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 |
| 28/07/2023 | Day 11 | 3 hours and 15 minutes |
| Description:  **Self-learning Duration : 3 hours**  **Activity Report Duration : 15 minutes**  **Activities:**   1. **Exploring Seasonal Decomposition (1 hour):**    * Studied the concept of seasonal decomposition of time series data.    * Learned about the additive and multiplicative decomposition approaches.    * Explored the decomposition using Python libraries like **statsmodels** and **seasonal**. 2. **Practical Seasonal Decomposition (1 hour):**    * Utilized a real-world seasonal dataset related to sales.    * Applied both additive and multiplicative decomposition techniques to analyze the seasonal, trend, and residual components.    * Plotted the decomposed components to visually understand the underlying patterns. 3. **Analyzing Decomposition Results (1 hour):**    * Interpreted the decomposition outcomes and gained insights into how the different components contribute to the overall time series behavior.    * Noted observations about the presence of trends and seasonality, which will be crucial for subsequent analysis. 4. **Updating Learning Journal (15 minutes):**    * Documented the process of seasonal decomposition, including the dataset used, the applied methods, and the interpretation of results.    * Highlighted the importance of decomposition in understanding complex time series variations.   **Challenges:** The challenge during this phase was distinguishing between additive and multiplicative decomposition and understanding when each approach is more appropriate. Additionally, interpreting the decomposed components to extract meaningful insights required careful consideration. | | |