The notebook appears to be focused on stock price prediction using machine learning. Here is an overview of its structure:

Introduction:

Predicting stock prices is a challenging task due to the market's volatility. This project uses machine learning techniques to forecast stock prices based on historical data.

Data Collection:

Historical stock price data is collected from Yahoo Finance or a similar financial data source. The data includes open, high, low, close prices, and volume.

Data Preprocessing:

The collected data undergoes several preprocessing steps:

- Data Cleaning: Handling missing values and correcting data types.
- Feature Engineering: Creating new features like moving averages and returns.
- Data Normalization: Scaling the data to a standard range for better model performance.

Exploratory Data Analysis:

EDA involves visualizing stock prices and volumes to understand trends and patterns. Statistical analysis provides insights into the data distribution and correlations.

Model Building:

The data is split into training and testing sets. Various machine learning models are trained, including Linear Regression and LSTM. Hyperparameter tuning is performed to optimize model performance.

Model Evaluation:

The models are evaluated using performance metrics like MSE, RMSE, and R-squared. Visualizations compare the model's predictions with actual stock prices.

Conclusion:

The notebook concludes with a summary of the results and discusses potential improvements for the model.