MARKET PRICE PREDICTION

INTRODUCTION

- ***Main goal is to create a powerful machine learning model specialized in time series analysis.***

- ***This model will utilize historical data to forecast future market trends accurately.***

- ***By employing cutting-edge algorithms, our aim is to predict both the quantities and prices of commodities for upcoming months.***

- ***This predictive capability will enable stakeholders to proactively plan production, procurement, pricing strategies, and allocate resources more effectively.***

TASKS

Data Preprocessing:

- ***Cleanse the dataset by addressing missing values and ensuring data consistency.***
- ***Transform categorical variables into a format suitable for analysis.***

Exploratory Data Analysis (EDA):

- ***Explore temporal patterns in the dataset to understand seasonal fluctuations and overall trends.***
- ***Identify any anomalies or irregularities that may affect model performance.***

Feature Engineering:

- **Generate additional features that capture important aspects of the data, such as lagged variables reflecting historical values, rolling statistics to capture trends, and seasonal indicators.**
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Model Selection and Training:

- **Evaluate a range of time series forecasting models, including traditional ones like ARIMA and SARIMA, as well as modern approaches such as Prophet and LSTM.**
- **Choose the most suitable model based on performance metrics and train it on the dataset.**

Model Evaluation:

- ***Assess the accuracy of the trained model using metrics like Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE).***
- ***Compare the model's performance against benchmarks and assess its reliability in making predictions.***

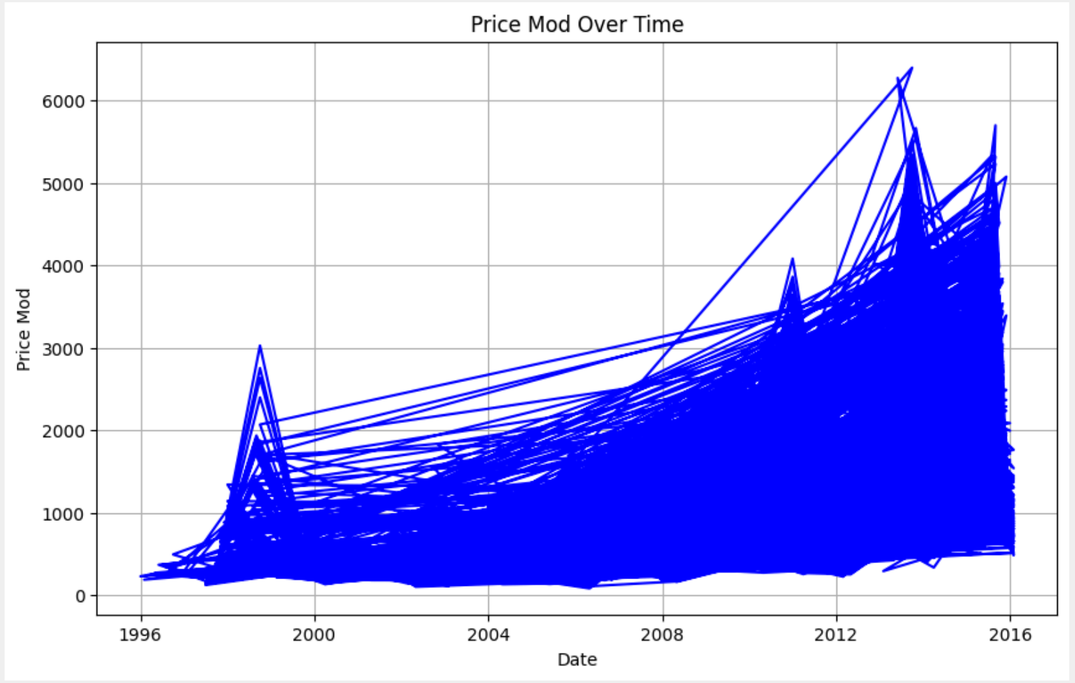
Fine-tuning and Validation:

- ***Refine the model's parameters to optimize its performance, ensuring it generalizes well to unseen data.***
- ***Validate the model on a separate dataset to confirm its effectiveness and iterate on the process if necessary to improve results.***

RESULT

The ultimate aim is to implement a machine learning model ready for production that can accurately predict market quantities and prices for upcoming months.

The insights from this model will help stakeholders make informed decisions, improve inventory management, optimize pricing strategies, and allocate resources more effectively, thereby boosting efficiency and profitability within the market ecosystem.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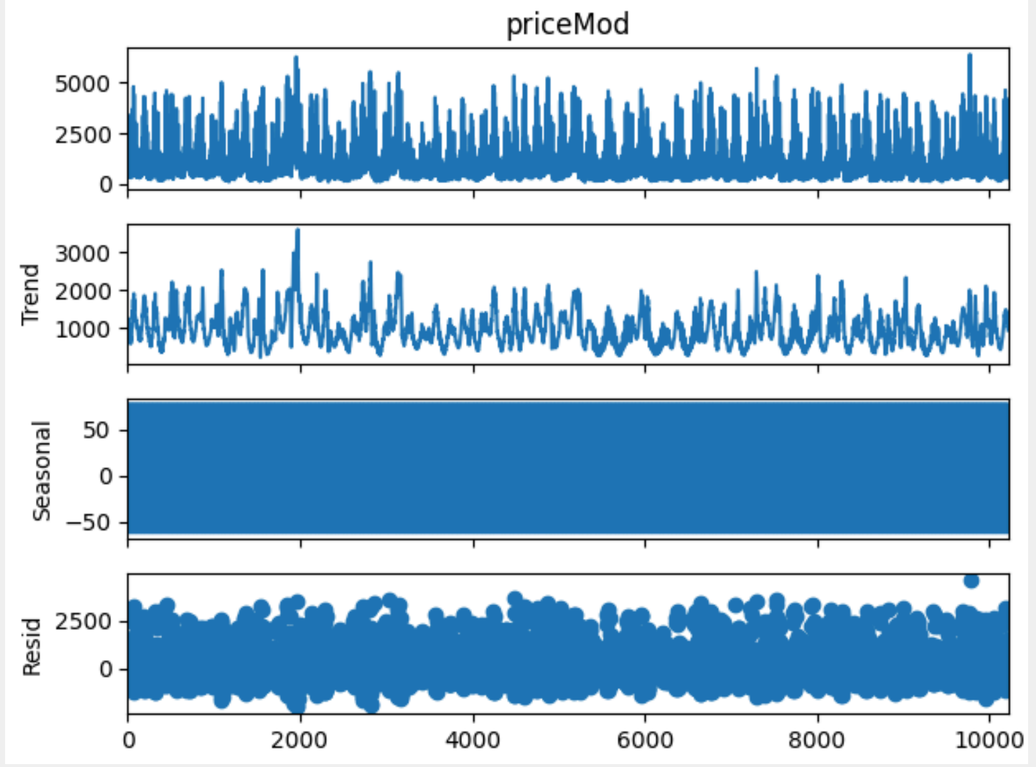
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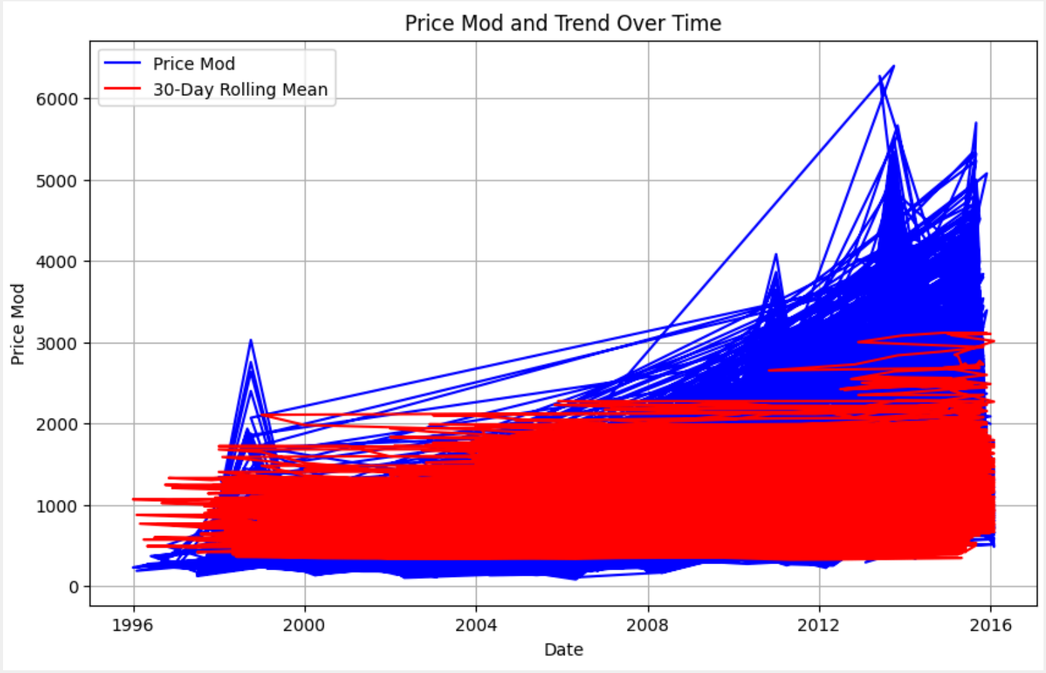
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Thank You