**Overview**

The **Health AI Assistant** is a machine learning–powered tool built with **Hugging Face Transformers**, **PyTorch**, and **Gradio**.  
It provides two main functionalities:

1. **Disease Prediction** – Generates possible medical conditions and general recommendations based on user-provided symptoms.
2. **Treatment Plans** – Suggests general treatment plans (including home remedies and medication guidelines) tailored to patient details.

⚠️ **Disclaimer:** This tool is **for informational purposes only**. It should **never replace professional medical advice**. Always consult a healthcare provider for diagnosis and treatment.

**⚙.Installation & Requirements**

Make sure you have Python 3.8+ installed.  
Install dependencies with:

pip install transformers torch gradio

**How It Works**

* Uses the pretrained language model **ibm-granite/granite-3.2-2b-instruct**.
* Wraps the model in a **Gradio interface** for easy interaction.
* Accepts user inputs:
  + **Symptoms** → Outputs possible conditions and general advice.
  + **Condition + Patient Info** → Outputs a personalized treatment plan.

**Functions**

**1. generate\_response(prompt, max\_length=1024)**

* **Purpose**: Sends a text prompt to the model and retrieves a response.
* **Parameters**:
  + prompt (str): Input text to feed into the model.
  + max\_length (int): Maximum number of tokens to generate.
* **Returns**: AI-generated text response.

**2. disease\_prediction(symptoms)**

* **Purpose**: Predicts possible conditions and recommendations based on symptoms.
* **Input**: A string of symptoms (e.g., "fever, cough, fatigue").
* **Output**: List of possible conditions with general recommendations.

**3. treatment\_plan(condition, age, gender, medical\_history)**

* **Purpose**: Suggests a personalized treatment plan.
* **Inputs**:
  + condition (str): Medical condition.
  + age (int): Patient age.
  + gender (str): Male / Female / Other.
  + medical\_history (str): Previous conditions, allergies, medications, or "None".
* **Output**: General treatment plan with home remedies and medication suggestions.

**Usage Guide**

**Run the App**

python health\_ai.py

**Interface**

The Gradio interface provides **two tabs**:

1. **Disease Prediction**
   * Enter symptoms (e.g., "fever, cough, headache").
   * Click **Analyze Symptoms** to view possible conditions.
2. **Treatment Plans**
   * Enter condition, age, gender, and medical history.
   * Click **Generate Treatment Plan** to get suggestions.

**Important Notes**

* This tool **does not provide medical diagnoses**.
* Always verify results with a **licensed healthcare professional**.
* Use responsibly for **educational or supportive purposes** only.