Coursera Capstone Project
Filling Barons Quay

Barons Quay

- Brand new shopping centre in Northwich

- £80m investment from government – Cheshire West and Chester Council

- 40% of retail space unused as of May 2019

- Need to identify prospective tenants

Data acquisition and cleansing: Town data

- List of towns in England sourced from Wikipedia

- Population value found within each town's own Wikipedia page

- Population successfully found for 933 out of the 965 English towns

- Top 100 towns with the highest population extracted for comparison

- Ranged from 62,500 (Sittingbourne) to 225,700 (Northampton)

- Represents 83% to 301% of Northwich's 75,000 population

- Latitude and longitude also determined from each town's page

Data acquisition and cleansing:
Retailer data

- Foursquare API queried for each town in the top 100

- Venues pulled within 3km of the given coordinates

- Categories limited to "shop & service" or "food" – most suitable for Barons Quay

- 7,653 matching retail locations found

Data acquisition and cleansing: Retailer data, continued

- Retailer names standardised – town names stripped; non-identical duplicates standardised

- Grouped to give a count for each retailer

- 2302 retailers in total

- 97 retailers with a count of 10 or more
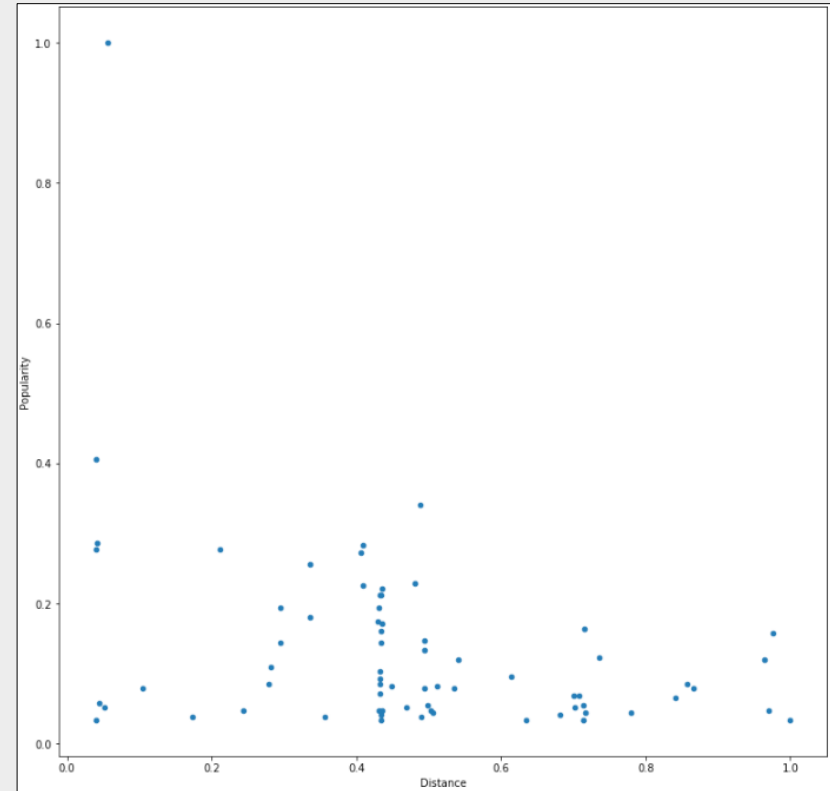
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retailers_grouped.head(10)
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Out[18]:

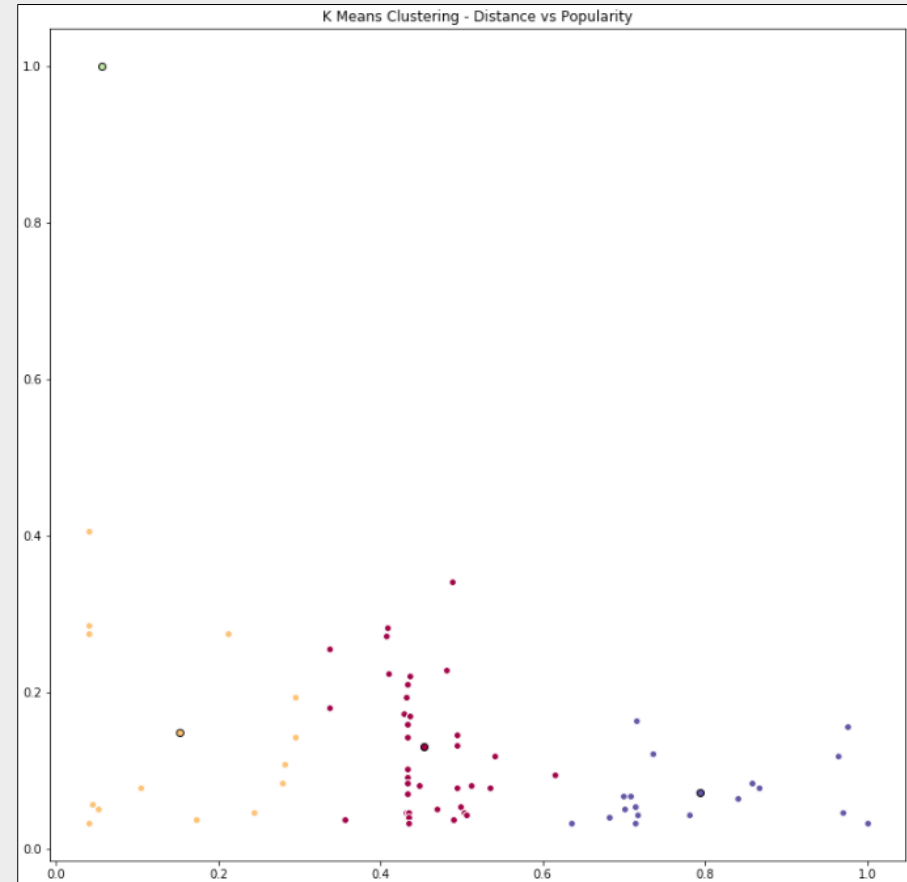|	Retailer	Count
0	TESCO	403
1	CO-OP FOOD	293
2	SAINSBURY'S	209
3	BOOTS	150
4	MARKS & SPENCER	135
5	WHSMITH	129
6	ARGOS	119
7	LIDL	116
8	ASDA	110
9	ALDI	101

Data acquisition and cleansing: Proximity data

- Foursquare API queried for the 97 retailers

- Match closest to Barons Quay found and distance in metres recorded

- Retailers with a presence less than 1,000m away stripped

- 70 retailers with no presence in Northwich

- Distance and Popularity values normalised on 0 – 1.0 scale

Clustering

- K Means with 4 clusters

- Starting centroids on corners [1, 1], [0, 0], [1, 0], [0, 1]

- Magenta cluster grouped from [1, 1] starting centroid

- Retailers in this cluster isolated and exported

- 37 prospective retailers

K Means Clustering - Distance vs Popularity

Prospective retailers

#	Retailer	Count	Closest	#	Retailer	Count	Closest
1	LLOYDSPHARMACY	100	17096	20	TOPSHOP	42	15177
2	ONE STOP STORES LTD	28	21502	21	HOBBYCRAFT	23	17277
3	HOME BARGAINS	67	16815	22	MOTHERCARE	16	17467
4	TK MAXX	83	14298	23	GRAINGER GAMES	14	17625
5	WILKO	80	14235	24	HOUSE OF FRASER	13	17698
6	TOPMAN	35	18929	25	EUROCHANGE	30	15156
7	VISION EXPRESS	65	15248	26	MAJESTIC WINE	24	15686
8	PRIMARK	62	15171	27	NISA	11	17129
9	VODAFONE	62	15156	28	HMV	27	15150
10	F&F CLOTHING	43	17284	29	JOHNSON CLEANERS	15	16429
11	POUNDLAND	66	14324	30	CARD FACTORY	25	15146
12	DUNELM	39	17292	31	GAME	53	11776
13	O2 SHOP	57	15105	32	GEEK SQUAD	21	15162
14	NATIONAL TYRES AND AUTOCARE	23	18744	33	LUSH	14	15225
15	DEBENHAMS	50	15242	34	VIRGIN MEDIA STORE	14	15112
16	CEX	51	15030	35	THREE	12	15194
17	RIVER ISLAND	47	15180	36	PAPERCHASE	10	15191
18	COHENS CHEMIST	24	17887	37	MCCOLL'S	11	12476
19	CARPHONE WAREHOUSE	75	11774				