

Applied Data Science Capstone Project Presentation

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Introduction

Learn about potential new office locations

- The Dublin Ohio development lab office is likely to move to a new location in the next year or two.
- This obviously has the potential to impact life positively or negatively for each employee.
- I would like to understand venue types in particular areas of the city as well as what drive time I could expect from my home location to the new potential office locations.

Data

My data will come from a number of sources, including wikipedia, google/bing, foursquare and the USPS.

- The following data sources were used:
 - wikipedia and other sites about Columbus Ohio to gather zip code and neighborhood info.
 - foursquare to collect info on locations and venues
 - google/bing to determine drive time to each location from my home.
- The data zip code and neighborhood data will be of the format:
Zip, neighborhood, longitude, latitude
- The venue data will be of the format:
Neighborhood, top venues 1-10
- The travel data will be of the format:
Neighborhood, travel distance to location, travel time to location

Discussion

- Several of the locations close to my home also have good venue options but I do worry about Delaware given the lack of restaurants and cafes shown in the results.

Methodology

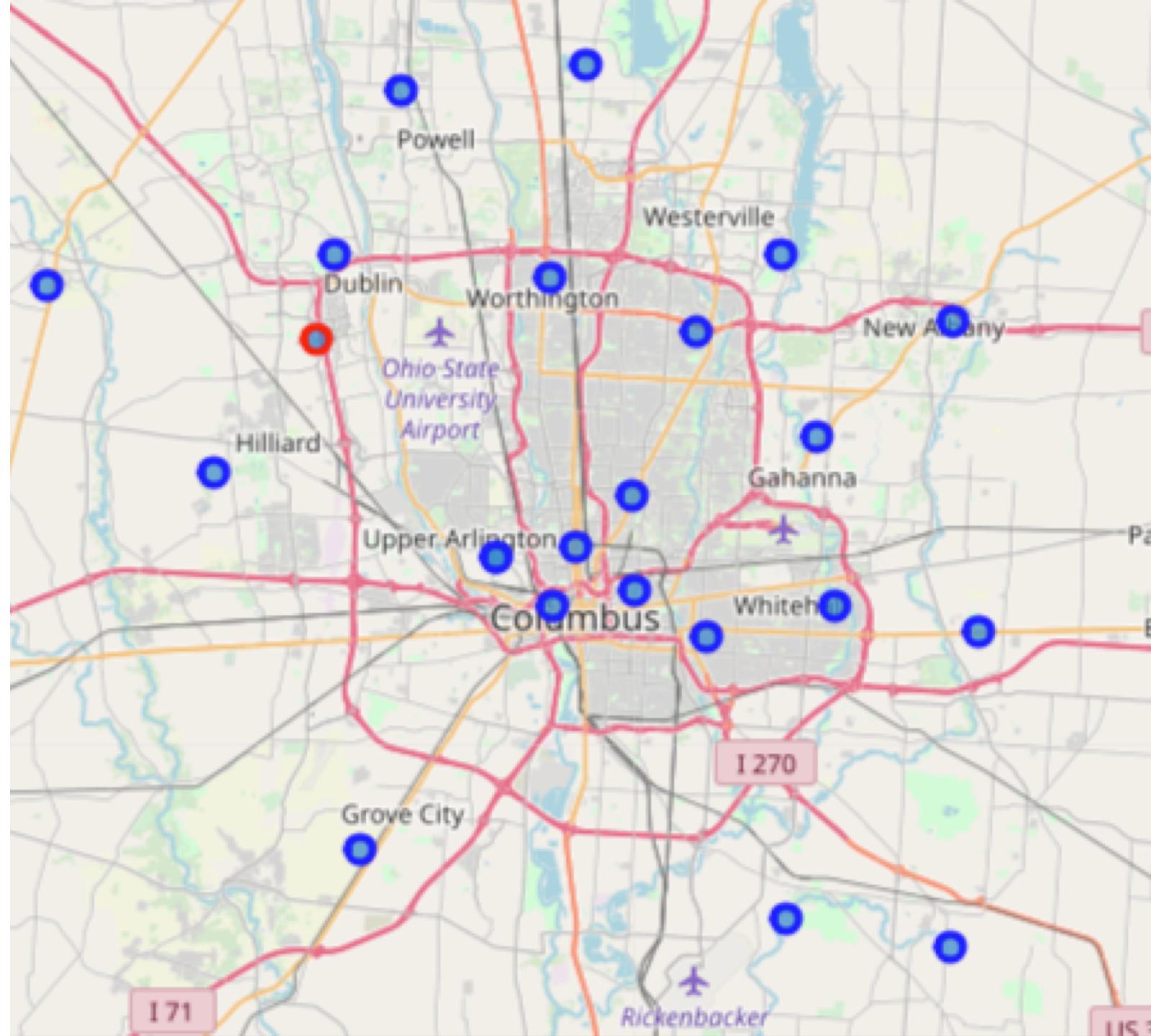
- The exploratory data analysis is explained in detailed in the Jupyter notebook. See the notebook for futher details.
- Collect a list of areas around Columbus.
- Use Foursquare REST APIs to determine the zipcode and longitude and latitude data for those areas.
- Use Foursquare REST APIs to determine the most common venue types for each target area.
- Use Bing REST APIs to determine drive time and drive distance between my home and each target area.

Results

- As you can see in the following data, the top locations for me are Powell, Lewis Center, Dublin (where the office is now) and Westerville.
- I do worry about Delaware given the lack of restaurants and cafes shown in the results.

Columbus Area Map

- Areas around Columbus and the existing Dublin office.



Neighborhood	Postcode	Longitude	Latitude	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
Bexley	43209	-82.9307	39.9536	Sandwich Place	Bank	Pizza Place	Pharmacy
Canal Winchester	43110	-82.8001	39.8267	Wings Joint	Convenience Store	Deli / Bodega	Diner
Columbus	43215	-83.013	39.9669	Rock Club	Deli / Bodega	Park	Business Service
Delaware	43015	-83.0602	40.2978	Grocery Store	BBQ Joint	Garden Center	Liquor Store
Dublin	43017	-83.129	40.1107	Football Stadium	Baseball Field	Wings Joint	Food & Drink Shop

- Collect data for each area to show the most common venues types.

Top Venues per Area

- Determine the driving distance time from my home to each potential new office location.

Distance and Drive time

	Neighborhood	Drive Distance	Drive Time
17	Powell	15.614	935
11	Lewis Center	16.945	1043
4	Dublin	21.689	1060
21	Westerville	22.324	1189
3	Delaware	22.768	1237
23	Worthington	23.471	1272
13	Marysville	23.072	1299
15	New Albany	27.005	1309
16	Plain City	24.017	1321
14	Minerva Park	27.464	1351

Neighborhood	Drive Distance	Drive Time	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
Powell	15.614	935	Café	Wings Joint	Food & Drink Shop	Deli / Bodega
Lewis Center	16.945	1043	Park	Restaurant	Baseball Field	Wings Joint
Dublin	21.689	1060	Football Stadium	Baseball Field	Wings Joint	Food & Drink Shop
Westerville	22.324	1189	Park	Wings Joint	Food & Drink Shop	Deli / Bodega
Delaware	22.768	1237	Grocery Store	BBQ Joint	Garden Center	Liquor Store
Worthington	23.471	1272	Furniture / Home Store	Bakery	Restaurant	Playground
Marysville	23.072	1299	Pizza Place	Dog Run	Wings Joint	Food & Drink Shop
New Albany	27.005	1309	Food Truck	Coffee Shop	Liquor Store	Food Court
Plain City	24.017	1321	Wings Joint	Convenience Store	Deli / Bodega	Diner
Minerva Park	27.464	1351	Golf Course	Park	Pool	Garden Center

Top Locations

Conclusion

- There are several good locations for the new office that would be reasonable driving distance and offer an acceptable level of venues for lunch and shopping.
- An analysis of more detailed longitude and latitude locations with tighter radius should be done.