

Technology Stack – HealthAI

The following technologies and tools were used to design, develop, and deploy the **HealthAI** intelligent healthcare assistant:

Frontend Technologies

Technology	Purpose
Streamlit	Used to build a simple, responsive, and interactive user interface with multiple tabs and sidebar navigation
HTML/CSS (via Markdown + Streamlit components)	Custom styling and layout enhancements
Plotly	For creating dynamic, interactive charts to visualize patient health metrics (e.g., heart rate, blood pressure)

Backend Technologies

Technology	Purpose
Python	Core backend logic, health data simulation, and API integration
Pandas & NumPy	Data manipulation, statistical generation, and analysis of health metrics
IBM Granite-13B-Instruct-v2	The Generative AI model used for Q&A, disease prediction, and treatment recommendation
Hugging Face API / IBM Watson ML	Integration layer for communicating with the IBM Granite model securely

Environment & Configuration

Technology	Purpose
python-dotenv	Manage API keys and environment variables securely
virtualenv	Isolate dependencies in a virtual environment for deployment stability
.env file	Store Watson API keys and project-specific configurations

Deployment (optional/future-ready)

Technology	Purpose
Streamlit Cloud / Render / Hugging Face Spaces	Cloud hosting options for live deployment
GitHub	Version control and source code collaboration