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

Date	15 October 2022
Team ID	PNT2022TMID49864
Project Name	Project - Efficient water quality analysis and prediction using machine learning
Maximum Marks	4 Marks

Technical Architecture:

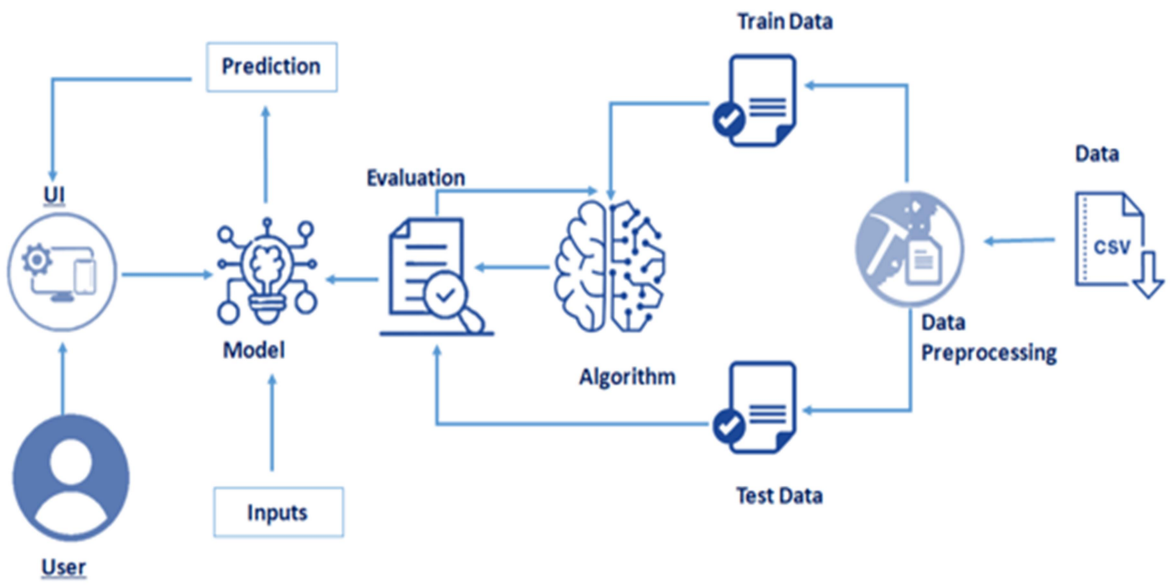

Table-1: Application Characteristics:

S.no	Characteristics	Description	Technology
1.	Open-Source Frameworks	For wiring hardware devices, API and online services	Node RED
2.	Security Implementations	Advanced Encryption standard, DataEncryption standard ,RSA algorithm	Encryption
3.	Scalable Architecture	More number of users can be access the data.	Automated bootstrapping
4.	Availability	Increase the availability	Cloud computing
5.	Performance	High performance	Adaptive Contention Window

Table-2: Components & Technologies:

S.no	Component	Description	Technology
1.	User Interface	user interacts with application e.g. Mobile App, web application.	Python ,C
2.	Application Logic-1	Developing application	Python
3.	Application Logic-2	To add speech transcription capabilities to application.	IBM Watson STT service
4.	Application Logic-3	To automate interactions withcustomers	IBM Watson Assistant
5.	Database	To create data base	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM Cloud etc.
7.	File Storage	Storing data	IBM Block Storage or Other Storage Service or Local File system
8.	External API-1	To deliver accurate and precious data	IBM Weather API
9.	External API-2	To verify data	Aadhaar API
10.	Machine Learning Model	To identify and locate objects	Object Recognition Model
11.	Infrastructure (Server / Cloud)	To compile and run the apps locally	Local, Cloud Foundry, etc.