Project Design Phase-I
Proposed Solution
Template

Date	10 November 2023
Team ID	PNT2023TMID592061
Project Name	River Water Quality Forecasting Using Machine Learning
Maximum Marks	

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Inaccurate or outdated forecasting models are leading to suboptimal resource allocation, inefficient use of water resources, and reduced overall efficiency. These factors contribute to poor environmental conditions, health risks, and increased costs for both private and public entities.
2.	Idea	The solution uses advanced machine learning techniques like Random Forest, Support Vector Machines, and Artificial Neural Networks to predict water quality parameters such as pH, temperature, dissolved oxygen, and nutrient concentration. These algorithms can effectively analyze complex data and accurately predict water quality changes over time.
3.	Uniqueness	This system aims to bridge the gap between inaccurate forecasting models and real-time data by leveraging advanced machine learning algorithms and real-time data collection systems. Additionally, it will incorporate data from multiple sources to provide a comprehensive and reliable water quality forecast.
4.	Customer Satisfaction	By offering a highly accurate and real-time River Water Quality Forecasting System, this solution aims to improve the decision-making capabilities of private and public entities. It will enable them to take timely and informed decisions to reduce the impact of poor water quality on the environment, human health, and economic activities.
5.	Business Model (Revenue Model)	This system can be monetized through various revenue models, such as: 1. Subscription-based pricing: Customers can pay a monthly or annual fee to

		access the forecasting service. 2. Advertising revenue: Partner with businesses to promote their products and services within the application. 3. API integration: Allow third-party applications to integrate with the RWQFS, charging them based on usage.
6.	Scalability of the Solution	The scalability of the solution is achieved through the use of cloud-based technologies and machine learning algorithms that can handle large datasets efficiently.