IBM Data Science Professional Certificate on Coursera
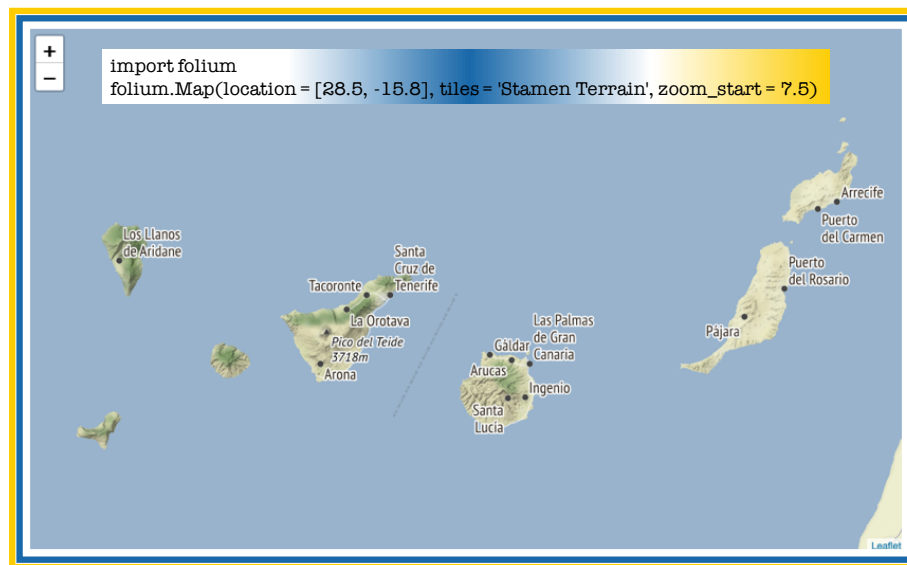
The Battle of the Neighbourhoods

Final assignment: Applied Data Science Capstone

Week 1: **Introduction/Business Problem** & **Data** sections *only*

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```
import folium
folium.Map(location = [28.5, -15.8], tiles = 'Stamen Terrain', zoom_start = 7.5)
```

1 Introduction

Gran Canaria is one of the group of volcanic islands that constitute Canary Islands. Located to the south of Spain and to the west cost of Morocco, the Canary Islands take their presence in the Atlantic Ocean. Given their location, the islands enjoy a very pleasant climate throughout the year thus attracting many tourists particularly during winter months. The tertiary sector accounts for 75 % of the economy in Canarias [1], where tourism is at the core of the islands activities. Construction has been booming as a result, as people are always seeking to invest in the housing market. Whether the intention is to use it solely as a touristic accommodation, or for a second home and explore the option of a short-let when the house is not in use, there is a need for a data-driven decision making.

Gran Canaria covers an area of $\sim 1500\,\mathrm{km}^2$ and has $\sim 850{,}000$ inhabitants. The island is composed of 21 municipalities [2], where the highest population density is in Las Palmas de Gran Canaria, which also serves as the capital city of the island. Each municipality is then made up of districts and neighbourhoods. Each municipality has its own unique characteristics. For instance, those located in the southern part of the islands are the top destinations for tourists due to the famous beaches, while those towards the centre of the island are ideal places for rural holidays and enjoying nature.

The choice of location is therefore important, and will largely be determined by what buyers are looking for, e.g. proximity to the beach, proximity to bars and restaurants, proximity to nature, residential areas, etc. Additionally, buyers will also need to have an indication on the return of investment. Historical data can be used to answer questions such as: when is the peak season for tourism in the island? How much does a tourist spend on accommodation on average? What do crime data tell us about safety within the city? Therefore, the purpose of the current work is to assist potential buyers in making decisions on buying a holiday property in Gran Canaria.

2 About the dataset

As previously described in the Introduction, two broad data categories can be highlighted:

- What are the characteristics of the different areas within Gran Canaria? Understand what features make the areas distinct.

- What additional information can be gathered from public sources in terms of tourism trends and safety within the city?

Foursquare[1] will be used for discovering the venues within Gran Canaria. Taking advantage of the

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[1]https://foursquare.com

free open API services Foursquare offers, the list of venues and their location data will be imported into Python.

The data source used for the island-related statistics will be from Instituto Canario de Estadistica (ISTAC), managed by the regional Government of the Canaries[2]. ISTAC contains an exhaustive catalogue of statistical data, ranging from economy, society, demographics, primary/secondary/tertiary sectors, average appraised home value, etc. All this information will weigh in when making a decision. Table 2 summarises the datasets used in this work and the source. NB: For the average home value, the statistics are shown for the *province* of Las Palmas. The province of Las Palmas includes the islands of Gran Canaria, Fuerteventura and Lanzarote. Nevertheless, it will be interesting to observe the general trends within the islands.

Table 1: Table summarising the datasets to be used for the study.

Data	Source
List of venues	Foursquare
GeoJSON data delimiting municipalities and districts boundaries	ISTAC
Cost breakdown by tourists on accommodation	ISTAC
Crime data	ISTAC
Monthly breakdown of number of tourists by air travel	ISTAC
Average appraised home value for Las Palmas *province*	ISTAC

[2]https://www.gobiernodecanarias.org & https://datos.canarias.es

References

[1] Gobierno de Canarias, http://www3.gobiernodecanarias.org/medusa/ecoblog/casilher/la-economia-en-espana/la-economia-canaria, last accessed on 12 January 2021.

[2] Cabildo de Gran Canaria, https://cabildo.grancanaria.com/en/los-municipios/, last accessed on 13 January 2021.