

**KGISL Institute of Technology**

**Course Name: DATA ANALYTICS**

## **Project Name: Air Quality Analysis In TamilNadu**

Problem Statement: The project aims to analyze and visualize air quality data from monitoring stations in Tamil Nadu. The objective is to gain insights into air pollution trends, identify areas with high pollution levels, and develop a predictive model to estimate RSPM/PM10 levels based on SO2 and NO2 levels. This project involves defining objectives, designing the analysis approach, selecting visualization techniques, and creating a predictive model using Python and relevant libraries.

Description: This project is aimed at conducting a comprehensive analysis of air quality in the state of Tamil Nadu, India. The primary objective is to assess and visualize air pollution levels across the region, gain insights into pollution trends, and develop predictive models for RSPM/PM10 levels based on SO2 and NO2 concentrations.

Key components of this project include collecting and aggregating air quality data from monitoring stations throughout Tamil Nadu, implementing data preprocessing techniques to ensure data integrity, and employing statistical and machine learning methodologies to analyze the data.

The project will utilize Python and relevant libraries to facilitate data analysis, visualization, and modeling. The outcomes will include detailed air quality reports, visualizations of pollution hotspots, and predictive models that can forecast RSPM/PM10 levels based on real-time SO2 and NO2 data.

By shedding light on air pollution patterns and trends, this project aims to provide valuable information to policymakers, environmentalists, and the public. It contributes to the broader goal of improving air quality management and enhancing public health in Tamil Nadu, while also serving as a model for similar initiatives in other regions.

Additionally, the project will consider the impacts of various factors such as industrial activities, traffic congestion, and meteorological conditions on air quality, thus offering a holistic understanding of the air pollution situation in Tamil Nadu.

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