***Global Air Quality Analysis***

***Problem statement:*** *This project aims to analyse the global air pollution dataset, focusing on AQI values across different countries and cities.*

***Abstract:***

*This data analysis project focuses on assessing global air quality using a comprehensive dataset that includes Air Quality Index (AQI) values from various countries and cities worldwide. The dataset encompasses AQI readings and corresponding categories, representing the level of air pollution from different regions. The primary objectives of the analysis are to identify geographical hotspots of air pollution and to understand seasonal variations in air quality. Through this analysis, we aim to pinpoint regions with consistently poor air quality and to uncover patterns in AQI fluctuations throughout the year. The outcomes will provide valuable insights into global air pollution trends, enabling stakeholders to prioritize interventions and develop targeted strategies for improving air quality and public health.*

***Objectives:***

***1. Regional Analysis of AQI Levels:***

***•*** *To identify and compare the countries and cities with the highest and lowest average AQI values.*

*• To determine the geographical regions that consistently experience poor air quality based on AQI categories (e.g., Good, Moderate, Unhealthy).*

***2 . Temporal Trends and Seasonal Variations:***

* *To analyse the temporal trends of AQI values over a specified time period to identify any patterns or fluctuations.*
* *To investigate seasonal variations in air quality, understanding how different seasons impact AQI levels across various countries and cities.*

***Outcomes:***

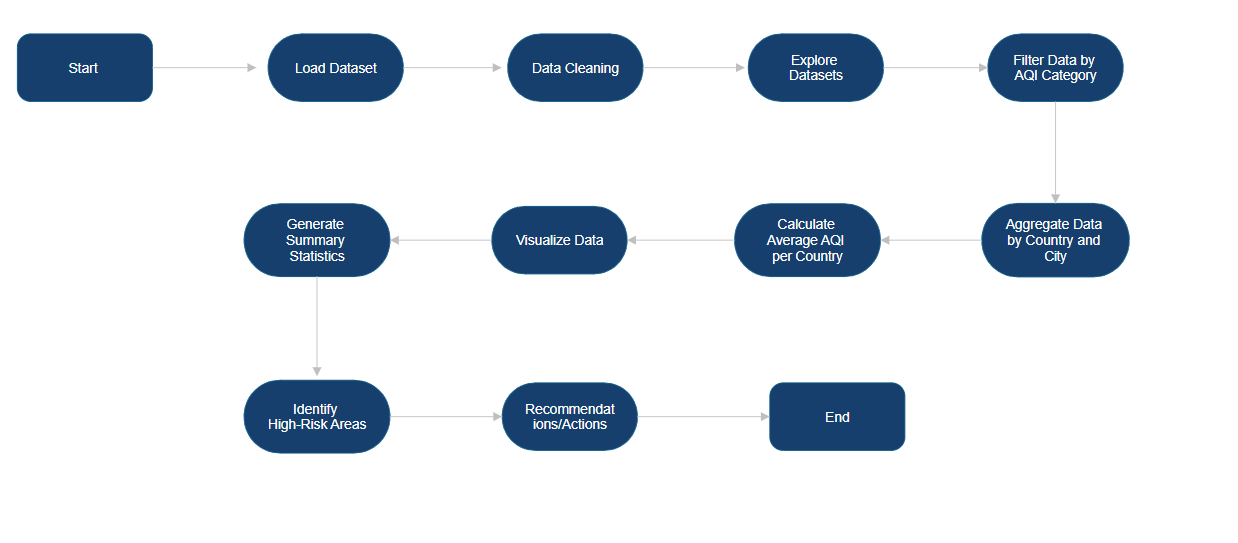
***1. Geographical Hotspots of Air Pollution:***

* *Identification of countries and cities that consistently report high AQI values, pinpointing geographical areas as "hotspots" for air pollution.*
* *Visualization maps highlighting these hotspots to provide a clear picture of areas most affected by poor air quality.*

***2. Seasonal Air Quality Profiles:***

* *Creation of seasonal AQI profiles for different regions, illustrating how air quality varies throughout the year.*
* *Insights into the seasons where certain regions experience heightened air pollution levels, potentially correlating with climatic conditions or seasonal activities.*

***Design a solution:***

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