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

Date	22 October 2022
Team ID	PNT2022TMID51187
Project Name	Project – Efficient water quality analysis and prediction using Machine Learning.
Maximum Marks	4 Marks

Technical Architecture:

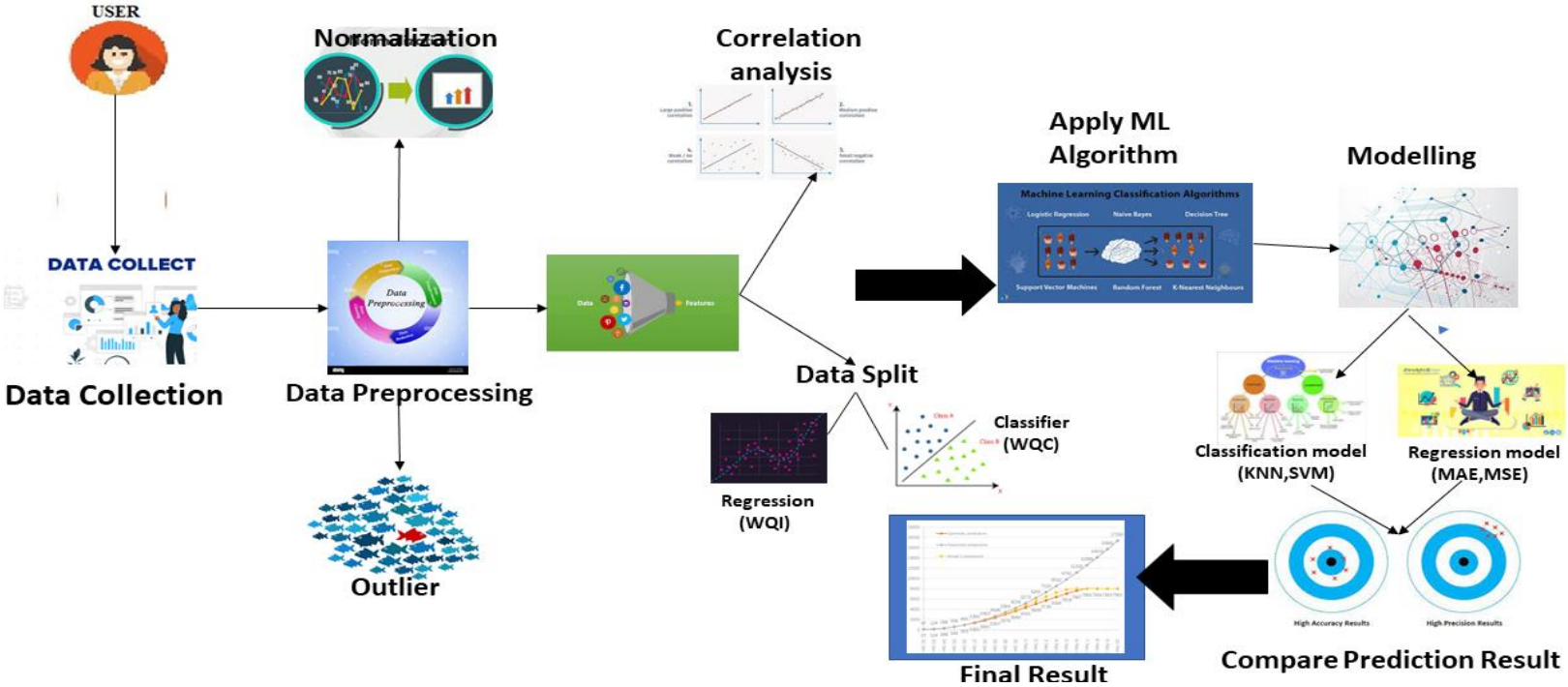

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The open-source frameworks used in the project are	Anaconda Navigator, Scikit-learn,Seaborn , ,Tensor Flow, Keras, Flask.
2.	Security Implementations	The security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	The scalability of architecture (3 – tier, Micro-services)	Data, models operate at different sizes, speed, consistency and complexity.
4.	Availability	The availability of application (e.g. use of load balancers, distributed servers etc.)	It can be availed by all kinds of customers who wish to test the quality of water they consume.
5.	Performance	The performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Digital twin technology .It gives correct and effective prediction, and easy accessibility to the results using Machine Learning Technology.