Project Design Phase-III

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Project Name: Health AI – IBM Granite-Powered Medical Assistant

# Technical Architecture

Below is the revised architecture for the Health AI system built using Streamlit. It includes the app logic, ML model, and no external database as per implementation.

Note: This is a lightweight single-page application architecture.

## Table-1: Components & Technologies

|  |  |  |
| --- | --- | --- |
| **Component** | **Description** | **Technology** |
| User Interface | Web UI using Python | Streamlit |
| Application Logic-1 | Form input and validation | Python |
| Application Logic-2 | API integration logic | Hugging face API |
| File Storage | Temporary in-memory or local | No DB used |
| External API-1 | ML interface | Hugging face interface endpoint |
| Machine Learning Model | Deployed externally | Hugging Face-hosted custom model |
| Infrastructure | Deployed setup | Localhost / Streamlit Cloud |
| External API-1 | NLP or ana;ytics services | IBM watson API |

## Table-2: Application Characteristics

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **Description** | **Technology / Justification** |
| Open-Source Frameworks | Streamlit, Python libraries | Fully OSS ecosystem |
| Security | Auth control via APIs scale automaically | Hugging Face Auth Token,IBM API key |
| Scalable Architecture | External APIs scale automatically | Hugging Face +IBM handle backend scaling |
| Availability | Reliable due to managed cloud endpoints | IBM cloud/HF API uptime |
| Performance | Fast as model run remotly | Optimized interface APIs, no local compute |