AIR POLLUTION FORECASTING USING LSTM

PRESENTED BY

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ABSTRACT

- In this industrial age, air pollution cannot be eliminated completely, but steps can be taken to reduce it. the government has developed, and continues to develop, guidelines for air quality and ordinances to restrict emissions in an effort to control air pollution.

- This study provides important insights into the patterns and sources of air pollution,temperature,pressure, wind speed etc.. which can be used to develop effective policies and strategies for reducing air pollution in industries and protecting public health .

- Air pollution forecasting involves the use of science and technology to predict the concentration of air pollution in the atmosphere for a given location and time.

INTRODUCTION

- Air pollution is a significant environmental problem that affects the health and well-being of people around the world. The monitoring and analysis of air pollution levels is crucial to identify trends, patterns, and potential sources of pollution.

- In this project, we will explore the current state of air pollution forecasting, the challenges involved, and the various techniques and approaches that can be used to develop accurate and reliable air pollution forecasting models.

- Multivariate parallel air pollution forecasting is an important technique for predicting air quality . This technique involves using multiple time series data to make forecasts for various air pollutants simultaneously. The approach requires building a multivariate time series model that accounts for the interdependencies and correlations among the different pollutants being forecasted.

PROBLEM STATEMENT

- The main objective of the project is to find whether the pollution is increased or decreased over the years by forecasting using LSTM technique.

- "Despite the significant impact of air pollution on public health, accurate forecasting of air pollutant concentrations remains a challenge. The complex and dynamic nature of air pollution, along with the limited availability of high-quality data, makes it difficult to predict air pollutant concentrations with sufficient accuracy. Therefore, there is a need for robust and reliable forecasting models that can capture the complex patterns in the data, and for strategies to improve the quality and availability of air pollution data."

NEED FOR STUDY

- Public health
- Environmental management
- Economic impact
- Climate change

Overall, studying air pollution forecasting is critical for protecting public health, managing the environment, and promoting economic stability and sustainable development.

DATA SOURCE

The dataset is retrived from Kaggle which is an open source platform.

ABOUT DATASET

- This is a dataset that reports on the weather and the level of pollution each hour for five years at the US embassy in Beijing, China.

- This dataset contains 43800 records and 9 features .

- The data includes the date-time, the pollution called PM2.5 concentration, and the weather information including dew point, temperature, pressure, wind direction, wind speed and the cumulative number of hours of snow and rain.
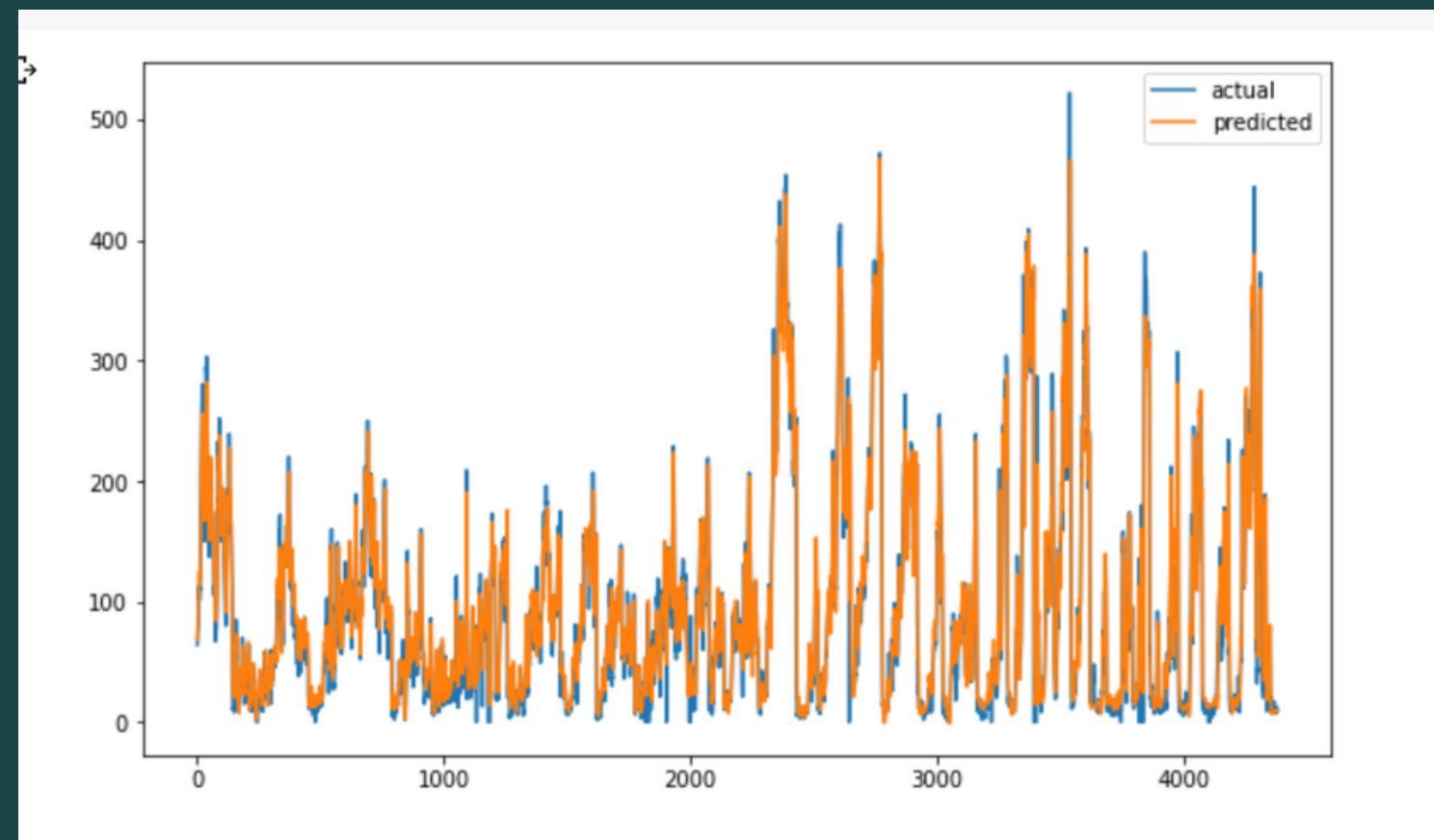
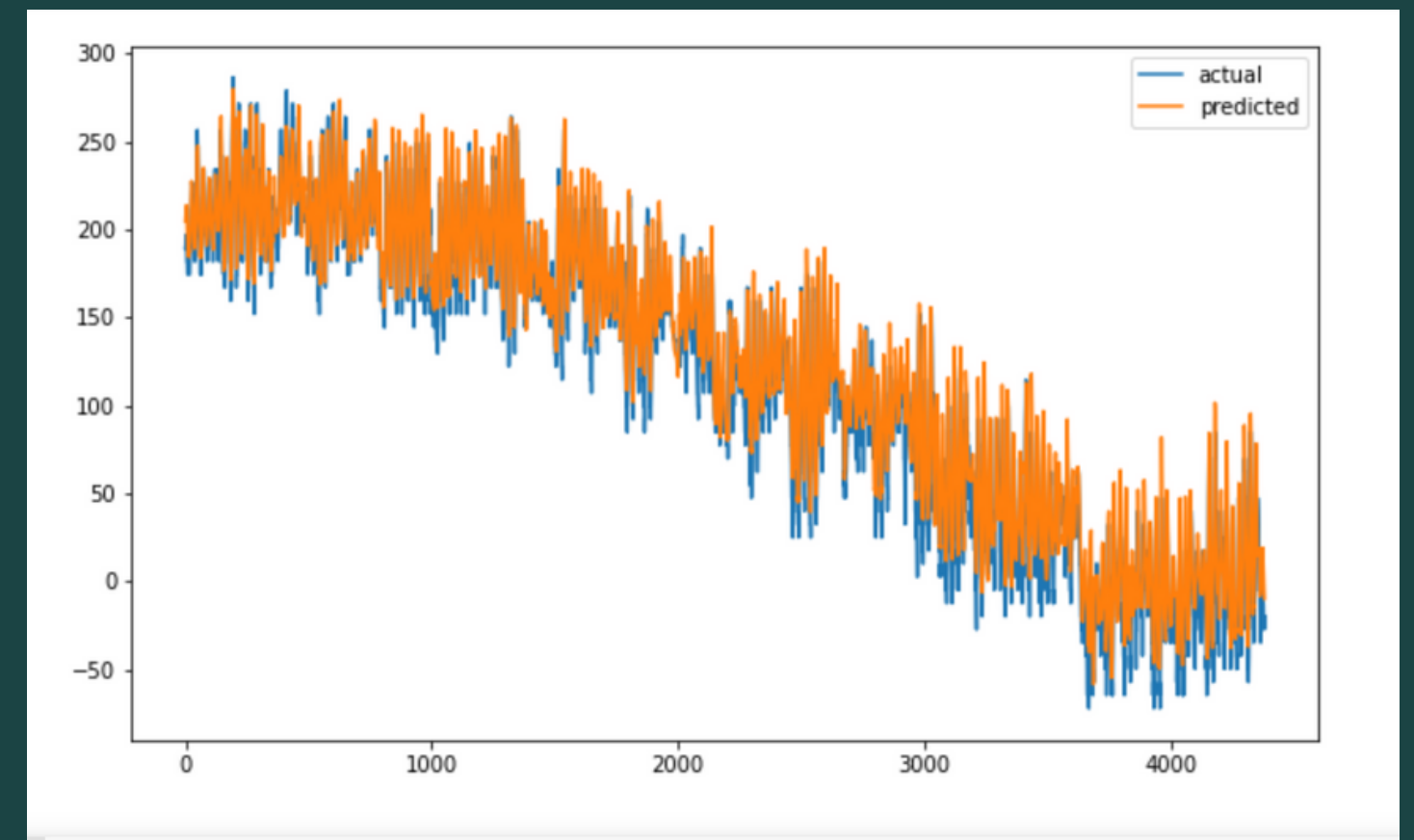# FLOW CHART
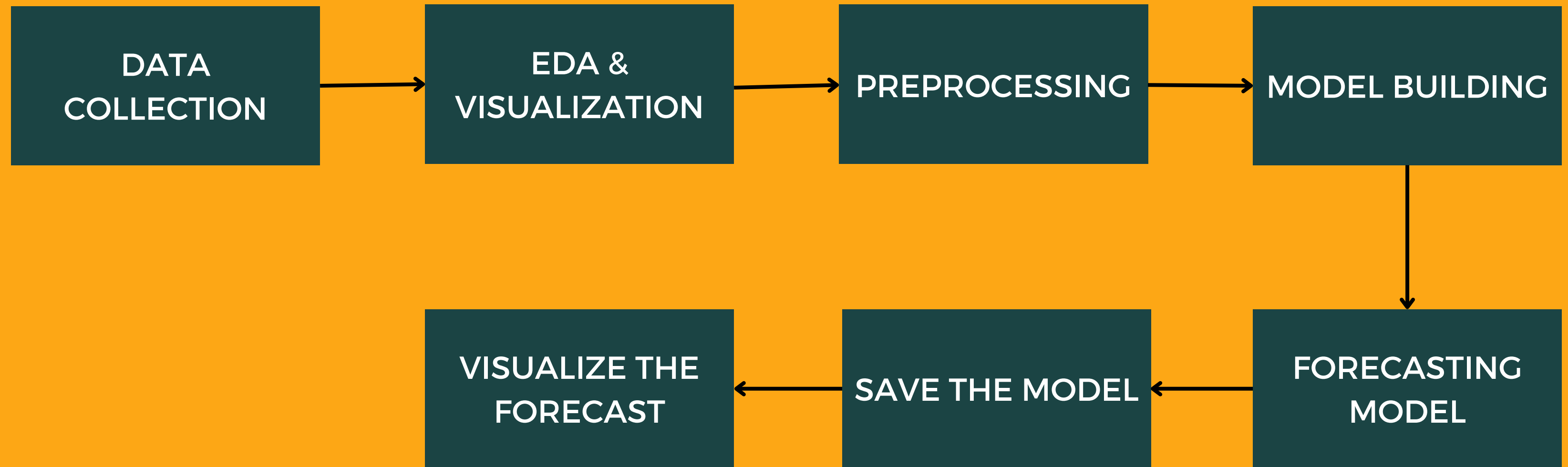
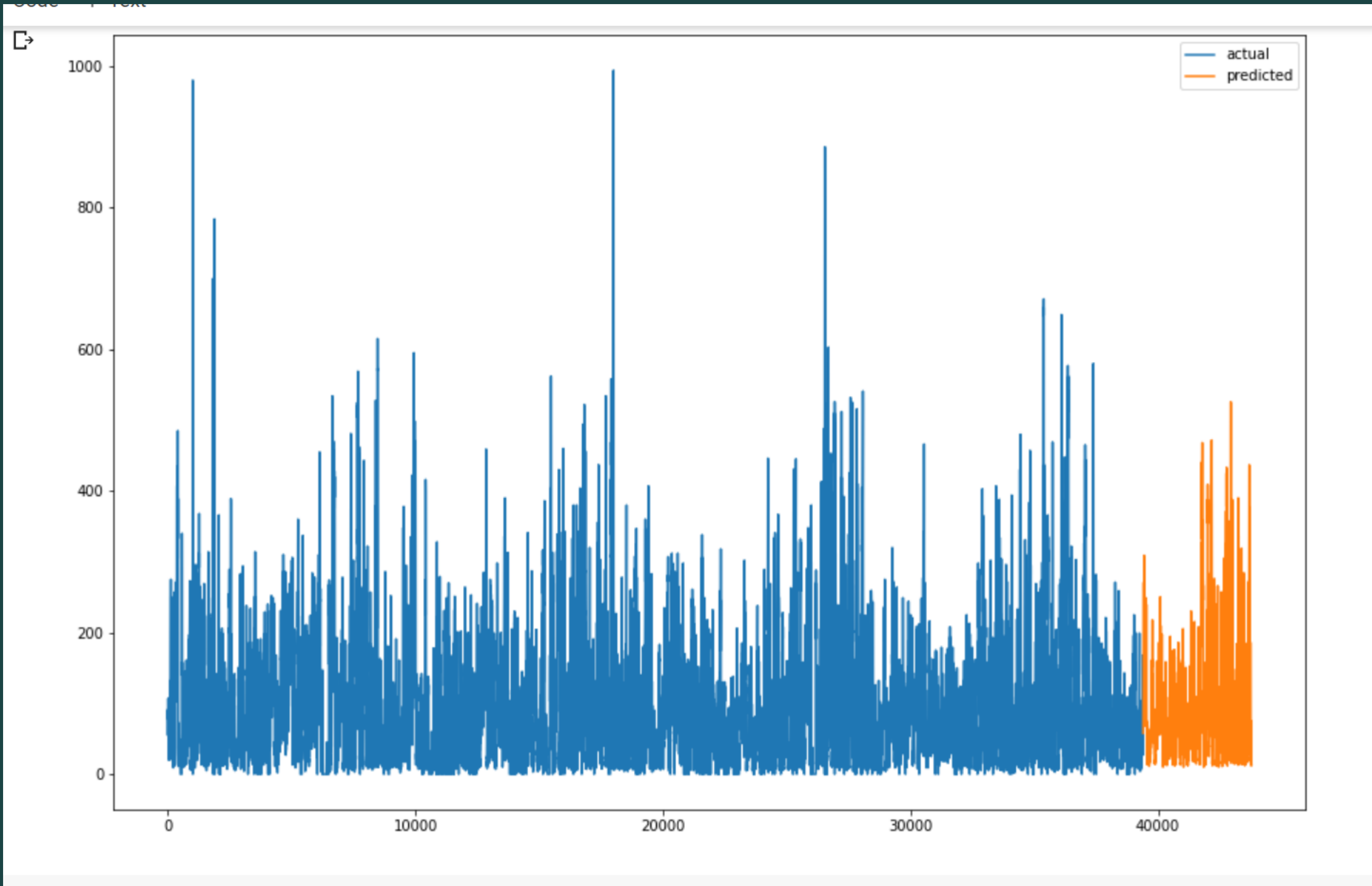# MULTIVARIATE -DEPENDENCE TECHNIQUE
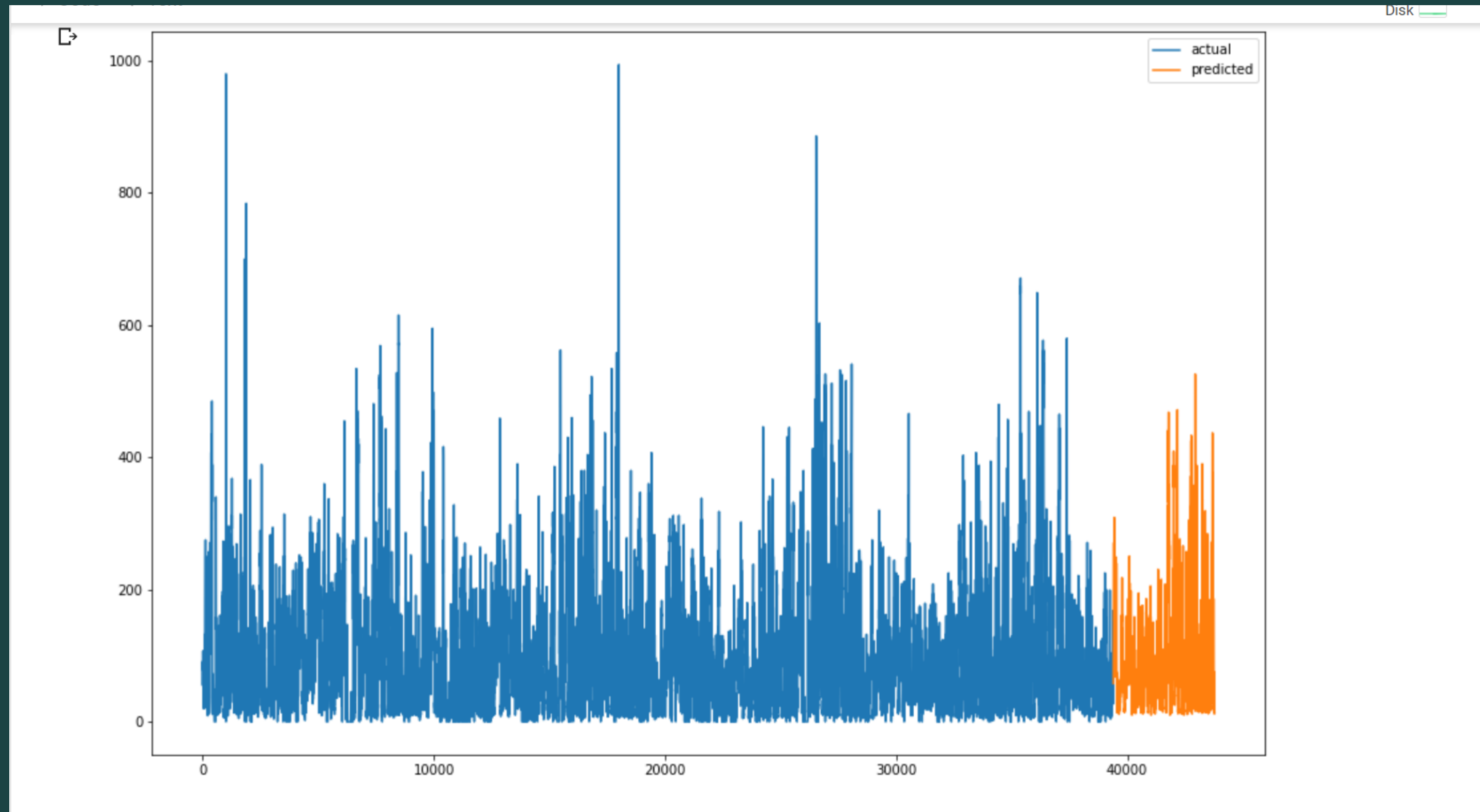
MULTIVARIATE - INTERDEPENDENCE TECHNIQUE

POLLUTION

TEMPERATURE

MULTIVARIATE - INTERDEPENDENCE TECHNIQUE

THANK YOU