Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	15 October 2022
Team ID	PNT2022TMID32788
Project Name	Efficient Water quality analysis and Prediction using Machine learning

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User registration	Registration through Gmail / Registration through form Create an account Follow the instructions
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User input	Users are required to give the input for the water sample to be analyzed based on chemical components such as temperature, pH level, dissolved oxygen, conductivity etc.
FR-4	Sensor requirement	Water level sensor produces the detection of clean drinking water.
FR-5	Accessing datasets	Datasets are collected by data preprocessing method.
FR-6	Output	Based on the range of the WQI, given water samples are analyzed and the final result is predicted.
FR-7	Mobile application	The efficiency of water quality is analyzed, and outputs are delivered through a mobile application or any display medium.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This project is useful to all the customers and stands upto their expectation by predicting the purity of water.
NFR-2	**Security**	All the water quality parameters are stored securely in a database for future access.
NFR-3	**Reliability**	This project helps everyone in protecting their health. If there are less no.of failures then the system operation is proper and more reliable.
NFR-4	**Performance**	The model will have improved performance because of the use of datasets with lowest time intervals and high precision.
NFR-5	**Availability**	It should be available for the duration of the user access to the system until the user terminates the access.
NFR-6	**Scalability**	If more parameters required, it can be added easily. Number of visualizations can be increased. Currently the system predicts for hourly manner this interval can be changed accordingly.