

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	27 June 2025
Team ID	LTVIP2025TMID59346
Project Name	HealthAI-Intelligent Healthcare Assistant Using IBM Granite
Maximum Marks	4 Marks

Technical Architecture – HealthAI

HealthAI's technical architecture is designed to provide intelligent, personalized, and accessible healthcare assistance using IBM's AI capabilities. The architecture bridges the gap between healthcare user needs and AI-driven digital solutions by clearly defining modules, workflows, and technology integrations.

It follows principles of modular design, AI integration, secure backend logic, and interactive frontend experiences.

References – Adapted for HealthAI

1. **C4 Model – Software Architecture Visualization** Used as the base modeling approach to define different levels of HealthAI's architecture (context, container, component).

 <https://c4model.com/>

2. IBM Order Processing System (Pandemic Reference)

Inspired HealthAI's backend design by using modular components and AI-powered services similar to orderprocessing use cases.

 <https://developer.ibm.com/patterns/online-orderprocessing-system-during-pandemic/>

3. IBM Cloud Architecture Center

Provided best practices and patterns for integrating AI models and deploying cloud-based healthcare applications.


 <https://www.ibm.com/cloud/architecture>

4. AWS Architecture Best Practices

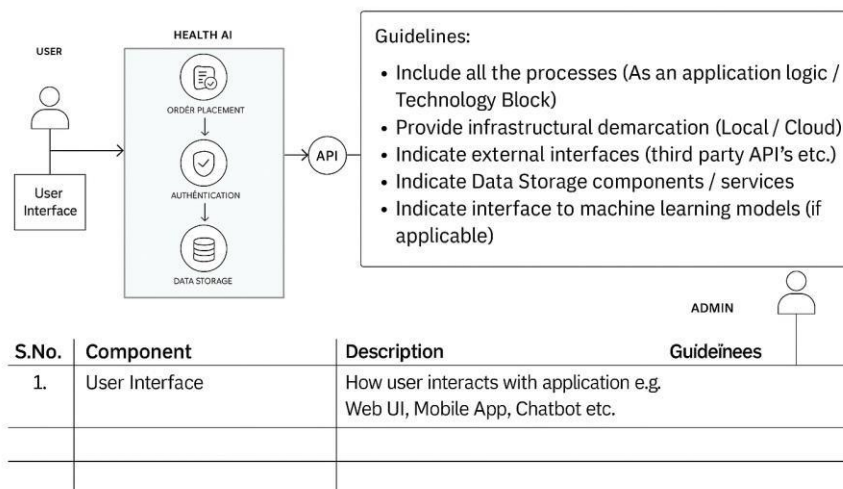
Used as a comparative reference to validate HealthAI's scalability, resilience, and service-based integration approach.

 <https://aws.amazon.com/architecture>

5. How to Draw Useful Technical Architecture Diagrams
Guided the creation of simplified, functional diagrams for HealthAI's backend and AI data flow.

 <https://medium.com/the-internal-startup/how-todraw-useful-technical-architecture-diagrams-2d20c9fda90d>

Health AI



Health AI Technology Stack

- | | |
|--|---|
| • Application Logic-1:
Patient intake and triage processing | Python / Java |
| • Application Logic-2:
Voice transcription for patient interactions | IBM Watson STT |
| • Database | IBM Watson Assistant |
| • Cloud Database | MySQL / MongoDB |
| • File Storage: Medical imaging and document | IBM DB2 / IBM Cloudant |
| • External API-1
Real-time environmental health tracking | IBM Block Storage / Local Filesystem |
| • External API-2 | IBM Weather API |
| • Machine Learning Model
Medical image classification | Aadhaar API |
| • Infrastructure
Scalable deployment for clinical environments | Aadhaar API |
| | Custom Object Recognition Model |
| | Cloud Foundry / Kubernetes / Local Server |