# Introduction

- Project: Global Air Quality & Health Impact Analysis
- Motivation: Air pollution is a major global health risk
- Goal: Explore trends & make insights accessible via dashboard

# Project Overview

- Dataset: WHO Ambient Air Quality Database (2024 update) ~77k records
- Focus pollutants: PM2.5, PM10, $NO_2$
- Objectives: clean & analyze, identify trends, build interactive dashboard
- Real-world problem: Policymakers and public need clear insights

# Solution & Benefits

- Python  for cleaning, EDA, statistics, clustering
- Dashboard in Tableau with KPIs, maps, and trends
- Benefits: interactive, filterable, highlights improving vs stagnating regions
- Clear tool for policymakers, NGOs, researchers, and public

# Potential Users

- Policymakers & governments
- NGOs & health organizations
- Researchers & students
- General public

# Demonstration

- Dashboard features:
- • KPI cards (Avg PM2.5, PM10, $NO_2$)
- • Global map: city-level air quality
- • Line chart: pollutant trends over time
- • Regional comparison bar chart
- Interactive filters: Year, Region, Pollutant

# Limitations

- Annual averages only (no daily/hourly data)
- Missing data in some countries/years
- No direct health outcome data (hospital admissions, mortality)

# Future Steps

- Link air quality data with health datasets
- Add socioeconomic factors (GDP, urbanization)
- Forecast pollution trends with time-series ML
- Deploy dashboard publicly for NGOs & policymakers

Thank you!