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

Date	18-10-2022
Team ID	PNT2022TMID35567
Project Name	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
FR-2	User Confirmation	Confirmation via Email
FR-3	User Authentication	Authentication via Email
FR-4	User Authorization	Open ID Authorization
FR-5	External Interfaces	Software Interfaces like frontend,backend are used for the interaction between the user and software.
FR-6	Reporting	Email notification for reporting or alerting the user.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Usability is that experience gained by the users when interacting with the application.Usability tells about the efficiency of the application and overall satisfaction of the user while using the application.In this app the user will be able to predict the quality of water by using water quality parameters like PH,Turbidity,Alkalinity,Nitrate,Hardness and can decide whether the water can be used to drink or for other purpose according to the predicted value.
NFR-2	**Security**	Application security is that the prevention of data being stolen or hacked by others.Our application ensures security by protecting the app from malware attacks and unauthorized users.
NFR-3	**Reliability**	This application works without failure while in a specified environment over a set duration of time.It detects the correct and accurate value of water quality without error.

NFR-4	**Performance**	This app performs in an efficient manner to give the user good experience and it takes really a very less time to give the predicted value of water quality.
NFR-5	**Availability**	This app ensures that it can be easily used by all the users without any inconvenience.This app performs in order to meet the users expectations and requirements.
NFR-6	**Scalability**	The proposed can be implemented in real time water quality analysis by getting water sample using devices(Internet Of Things). Real time applications can be used in various places like schools, colleges etc. Machine learning model integrated with IOT can make users more comfortable and to use in real time.