Health AI - Intelligent Healthcare Assistant



**Team Members :-**

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**Project Introduction :-**

Health AI project typically involves designing and developing AI solutions to address key problems in healthcare through a human-centered approach that includes engagement with stakeholders such as patients, caregivers, and clinical experts. These projects aim to improve healthcare outcomes by using advanced algorithms for tasks like disease risk prediction, early disease detection, patient monitoring, and streamlining administrative workflows. Common applications include AI-powered virtual assistants, remote patient monitoring, ambient sensing, automating clinical documentation, and personalized treatment recommendations. The goal is to enhance patient care, improve efficiency, reduce costs, and support healthcare professionals with data-driven insights while addressing ethical and safety considerations.

**Project Overview:-**

Health AI uses machines to help doctors and nurses by analyzing medical data to improve patient care. It can assist with faster and more accurate diagnoses, personalized treatments, and automating routine tasks. Overall, AI in healthcare makes medical services smarter, faster, and more efficient

**Pre-requisites:-**

* Gradio Framework Knowledge: Gradio Documentation
* IBM Granite Models (Hugging Face): IBM Granite models
* Python Programming Proficiency: Python Documentation
* Version Control with Git: Git Documentation
* Google Collab’s T4 GPU Knowledge: Google collab

**Key features of Health AI:-**

* Multidisciplinary collaboration involving technical experts and healthcare stakeholders.
* Use of predictive analytics to identify at-risk patients and detect diseases early.
* Integration with existing health systems and workflows for effective adoption.
* Experimentation and iterative development using feedback from users.
* Targeted applications such as AI chatbots for symptom checking, real-time vital signs monitoring, and AI-assisted clinical decision support.
* Focus on privacy, equity, and ethical implications of AI use in healthcare.

# **System Requirements :-**

* Google Colab (T4 GPU enabled)
* Python 3.x
* Libraries: transformers, torch, gradio.

# **Project Workflow :-**

# **Exploring Naan Mudhalvan Smart Interz Portal**

1. Search for 'Naan Mudhalvan Smart Interz' portal in any browser.  
 2. Login with your details.  
 3. Go to 'Projects' section and select 'Health AI'.  
 4. Access resources and guided project.  
 5. Navigate to project workspace to track progress.

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## **Choosing IBM Granite Model (Hugging Face)**

1. Visit Hugging Face and create an account.  
2. Search for 'IBM-Granite models'.  
 3. Choose a model (here: granite-3.0-2b-instruct) for fast and lightweight performance.

**Running in Google Colab**

1.Open Google Colab and create a new notebook.  
2.Change runtime type to T4 GPU.  
3. Install required libraries using.

**!pip install transformers torch gradio -q**

4.Run the Health AI code from provided source.  
5.Launch the Gradio application and test the output.

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## **Uploading to GitHub**

1.Create a GitHub account and repository.  
 2. Download project code from Google Colab.  
 3. Upload files to GitHub repository.  
 4. Commit changes and share repository link.

# **Challenges Faced**

* Model loading time in Colab due to large model size.
* GPU runtime limits in free Colab tier.
* Initial learning curve for Hugging Face and Gradio integration.

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## output:-

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