Zircornn-Black /
DSF_Group-6

<> **Code**   ⊙ Issues   ⑂ Pull requests   ▷ Actions   ⊞ Projects   📖 Wiki   ⊘ Security   〜

⚠️ Please configure another 2FA method to reduce your risk of permanent account lockout. If you use SMS for 2FA, we strongly recommend against SMS as it is prone to fraud and delivery may be unreliable depending on your region.   [View 2FA settings]   ✕

DSF_Group-6 / **README.md** 🗗   ···

🔲 **wkimunya** Update README.md   6bbc2b4 · now 🕘

48 lines (30 loc) · 1.79 KB

[Preview]   Code   Blame   Raw 🗗 ⬇   ✏️ ▾   ☰

🔗 Power Consumption Forecast - A Sneek Peek

Overview

Using the Time Series Model, This project analyses and forecasts household electric power consumption. The primary goal is to understand consumption patterns and predict future usage. We used various Time series Techniques to achieve this.

The data (individual+household+electric+power+consumption.zip) contains 2,075,259 measurements gathered in a house located in Sceaux, France (7km from Paris) between December 2006 and November 2010 (47 months).

Business Understanding

- Understand Household Electricity Consumption Patterns: Analyze trends, seasonality, and patterns in electricity-related variables

- Identify Factors Influencing Electricity Consumption: Analyze impact of time of day, day of week, seasons, and appliance usage

- Develop Predictive Models: Forecast future electricity consumption patterns

- Optimize Energy Efficiency: Identify high-consumption appliances and peak demand periods

- Potential Business Applications: Household energy management Utility company insights Energy policy and planning Research and development

Modeling

Models used in this project include:

- Moving Average
- LTSM Model
- SARIMAX

Of the three, SARIMAX was the best, it had the least margin of error when comparing actual data and the predicted results.

Recommendations

• To predict power consumption, we have a number of models that can be applied for this time series data. We evaluated 3 models namely;

•• Moving Average Model •• Long Short-Term Memory •• Seasonal Autoregressive Integrated Moving Average(SARIMA)

• All the models did well when applied on actual data gave very good results. However, the best model turned out to be SARIMA since it had the least margin of error when comparing actual data and the predicted results.