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

Date	08 May 2023
Team ID	NM2023TMID17066
Project Name	Estimation and Prediction of Hospitalization and Medical Care Costs

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with the prediction model through website to predict medical costs.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic	Implementation	Java / Python
3.	Database	Storing data and other information in the database.	MySQL
4.	Cloud Database	The model is provided with data from IBM cloud Database.	IBM Cloud DB
5.	File Storage	Patient file storage.	IBM Block Storage
6.	External API-1	Used to extend the service to other applications	Flask Application
7.	External API-2	Authentication	Aadhar API, etc.
8.	Machine Learning Model	Analyse and predict the health care cost by the user data.	Linear regression in Machine Learning.

| 9. | Infrastructure (Server / Cloud) | Application Deployment on Local System and Local Server Configuration: | Local.. |

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	large-scale data processing and analysis	Apache Spark, H2O, Flask, Bootstrap, IBM Cloud DB
2.	Security Implementations	Protect networks from malicious attacks and unauthorized access.	e.g. SHA-256, Encryptions, Firewalls, Access Controls.
3.	Scalable Architecture	Support for Multiple Sample prediction.	Machine Learning, Cloud Computing, Big Data Analytics.
4.	Availability	identify patterns and trends in health care costs	Data Mining
5.	Performance	The application is expected to handle up to 10000 predictions per second	Load Balancers, Distributed Servers

Technology Architecture: