

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

Date	28 June 2025
Team ID	LTVIP2025TMID50016
Project Name	HealthAI: Intelligent Health care Assistant Using IBM Granite
Maximum Marks	

**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	Users interact via web and mobile app	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Handles request and integrates IBM Granite model	Python (transformers, torch)
3.	Application Logic-2	Converts speech input to text	IBM Watson Speech to Text
4.	Application Logic-3	AI assistant for health conversations	IBM Watson Assistant
5.	Database	User records, symptoms history	IBM Watson Assistant
6.	Cloud Database	Medical knowledge & assistant logs	IBM Cloudant
7.	File Storage	User records, symptoms history	IBM Cloud Object Storage
8.	External API-1	Health alerts based on weather	IBM Weather API
9.	External API-2	Identity verification	Aadhar UIDAI API
10.	Machine Learning Model	Generates answers to medical questions	IBM Granite 3.3-2B Instruct (via Hugging Face)
11.	Infrastructure (Server / Cloud)	Local + Cloud deployment using containers	Docker, IBM Cloud Foundry, Kubernetes

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frontend and backend app dev	React.js, Flask
2.	Security Implementations	Data encryption, IAM, token access	SHA-256, OAuth 2.0, IBM IAM
3.	Scalable Architecture	Modular microservice-based LLM pipeline	Docker, Kubernetes
4.	Availability	Auto-failover & multi-region cloud setup	IBM Load Balancer, Multi-Zone Clusters
5.	Performance	Fast response from LLM + caching + API gateway	Redis, IBM API Gateway, Cloudflare CDN