

# Neighbourhood insights for buying a home in Edinburgh

Sander Tanni

12th of March 2019

Coursera Applied Data Science Capstone Project

# Business problem

- ▶ Estate agent in Edinburgh wants to attract more customers who are new to the city.
- ▶ Presenting valuable insights about local amenities to potential buyers could attract more customers, particularly those new to the city.
- ▶ **AIM:** Provide a solution for informing home buyers about neighbourhoods.
- ▶ **SOLUTION:** Create categorisation tool that can be tailored to customer preferences

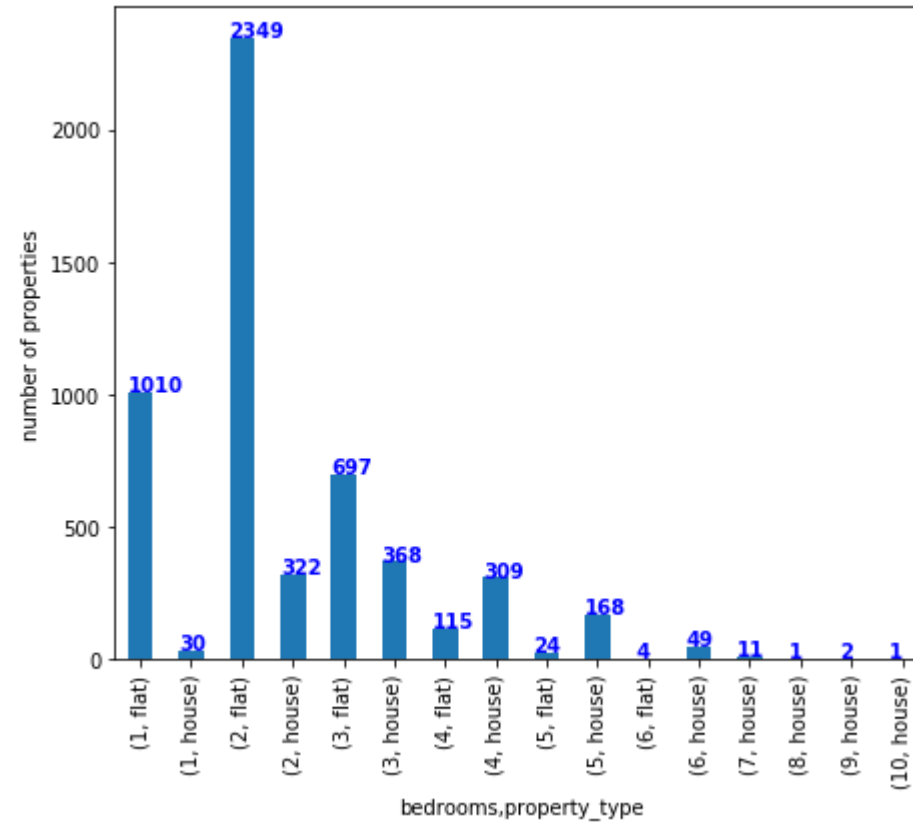
# Foursquare venue data

- ▶ API calls for 664 focal points
- ▶ 9 venue categories
- ▶ Venue coordinates

	total	per neighbourhood
<b>Food</b>	1659	2.50
<b>Outdoors &amp; Recreation</b>	750	1.13
<b>Nightlife Spot</b>	710	1.07
<b>Arts &amp; Entertainment</b>	658	0.99
<b>Cafe</b>	462	0.70
<b>Food &amp; Drink Shop</b>	297	0.45
<b>Bus Stop</b>	290	0.44
<b>Spiritual Center</b>	144	0.22
<b>Convenience Store</b>	106	0.16

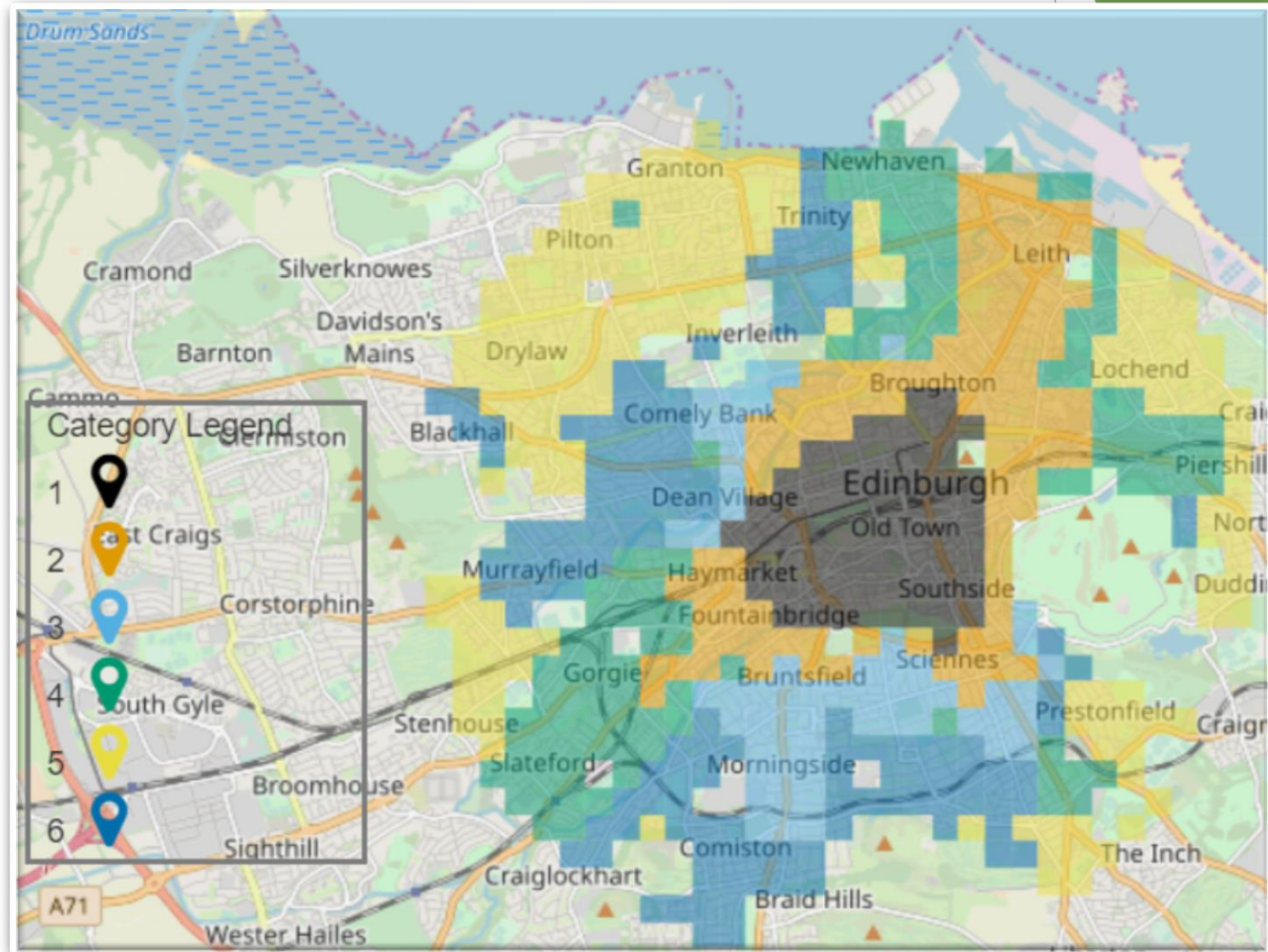
# Rightmove sale price data

- ▶ Two bedroom flats most common
  - ▶ Presentation shows results for 2 bed properties
- ▶ Coordinates inferred from postcode



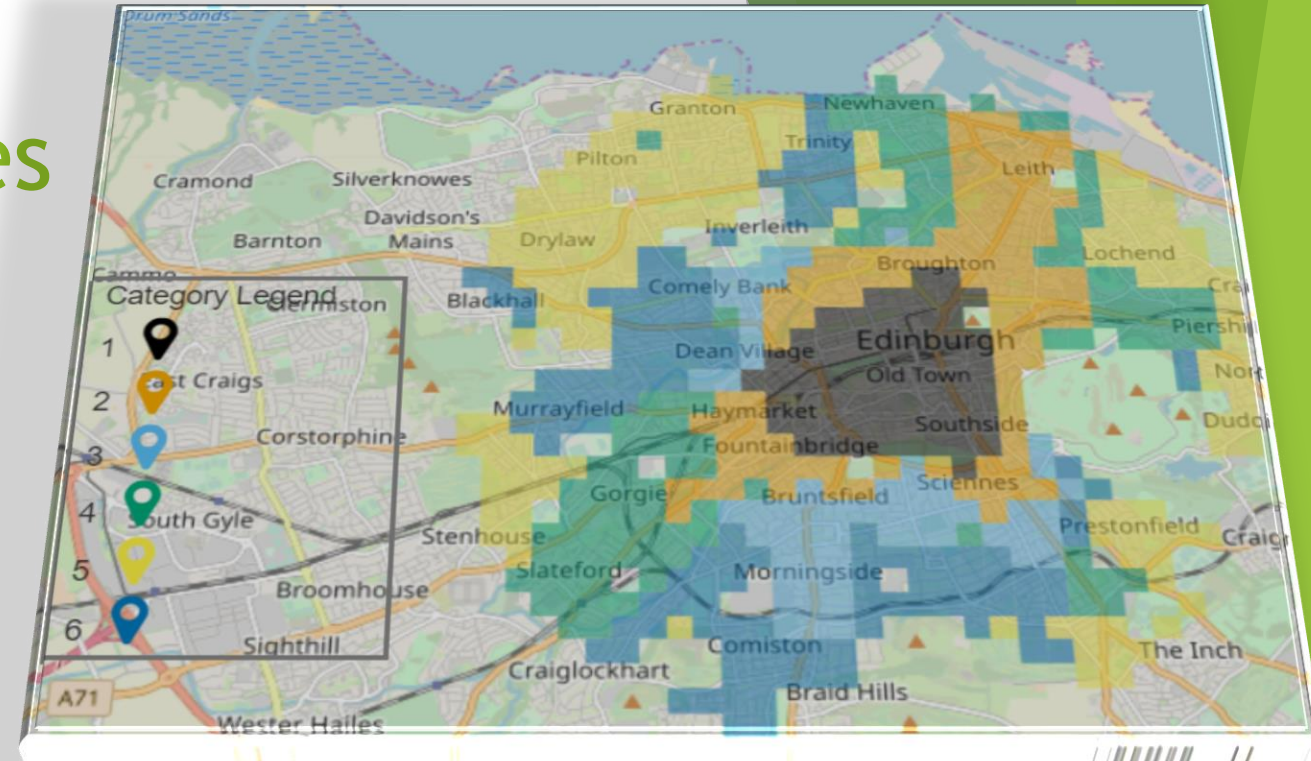
# Neighbourhood categories

- ▶ 500 m neighbourhoods
  - ▶ Venue counts per category
  - ▶ Mean property price
- ▶ K-means clustering
- ▶ 6 clusters



# Neighbourhood categories

- ▶ Contiguous regions on map
- ▶ Median feature values per category
  - ▶ Central areas
  - ▶ Cheap and expensive residential areas



Category	Outdoors & Recreation	Food & Drink Shop	Nightlife Spot	Spiritual Center	Bus Stop	Arts & Entertainment	Food	Cafe	Convenience Store	Price
1	38	17	74	9	19	65	149	40	8	319496
2	19	11	19	4	9.5	14	55.5	14	3	253041
3	9	7	4	4	2	3	28	8	2	353798
4	10	3.5	5	1	4	4	11	2	1	214321
5	6	1	1	0	1	1	3	0	0	177824
6	5	1	1	1	1	1	2	1	0	294988



# Conclusions

- ▶ Six distinctive neighbourhood categories
- ▶ Neighbourhoods of same category form contiguous areas
- ▶ Not just in circular zones around the centre
- ▶ Useful information for home buyers new to Edinburgh