PROJECT TITLE :

AIR QUAILTY ANALYSIS AND PREDICTION IN TAMIL NADU

PROBLEM DEFINITION:

Air quality analysis and prediction in Tamil Nadu refers to the process of assessing and forecasting the condition of the air in the state of Tamil Nadu, located in southern India. This involves the systematic examination of various air pollutants and their concentrations, as well as meteorological factors that influence air quality. The primary goals of air quality analysis and prediction in Tamil NaduAir quality analysis and prediction are crucial for addressing environmental and public health challenges related to air pollution. By continuously monitoring and assessing air quality in Tamil Nadu, authorities can work toward mitigating pollution levels and improving the overall well-being of the population.

DESIGN THINKING :

User Research:

Start by understanding the people affected by poor air quality in Tamil Nadu. Conduct surveys, interviews, and observations to gather insights into their daily lives, concerns, and experiences related to air pollution

Data Collection:

Gather historical air quality data, meteorological data, and pollution sources information for the region. This data will be crucial for analysis and prediction.

Stakeholder Engagement:

Identify key stakeholders such as government agencies, environmental organizations, and local communities. Understand their perspectives and needs regarding air quality.

Proof of Concept:

Develop a prototype or proof of concept for your chosen solution. This could be a simplified version of the system or technology you plan to implement.

it's essential to collaborate with relevant stakeholders, engage the community, and be open to adapting your solution as you learn more about the specific air quality issues in Tamil Nadu. Additionally, staying updated with the latest technology and research in air quality monitoring and prediction is crucial for designing an effective and sustainable solution.

LITERATE SURVEY :

TITLE	METHODOLOGY	OUTCOME
Assessment of Air Quality	chromatography, infrared spectroscopy, fluorornetry, spectrophotometry and atomic absorption spectroscopy	This involves monitoring and measuring the levels of various air pollutants, such as particulate matter (PM2.5 and PM10), nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO), ozone (O3), and other potentially harmful substances in the air
Data Collection	Surveys, quizzes, and questionnaires. Interviews. Focus groups. Direct observations. Documents and records	Gathering data from air quality monitoring stations located across Tamil Nadu to compile a comprehensive dataset. This data includes real-timeor periodic measurements of air pollutants, meteorological parameters (e.g., temperature, humidity, wind speed, and direction), and other relevant information.
Data Analysis	Diagnostic Analysis, Predictive Analysis, Prescriptive Analysis, Text Analysis, and Statistical Analysis	Analyzing the collected data to identify trends, patterns, and correlations between air quality parameters and meteorological conditions. This analysis helps in understanding the factors contributing to air pollution in
Prediction and Forecasting	qualitative and quantitative	Using mathematical models and statistical techniques to predict future air quality conditions in various parts of Tamil Nadu. These predictions are typically made for short-term (e.g., daily or hourly) and long-term (e.g., seasonal) periods, allowing authorities and the public to prepare for potential air quality issues.

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