Project Design Phase-I
Proposed Solution

Date	19 September 2022
Team ID	PNT2022TMID24172
Project Name	Essential Water Quality Analysis and Prediction using Machine learning
Maximum Marks	2 Marks

Proposed Solution Template:

The project team shall fill in the following information in the proposed solution template.

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	WATER QUALITY DETECTION AND PREDICTION Around the world, 80% of wastewater is dumped back into the environment, mostly untreated, damaging rivers, lakes, and seas. Our health is in danger as a result of this widespread issue with water pollution. More people die each year from unsafe water than from war and all other types of violence combined. Access to clean drinking water is crucial for health, a fundamental human right, and a component of successful health protection policies. On a national, regional, and local level, this is significant as a health and development issue. Investments in water supply and sanitation have been shown to produce a net economic advantage in some areas because they reduce negative health effects and medical expenses more than they cost to implement. 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. Based on purpose, the properties of water may vary. The chemical, physical, and biological properties of water are referred to as its quality.
2.	Idea / Solution description	The Quality of water is predicted and based on it, water can be treated and used for each purpose. Water Quality prediction plays a major role in categorizing the water to be fit or unfit for usage.

3.	Novelty / Uniqueness	**#NOVELTY 1** Major parameters affecting quality such as • Dissolved Oxygen • Carbon percentage • pH • Temperature • Conductivity • BOD are considered for analysis **#NOVELTY 2** Web application with simple user interface does not exist
4.	Social Impact / Customer Satisfaction	All forms of life on earth are more significantly impacted by this idea. To continuously evaluate the quality of the water coming from the various supply sources, both qualitative and quantitative measurements are occasionally required. The sophistication of their consumers with regard to water quality data and laboratory tests may or may not be known to dealers. They are specifically interested in finding out if the equipment they choose will successfully remove pollutants that are known to be present in their drinking water. Product "certifications" are excellent, but they can also be perplexing, particularly when numerous businesses make promises without any supporting scientific data. The user can more easily determine the quality of his water with the aid of this application. With the stroke of a button, detailed reports on domestic water quality down to the user's system can be generated. Users can search and analyse local water quality data more precisely than ever before.

5.	Business Model (Revenue Model)	In general, ISO-certified laboratories should sample and analyse water. Only trained technicians should conduct sampling and monitoring tests. However, it is a laborious process that could take up to two days to provide an accurate report. This application would provide the result more precisely and in a fraction of a second. Consequently, the procedure of analysing the water quality is made simpler, and lab personnel's lives are made simpler.
6.	Scalability of the Solution	Precisely defined parameters are crucial to the model's accuracy. The quality assurance of your analytical result will help you gain or maintain user trust. The ability of your web application to handle an increasing number of people interacting with the app at once is known as scalability. Scalability is highly impacted by the quality of the code as well. The entire cycle of developing a web application must include testing. A smooth growth of your application is guaranteed by proper load and performance testing.