Identifying Rental Opportunities in London using Machine Learning

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1. **Introduction**
   1. **Background**

London is one of the most expensive cities for renters to live in the whole of Europe. Rents can vary depending on a variety of factors, including location, number of bedrooms, and local services. Single rooms are often popular with young professionals moving to the capital, two and three bedroom properties have a varied audience, including families to sharers.

* 1. **Problem**

When searching for the perfect locket of London to call home, looking at rental prices and identifying the ideal location can seem very intimidating. It is common knowledge that renting a home privately in the capital can be pricey, but knowing which borough is suitable for your own personal budget can really help keep costs down.

The purpose of this project is to identify ideal rental locations in London for house sharers based on access to local services using K means unsupervised machine learning. To identify ideal rental locations the project will filter using the following criteria:

* Narrowing London borough and ward locations based on a £800 - £1200 per person rental budget,
* Narrowing London borough and ward locations by identifying neighbourhoods with relatively low crime,
* Filtering identified ward locations using K Means clustering based on access to local amenities (restaurants, pubs etc.).
  1. **Interest**

Who might be interested in this project?

* House sharers and families looking for a safe place to live with access to local services.
* Landlords looking to target specific demographics.
* Local services trying to better understand their target market.

1. **Data Acquisition and Cleaning**
   1. **Data Sources**

The London borough and ward rental statistics can be found from the gov.uk website:

* <https://data.london.gov.uk/dataset/average-private-rents-borough>
* <https://data.london.gov.uk/dataset?res_geo=Ward,Other&organization=gla&tag=rent>

The London borough and ward crime statistics can be found from the gov.uk website:

* <https://data.london.gov.uk/dataset/recorded_crime_summary>

Local popular amenity data can be found by leveraging the Foursquare API:

* <https://developer.foursquare.com/>
  1. **Data Cleaning**
  2. **Feature Selection**

**Methodology**

Methodology section which represents the main component of the report where you discuss and describe any exploratory data analysis that you did, any inferential statistical testing that you performed, if any, and what machine learnings were used and why.

**Results**

Results section where you discuss the results.

**Discussion**

Discussion section where you discuss any observations you noted and any recommendations you can make based on the results.

**Conclusion**

Conclusion section where you conclude the report.

**Summary**

References