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

Date	16 October 2022
Team ID	PNT2022TMID51670
Project Name	Project – Efficient Water Quality Analysis & 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	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Authentication	Authentication with OTP via SMS/email Authentication via social networks
FR-4	User Authorization	Role-Based Access Controls(RBAC) OpenID Authorization
FR-5	External Interfaces	Interaction logic between user and software Software interfaces like frontend, backend, etc. Buttons, functions on the model
FR-6	Reporting	SMS notification for reports/alerts Email notification for reports/alerts

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	To test water quality, one has to go through expensive and cumbersome lab analysis. But this model predicts the water quality using minimal and easily available water quality parameters like pH, Turbidity, Alkalinity, Nitrate, Hardness etc.
NFR-2	**Security**	The model predicts the correct and accurate result. It is protected from malware attacks and unauthorized access.
NFR-3	**Reliability**	Water quality testers are not predicting the accurate value. But this model predicts the accurate value and gives the report as whether the water is safe to drink or not.
NFR-4	**Performance**	It measures a wide range of more than 100 potential contaminants and delivers the results in an easy-to-read, richly detailed report. Production of report shall take less than minutes.

NFR-5	**Availability**	The test report from lab will take so many days. But using this model can get the report within minutes.
NFR-6	**Scalability**	Using this model can test water any number of times. The model will predict the accurate value and give the correct report.