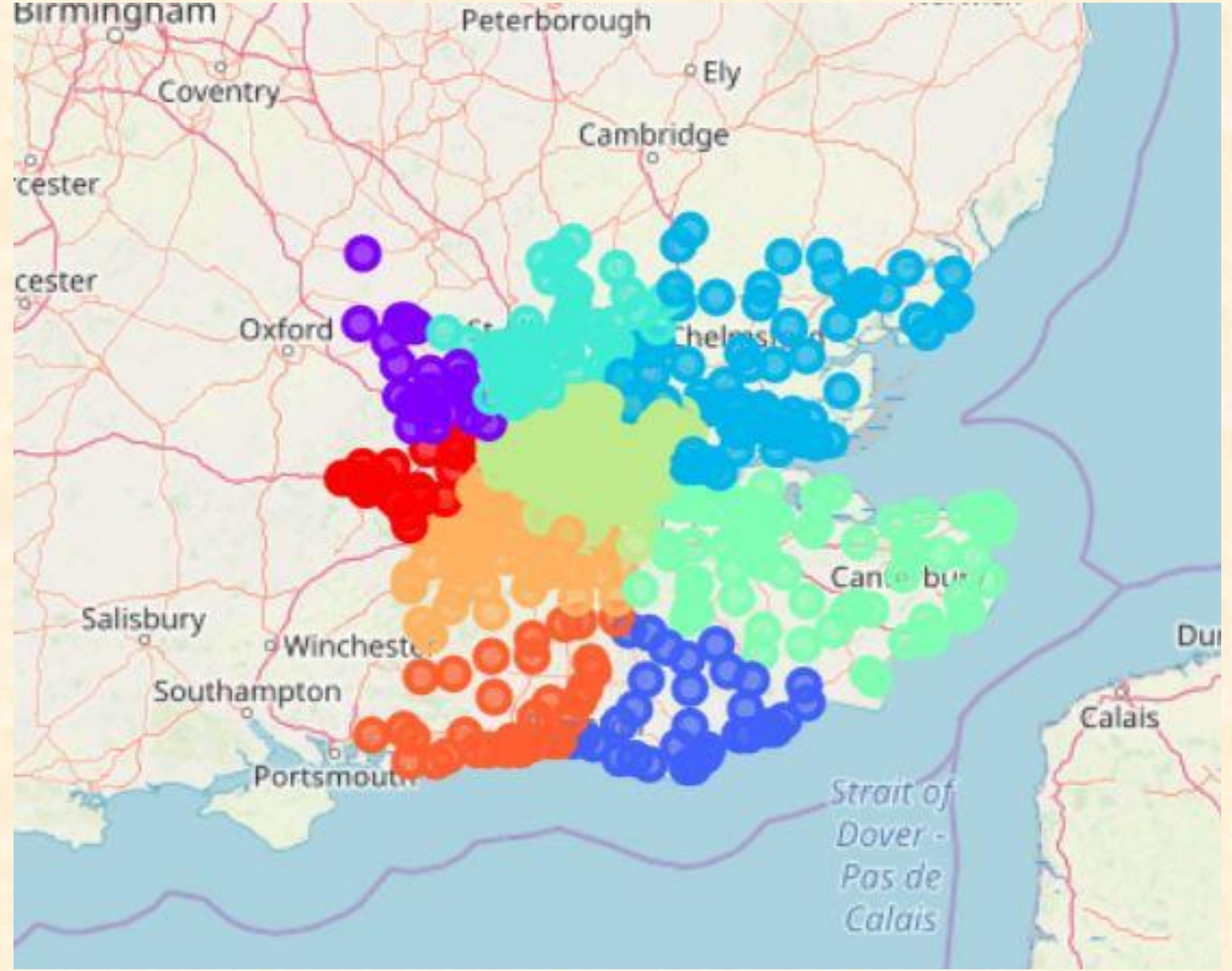


Capstone Project The Battle of the Neighborhoods

Applied Data Science Capstone by
IBM/Coursera

Relocation in Central London and the Home Counties



Problem

Relocation in London and the Home Counties – where to start?

Case Study 1

Postcodes split into 3 clusters or similar groups – High Level Overview

Case Study 2

Postcodes split into 5 clusters or similar groups – Relocation from Eltham to Home Counties

Case Study 3

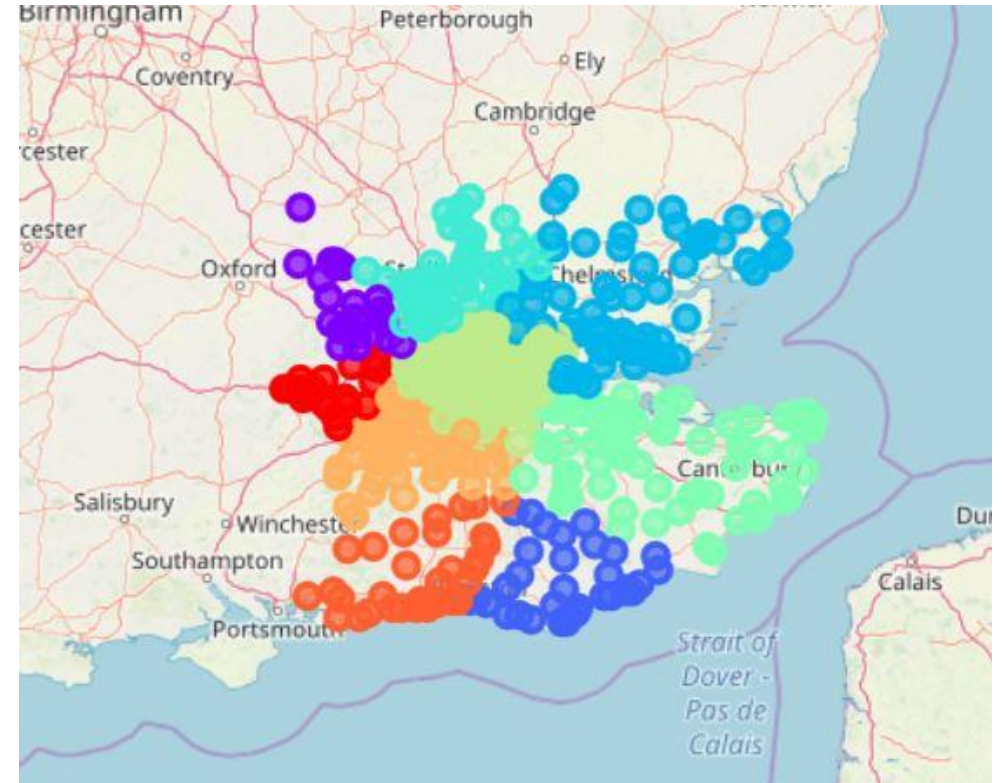
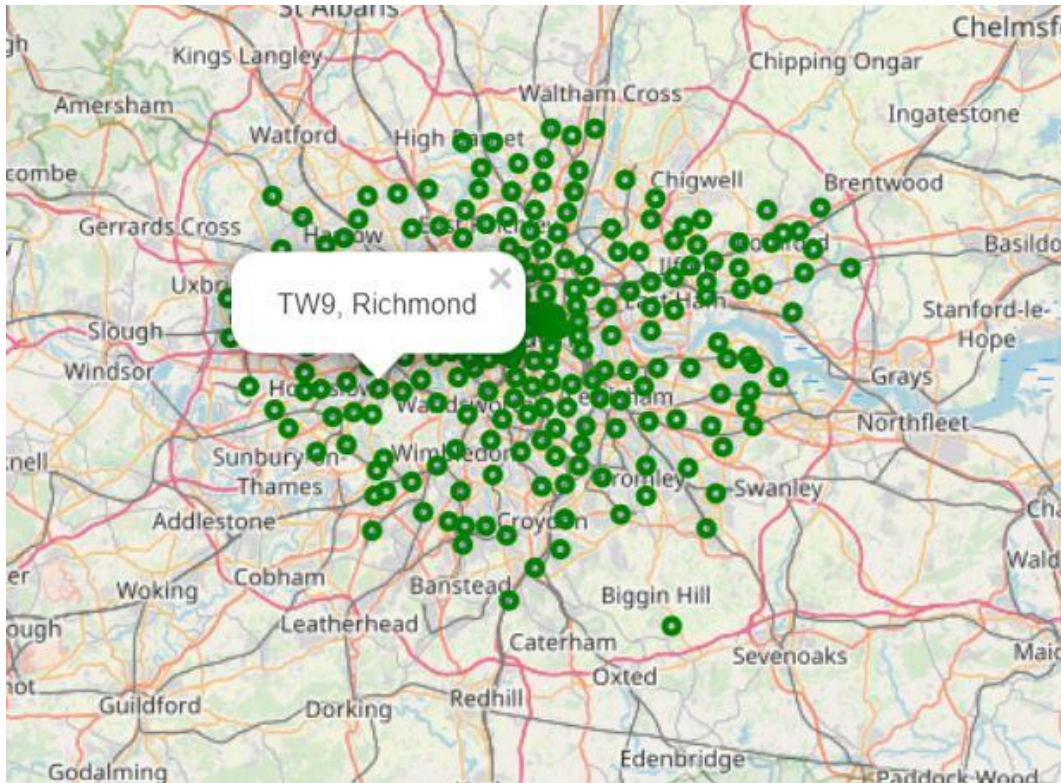
Postcodes split into 10 clusters or similar groups – Relocation from Horsham to Kent

Data

- Postcode Districts in London and Home Counties and respective coordinates (Ordnance Survey Data)
- London coordinates from geocoder to get the Folium map for London
- Foursquare data of venues within 500 yards of each postcode district
- House price data by county (ONS)

Postcodes

London and Home Counties



Clustering and Grouping Data – K-means

Case Study 1

Postcodes split into 3 clusters or similar groups – High Level Overview

Case Study 2

Postcodes split into 5 clusters or similar groups – Relocation from Eltham to Home Counties

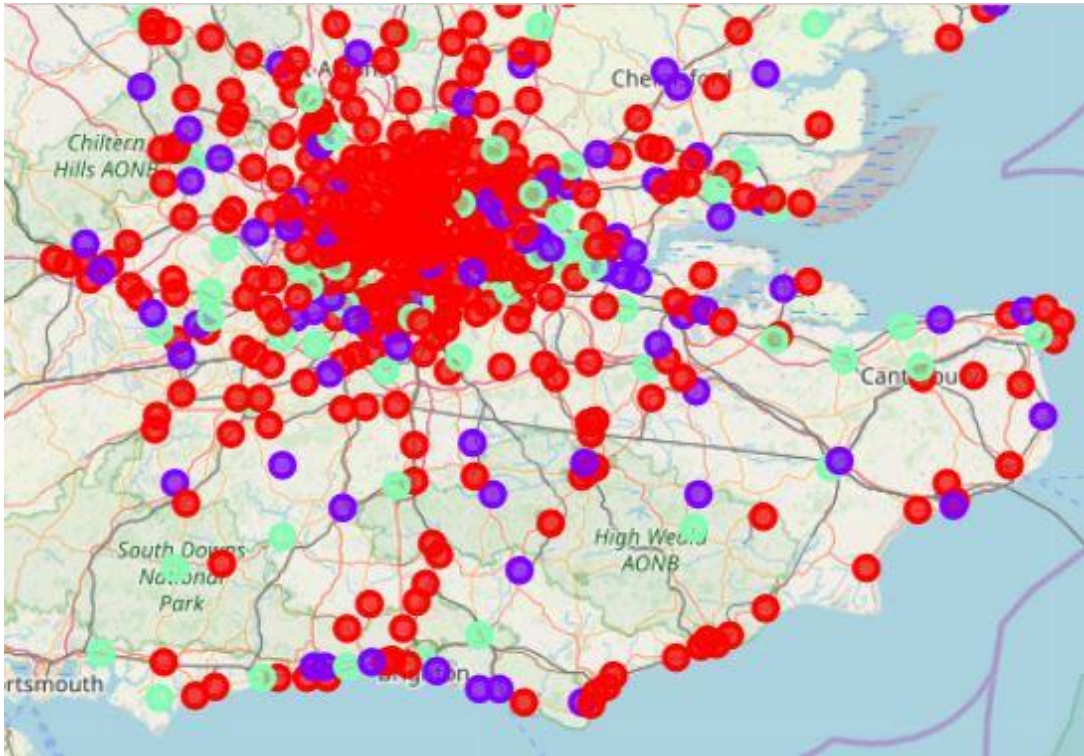
Case Study 3

Postcodes split into 10 clusters or similar groups – Relocation from Horsham to Kent

Case Study 1

High Level Overview

Postcodes split into 3 clusters or similar groups

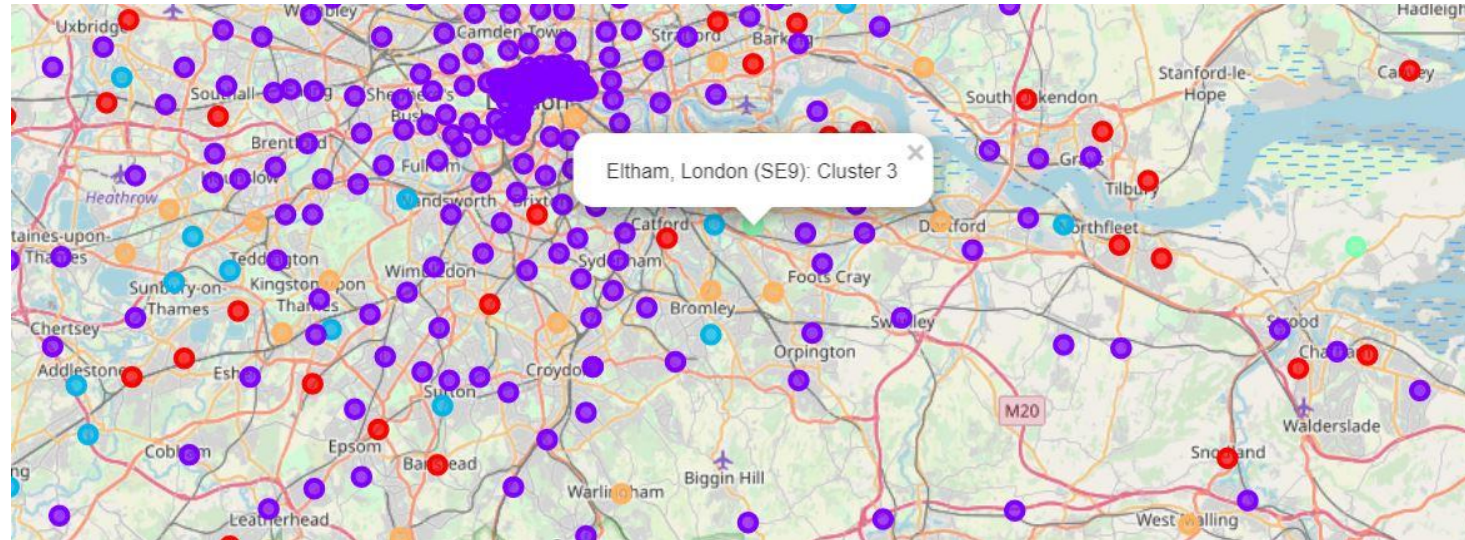


- Dominant Group is the Red group and covers most of Central London
- London and the South East postcodes can be quite homogeneous

Case Study 2

Relocation from Eltham to Home Counties

Postcodes split into 5 clusters or similar groups

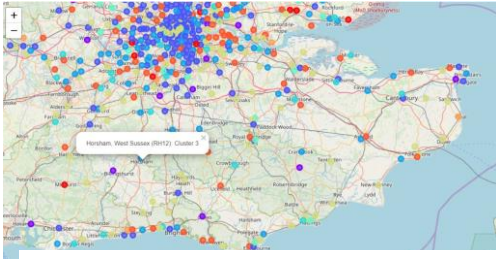


- Eltham is similar to Clayton (West Sussex), Guildford (Surrey), Hoo St Werburgh (Kent) and Felpham (West Sussex).
- Top venues in those postcodes tend to be golf courses and yoga studios.

Case Study 3

Relocation from Horsham to Kent

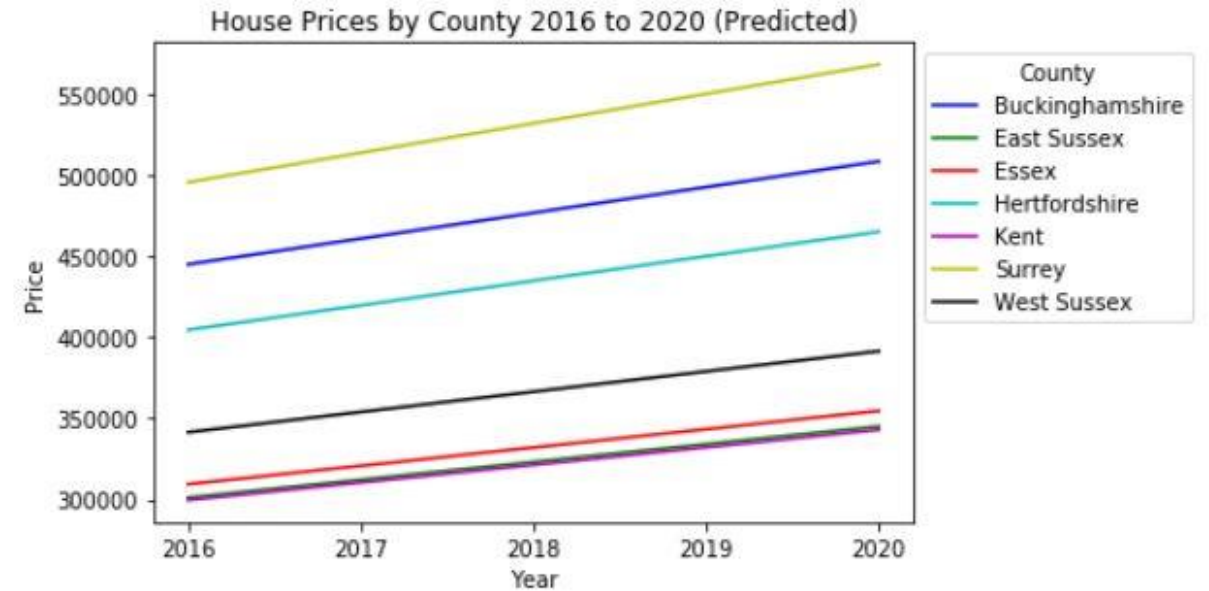
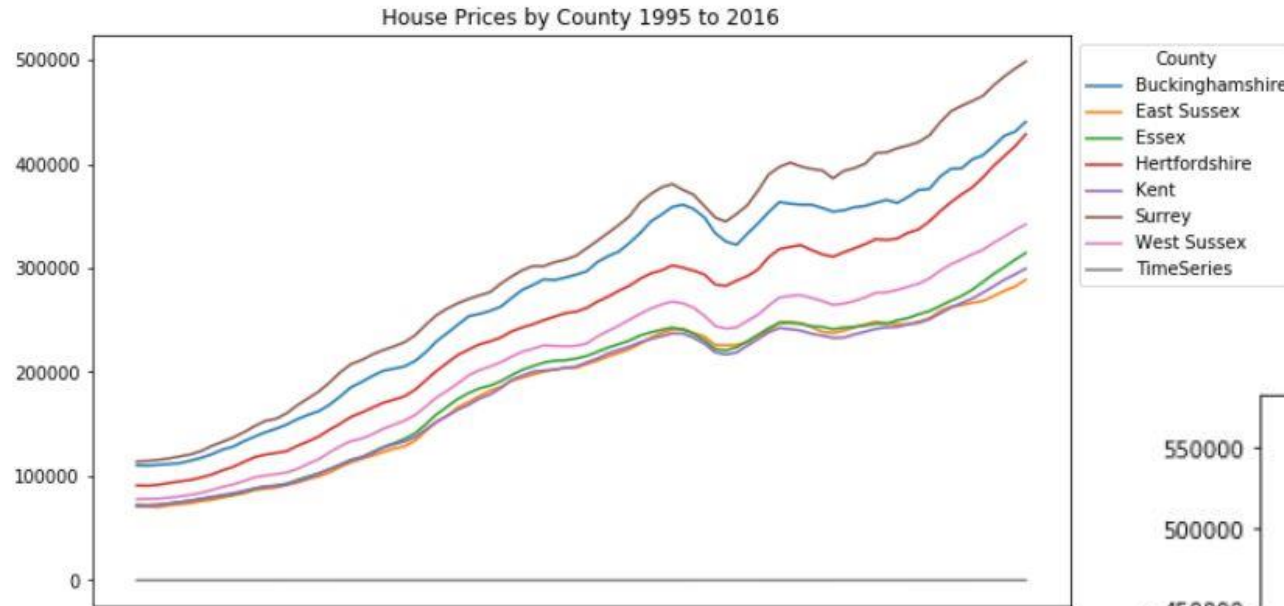
Postcodes split into 10 clusters or similar groups



- 11 postcodes in Kent are similar to Horsham
- Top venues below (Horsham on top)

	Postcode	Top 1st Venue	Top 2nd Venue	Top 3rd Venue	Top 4th Venue	Top 5th Venue	Top 6th Venue	Top 7th Venue	Top 8th Venue	Top 9th Venue	Top 10th Venue	Cluster label	latitude	longitude	town	region	region_id	
	336	RH12	Pub	Nature Preserve	American Restaurant	Grocery Store	Yoga Studio	Flea Market	Farmers Market	Fast Food Restaurant	Field	Film Studio	3	51.07579	-0.33254	Horsham	West Sussex	8
	Postcode	Top 1st Venue	Top 2nd Venue	Top 3rd Venue	Top 4th Venue	Top 5th Venue	Top 6th Venue	Top 7th Venue	Top 8th Venue	Top 9th Venue	Top 10th Venue	Cluster label	latitude	longitude	town	region		
	84	CT10	Café	Fast Food Restaurant	Pub	Convenience Store	Train Station	Turkish Restaurant	Flea Market	Farmers Market	Field	Film Studio	3	51.36208	1.43073	Broadstairs	Kent	
	94	CT21	Café	Pub	Supermarket	Seafood Restaurant	Indian Restaurant	Light Rail Station	Coffee Shop	Yoga Studio	Fishing Store	Farmers Market	3	51.07233	1.07795	Hythe	Kent	
	96	CT5	Flea Market	Pub	Indian Restaurant	Gym	Yoga Studio	Farm	Farmers Market	Fast Food Restaurant	Field	Film Studio	3	51.35318	1.03641	Canterbury	Kent	
	101	DA1	Pub	Pizza Place	Clothing Store	Nightclub	Performing Arts Venue	Coffee Shop	Yoga Studio	Fishing Store	Farmers Market	Fast Food Restaurant	3	51.44637	0.20915	Dartford	Kent	
	103	DA11	Pub	Grocery Store	Park	Fast Food Restaurant	Fish & Chips Shop	Yoga Studio	Fishing Store	Farm	Farmers Market	Field	3	51.43455	0.35392	Gravesend	Kent	
	105	DA13	Pub	Pizza Place	Train Station	Restaurant	Yoga Studio	Fishing Store	Falafel Restaurant	Farm	Farmers Market	Fast Food Restaurant	3	51.38235	0.35555	Meopham Station	Kent	
	117	DA9	Pub	Fast Food Restaurant	Train Station	Bus Stop	Yoga Studio	Flea Market	Farm	Farmers Market	Field	Film Studio	3	51.44771	0.27975	Stone	Kent	
	269	ME13	Restaurant	Deli / Bodega	Pub	Soccer Field	Yoga Studio	Farmers Market	Fast Food Restaurant	Field	Film Studio	Fish & Chips Shop	3	51.30275	0.89675	Faversham	Kent	
	273	ME19	Pub	Gastropub	Chinese Restaurant	Grocery Store	Coffee Shop	Flea Market	Farmers Market	Fast Food Restaurant	Field	Film Studio	3	51.29307	0.41123	West Malling	Kent	
	468	TN17	Pub	Grocery Store	Coffee Shop	Café	Yoga Studio	Flea Market	Farmers Market	Fast Food Restaurant	Field	Film Studio	3	51.09610	0.53810	Cranbrook	Kent	
	472	TN23	Pub	Gas Station	Fish & Chips Shop	Yoga Studio	Flower Shop	Farmers Market	Fast Food Restaurant	Field	Film Studio	Fish Market	3	51.13902	0.86075	Ashford	Kent	

House Prices (mean by County)



Conclusions and Extensions

- London and the Home Counties postcodes can be easily grouped
- Analysis can help find similar postcodes starting points, which could change in time
- Project can be baseline for app or further research
- Analysis can be extended to other areas, e.g. demographic data for political campaigns
- Further analysis could be done on house price predictions