**Objective:**

The primary objective of this project is to develop a machine learning model capable of predicting the "Load\_Type" of a power system based on historical data. The "Load\_Type" categorization includes "Light\_Load", "Medium\_Load", and "Maximum\_Load". This classification problem requires candidates to apply their skills in data preprocessing, exploratory data analysis (EDA), feature engineering, model selection, and model evaluation to predict the load type accurately.

**Data Description:**

The dataset provided for this task contains several features that are crucial for understanding and predicting the load type of a power system. These features include:

**Date** Continuous-time data taken on the first of the month  
**Usage\_kWh** Industry Energy Consumption Continuous kWh  
**Lagging Current** reactive power Continuous kVarh  
**Leading Current** reactive power Continuous kVarh  
**CO2** Continuous ppm  
**NSM** Number of Seconds from midnight Continuous S  
**Load Type** Categorical Light Load, Medium Load, Maximum Load

**Validation and Testing**:

Implement an appropriate validation strategy, using the last month of data as the test set to assess the model's performance. This approach will evaluate the model's ability to generalize well to recent, unseen data. Metrics specific to classification problems, such as accuracy, precision, recall, and F1-score, should be used for evaluation.

**Submission Requirements**:

Submission should be in the form of Jupyter notebook either in a zipped folder or just share a Github repo link.