



Restaurant Recommend ation

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Introduction

- A new couple was planning to move to and retire in Phoenix area
- They would like to know what types of restaurants they can open
- A predictive model was built for recommendation

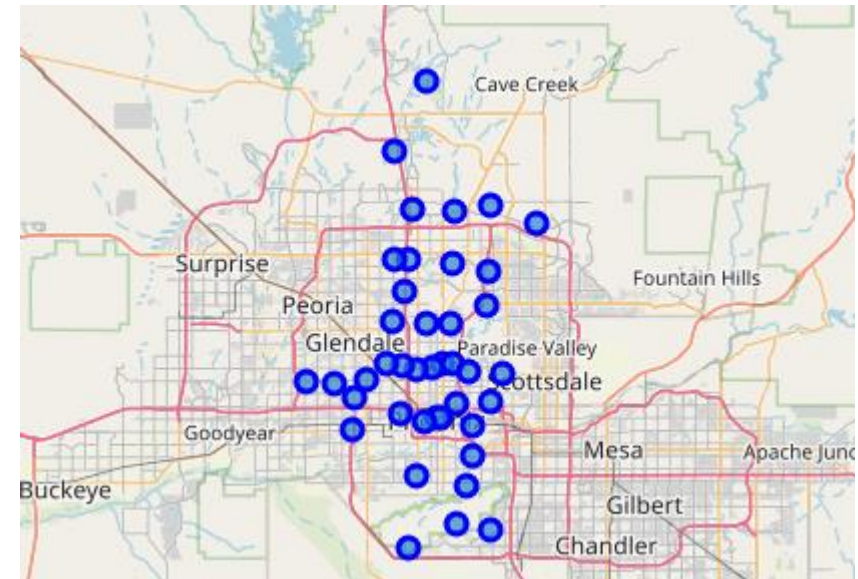
Data Source

- Foursquare
- <https://www.zipdatamaps.com/zipcodes-phoenix-az>
- <https://phoenix.areaconnect.com/zip2.htm?search=zip>

Data Cleaning

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	85003	33.452	-112.075	Phoenix Public Market Caf��	33.455692	-112.073086	New American Restaurant
1	85003	33.452	-112.075	The Breadfruit	33.455662	-112.072009	Caribbean Restaurant
2	85003	33.452	-112.075	The Vig Fillmore	33.454926	-112.079308	American Restaurant
3	85003	33.452	-112.075	Harumi Sushi	33.449785	-112.075276	Sushi Restaurant
4	85003	33.452	-112.075	The Arrogant Butcher	33.447354	-112.072632	American Restaurant
5	85003	33.452	-112.075	Chick-fil-A	33.453619	-112.071545	Fast Food Restaurant

	zipcode	Population	Latitude	Longitude
0	85003	9369.0	33.452	-112.075
1	85004	4965.0	33.451	-112.068
2	85006	25742.0	33.469	-112.046
3	85007	14040.0	33.448	-112.090
4	85008	56145.0	33.470	-111.999
5	85009	52520.0	33.457	-112.123
6	85012	6390.0	33.513	-112.066



Results (1)

----85003----

	venue	freq
0	American Restaurant	0.27
1	New American Restaurant	0.20
2	Mexican Restaurant	0.13
3	Sushi Restaurant	0.07
4	Mediterranean Restaurant	0.07

----85004----

	venue	freq
0	American Restaurant	0.35
1	New American Restaurant	0.18
2	Southern / Soul Food Restaurant	0.12
3	Caribbean Restaurant	0.06
4	Sushi Restaurant	0.06

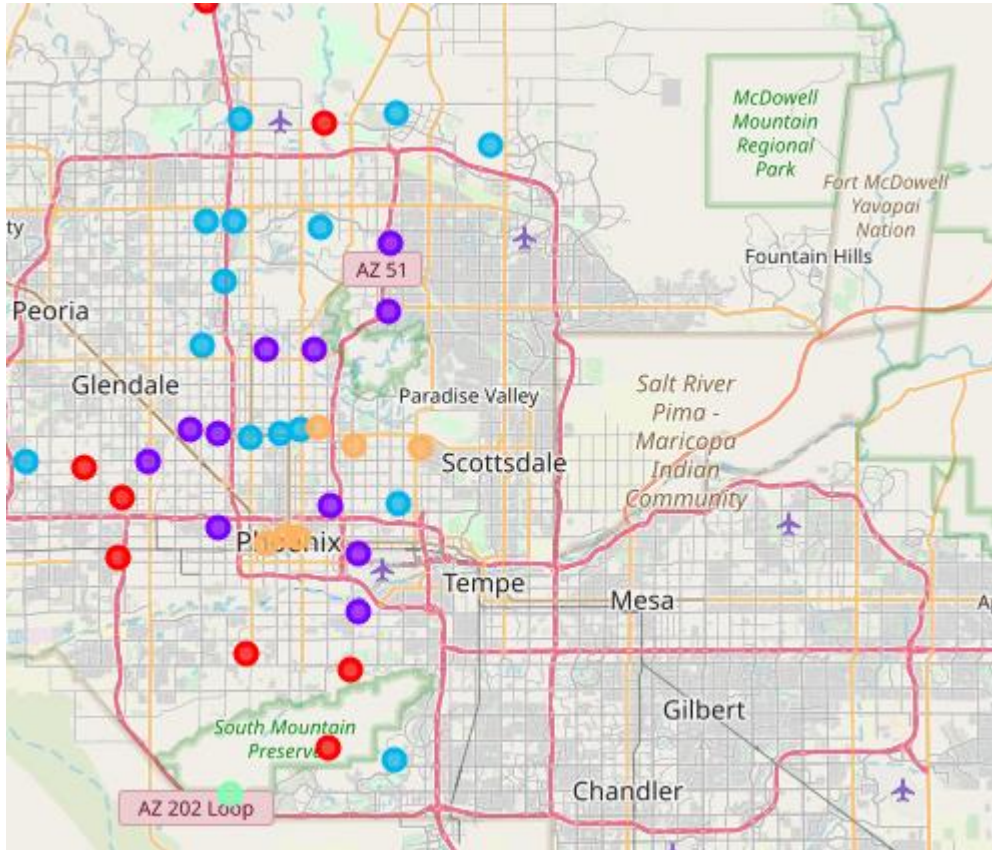
	Population	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	9369.0	33.452	-112.075	3	American Restaurant	New American Restaurant	Mexican Restaurant	Mediterranean Restaurant	Sushi Restaurant
1	4965.0	33.451	-112.068	3	American Restaurant	New American Restaurant	Southern / Soul Food Restaurant	Mediterranean Restaurant	Sushi Restaurant
3	14040.0	33.448	-112.090	3	Mexican Restaurant	American Restaurant	New American Restaurant	Southern / Soul Food Restaurant	Sushi Restaurant
6	6390.0	33.513	-112.066	3	Mexican Restaurant	American Restaurant	Sushi Restaurant	New American Restaurant	Latin American Restaurant
8	24782.0	33.514	-112.053	3	Mexican Restaurant	American Restaurant	New American Restaurant	Sushi Restaurant	Latin American Restaurant
10	33896.0	33.504	-112.029	3	American Restaurant	New American Restaurant	Mexican Restaurant	Italian Restaurant	Sushi Restaurant

Results (2)

	Population	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
2	25742.0	33.469	-112.046	1	Mexican Restaurant	New American Restaurant	American Restaurant	Restaurant
4	56145.0	33.470	-111.999	1	Mexican Restaurant	Italian Restaurant	American Restaurant	Restaurant
5	52520.0	33.457	-112.123	1	Mexican Restaurant	American Restaurant	New American Restaurant	Italian Restaurant
7	19314.0	33.510	-112.080	1	Mexican Restaurant	Italian Restaurant	New American Restaurant	Restaurant
9	37644.0	33.508	-112.101	1	Mexican Restaurant	American Restaurant	Vietnamese Restaurant	New American Restaurant
11	38872.0	33.511	-112.122	1	Mexican Restaurant	Vietnamese Restaurant	Thai Restaurant	American Restaurant

	Population	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	C
33	7238.0	33.304	-112.114	2	Asian Restaurant	Vietnamese Restaurant	Fondue Restaurant	Hotpot Restaurant	Hawaiian Restaurant	H

Results (3)



Conclusion

- If you want to have a new restaurant in the Phoenix area, you can either have the same type of restaurant in the area with most populations or try to open a total different type of restaurant based on the above result.