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# TeslaProVista: Tesla Stock Analysis Platform

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| Project Overview  TeslaProVista is a comprehensive analysis and prediction platform that utilizes artificial intelligence and data science techniques on Tesla stock data. This project aims to understand Tesla stock performance and predict future price movements.  **Technologies Used**   * Python: Python programming language is used for data analysis, manipulation, and visualization. * Jupyter Notebook: Project steps, analyses, and visualizations are conducted within the Jupyter Notebook environment. * Pandas: The Pandas library is employed for data manipulation and handling data frames. * NumPy: NumPy library is utilized for numerical computations and data processing. * Matplotlib: Matplotlib library is used for creating various types of static visualizations. * Plotly Express: Plotly Express library is employed for interactive and animated graphical visualizations. |
| *"Data science is the art of turning data into insights, empowering us to unravel the mysteries hidden within the numbers."* |
| **Technologies Used**  The project uses a CSV file containing Tesla stock data as its primary data source. The dataset includes information such as date, opening price, highest price, lowest price, closing price, adjusted closing price, and trading volume.  **Analysis Steps**   1. **Data Preparation**  * The dataset is loaded and inspected. * The date column is converted to datetime format. * Daily price changes are calculated.  1. **Visualizations**  * A line chart is created based on daily closing prices. * Interactive graphics are designed to help understand stock movements visually**.**  1. **Risk Analysis**  * The standard deviation of daily returns is calculated to determine stock volatility. * Value at Risk (VaR) analysis is conducted, and risk levels at different confidence intervals are visualized.  1. **Time Series Analysis**  * A time series plot is generated to show how stock volatility changes over time. * Trends in volatility changes over time are examined   **Results and Insights** |

Through this project, an analysis of Tesla stock data has been conducted using various techniques. Visual analyses and statistical calculations provide insights into the stock's risk profile to investors and stakeholders. Additionally, examining volatility changes over time offers a better understanding of the stock's historical performance.

The TeslaProVista project is designed as an analysis platform that leverages data science and artificial intelligence techniques to provide valuable insights to investors and stock enthusiasts.