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 |
| 25/07/2023 | Day 8 | 3 hours and 30 minutes |
| Description:  **Self-learning Duration : 3 hours**  **Activity Report Duration : 30 minutes**  **Activities:**   1. **Time Series Modeling with ARIMA (2 hours):**    * Dived deeper into the ARIMA (AutoRegressive Integrated Moving Average) model.    * Reviewed the parameters of the ARIMA model: p (autoregressive order), d (integration order), and q (moving average order).    * Understood the significance of differencing in achieving stationarity and practiced differencing time series data.    * Explored the ACF (AutoCorrelation Function) and PACF (Partial AutoCorrelation Function) plots for model order selection. 2. **Hands-on with Python's statsmodels (1 hour):**    * Implemented the ARIMA model using the **statsmodels** library in Python.    * Loaded a sample time series dataset, preprocessed it, and split it into training and testing sets.    * Defined and trained an ARIMA model, made predictions, and evaluated its performance on the test data. 3. **Documentation and Report (30 minutes):**    * Documented the steps taken during the ARIMA modeling process, including data preparation, model configuration, and evaluation metrics.    * Summarized the findings and observations regarding the ARIMA model's performance.    * Proofread and organized the activity report for Day 8.   **Challenges:** Implementing the ARIMA model in Python required a clear understanding of the parameter tuning process and interpreting the results. Ensuring that the documentation is comprehensive while remaining concise posed a challenge. | | |