CIND820 D1H - Big Data Analytics Project - F2024

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Abstract

The dataset on ‘Energy and water usage of large buildings in Ontario’ provides comprehensive information on various aspects including property types, energy and water consumption, greenhouse gas emissions, and energy efficiency scores etc. The dataset contains 6,864 rows and 32 columns.

This research will explore the dataset and aims to find the following insights:

1. What are the key drivers of energy efficiency across different property types?

2. How do greenhouse gas (GHG) emissions vary by location and property type?

3. What is the relationship between water usage and energy consumption in large buildings?

Firstly, my analysis will explore the key factors of energy efficiency across the various property types. The dataset includes information such as proper type, electricity and gas consumption and energy star score for finding the key insights for energy efficiency.

Secondly, I will explore the greenhouse gas (GHG) emissions across the various property types located in the various cities and postal codes which will help find out the pattern and trends of the greenhouse gas emissions based on the building location in Ontario, Canada.

Lastly, I will analyze the relationship between the water usage and energy consumption in large buildings.

For the classification and prediction tasks on the given dataset, a systematic data analysis approach will be employed. Initially, the entire dataset will go a cleaning process, followed by preliminary analysis utilizing various exploratory data analysis tools. Then, experimental design and model constructions will be undertaken. Finally, the performance of the model will be evaluated with recommendations and conclusions.

References:

Dataset source

https://data.ontario.ca/dataset/0eab2faf-6186-4a5b-8de1-b15872943c24/resource/f53db89b-d5e0-49ea-aa85-70453d969453/download/energy\_large\_building\_energy\_water\_ghgs\_2022.xlsx