Anna University Regional Campus Coimbatore

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IBM Naan Mudhalvan Phase 2 Submission

Title: AIR QUALITY ANALYSIS AND PREDICTION IN TAMILNADU

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Department :B.E ECE

Sem/year :V/III

Air Quality Analysis and Prediction in Tamil Nadu

Objective:

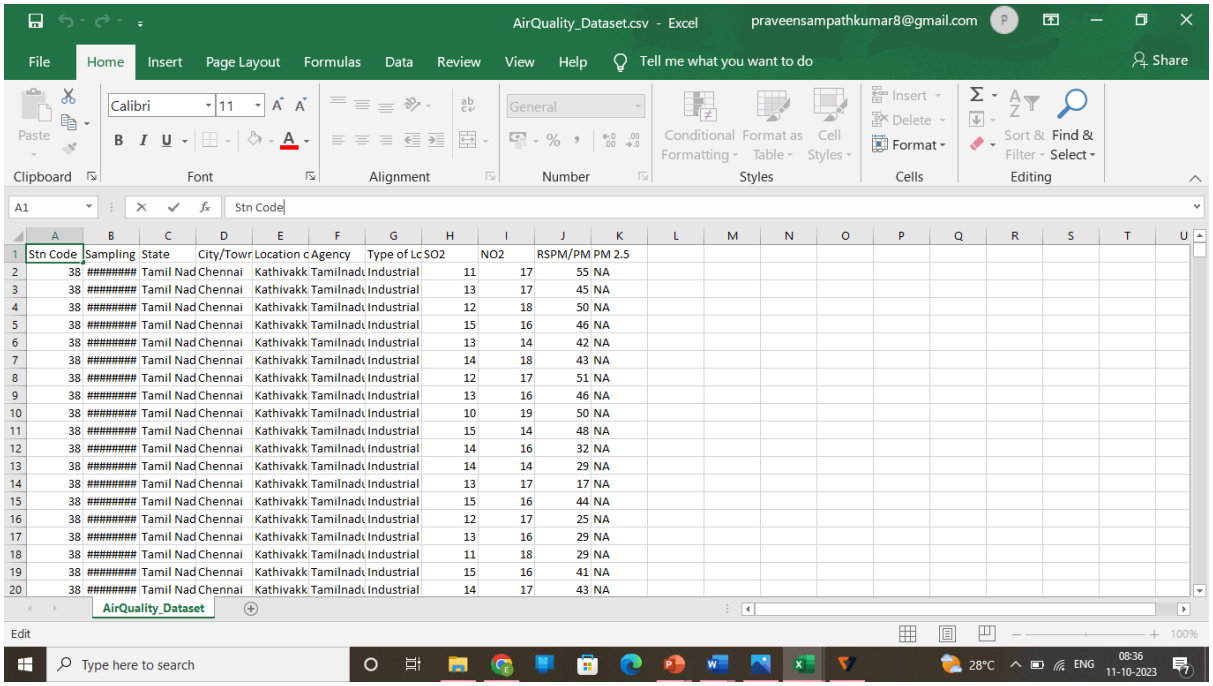
The Objective of the project is to analyze and visualize the air quality data from the various monitoring stations in Tamil Nadu. The give dataset contains the measurements of the various gases that release into the atmosphere. Some of the gases that given in the dataset are Sulphur Dioxide(SO2), Nitrogen Dioxide(NO2) and Respirable particulate matter and these are measured in different cities, villages, towns. This Project aim is to gain the insight of air pollution trends, estimate the RSPM/PM10 levels based on SO2 and NO2 levels

Description of dataset:

The link for the chosen dataset is mentioned below,

https://tn.data.gov.in/resource/location-wise-daily-ambient-air-quality-tamil-nadu-year-2014

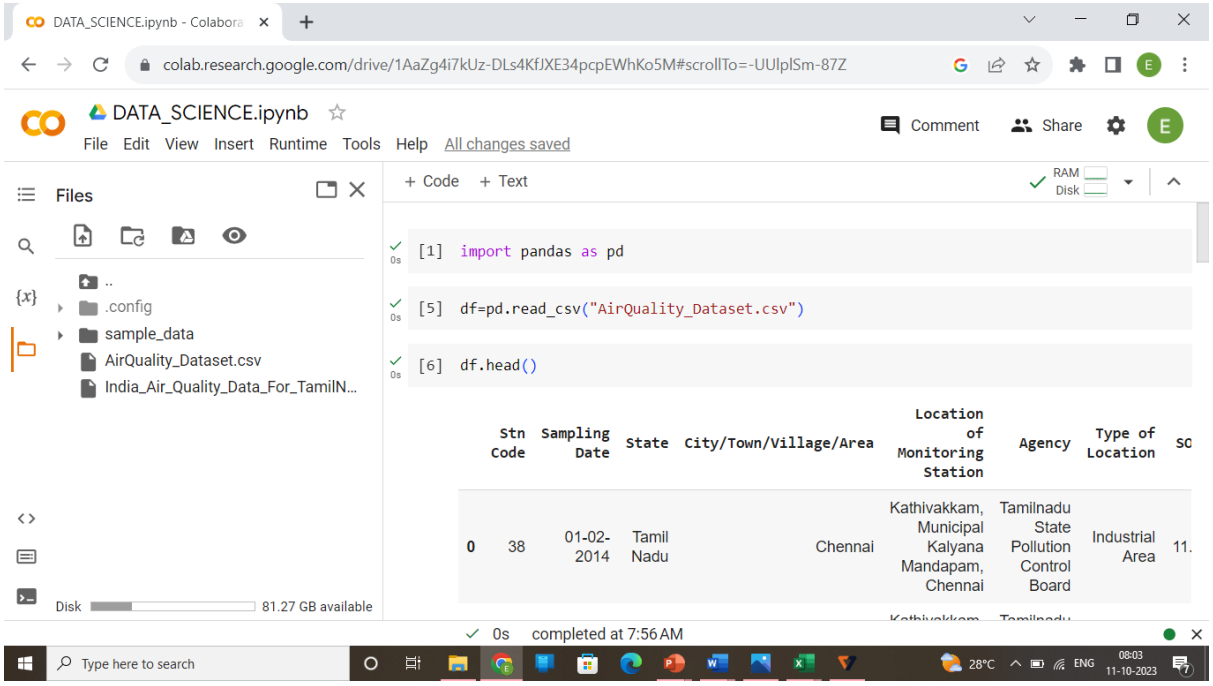
The above dataset contains the combined version of air quality of Tamil Nadu. This contains the district wise dataset for the prediction of air quality parameter in the state of Tamil Nadu. This data was released by the Ministry of Environment and Forests and Central Pollution Control Board of India under the National Data Sharing and Accessibility Policy.



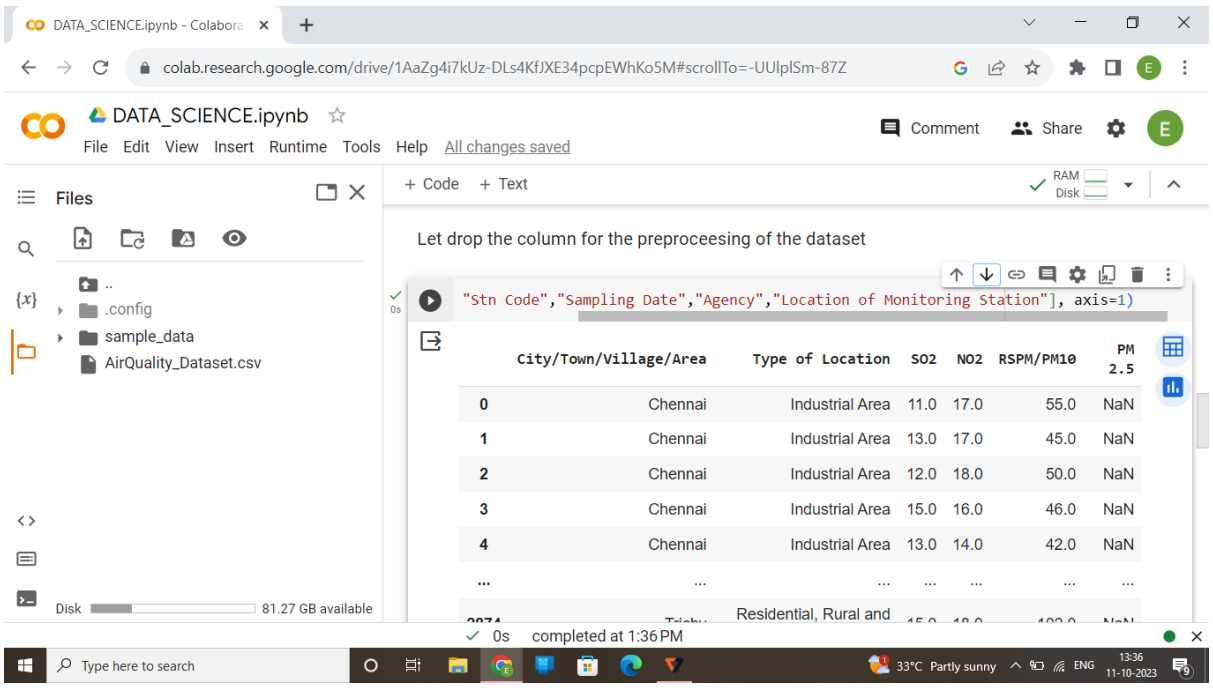
Explanation:

The given dataset contains the different columns with their specific details. The different columns are **“stn code, sampling date, state, city/town, Location of monitoring stations, Agency, Type of location, SO2, NO2, RSPM/PM, SPM”**

To further proceeding of the project let us drop the unwanted columns that is unnecessary for analysis of the air quality in Tamil Nadu



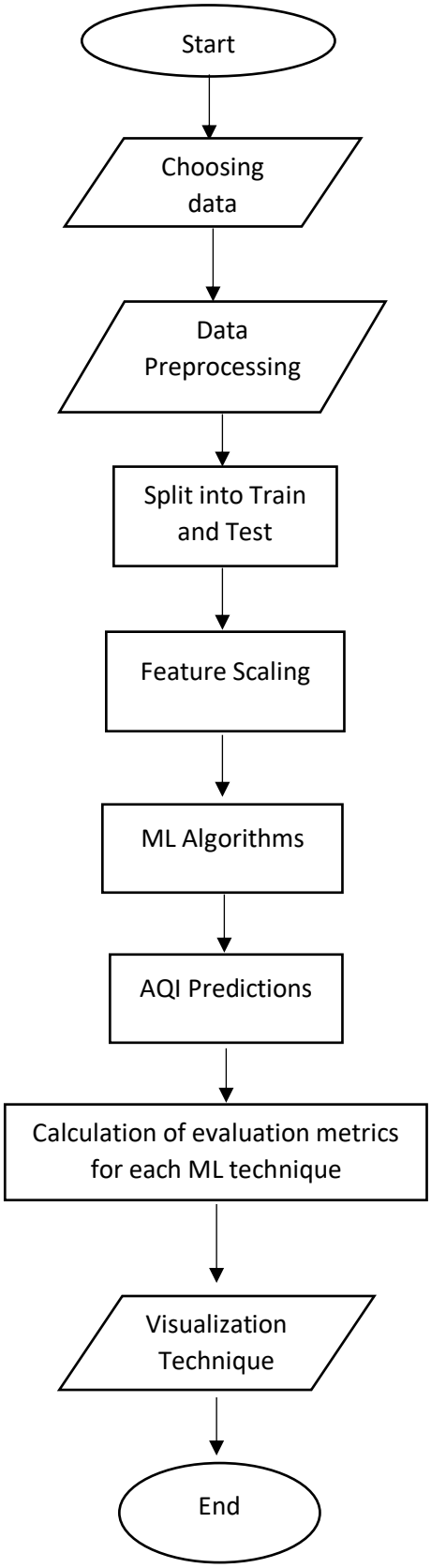
	Stn Code	Sampling Date	State	City/Town/Village/Area	Location of Monitoring Station	Agency	Type of Location	SO
0	38	01-02-2014	Tamil Nadu	Chennai	Kathivakkam, Municipal Kalyana Mandapam, Chennai	Tamilnadu State Pollution Control Board	Industrial Area	11.



	City/Town/Village/Area	Type of Location	SO2	NO2	RSPM/PM10	PM 2.5
0	Chennai	Industrial Area	11.0	17.0	55.0	NaN
1	Chennai	Industrial Area	13.0	17.0	45.0	NaN
2	Chennai	Industrial Area	12.0	18.0	50.0	NaN
3	Chennai	Industrial Area	15.0	16.0	46.0	NaN
4	Chennai	Industrial Area	13.0	14.0	42.0	NaN
...	...	...	...	...	...	...
2874	Trichy	Residential, Rural and	15.0	18.0	102.0	NaN

By this, we are going to use the specific columns for the preprocessing of the data to predict and analyze the air quality in various regions in Tamil Nadu.

Flow Chart for the proposed system



Conclusion:

In conclusion, this project focuses on analysing and predicting the air quality in Tamil Nadu. This will yield the valuable insights and outcomes. Through collection and analysis of historical air quality data, we could able to identify trends, seasonal variations, and the impact of various factors or air quality. Our predictive model, based on machine learning algorithms, demonstrated reasonable accuracy in forecasting air quality levels.