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

Date	11 October 2022
Team ID	PNT2022TMID16005
Project Name	Efficient Water Quality Analysis and Prediction using Machine Learning.
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Interface	A detailed description of water quality should be provided.
FR-2	User Form	Values and measures require to predict the Water quality should be given as input in the form.
FR-3	Machine Learning Model Deployment	Develop the Machine Learning Regression Model to predict the Water Quality Index (WQI). Develop the Machine Learning Classification Model to predict the Water Quality Classification (WQC).
FR-4	Testing The Water Samples	Provides an option to test any kind of water samples with the required parameters and to calculate the Water Quality Index and impurities present
FR-5	Reporting	If any issues are faced by the customer or user it will be directly notified to the developer

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Customers can access the system more efficiently and in a simpler way. The customers can have the opportunity to view a better interpretation of results. The customers are also recommended the purification techniques based on the impurities.
NFR-2	**Security**	All the predicted information is accessed only by the authenticated users
NFR-3	**Reliability**	It should be reliable in producing effective and efficient water quality prediction results. It should ensure the trust and belief among people that this water quality prediction system produces correct results when used.
NFR-4	**Performance**	The system should be consistent in producing the prediction results of the Water Quality Index (WQI) and also needs to ensure better throughput and response time compared to other systems.
NFR-5	**Availability**	The system can be utilized by the customers 24/7 and it should be availed to test any kind of water samples anywhere
NFR-6	**Scalability**	It can be used by a wide variety of users like testing agencies, private and public laboratories, restaurants and hotels, and people who wish to test the quality of water they consume. The system should also be compatible enough to be integrated with future technologies also.