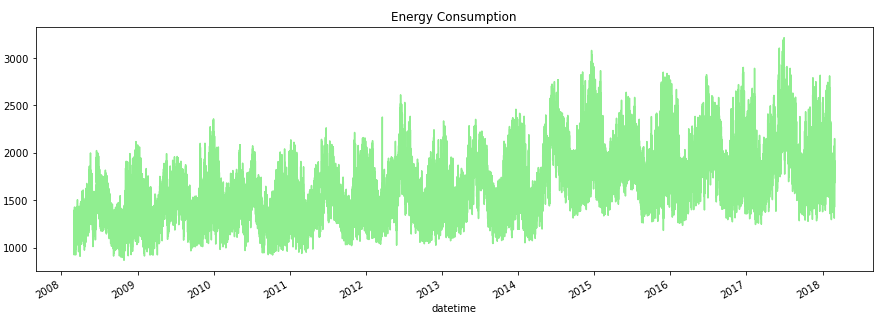
**Forecast Green Energy** 

**Approach:**

Steps carried:

1. Importing the Data:

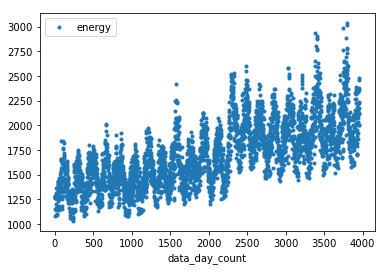
Train and Test data Separately as Data Frames

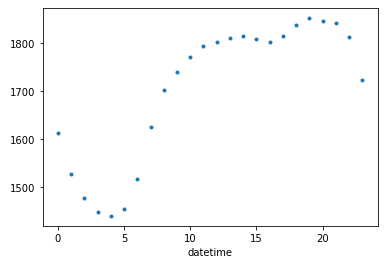
1. Data Preprocessing:

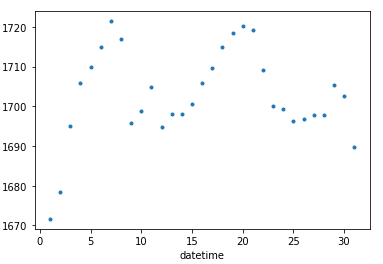
Converted the datetime column from object to datetime

1. EDA:

Univariant Analysis with the Datetime Column w.r.t Energy Consumption







1. Feature Engineering:

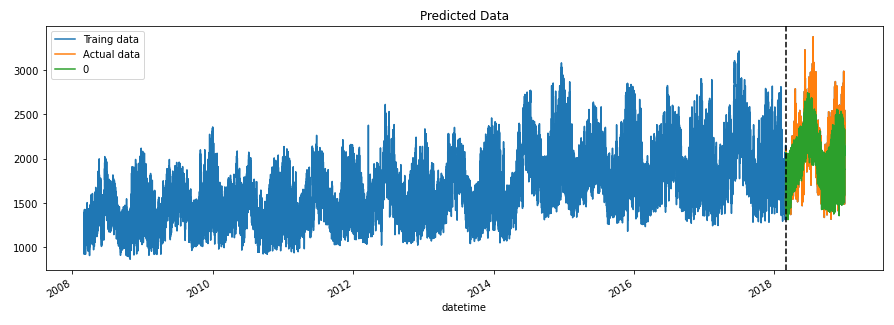
Created Many Features from Datetime Column like

* Year: Year
* Month: Month
* Day: Day
* Hour: Hour
* Quarter: Quarter
* month\_of\_quarter: Month of each Quarter
* day\_of\_year: Day of the year
* day\_of\_quater: Day of the Quarter
* day\_of\_week: Day of the Week
* week\_of\_the\_year: Week of the Year
* is\_weekend: Is week-end or not
* is\_morning: I s morning (6am to 12pm)
* morning\_hour: Morning hour ([1 to 7] or 0)
* is\_afternoon: Is afternoon (1pm to 5pm)
* afternoon\_hour: Afternoon hour ([1 to 5] or 0)
* is\_evening: Is evening (6pm to 10pm)
* evening\_hour: Evening hour ([1 to 5] or 0)
* is\_night: Is night (11pm to 5am)
* night\_hour: Night hour ([1 to 7] or 0)
* is\_am: Is am (dividing am separately)
* is\_pm: Is pm (dividing pm separately)
* peak\_hour: Peak hour (19,20,21 max energy consumption if yes:1 else:0)
* off\_hour: off hour (3,4,5 min energy consumption if yes:1 else:0)
* 3hour\_interval: dividing 3hour interval (representing [0-3,4-6,7-9,10-12,13-15,16-18,19-21,22-24])
* 6hour\_interval: dividing 6hour interval (representing [0-6,7-12,13-18,19-24])

1. Model Selection/Model Training:

Used XG Booster model: Trained model with Evaluation matrix RMSE

1. Model Evaluation:

Checked the Model has RMSE of 203.50361122041437 for Valid Data Set

1. Prediction:

Predication is Combined with the Test Data Set and Downloaded as .csv file with Row id and Energy consumption

