THE BATTLE OF NEIGHBORHOODS.

NEW ZEALAND MOST POPULATED CITIES CLASIFICATION

Introduction:

- The purpose of this Project is to help people exploring better facilities around their place of choice.
- This Project aim to create an analysis of features for a people (like me) migrating to New Zealand to search the best fitted place as a comparative analysis between populated places. The features include median housing price and the most common facilities around in that place.

Data acquisition and cleaning

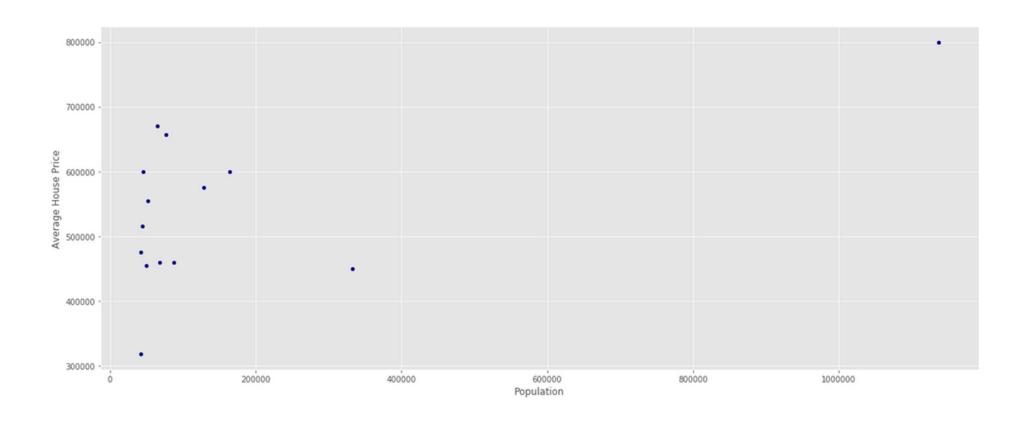
	name	desc_code	pop	region	tla	class	GEOMETRY_X	GEOMETRY_Y	HAP
0	Auckland	METR	1137141	Auckland Region	Auckland City	2	174.765989	-36.847013	800000
1	Christchurch	METR	333204	Canterbury Region	Christchurch City	2	172.636656	-43.532049	450000
2	Wellington	METR	164508	Wellington Region	Wellington City	2	174.776890	-41.291179	600000
3	Hamilton	TOWN	128988	Waikato Region	Hamilton City	2	175.281742	-37.785863	575000
4	Dunedin	METR	87384	Otago Region	Dunedin City	2	170.503575	-45.874123	657100
5	Lower Hutt	USAT	76845	Wellington Region	Lower Hutt City	2	174.904349	-41.209652	
6	Palmerston North	TOWN	68439	Manawatu-Wanganui Region	Palmerston North City	2	175.610996	-40.356124	
7	Tauranga	TOWN	64986	Bay of Plenty Region	Tauranga City	2	176.169876	-37.684330	670100
8	Napier	TOWN	52302	Hawke's Bay Region	Napier City	2	176.918314	-39.490174	555000
9	Rotorua	TOWN	49533	Bay of Plenty Region	Rotorua District	2	176.251523	-38.137847	455000
10	Porirua	USAT	46023	Wellington Region	Porirua City	2	174.842505	-41.138316	600000
11	Whangarei	TOWN	45087	Northland Region	Whangarei District	2	174.322041	-35.726603	515000
12	Invercargill	TOWN	42129	Southland Region	Invercargill City	2	168.347374	-46.412985	318000
13	New Plymouth	TOWN	41925	Taranaki Region	New Plymouth District	2	174.076095	-39.057195	475000



Data from Foursquare API

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Auckland	Café	Japanese Restaurant	Pizza Place	Plaza	Korean Restaurant	Steakhouse	Mexican Restaurant	Bar	Indian Restaurant	Pub
1	Christchurch	Café	Hotel	Bar	Japanese Restaurant	Thai Restaurant	Coffee Shop	Restaurant	Gastropub	Supermarket	Italian Restaurant
2	Dunedin	Café	Coffee Shop	Bar	Asian Restaurant	Hotel	Shopping Mall	Brewery	Theater	Restaurant	Pub
3	Hamilton	Café	Restaurant	Bar	Fast Food Restaurant	Hotel	Coffee Shop	Department Store	Mexican Restaurant	Performing Arts Venue	Steakhouse
4	Invercargill	Café	Burger Joint	Department Store	Bar	Food	Food & Drink Shop	Fast Food Restaurant	Supermarket	Movie Theater	Flower Shop
5	Lower Hutt	Café	Supermarket	Fast Food Restaurant	Indian Restaurant	Electronics Store	Burger Joint	Shoe Store	Shopping Mall	Portuguese Restaurant	Japanese Restaurant
6	Napier	Café	Restaurant	Fast Food Restaurant	Electronics Store	Thai Restaurant	Hotel	Beach	Organic Grocery	Paper / Office Supplies Store	Pub
7	New Plymouth	Restaurant	Café	Coffee Shop	American Restaurant	Hotel	Thai Restaurant	Electronics Store	Bar	Bakery	Burger Joint
8	Palmerston North	Café	Fast Food Restaurant	Asian Restaurant	Coffee Shop	Grocery Store	Shopping Mall	Japanese Restaurant	Thai Restaurant	Brewery	Burger Joint
9	Porirua	Furniture / Home Store	Grocery Store	Café	Paper / Office Supplies Store	Skate Park	Pizza Place	Burger Joint	Pet Store	Fast Food Restaurant	Supermarket
10	Rotorua	Café	Hotel	Pizza Place	Hostel	Motel	Pedestrian Plaza	Pool	Steakhouse	Furniture / Home Store	Middle Eastern Restaurant
11	Tauranga	Café	Coffee Shop	Hotel	Pub	Japanese Restaurant	Middle Eastern Restaurant	Gastropub	Park	Seafood Restaurant	Fast Food Restaurant
12	Wellington	Café	Coffee Shop	Bar	Restaurant	Vietnamese Restaurant	Italian Restaurant	Pizza Place	Asian Restaurant	Burger Joint	Chinese Restaurant
13	Whangarei	Café	Supermarket	Fast Food Restaurant	Gastropub	Middle Eastern Restaurant	Coffee Shop	Bakery	Restaurant	Electronics Store	Filipino Restaurant

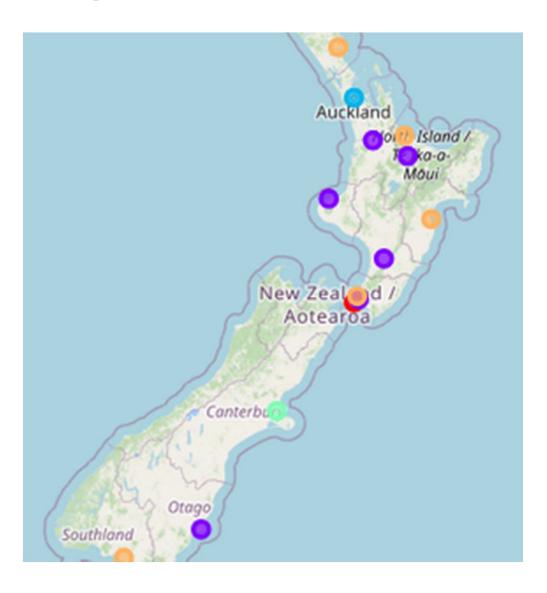
Population Vs Average House Prices



K-means Model

	name	desc_code	рор	region	tla	class	GEOMETRY_X	GEOMETRY_Y	НАР	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue
0	Auckland	METR	1137141	Auckland Region	Auckland City	2	174.765989	-36.847013	800000	2	Café	Japanese Restaurant	Pizza Place	Plaza	Korean Restaurant	Steakhouse	Mexican Restaurant	Bar	Indian Restaurant
1	Christchurch	METR	333204	Canterbury Region	Christchurch City	2	172.636656	-43.532049	450000	3	Café	Hotel	Bar	Japanese Restaurant	Thai Restaurant	Coffee Shop	Restaurant	Gastropub	Supermarket
2	Wellington	METR	164508	Wellington Region	Wellington City	2	174.776890	-41.291179	600000	0	Café	Coffee Shop	Bar	Restaurant	Vietnamese Restaurant	Italian Restaurant	Pizza Place	Asian Restaurant	Burger Joint
3	Hamilton	TOWN	128988	Waikato Region	Hamilton City	2	175.281742	-37.785863	575000	1	Café	Restaurant	Bar	Fast Food Restaurant	Hotel	Coffee Shop	Department Store	Mexican Restaurant	Performing Arts Venue
4	Dunedin	METR	87384	Otago Region	Dunedin City	2	170.503575	-45.874123	460000	1	Café	Coffee Shop	Bar	Asian Restaurant	Hotel	Shopping Mall	Brewery	Theater	Restaurant
5	Lower Hutt	USAT	76845	Wellington Region	Lower Hutt City	2	174.904349	-41.209652	657100	1	Café	Supermarket	Fast Food Restaurant	Indian Restaurant	Electronics Store	Burger Joint	Shoe Store	Shopping Mall	Portuguese Restaurant
6	Palmerston North	TOWN	68439	Manawatu- Wanganui Region	Palmerston North City	2	175.610996	-40.356124	460000	1	Café	Fast Food Restaurant	Asian Restaurant	Coffee Shop	Grocery Store	Shopping Mall	Japanese Restaurant	Thai Restaurant	Brewery
7	Tauranga	TOWN	64986	Bay of Plenty Region	Tauranga City	2	176.169876	-37.684330	670100	4	Café	Coffee Shop	Hotel	Pub	Japanese Restaurant	Middle Eastern Restaurant	Gastropub	Park	Seafood Restaurant
8	Napier	TOWN	52302	Hawke's Bay Region	Napier City	2	176.918314	-39.490174	555000	4	Café	Restaurant	Fast Food Restaurant	Electronics Store	Thai Restaurant	Hotel	Beach	Organic Grocery	Paper / Office Supplies Store
9	Rotorua	TOWN	49533	Bay of Plenty Region	Rotorua District	2	176.251523	-38.137847	455000	1	Café	Hotel	Pizza Place	Hostel	Motel	Pedestrian Plaza	Pool	Steakhouse	Furniture / Home Store
10) Poriru	a USAT	46023	3 Wellington Region		y 2	174.842505	-41.138316	600000	4	Furniture / Home Store	Grocery Store	Café	Paper / Office Supplies Store	Skate Park	Pizza Place	Burger Joint	Pet Store	Fast Food Restaurant
11	Whangare	ei TOWN	4508	7 Northland Region			174.322041	-35.726603	515000	4	Café	Supermarket	Fast Food Restaurant	Gastropub	Middle Eastern Restaurant	Coffee Shop	Bakery	Restaurant	Electronics Store
12	2 Invercarg	ill TOWN	42129	Southland Region			168.347374	-46.412985	318000	4	Café	Burger Joint	Department Store	Bar	Food	Food & Drink Shop	Fast Food Restaurant	Supermarket	Movie Theater
13	Nev Plymout		41925	Taranak Region		n 2	174.076095	-39.057195	475000	1	Restaurant	Café	Coffee Shop	American Restaurant	Hotel	Thai Restaurant	Electronics Store	Bar	Bakery

Clusters Map



Discussion and conclusion

- We classified the 14 most populated cities of New Zealand. These studies can be vital for people looking to migrate to New Zealand, helping then to select the suited city for theirs needs.
- Cluster 2, which consists of the cities of Hamilton,
 Dunedin, Lower Hutt, Palmerston North, Rotorua and
 New Plymouth, has low population and low house prices.