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

Date	03 October 2022
Team ID	PNT2022TMID17967
Project Name	Project - 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 Input**	Users are required to give chemical components of their water, which they need to test. The chemical components such as Temperature, pH, Dissolved Oxygen, Coliform, Biochemical oxygen demand, Conductivity, and Nitratenan details.
FR-2	**Display output**	Based on the range of water quality index available, given water sample values are classified and predicted the final result as (excellent, good, marginal, poor).

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	System is such that it stands up to the customers expectation. When an application is usable, users can easily navigate its interface. The native user can also use the system effectively, without any difficulties. Users can easily determine what a feature is and what it can do.
NFR-2	**Security**	Various forms of questions are asked for calculating water quality index(wqi) and are securely stored in database.
NFR-3	**Reliability**	Consider recording the number of critical failures a system experiences during testing to check its reliability. Tracking the time between critical failures can help you understand the reliability of a system. If the number of failures is low, it means that the system operates properly.
NFR-4	**Performance**	User can interact with the system by providing some of details which is required for calculating the index. Response of the operation is good and fast.

NFR-5	**Availability**	New value deployment does not impact our pages availability and does not take longer than one hour for predicting the index range.
NFR-6	**Scalability**	The website attendance limit must be scalable enough to support 200,000 users at a time. It can also serve more processing data, and doing more transactions.