

WHICH ONE IS MORE MULTICULTURAL?  
SOUTHAMPTON VS PORTSMOUTH  
THE BATTLE OF THE  
“NEIGHBOURHOODS”:



# BACKGROUND

- Multicultural cities
- Southampton has a population of 254,275 and Portsmouth, 238,137
- People tend to travel between those two cities in the weekends or during the week
- Benefits for tourism industry
- Businesses want to attract tourists and commuters

# QUESTIONS

- Questions: Which city is more multicultural? How many unique cultural restaurants are in Southampton and Portsmouth, UK? If I want to experience a specific cuisine, which city should I go? If a restaurant owner wants to open a business that will attract tourists and commuters, where should they open this restaurant and what are the other restaurants nearby?



# GOALS

- Now that we have in mind the goal of this project and some objectives, we can draw the next stages. These are: 1) analysis of each neighbourhood from each city using the mean of each category and add it to a dataframe; 2) use k-means to cluster the neighbourhoods; 3) compare the clusters from each city.

# DATA CHOICE

- Data that will be utilised will come from the Foursquare API. The reason for that is that it will be easier to use the queries to look for unique categories and cluster the neighbourhoods according to each category. In foursquare, there is a way to use the function GET request for result, and I will use the 'categories' section to group the data. I will use latitude and longitude information from each city as a starting point. The starting point is the train station from each city.



## Food

4d4b7105d754a06374d81259



## Afghan Restaurant

503288ae91d4c4b30a586d67



## African Restaurant

4bf58dd8d48988d1c8941735



## Ethiopian Restaurant

4bf58dd8d48988d10a941735



## American Restaurant

4bf58dd8d48988d14e941735



## New American Restaurant

4bf58dd8d48988d157941735



## Asian Restaurant

4bf58dd8d48988d142941735



## Burmese Restaurant

56aa371be4b08b9a8d573568



## Cambodian Restaurant

52e81612bcbc57f1066b7a03



## Chinese Restaurant

# METHODOLOGY

- Exploratory analysis
- Group by category
- Group by common venues
- k-means clustering

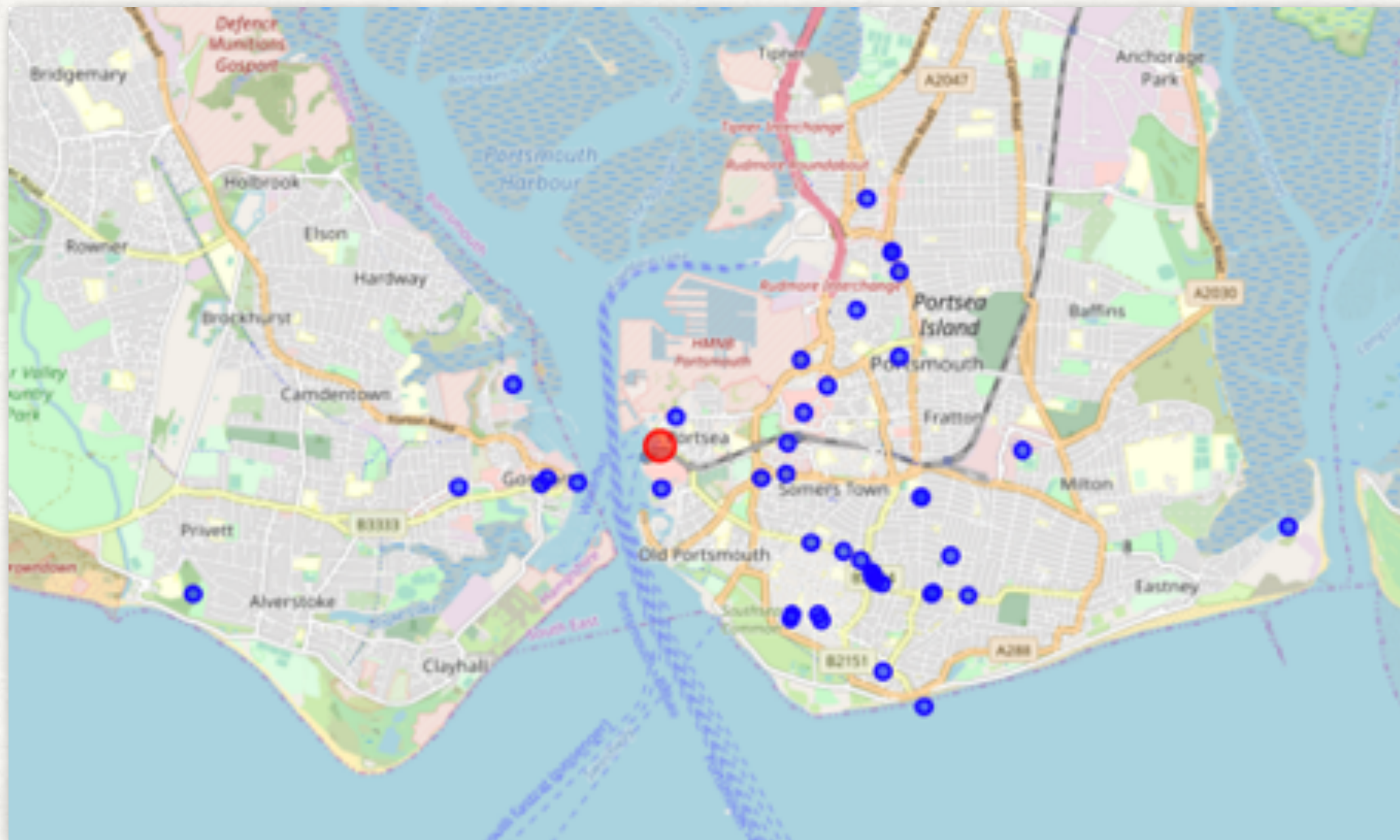


# SOUTHAMPTON RESTAURANTS, NEAR SOUTHAMPTON CENTRAL STATION



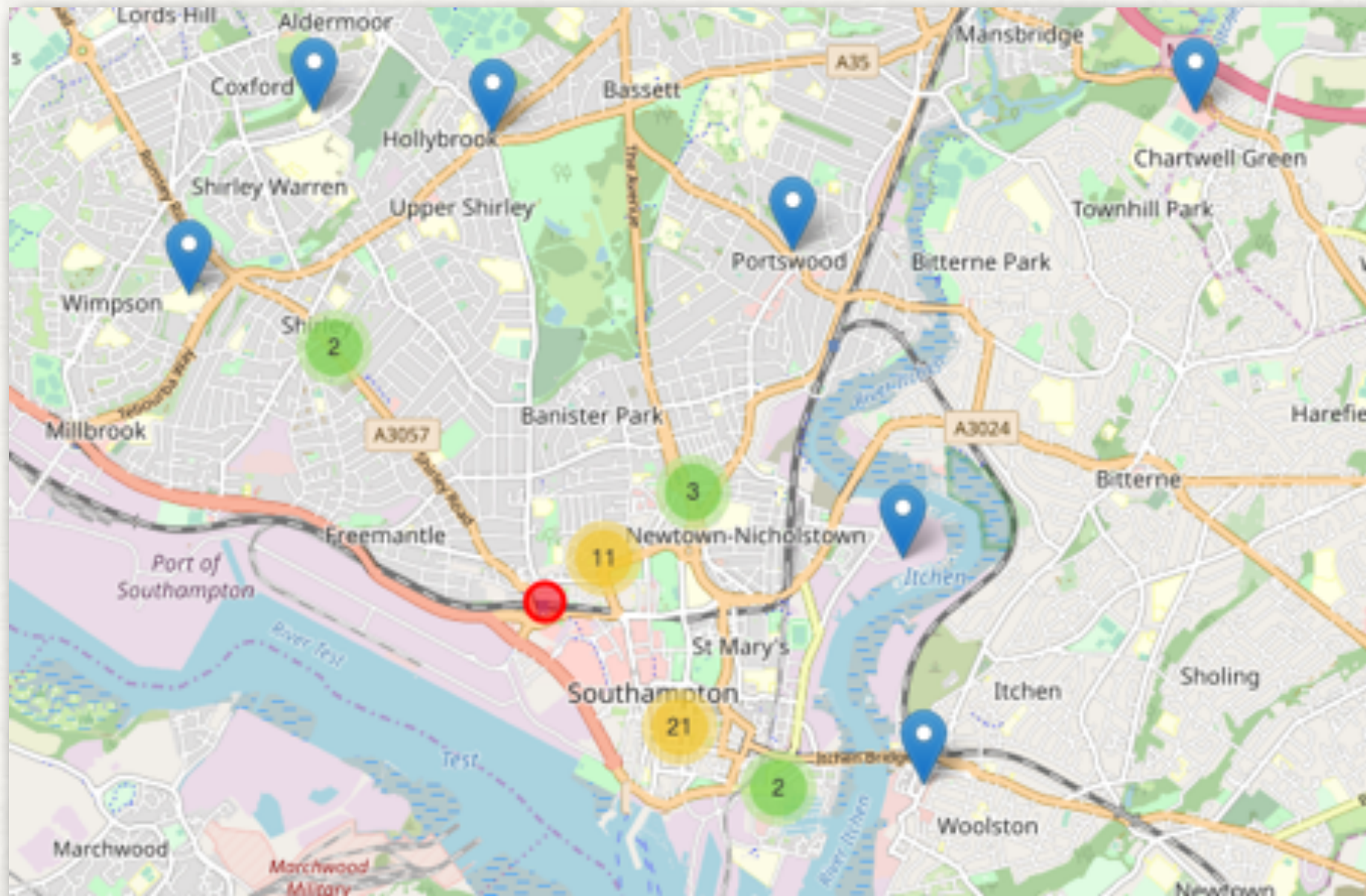


# PORTSMOUTH RESTAURANTS, NEAR PORTSMOUTH HABOUR STATION



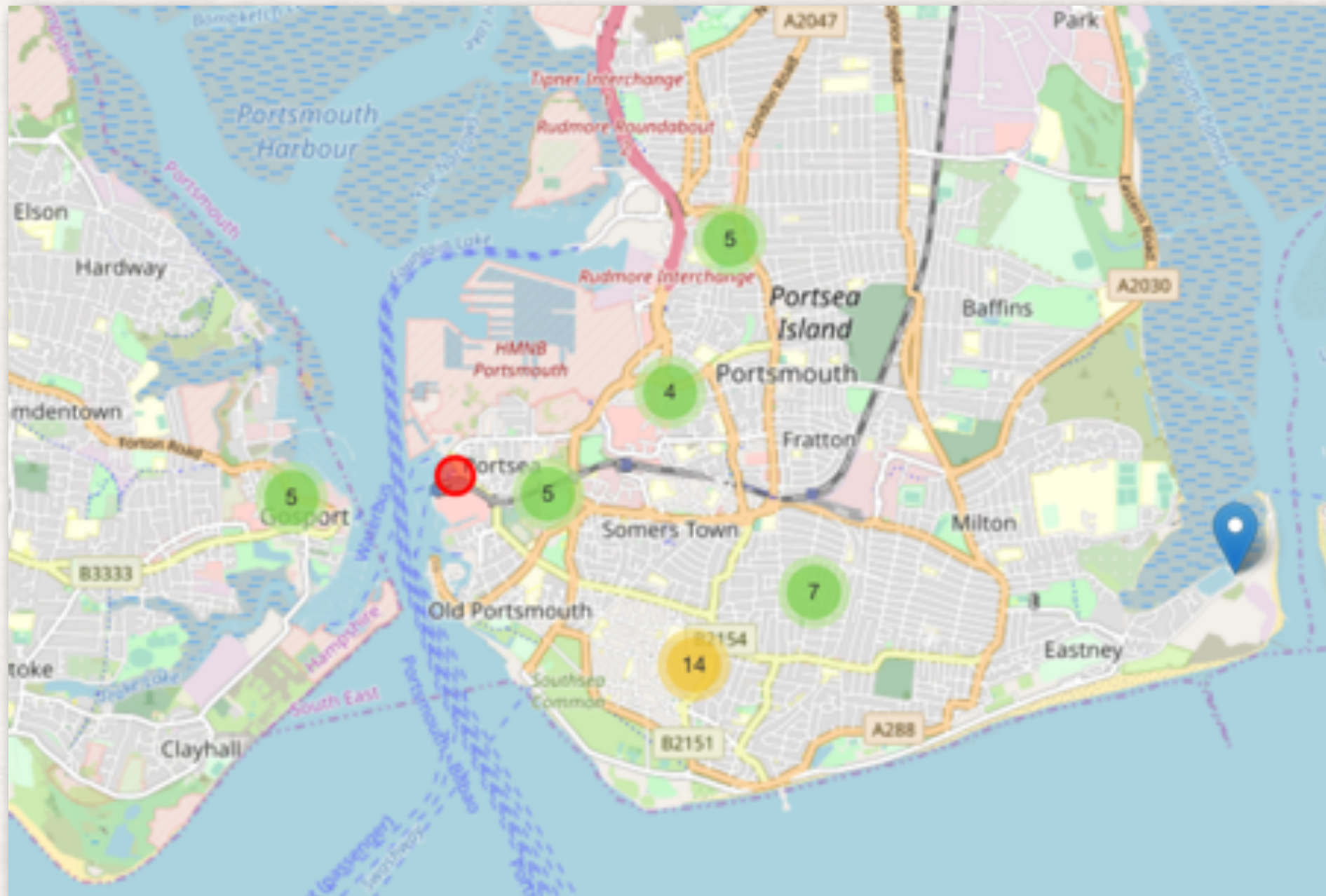


# SOUTHAMPTON RESTAURANTS, GROUPED BY DISTANCE





# PORTSMOUTH RESTAURANTS, GROUPED BY DISTANCE





# TOP CATEGORIES, GROUPED BY DISTANCE FROM MAIN POINT

	categories	lat	lng	distance
17	Thai Restaurant	50.908964	-1.409350	356.0
9	Indian Restaurant	50.909169	-1.409784	386.0
4	Chinese Restaurant	50.907835	-1.410205	418.5
16	Scandinavian Restaurant	50.903382	-1.411634	511.0
3	Cantonese Restaurant	50.911926	-1.403879	852.0
12	Lebanese Restaurant	50.902418	-1.404238	905.0
5	Diner	50.902354	-1.404234	910.0
15	Restaurant	50.907633	-1.408965	1021.6
1	Breakfast Spot	50.906563	-1.400800	1069.0
8	Greek Restaurant	50.900324	-1.403019	1141.0
14	Polish Restaurant	50.912890	-1.399887	1147.0
11	Japanese Restaurant	50.899392	-1.403511	1184.0
0	Afghan Restaurant	50.906039	-1.396637	1234.0
10	Italian Restaurant	50.899683	-1.401814	1251.0
13	Middle Eastern Restaurant	50.911502	-1.393604	1494.0
7	Food	50.897970	-1.397420	1592.0
2	Café	50.918636	-1.377496	3181.0
6	English Restaurant	50.873014	-1.400751	3974.0

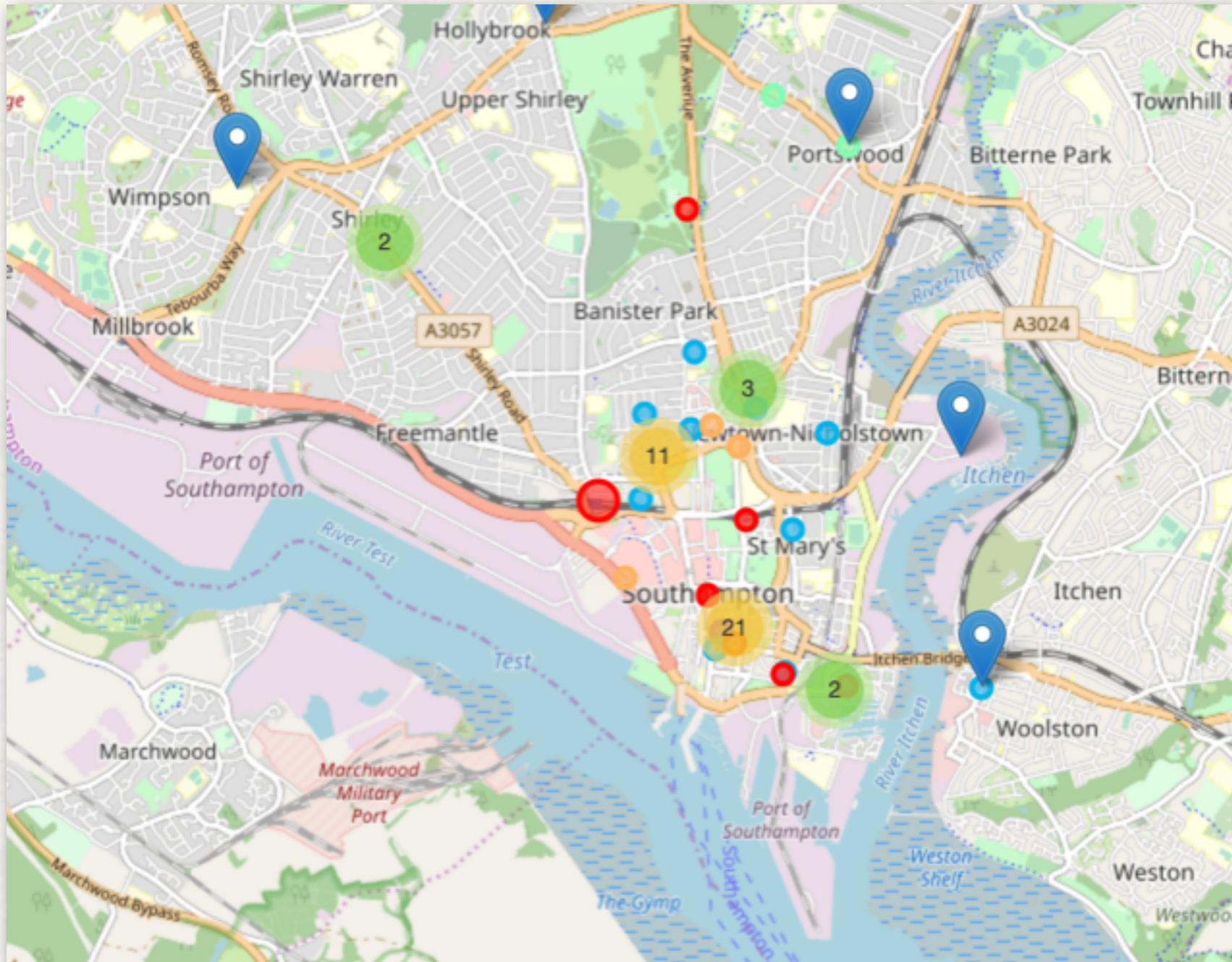
Southampton

	categories	lat	lng	distance
18	Seafood Restaurant	50.794419	-1.106634	350.000000
4	Department Store	50.800040	-1.090082	1213.000000
22	Winery	50.802148	-1.124063	1312.000000
21	Wine Bar	50.804035	-1.090426	1363.000000
3	Chinese Restaurant	50.795314	-1.091644	1516.250000
7	Greek Restaurant	50.784693	-1.088026	1952.000000
15	Mediterranean Restaurant	50.787947	-1.082008	2051.000000
14	Malay Restaurant	50.804248	-1.078895	2104.000000
13	Lebanese Restaurant	50.787354	-1.080876	2153.000000
20	Turkish Restaurant	50.785926	-1.083122	2158.500000
11	Japanese Restaurant	50.799260	-1.083330	2198.000000
16	Middle Eastern Restaurant	50.790246	-1.075737	2365.000000
5	English Restaurant	50.784018	-1.080661	2400.000000
0	Asian Restaurant	50.810489	-1.078856	2440.000000
12	Korean Restaurant	50.789471	-1.072915	2553.000000
6	French Restaurant	50.780903	-1.080822	2607.000000
9	Indian Restaurant	50.789473	-1.071518	2706.750000
1	Breakfast Spot	50.797063	-1.147405	2883.333333
19	Soccer Stadium	50.797236	-1.064455	2985.000000
2	Café	50.811013	-1.080133	3119.333333
17	Restaurant	50.813015	-1.114875	3181.428571
10	Italian Restaurant	50.788722	-1.130276	4997.000000
8	Hotel	50.720495	-1.109804	8581.000000

Portsmouth

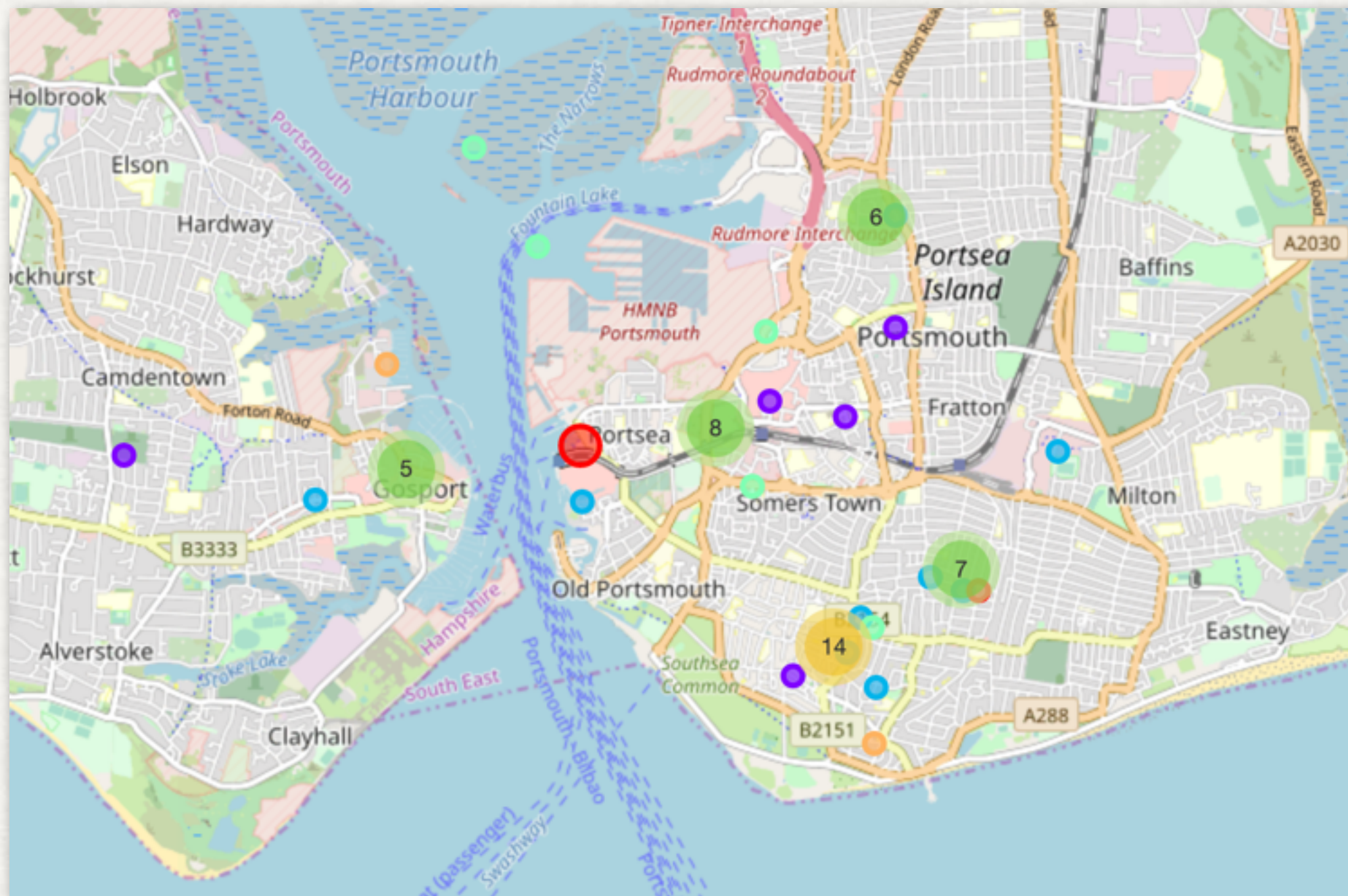


# K-MEANS, SOUTHAMPTON





# K-MEANS, PORTSMOUTH





# CONCLUSION AND FUTURE DIRECTIONS

- There are clusters of categories that go together: Chinese and others
- Lebanese and Japanese are isolated in Portsmouth
- Southampton has more isolated groups of Thai restaurants
- Future: run the research using user tips and advices; some clusters from Portsmouth were situated in the Harbour (see map); need to improve this part
- There was a small difference of result due to changes on the top venues by day