

Project Design Phase-II

Technology Stack (Architecture & Stack)



Date: 31 February 2025



Team ID: LTVIP2025TMID34281



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 order-processing use cases.

 <https://developer.ibm.com/patterns/online-order-processing-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.

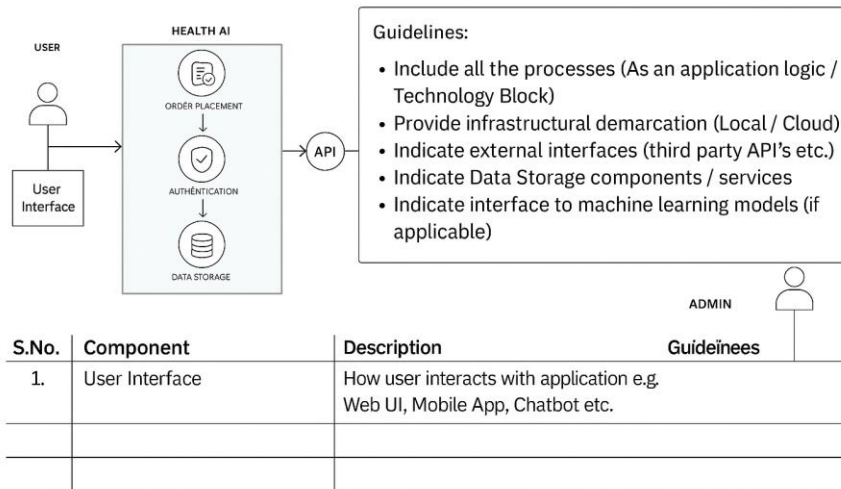
 <https://aws.amazon.com/architecture>

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-to-draw-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
MySQL / MongoDB
- Cloud Database
IBM DB2 / IBM Cloudant
- File Storage: Medical imaging and document
IBM Block Storage / Local Filesystem
- External API-1
IBM Weather API
- External API-2
Aadhaar API
- Machine Learning Model
Custom Object Recognition Model
- Infrastructure
Scalable deployment for clinical environments
Cloud Foundry / Kubernetes / Local Server