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 |
| 23/07/2023 | Day 6 | 3.5 hours and 30 minutes |
| Description:  **Self-learning Duration : 3.5 hours**  **Activity Report Duration : 30 minutes**  **Activities:**   1. **Data Collection for Time Series Analysis (1.5 hours):**    * Researched and identified publicly available datasets suitable for time series analysis and forecasting practice.    * Selected a dataset related to the project's domain: historical stock price data for a technology company.    * Ensured the dataset covers a sufficient timeframe with clear date-time indices. 2. **Data Preprocessing and Cleaning (1.25 hours):**    * Downloaded the selected stock price dataset from a reliable financial data source.    * Checked for missing values, duplicated entries, and anomalies in the dataset.    * Performed data imputation for missing values and verified the integrity of the cleaned data. 3. **Exploratory Data Analysis (30 minutes):**    * Plotted basic time series visualizations, including line plots and bar plots, to observe trends and patterns.    * Calculated descriptive statistics such as mean, median, and standard deviation to gain initial insights.    * Identified any potential outliers that might impact the analysis. 4. **Initial Time Series Modeling (30 minutes):**    * Utilized the cleaned stock price data to implement a basic time series model using ARIMA.    * Split the dataset into training and testing sets to evaluate the model's performance.    * Fit the ARIMA model and generated forecasts for a short time horizon.   **Challenges:** Cleaning the financial dataset proved to be more intricate than expected due to irregularities caused by trading holidays and weekends. The initial ARIMA modeling highlighted the need for further parameter tuning to improve forecast accuracy. | | |