PREREQUISITES
PROJECT OBJECTIVE

Team ID	PNT2022TMID08566
Project Name	Project – Efficient Water Quality Analysis & Prediction using Machine Learning

Undoubtedly, water is the most essential resource on our planet. Without it, life will cease to exist and will collapse within a few days. Not only for general usage, but its application in industries also helps in the creation and refining of other resources and products that are essential for our existence and sustainable living.

However, we have been exploiting this irreplaceable resource for decades. Out of the 71% water that covers the Earth's crust, only 2.5% or even less is suitable for drinking. This has resulted in severe consequences in terms of increased concentration of pollutants in freshwater bodies along with water scarcity in different corners of the globe.

The freshwater sources are depleting at an uncontrollable rate and currently, there isn't any alternative to improve the situation other than monitoring and maintaining optimum quality of water bodies. Howbeit, currently the water quality measurement is done manually, which poses several challenges.

The objective is to predict the water quality using artificial intelligence (AI) techniques including MLP, SVM, linear regression and random forest regression. An application is created where the user can enter the parameters and check for the prediction of the water quality. Based on the parameters entered the machine learning algorithms make predictions with the dataset and produce the desired outcome.

First the dataset is fed to the system and the dataset is trained and tested with specific machine learning algorithms like linear regression, random forest regression etc. Data Visualization is made to classify the quality of water.