**Air Quality Analysis and Prediction in Tamilnadu**

**Phase 1: Problem Definition and Design Thinking**

In this part you will need to understand the problem statement and create a document on what have you understood and how will you proceed ahead with solving the problem. Please think on a design and present in form of a document.

**Problem Definition:** The project aims to analyse 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.

**Design Thinking:**

1. Project Objectives: Define objectives such as analyzing air quality trends, identifying pollution hotspots, and building a predictive model for RSPM/PM10 levels.
2. Analysis Approach: Plan the steps to load, pre-process, analyse, and visualize the air quality data.
3. Visualization Selection: Determine visualization techniques (e.g., line charts, heat maps) to effectively represent air quality trends and pollution levels.

**Dataset Link:**[**https://tn.data.gov.in/resource/location-wise-daily-ambient-air-quality-tamil-nadu-year-2014**](https://tn.data.gov.in/resource/location-wise-daily-ambient-air-quality-tamil-nadu-year-2014)