

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

Date	15 November 2022
Team ID	PNT2022TMID15978
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	<ol style="list-style-type: none"><li>Result of the water quality analysis will be sent a message to the user.</li><li>The real-time water quality report is collected and the dataset is used to predict the water quality for future works.</li></ol>
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	Usability	Allows users to identify missing data elements available in the water quality portal data.
NFR-2	Security	Authorization via Email.
NFR-3	Reliability	Our model will accurately report the uncertainty in the prediction.
NFR-4	Performance	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.