**Approach for Demand Forecasting -Hourly Car Rental**

1. Imported all required python Libraries & Packages, such as Pandas, Numpy, Matplotlib, Scikit-learn,..
2. Read the data into dataframe
3. Performed data analysis on loaded data and observed that mean houly demand, mean day demand, mean yearly demand, all are nearly 73.
4. No Null values identified and all 24 hours for each day were not recorded, some hours for each day were missed. The missed hours are imputed and demand noted as 73 but its does not incurred any performance hike. And the left the given train data as it is.

Approach-1:

1. Combined date with hour and convered the data type of newly generated feature as datetime.
2. Build and evaluated the ARIMA model with p.d,q =3,1,2 or 1,0,0 and forecasted with RMSE nearly 39.
3. Worked on all foundational things to implement ARIMA model like stationarity of data and check on trends, seasonality, cyclic, etc.

Approach-2:

1. Extracted day, month, year from date feature.
2. Generated data frame with features- day, month, year, hour, demand .
3. Build and validated regression models with train & test splits on training data
4. Implemented KNN, Decision Trees, Random Forest, Neural Network and XGBoost to forecast houly demand.
5. Out of all models, XGboost model at optimal performance with nearly 37 RMSE.
6. Worked on all foundational operations like gridsearch cross validation and feature importances, etc.