Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	22 June 2025
Team ID	LTVIP2025TMID31732
Project Name	HealthAI
Maximum Marks	4 Marks

✅ Solution Architecture Diagram – HealthAI

CPU-friendly, AI-assisted healthcare tool for early diagnostics/symptom analysis

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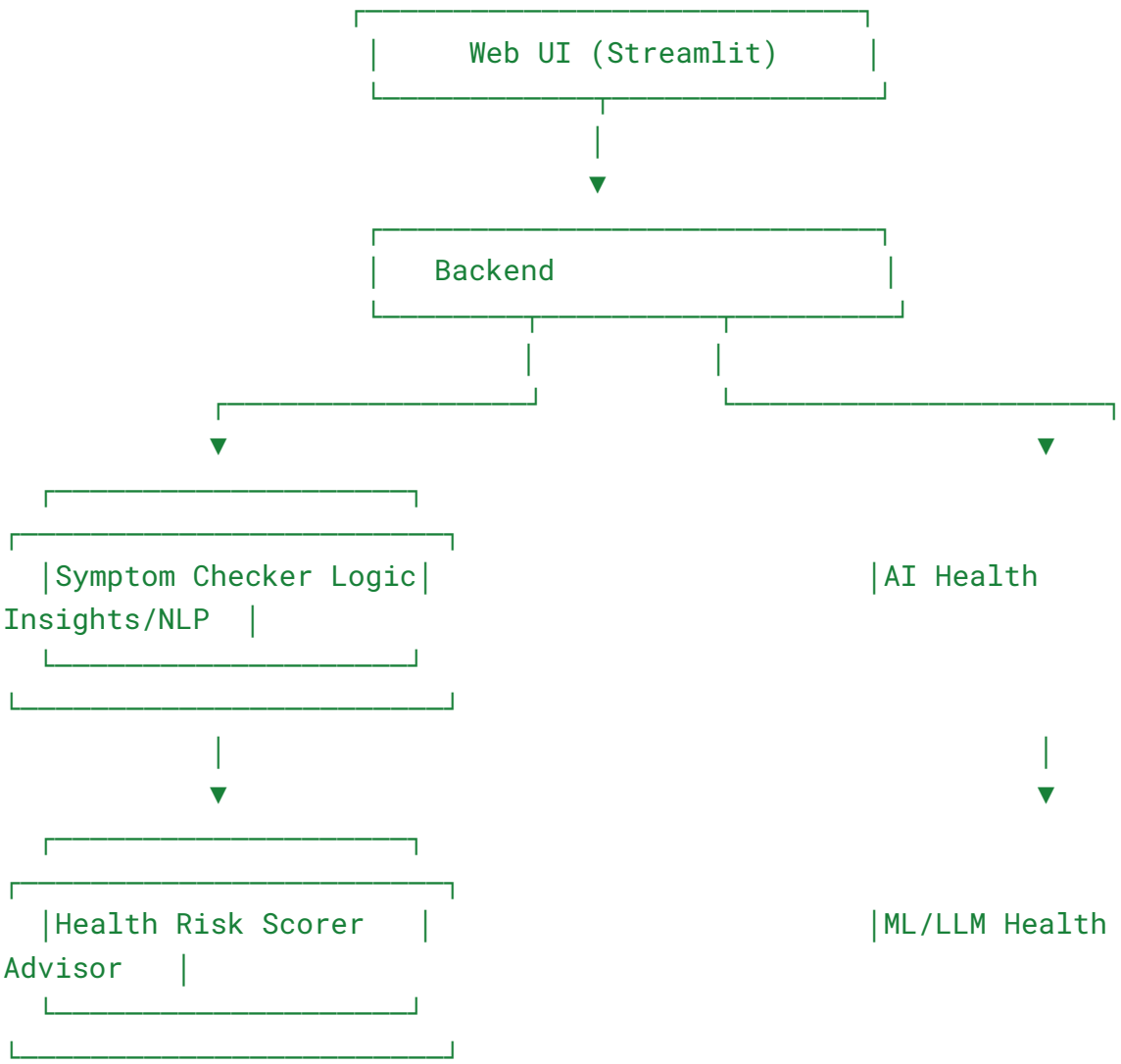

📋 Table-1: Components & Technologies – HealthAI

S.No	Component	Description	Technology
1	User Interface	User input & report view	Streamlit (lightweight UI)
2	Application Logic-1	Symptom parser and rule-based checker	Python + custom health rule engine
3	Application Logic-2	LLM-based diagnosis explanation	OpenAI GPT-4.5 / lightweight LLM (optional)
4	Application Logic-3	PDF generation for reports	ReportLab / FPDF
5	Database	Store user session data, symptoms, assessments	SQLite / JSON flat files
6	Cloud Database	Optional remote data sync	Firebase / Supabase
7	File Storage	Store reports / cached model data	Local FS
8	External API-1	OpenAI or HuggingFace API for explanations	OpenAI / Hugging Face
9	External API-2	Optional health data APIs	WHO API / Healthline
10	Machine Learning Model	Risk scoring, basic classification	Logistic Regression / Random Forest

11	Infrastructure	Local development / Light deployment	Local machine / Streamlit Sharing / Render

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📊 Table-2: Application Characteristics – HealthAI

S.No	Characteristics	Description	Technology Used
1	Open-Source Frameworks	Streamlit, Flask/FastAPI, Scikit-learn	Python, Streamlit, Hugging Face
2	Security Implementations	Local storage, no user login (or optional login), basic input sanitization	SHA-256 (optional), input validation
3	Scalable Architecture	Modular design, stateless endpoints, optional cloud functions	Flask/FastAPI microservices
4	Availability	Offline mode support with optional cloud sync	Local + optional Firebase
5	Performance	Optimized for low RAM/CPU usage; no large models run locally	Lightweight ML, batching, caching