INDIAN AIR POLLUTION ANALYTICS DASHBOARD

INTERACTIVE DATA ANALYTICS PROJECT USING TABLEAU

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INTRODUCTION

- *Air pollution is a major environmental and health concern in India.*
- *Understanding air quality patterns across different regions is essential for planning and awareness.*
- *This project presents an interactive Tableau dashboard to analyze and explore Air Quality Index (AQI) data across Indian cities and states.*

PROBLEM STATEMENT & OBJECTIVE

PROBLEM STATEMENT

- *Raw air quality data is difficult to interpret and compare across multiple locations and time periods.*

OBJECTIVES

- *Build an interactive dashboard to analyze AQI data*
- *Identify most polluted and cleanest cities*
- *Analyze air quality trends over time*
- *Enable filtering by state, city, and date*

DATA OVERVIEW

- *Dataset contains daily air quality records across multiple Indian cities*
- *Key attributes:*
  - *Date*
  - *State*
  - *City*
  - *AQI Value*
  - *Air Quality Category*
  - *Prominent Pollutants*
- *Each record represents air quality of a city on a given day*

DASHBOARD OVERVIEW

- 🗺️ *AQI Map*
  - *Visualizes air quality levels across different cities and states.*
- 📊 *Top 10 Polluted Cities*
  - *Highlights the most polluted cities based on AQI values.*
- 📈 *AQI Trend Over Time*
  - *Shows how air quality changes across different time periods.*
- 🥧 *Air Quality Distribution*
  - *Displays the proportion of cities under each air quality category.*
- 🧪 *Pollutant Analysis*
  - *Analyzes the impact of major pollutants on air quality.*
- 📌 *KPI Cards*
  - *Shows key metrics like Average AQI, Best AQI, Worst AQI, and Total Cities.*
- 🎛️ *Interactive Filters*
  - *Allows users to explore data by State, City, and Date*

ANALYTICS APPROACH

The following analyses were performed:

- City and state-wise AQI comparison
- Top 10 most polluted cities analysis
- AQI trend analysis over time
- Air quality category distribution analysis
- Pollutant-wise impact analysis
- KPI metrics:
  - Average AQI
  - Best AQI
  - Worst AQI
  - Total Cities

KEY FINDINGS

- *Several cities consistently show high AQI levels*
- *Air quality varies significantly across regions*
- *A large portion of cities fall under:*
- *Moderate and Poor air quality categories*
- *Some pollutants are strongly associated with higher AQI values*
- *AQI levels show noticeable variation over time*

INSIGHTS & IMPACT

- *The dashboard helps:*
  - *Identify high-risk pollution zones quickly*
  - *Compare air quality across cities and states*
- *Useful for:*
  - *Environmental monitoring*
  - *Awareness and decision support*
- *Enables data-driven understanding of pollution patterns*

CONCLUSION

- *Successfully developed a fully interactive AQI analytics dashboard using Tableau*
- *The project transforms complex air quality data into:*
  - *Clear visuals*
  - *Actionable insights*
- *Demonstrates practical skills in:*
  - *Data visualization*
  - *Dashboard design*
  - *Analytical thinking*

THANK YOU