

FINAL REPORT -HEALTH AI

Introduction

- **Project Title:** HealthAI — AI-Powered Healthcare Assistant
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Project Overview

- **Purpose:**

HealthAI is an intelligent AI-driven healthcare assistant built using Hugging Face Transformers and deployed via Gradio. It aims to provide quick, reliable health advice, home remedies, and prescription suggestions to users based on natural language inputs.
 - **Features:**
 - AI-generated health diagnoses based on user symptom input
 - Suggested home remedies and over-the-counter medicine recommendations
 - Clean, intuitive Gradio interface
 - Secure environment variable management
 - Deployment-ready via local host or public Gradio share links
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Architecture

- **Frontend:**
 - Built using **Gradio** for the web-based interactive user interface.
 - **Backend:**
 - Python application powered by **Hugging Face Transformers**.
 - Health advice generation using pre-trained or hosted AI models.
 - **Database:**
 - No persistent database used; dynamic in-memory conversation handling.
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- **Prerequisites:**

- Python 3.10+
- pip
- Hugging Face transformers
- IBM Granite 3.3 2B Instruct
- Gradio
- python-dotenv

- **Installation:**

```
git clone <"repo-url">
```

```
cd healthAi
```

```
pip install -r requirements.txt
```

- **Environment Variables:**

Create a .env file containing your Hugging Face API token:

```
HUGGINGFACEHUB_API_TOKEN=your_token_here
```

Folder Structure

```
healthAi/
```

```
├── .env          # Environment variables
├── app.py        # Main Gradio application script
├── requirements.txt # Dependencies
├── readme.md     # Project documentation
└── venv/         # Virtual environment
```

Running the Application

- Run the application locally:

```
python app.py
```

- Access via:

```
http://localhost:7860
```

- To create a public shareable link:

```
python
```

```
interface.launch(share=True)
```

API Documentation

Not applicable: Direct AI model inference through Hugging Face pipeline within the app — no external REST APIs exposed.

Authentication

- API authentication handled via Hugging Face API token stored securely in .env.
 - No user login system as it's an open-access AI assistant app.
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User Interface

- **Gradio interface** with:
 - Symptom text input box
 - Output area showing AI-generated health advice
 - Clear button to reset chat history
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Testing

- Functional test cases for:
 - Input validation
 - AI response generation
 - Error handling
 - Chat history management
- Performance test cases for:
 - Response time
 - Concurrent request handling

(Refer to earlier test case table I made — it fits perfectly here.)

Known Issues

- No persistent database support (session-based only)
- Response quality depends on the Hugging Face model used

- No multi-language support currently

Screenshot Preview:

Welcome to HealthAI

Your intelligent healthcare assistant.

Symptoms Remedies Diet Mental Wellness FAQs

Enter your symptom

blood from mouth

AI Diagnosis

What illness could cause: blood from mouth?

Blood from the mouth can be a sign of various medical conditions, including:

1. Oral trauma: Injuries to the mouth, such as biting one's tongue or getting kicked in the mouth, can cause bleeding.
2. Gingivitis or periodontal disease: Inflammation of the gums can lead to bleeding, especially during brushing or flossing.

Analyze

Use via API - Built with Gradio - Settings

Welcome to HealthAI

Your intelligent healthcare assistant.

Symptoms Remedies Diet Mental Wellness FAQs

What are you suffering from?

Suggested Remedy

Suggest

Use via API - Built with Gradio - Settings

Future Enhancements

- Integrate symptom severity scoring
- Add voice-based input
- Deploy via Hugging Face Spaces
- Build a user login and profile management system
- Implement feedback collection on AI advice accuracy