ app.py
■■■ requirements.txt
■■■ models/
■■■ dataset/
■■■ docs/
■■■ README.md

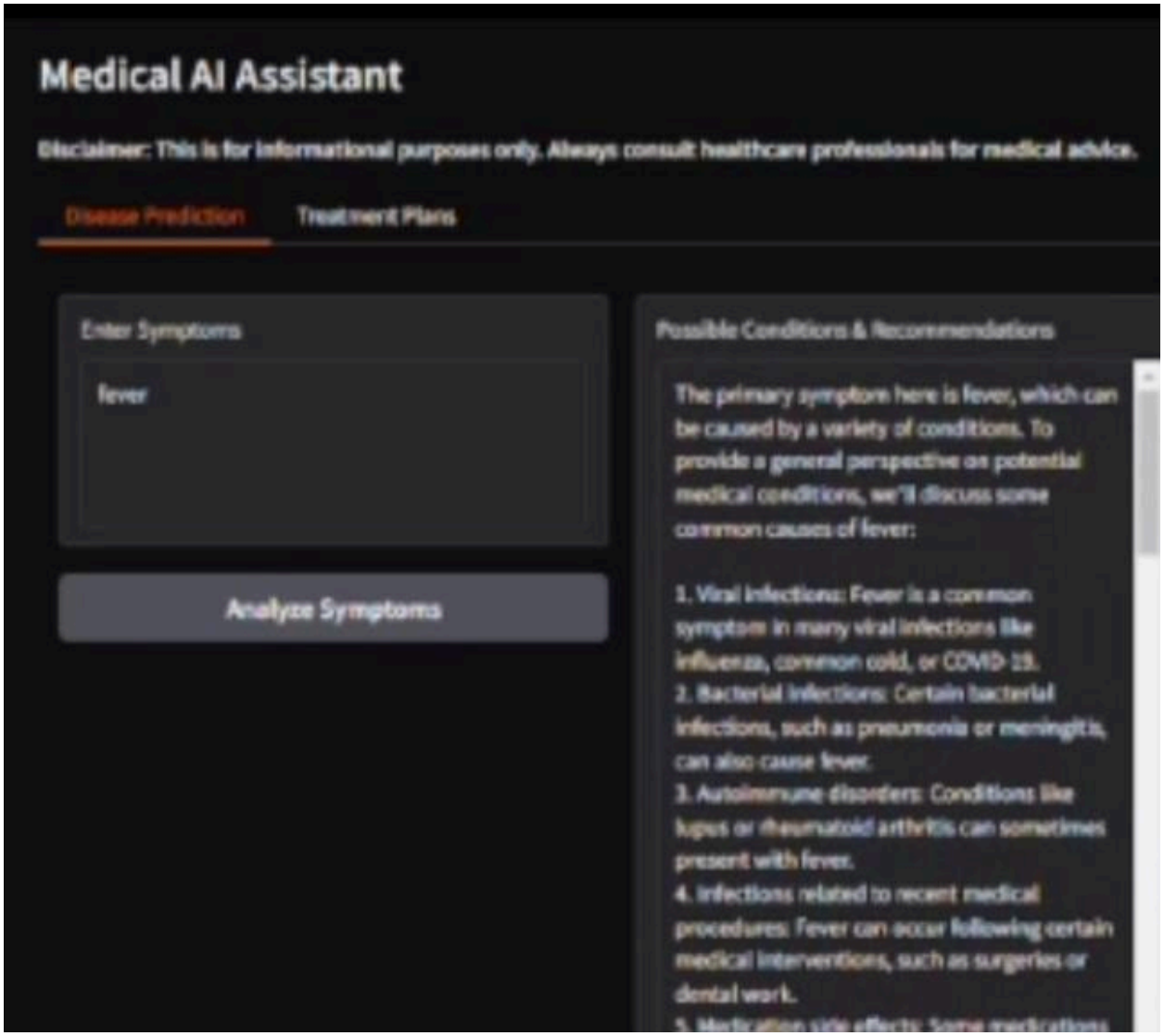
10. Running the Application

- Run the code in Google Colab.
- Click the generated Gradio link.
- Interact with the AI model through the web interface.

11. User Interface
- Chat window for queries
- Buttons for quick actions
- Clean, minimal layout

SCREENSHOT :


Medical AI Assistant
Disclaimer: This is for informational purposes only. Always consult healthcare professionals for medical advice.
Disease Prediction
Treatment Plans
Medical Condition
hypertension
Age
30
Gender
Male
Medical History
Previous conditions, allergies, medications or None
Personalized Treatment Plan
1. Lifestyle Modifications:
- Dietary Changes: Adopt a low-sodium diet (less than 2,000 mg/day) and increase intake of fruits, vegetables, whole grains, and lean proteins. Limit processed foods, sugars, and saturated fats.
- Exercise: Engage in regular aerobic exercises (at least 150 minutes per week) and resistance training (twice a week). Examples include brisk walking, jogging, cycling, swimming, or weightlifting.
- Weight Management: If overweight or obese, aim for a healthy weight through diet and exercise. Maintain a Body Mass Index (BMI) between 18.5 and 24.9.
2. Home Remedies:
- Herbal Teas: Drink chamomile, peppermint, or lemon balm tea daily to help relax and lower blood pressure.



12. Testing and Validation
- Unit testing of input/output
- Accuracy check of responses
User validation
- Cross-check with medical resources

13. Future Enhancements & Conclusion
Future Enhancements:
- Integration with wearables
- Multilingual support
- Voice-enabled interactions
- Advanced analytics

Conclusion:
HealthAI demonstrates the potential of AI in healthcare assistance and education.

PROJECT DEMO VIDEO LINK:

https://drive.google.com/file/d/1qUnHmkgS6DqVimhOBN7ayKccnhySvf24/view?usp=drivesdk