Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	16 October 2022
Team ID	PNT2022TMID16583
Project Name	Early Detection of Chronic Kidney Disease Using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

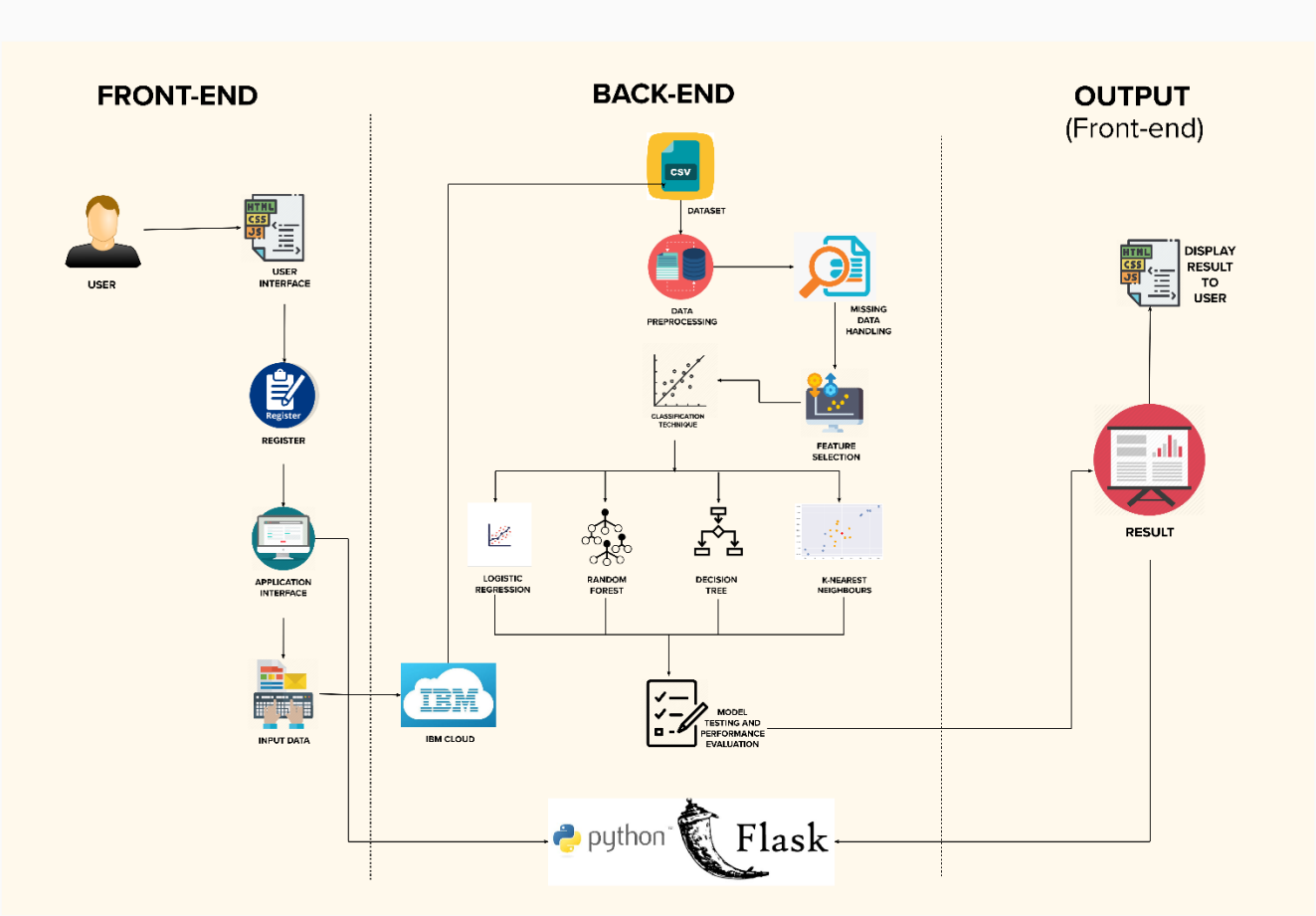

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	An Interface for the user to interact with the prediction model.	HTML, CSS, JavaScript
2.	User Registration	User can register in the web application	HTML forms
3.	Disease Prediction	The user enters the data which is given as input to model to predict the disease.	Machine Learning with Python.
4.	Update Prediction result	The result of disease prediction is updated in the Web UI for the user to know the output.	Python.
5.	Database	Relational database structure to store the user data	MYSQL.
6.	Machine Learning Model	To predict he chronic kidney disease (CKD) with various input parameters.	Random Forest, KNN, Decision tree, Logistic Registration.
7.	Cloud Database	Database services on IBM cloud.	IBM Cloudant.
8.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The python open-source frameworks are used to build the web application as well as to build Machine Learning model.	Python Flask, Numpy, Scikit-Learn etc.
2.	Scalable Architecture	The 3-tier architecture used with a separate user interface, application tier and data tier make it easily scalable.	IBM Watson Studio.

3.	Availability	The web application is highly available as it is deployed in cloud	IBM Cloud.
4.	Performance	The performance of the website is improved with caching and security.	IBM Cloud Internet Services.