# Project Design Phase-I
# Proposed Solution

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| Date | 13 November 2022 |
| Team ID | PNT2022TMID53671 |
| Project Name | Efficient Water Quality Analysis and Prediction using Machine Learning |
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| Team Members | Sree Murari K,Syed Fardeen Althaf SK,Prassanna G |

## Proposed Solution Template:

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

| S.No. | Parameter | Description |
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| 1. | **Problem Statement (Problem to be solved)** | Efficient Water Quality Analysis and Prediction using Machine Learning. |
| 2. | **Idea / Solution description** | Models of artificial neural networks, specifically nonlinear autoregressive neural networks, are used to forecast the WQI (NARNET)<br><br>as well as the long short-term memory (LSTM) deep learning method. Three machine learning techniques have also been utilised for the WQC forecasting: Knearest Neighbor (K-NN), Naive Bayes, and Support Vector Machine (SVM).<br>The created models were assessed based on several statistical criteria, and the employed dataset has seven significant parameters. |
| 3. | **Novelty / Uniqueness** | In previous they find water quality with help of WQI and WQC. Now the solution is find with help of advanced artificial intelligence and it include seven parameters |
| 4. | **Social Impact / Customer Satisfaction** | Water quality has been harmed during the past few years by a number of pollutants. As a result, anticipating and modelling water quality have become crucial for reducing water pollution. In this work, cutting-edge AI algorithms are created to forecast the water quality index (WQI) and water quality classification (WQC). This is how this sentence has an effect. |

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| 5. | **Business Model (Revenue Model)** | *The promoted trends and methods are included in the income stream. On the business side, technology and production have improved. It improved the logistical process and the profit.* |
| 6. | **Scalability of the Solution** | This solution's scalability allows it to quickly serve millions of users located all over the world while handling large amounts of data and performing numerous computations at low cost and in a short amount of time. |