Project Title: Analysis, Visualization, and Forecasting of Amazon (AMZN) Stock Prices (2012–2025)

# Project Overview

The goal of this project is to perform an end-to-end analysis of Amazon's stock prices. It involves cleaning and visualizing the historical data, performing exploratory data analysis (EDA), detecting trends or seasonality, and ultimately building models to forecast future stock movements.

# Project Objectives

* Data Cleaning & Preprocessing:  
   - Import the dataset and inspect for missing or inconsistent values.  
   - Convert date columns from string format to Python datetime objects.
* Exploratory Data Analysis (EDA):  
   - Visualize trends, distribution, and key statistics (e.g., daily returns and volatility).  
   - Explore patterns such as seasonality, trends, or anomalies in the data over time.
* Feature Engineering:  
   - Compute additional features like daily returns, moving averages, and volatility metrics.  
   - Investigate correlations between various technical indicators.
* Model Building:  
   - Use time series analysis methods (e.g., ARIMA, Prophet, etc.) to build forecasting models.  
   - Evaluate model performance using metrics like RMSE and MAE.
* Visualization & Reporting:  
   - Create visualizations using libraries such as matplotlib, seaborn, or Plotly.  
   - Summarize findings in a final report, highlighting key insights, potential investment insights, and recommendations.

# Project Deliverables

* A cleaned and well-documented dataset ready for analysis.
* EDA notebooks detailing visualizations and descriptive statistics.
* Forecasting models along with their performance evaluation.
* A final report summarizing methodology, results, insights, and recommendations, ideally in an interactive Jupyter Notebook format.

# Potential Extensions

* Incorporate external variables such as market sentiment or macroeconomic indicators to enhance forecasting capabilities.
* Compare the performance of different forecasting models and discuss their trade-offs.
* Build an interactive dashboard where users can dynamically view different time ranges and forecasts.