**Project Development Overview:**

**🔹 Objective:**

The goal of this project is to develop **Health AI**, an intelligent, AI-powered healthcare assistant that leverages IBM's **Granite foundation models** to assist users—patients, doctors, and medical staff—with medical information, symptom analysis, health-related Q&A, and clinical note summarization.

**🔹 Key Development Stages**

**✅ 1. Model Selection & Architecture Design**

* Selected **IBM Granite** model from watsonx.ai for its enterprise-grade, healthcare-suitable capabilities.
* Designed a scalable architecture including frontend, backend (app.py), Granite API integration, and a secure data layer.

**✅ 2. Core Functionalities Implementation**

* Developed essential features like:
  + Symptom checker
  + Medical Q&A
  + EHR summarizer
  + Appointment assistant
* Used dynamic prompt generation to interface with Granite effectively.

**✅ 3. app.py Development (Backend Logic)**

* Created the main backend app using **FastAPI** or Flask.
* Managed user input, task routing, prompt generation, and model integration.
* Served as the connection point between frontend and the Granite model.

**✅ 4. Main Application Logic**

* Built modular functions to handle different user tasks.
* Ensured secure and efficient communication with IBM Granite API.
* Added error handling, logging, and structured response formatting.

**✅ 5. User Interface Development**

* Designed a **user-friendly, responsive** UI for patients and doctors.
* Chat interface with task dropdown (Q&A, summarization, symptom checking).
* Integrated API calls to backend (/ask endpoint).
* Ensured mobile compatibility and accessibility.

**🔹 Tools and Technologies Used**

| **Layer** | **Tools/Tech** |
| --- | --- |
| Frontend | HTML/CSS, JavaScript, React |
| Backend | Python (FastAPI/Flask), app.py |
| AI Model | IBM Granite via watsonx.ai |
| Communication | REST API, JSON |
| Deployment | IBM Cloud / Localhost testing |
| Styling | Tailwind CSS / Bootstrap |

**Project Conclusion:**

The Health AI project successfully demonstrates how cutting-edge AI technology—specifically the IBM Granite foundation

model—can be applied to solve real-world challenges in the healthcare domain. Through the integration of natural language processing and intelligent task handling, Health AI enables users to:

* Check symptoms conversationally
* Ask health-related questions and receive reliable responses
* Summarize clinical records for quicker understanding
* Facilitate basic healthcare management tasks like appointment assistance

By combining a user-friendly interface, a modular backend (app.py), and secure, powerful AI models, Health AI stands as a scalable and intelligent virtual assistant for healthcare environments. The project proves that AI can enhance the efficiency, accessibility, and quality of healthcare communication, especially for patients and medical professionals seeking instant, simplified medical information.