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 |
| 24/07/2023 | Day 7 | 3 hours and 30 minutes |
| Description:  **Self-learning Duration : 3 hours**  **Activity Report Duration : 30 minutes**  **Activities:**   1. **Time Series Forecasting Concepts Review (1.5 hours):**    * Reviewed the foundational concepts of time series forecasting, including stationarity, trend, seasonality, and noise.    * Consolidated understanding of autocorrelation and partial autocorrelation functions for model identification.    * Revisited the Box-Jenkins methodology for ARIMA model selection. 2. **Advanced Python Libraries for Time Series Analysis (1 hour):**    * Explored Python libraries like **statsmodels** and **prophet** designed for time series modeling and forecasting.    * Installed necessary packages and set up the environment for using these libraries effectively.    * Created a sample Jupyter Notebook to experiment with loading, visualizing, and modeling time series data. 3. **Implementing Seasonal Decomposition (30 minutes):**    * Studied the decomposition of time series into trend, seasonality, and residual components.    * Applied additive and multiplicative decomposition techniques to a sample time series dataset.    * Interpreted the results and gained insights into the importance of decomposition in forecasting.   **Challenges:** Understanding the mathematics behind seasonal decomposition and the rationale behind choosing between additive and multiplicative methods required careful review. Some concepts, like deseasonalization, needed multiple iterations to grasp fully. | | |