**Final Project Summary**

**Project Title:**  
**Website Traffic Forecasting using AI-Powered ARIMA Model (Test Run 3)**

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**📌 Objective:**

To forecast monthly website traffic for the next 6 months using the previous 24 months’ data, identify seasonal patterns, and predict future trends using an AI-assisted ARIMA time series model.

**📊 Methodology:**

* Loaded 24 months of historical website traffic data from a CSV file
* Visualized the existing traffic trend to identify recurring seasonality
* Applied a **Time Series ARIMA (1,1,1) model** to forecast the next 6 months’ traffic
* Created a line graph visualizing Actual Traffic and Forecasted Traffic
* Generated key business insights and recommendations based on forecast outcomes

**📈 Key Findings:**

* Clear seasonal pattern identified, with higher traffic during October to December months consistently over the last 2 years
* The ARIMA model predicts a steady upward trend in traffic for the next 6 months
* Anticipated spikes expected again during the festive season months (Oct–Dec)
* The forecasted values align well with the historical growth trend and seasonality

**📌 Recommendations:**

* Plan for higher server capacity and online marketing initiatives ahead of expected festive traffic spikes
* Monitor traffic data monthly to refine forecasting models with real-time updates
* Use forecasted data for sales, advertising, and infrastructure planning

**📋 Deliverables:**

* Jupyter Notebook with ARIMA model implementation
* Forecast graph image (PNG)
* Professional PDF summary report
* GitHub repository documentation