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

Team ID	PNT2022TMID22216
Project Name	Early Detection of Chronic Kidney Disease using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the Table1 & Table 2.

Table-1: Component & Technology:

S.No	Component	Description	Technology
1.	User Interface	A user-interactive interface for the easy interaction with prediction model.	HTML, CSS, JavaScript
2.	User Registration	Users may sign up in the website application.	HTML forms
3.	Disease Prediction	The user provides the information that is sent to the model as input to forecast the illness.	Machine Learning with Python.
4.	Update Prediction result	The Web UI updates the illness prediction outcome so that the user may see it.	Python.
5.	Database	The user data is stored in a relational database structure.	MYSQL.
6.	Cloud Database	Database services on IBM cloud.	IBM Cloudant.
7.	Machine Learning Model	To predict he chronic kidney disease (CKD) with various input parameters.	Random Forest, KNN, Decision tree, Logistic Registration.
8.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Both the machine learning model and the web application are built using open-source Python frameworks.	Python Flask, Numpy, Scikit-Learn etc.
2.	Scalable Architecture	It is readily expandable due to the 3-tier design employed, which has a distinct user interface, application layer, and data tier.	IBM Watson Studio.
3.	Availability	The web application is highly available as it is deployed in cloud.	IBM Cloud.
4.	Performance	With caching and security, the website's speed is enhanced.	IBM Cloud Internet Services.

Architectural Diagram: