■ Assignment: Data Handling using Pandas — Air Quality Dataset

■ Objective

This assignment helps beginners learn how to handle and analyze real-world data using the Pandas library in Jupyter Notebook. You will read, explore, and filter air quality data collected from different cities around the world.

■ Dataset: air_quality_global.csv

Column Name	Description
city	Name of the city
country	Country of the city
latitude	Geographic latitude
longitude	Geographic longitude
year	Year of measurement
month	Month of measurement
pm25_ugm3	Particulate Matter 2.5 concentration (µg/m³)
no2_ugm3	Nitrogen Dioxide concentration (µg/m³)
data_quality	Quality rating of the data (e.g., Good, Moderate, Poor)
measurement_method	How the measurement was taken (e.g., Sensor, Satellite, Manual)
data_source	Organization or source providing the data

■ Problem Statement

You are a data analyst at an environmental research organization. Your task is to use Pandas to analyze air quality data from various cities using only the Pandas library.

Task 1: Import the Pandas Library

Import the Pandas library to begin working with the dataset.
Code:

```
import pandas as pd
```

Task 2: Read the CSV File

Read the file air_quality_global.csv into a Pandas DataFrame named data. Display the first 5 rows to understand its structure.
Code:

```
data = pd.read_csv('air_quality_global.csv')
data.head()
```

Task 3: Explore the Dataset

Use Pandas to explore and summarize the dataset:
1. Display number of rows and columns
2. Display column names
3. Show dataset information using **.info()**
4. Show summary statistics using **.describe()**

Task 4: Display Specific Columns

Display only the columns: city, country, pm25_ugm3, and no2_ugm3.
Code:

```
data[['city', 'country', 'pm25_ugm3', 'no2_ugm3']]
```

Task 5: Filter Data

Filter and display records where pm25_ugm3 is greater than 50.
Code:

```
high_pm25 = data[data['pm25_ugm3'] > 50]
high_pm25
```