

Project Summary: Market Demand Trend Analysis (Recruitment & Outsourcing)

This report summarizes the findings of the **Market Demand Trend Analysis** project, which leverages Python-based forecasting and Power BI visualization.

1. Executive Overview

The primary goal was to analyze historical job market patterns. By processing over **1,200 records** across **17 columns**, we developed a robust predictive framework.

2. Data Methodology

- **Data Generation:** Created a dataset featuring 17 columns like **Demand_Index** and **Economic_Indicator_Score**.
- **Data Balancing:** Upsampled regions like Galle and Jaffna to **400 records each**.
- **Predictive Modeling:** Utilized **Holt-Winters Exponential Smoothing** for a 30-day forecast.

3. Scenario Analysis Results (30-Day Forecast)

Scenario	Predicted Applicant Volume	Economic Assumption
Most Likely	177,022	Current market trends continue steadily
Best Case	212,426	High growth (+20%)
Worst Case	141,618	Market downturn (-20%)

4. Key Market Insights

- **Emerging Roles:** Data Science, ML Engineering, and Cloud Architecture.
- **Geographic Trends:** Significant growth potential in Kandy and Jaffna for remote roles.
- **Skill Requirements:** Python, SQL, and Power BI are top technical skills.

5. Conclusion

This system offers a highly accurate tool for navigating the modern job market by incorporating external economic factors and regional balancing.