FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)

Hormis Nagar, Mookkannoor PO,
Angamaly, Kochi

Accredited by NAAC with 'A+' Grade

DEPARTMENT OF COMPUTER APPLICATIONS

SYNOPSIS OF THE MINI PROJECT

Name of the Student	NITHYA K
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Name of Project Guide	Dr. Rose Mary Mathew
GitHub ID	https://github.com/nithyakalathil
Project Title	Water Quality Prediction

Area of the Project	Water Quality Prediction Using Machine Learning Techniques
Date of Submission	03/01/2025

Description of Project:

The project "Water Quality Prediction Using Machine Learning" focuses on using smart computer models to check and predict water quality. Traditional methods of testing water take a lot of time and money because they require lab testing. This project uses machine learning techniques like Artificial Neural Networks (ANN), Support Vector Machines (SVM), and Decision Trees (DT) to predict important water quality factors such as pH, Dissolved Oxygen (DO), and Chemical Oxygen Demand (COD). By studying past and real-time data from different water sources, the system can detect pollution early and help take quick action. The project also ensures the collected data is clean and accurate before training the models. With the help of real-time monitoring using IoT devices, this system can improve water safety for drinking, farming, and industries while protecting the environment.

Features:

The project "Water Quality Prediction Using Machine Learning" helps in checking and predicting water quality using smart computer models. It analyzes important water parameters like pH, Dissolved Oxygen (DO), and Chemical Oxygen Demand (COD) to detect contamination early. The system uses machine learning techniques such as Artificial Neural Networks (ANN), Support Vector Machines (SVM), and Decision Trees (DT) to make accurate predictions. The data is cleaned and prepared to improve accuracy, and the model's performance is tested using various accuracy checks. This project can also work in real-time by connecting with IoT sensors to provide live water quality updates. It can be used for different water sources like rivers, lakes, and drinking water, making it a flexible and useful tool. By reducing the need for expensive and time-consuming lab testing, it provides a faster and more cost-effective solution. Ultimately, this project helps in protecting public health and the environment by ensuring safe and clean water for drinking, agriculture, and industries.

Front End & Back End Tools	React,Express.js,Node.js,MongoDB,Python