**TITLE:AIR QUALITY ANALYSIS IN TAMIL NADU**

**Project Definition:**

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.

**Design Thinking:**

1. Project Objectives: The project's primary objectives revolve around three key aspects. First, it aims to analyze historical air quality data to discern prevalent trends in Tamil Nadu. Second, it seeks to pinpoint pollution hotspots within the region. Lastly, it endeavors to construct a predictive model to estimate RSPM/PM10 levels based on the levels of SO2 and NO2.

2. Analysis Approach: The project involves a systematic approach to handling air quality data. This encompasses loading the data from selected sources, preprocessing it to address issues like missing values and outliers, conducting thorough analysis, and finally, creating visual representations of the data to facilitate comprehension.

3. Visualization Selection: The project recognizes the significance of effective data visualization. To convey air quality trends and pollution levels with clarity, it will employ various visualization techniques such as line charts and heatmaps, ensuring that the chosen methods are well-suited to the specific aspects of the data being portrayed.