

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

Date	15 October 2022
Team ID	PNT2022TMID42037
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 Registration	Users can enter their details using the login form.
FR-2	User Confirmation	Confirmation via Email
FR-3	Authorization level	A Security question will be displayed to the user to verify the details.
FR-4	Reporting	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-5	Business rules	Water Quality Index(WQI) formula will be used for the water quality analysis and prediction.

**Non-functional Requirements:**

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	Allows users to identify missing data elements available in the water quality portal data.
NFR-2	<b>Security</b>	Authorization via Email.
NFR-3	<b>Reliability</b>	Our model will accurately report the uncertainty in the prediction.
NFR-4	<b>Performance</b>	The system effectively compares the input parameters given by the users with the dataset.
NFR-5	<b>Availability</b>	Our model will keep working and be available for work even if there is an infrastructure failure.
NFR-6	<b>Scalability</b>	High mineral levels are found in water as well as Water Quality Index (WQI) and Water Quality Classification (WQC) are accurately predicted.