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

Date	20 November 2023
Team ID	Team-592199
Project Name	Disease Prediction Using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

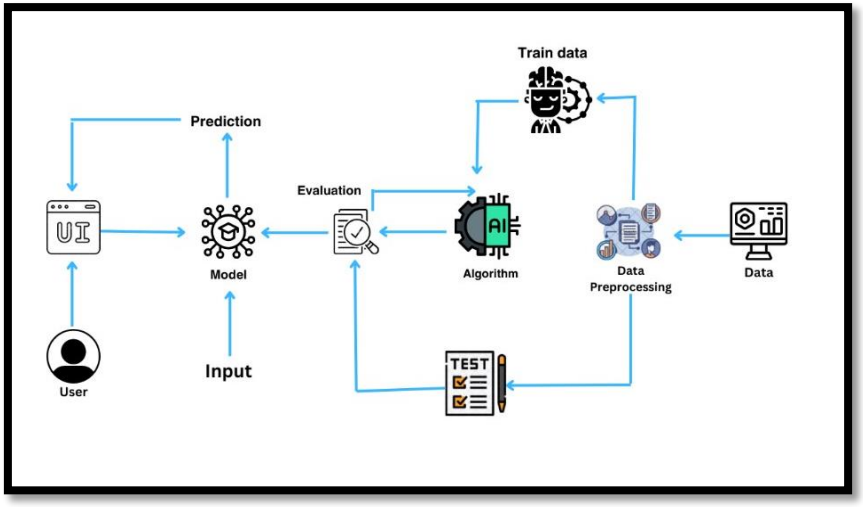

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Interface for symptom input (Web UI, Mobile App, Chatbot)	HTML, CSS, JavaScript
2.	Data Preprocessing	Cleaning and organizing collected symptom dataset	Python, Pandas, NumPy
3.	Data Interaction	Communication with data sources for disease dataset	IBM Watson APIs, Database Connectivity (e.g., MySQL)
4.	Application Logic	Logic for processing within the application	IBM Watson Assistant, Python
5.	Database	Connectivity to website for data extraction and storage	MySQL, NoSQL databases, Cloud Storage

6.	File Storage	Storage for recorded symptom data	Local File System, Cloud Storage Services
7.	Framework	Framework to connect frontend and backend	Flask - Python, Web Application Frameworks
8.	External API-1	API for retrieving 5G band frequencies	5G Spectrum API, External Data Integration APIs
9.	External API-2	API for authentication and user uniqueness	Authentication APIs (e.g., OAuth, Aadhar API)
10.	Deep Learning Model	Model for predicting disease based on symptoms	LSTM Model, TensorFlow, PyTorch, Deep Learning Libraries
11.	Infrastructure	Deployment on local/cloud servers	Local Server Configuration, Cloud Deployment Services

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilizing open-source frameworks for disease prediction	TensorFlow, PyTorch, Scikit-Learn, Flask
2.	Security Implementations	Implementing security measures for user data	Encryption Techniques, Secure APIs, Data Security Tools
3.	Scalable Architecture	Architecture for scalability and performance	Microservices Architecture, Load Balancers, Kubernetes
4.	Availability	Ensuring system availability and reliability	High Availability Clusters, Data Replication Strategies
5.	Performance	Optimizing performance for efficient disease predictions	GPU Acceleration, Distributed Computing, Caching