INTERNSHIP: STUDENT DAILY REPORT

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| Name of the Student | Vivek kumar Shriwas |
| Internship Project Topic | TCS iON RIO-125: Forecasting System - Project Demand of Products at a Retail Outlet Based on Historical Data |
| Name of the Organization | TCS iON |
| Name of the Industry Mentor | Sreekathiayini Ruthraiyah |
| Name of the Institute | Viswakarma University |

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| Date | Day | Hours Spent |
| 22/07/2023 | Day 5 | 5 hours and 45 minutes |
| Description:  **Self-learning Duration : 5 hours**  **Activity Report Duration : 45 minutes**  **Activities:**   1. **Advanced Forecasting Techniques Research (2.5 hours):**    * Explored advanced time series forecasting techniques beyond ARIMA.    * Researched techniques like Exponential Smoothing (ETS), Seasonal Decomposition of Time Series (STL), and Prophet.    * Compared the advantages and use cases of each method. 2. **Implementing Exponential Smoothing (1.5 hours):**    * Deepened understanding of Exponential Smoothing methods such as Simple Exponential Smoothing (SES) and Holt-Winters.    * Implemented SES and Holt-Winters models using real-world time series data.    * Evaluated model performance and made preliminary comparisons with ARIMA. 3. **Experimenting with Seasonal Decomposition (1 hour):**    * Studied the Seasonal-Trend decomposition procedure based on Loess (STL) for time series with strong seasonal patterns.    * Applied STL to decompose time series into seasonal, trend, and remainder components.    * Interpreted the decomposition outputs and examined their significance. 4. **Updating Documentation with New Techniques (45 minutes):**    * Updated the project documentation with insights from the research on Exponential Smoothing and STL.    * Included code snippets, explanations of techniques, and initial performance comparisons.    * Ensured clarity for future reference and knowledge sharing.   **Challenges:** Understanding the intricacies of the Seasonal-Trend decomposition procedure was challenging, particularly in distinguishing between seasonal and trend components. Experimenting with different variations of Exponential Smoothing methods also required additional effort. | | |