Project Design Phase-I
Proposed Solution

Date	01 October 2022
Team ID	PNT2022TMID12618
Project Name	Project - Efficient Water Quality Analysis & Prediction using Machine Learning
Maximum Marks	2 Marks

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Pure Water has become a scarce resource in today's scenario. So, it is necessary to analyse predict the quality of water samples so as to determine and detect the contaminants present in those samples which may cause adverse effects on human health, environment, etc.
2.	Idea / Solution description	A web application will be designed which provides an interface to accept water's parameter as input from the user. Then Machine Learning techniques are used to predict the water quality index which denotes the healthiness of the water.
3.	Novelty / Uniqueness	Using ML techniques (Regression models) to predict the quality of water instead of using physical measurements or sensors to obtained the quality of water in different places. ML techniques improves the accuracy of measurement over existing chemical and physical techniques which may not be feasible to obtain all the required features to predict the water quality. Physical and chemical measurements may lead to the usage of expensive instruments and also takes a lot of time. ML techniques make the process easier, feasible and faster.
4.	Social Impact / Customer Satisfaction	Our intended audience consist of people who are concerned about the quality of water they drink. Water's health is more important which should be considered as many water-borne diseases are more widely known. The proposed solution will help in identifying water pollution and helps the customer to drink healthy water.
5.	Business Model (Revenue Model)	Industries that provide sanitation facilities and products (like water purifiers, quality testers etc.) can deploy this solution to provide more waste water treatment plants, better insights in health concerns and there may also be an increase in awareness and demand for better water quality testing and availability. People will start looking for treatments related to water-borne diseases as the awareness increases.
6.	Scalability of the Solution	The solution proposed will be deployed as web-application. So, it is easily accessible by anyone who has internet services and has no specific software and hardware specifications