Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID24570
Project Name	Essential Water Quality Analysis and Prediction using Machine learning
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Water is one of the most important natural resources for all living organisms on earth. The monitoring of treated wastewater discharge quality is vitally important for the stability and protection of the ecosystem. Collecting and analyzing water samples in the laboratory consumes much time and resources. Access to safe drinking-water is essential to health, a basic human right and a component of effective policy for health protection. This is important as a health and development issue at a national, regional and local level. In some regions, it has been shown that investments in water supply and sanitation can yield a net economic benefit, since the reductions in adverse health effects and health care costs outweigh the costs of undertaking the interventions. Water can be utilized for drinking, cleaning, fishing, farming, industry, and enjoyment. Different defined chemical, physical, and biological standards are required to support each of these designated purposes. For instance, water used for swimming or drinking has higher criteria than water used for business or agriculture.
2.	Idea / Solution description	Due to various problems the water gets contaminated easily. To avoid these problems water can be treated and used for each purpose. Water Quality Analysis And Prediction is one of the main and important procedure to predict the water to be used or not.

3.	Novelty / Uniqueness	Major parameters affecting quality such as 1. Dissolved Oxygen 2. pH Value 3. Temperature 4. Turbidity 5. Conductivity are considered for water analysis
4.	Social Impact / Customer Satisfaction	Users can search and analyze local water quality data more precisely than ever before. This model is built with a good accuracy so the customer can use this confidently and it analysis and detection will be always correct.
5.	Business Model (Revenue Model)	Overall, the goals defined for this research were reached and the examples of the application of machine learning models are presented. This work also reveals the importance of consulting data scientists before starting of the monitoring, since data sets unsuitable for requested tasks is a common problem. The machine-learning algorithms are one of the tools that can contribute to this field a lot and may be used to keep the progress on-going.
6.	Scalability of the Solution	Machine learning has been widely used as a powerful tool to solve problems in the water environment because it can be applied to predict water quality, optimize water resource allocation, manage water resource shortages, etc. A smooth growth of your application is guaranteed by proper load and performance testing.