Power Management in Smart Homes

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Agenda

- Background and data collection
- Data management and security
- Data analysis and recommendations

Background

Through electrical sub meter data analysis, we want to understand household power consumption to offer highly efficient Smart Homes.

Objectives

Understand the data

We first proceed to data cleansing and ran our first exploratory analysis.

First thoughts

We have created the first conclusions on on our analysis and how this could impact efficiency.

Recommendations

We present three recommendations where we can improve the efficiency on the households

Data Management

How will we manage the data

Data is stored on a on Amazon servers and can be accessed through MySQL queries at anytime anywhere.

The analysis is made through the use of open source software R Studio.

How will the data be secured

The data is secured on the Amazon servers and the data manipulations is made only by our analytics in our secured servers at IOT Analytics Office.

The files are only accessed by the analyst assigned to this project.

Data Description

2075259 Measures

House in Sceaux 7 Km from Paris, France

December 2006 to November 2010

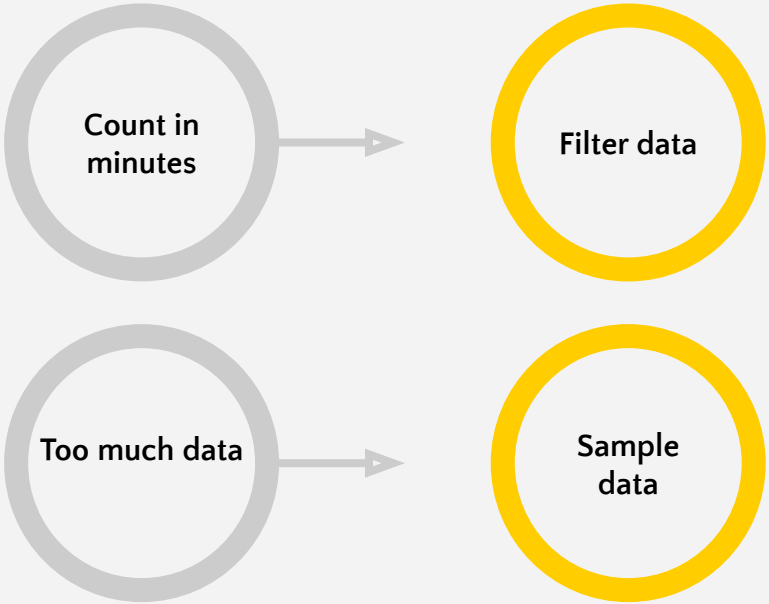
Kitchen

3 Sub Meters

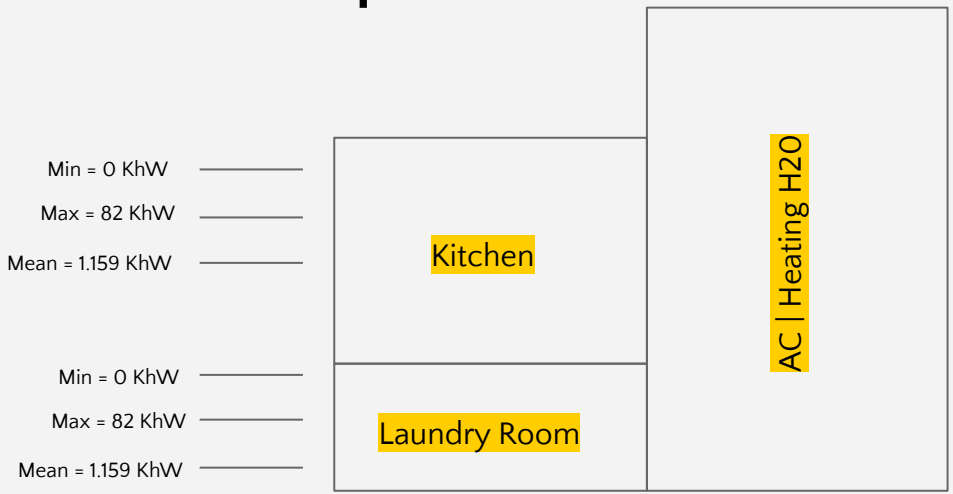
AC | Heating water

Laundry Room

Issues discovered



Data Description



Between 12AM and 9AM
Mondays
August

Lowest consumption

Highest consumption

After 3PM
Saturday
November to February

Recommendations

Measurement

It would be important to measure the living room and the master bedroom, since it's where people spend most of their time. Other appliances like TV, computers, consoles and lightning should be measured to get a better understanding people's patterns.

Also, AC should be separated from water heater for a better understanding of usage.

More households

Having measuring just one household gives us the behaviors of just one family. This could not be enough to be representative of people's general power consumption.

Date and time

One full year per household is enough to understand people's behaviour since it doesn't have major changes YoY. Also, to avoid extra data, the measurements can be done by hour instead of minute.

Thanks!

Any questions ?

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