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

Date	19 October 2022
Team ID	PNT2022TMID52978
Project Name	Project – Efficient Water Quality Analysis and Prediction using Machine Learning
Maximum Marks	4 Marks

Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Input (parameters for testing)	7 input parameters fed as input (BOD, DO, pH, Conductivity, Year, Total Coliform, NITRITENANN (mg/l).
FR-3	Reports and results	1. Result of the water quality analysis will be sent a message to the user. 2. The real-time water quality report is collected and the dataset is used to predict the water quality for future works.
FR-4	Prediction	Water Quality Index (WQI) formula will be used for the water quality analysis and prediction. WQI value is displayed on the application page.

Non-functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Allows users to identify missing data elements available in the water quality portal data.
NFR-2	**Reliability**	Consistent results will be obtained even after multiple use (results and prediction based on the dataset).
NFR-3	**Performance**	The system effectively compares the input parameters given by the users with the dataset.
NFR-4	**Availability**	Even if there is infrastructure failure, the model will continue to function.
NFR-5	**Scalability**	Water Quality Index (WQI) and Water Quality Classification (WQC) are accurately predicted for different geographic locations with the available data.