

Workspace for Freelancers and Entrepreneurs

- Where can they work from when they can't (or don't want to) work from home?
- What do they need to work productively (assumptions)?
- Where in the county are their needs best met?
- If a developer wanted to open a dedicated cowork space, where would one do it?

Assumptions and Needs

- Individual Self-Employed Freelancer or Entrepreneur
- No special equipment to do their job
- Commercial space is not an option
- Plug in for computer and public WiFi
- Occasional use of meeting space
- Daily use, no long term contracts
- Coffee



Options Available

- Cafes
- Coffee Shops
- Tea Rooms
- Libraries
- Dedicated Coworking Spaces

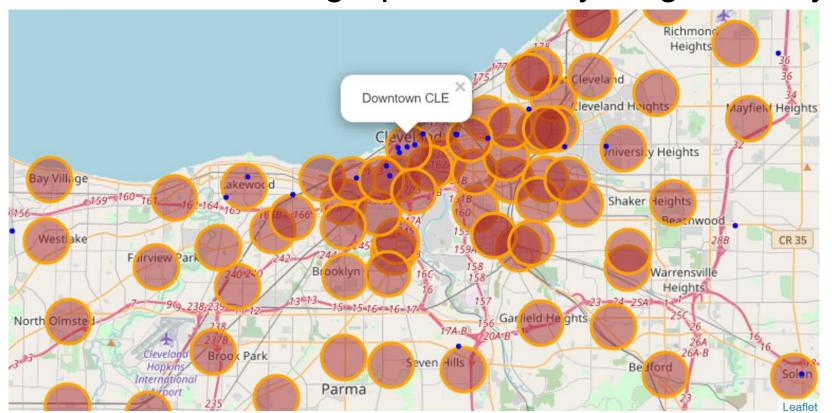


Cleveland and Cuyahoga County, Ohio

- 1.25 million residents
- Approximately 15,000 freelancers
- 26 neighborhoods in city of Cleveland
- 53 unique zip codes in Cuyahoga County



Dedicated Coworking Spaces in Cuyahoga County



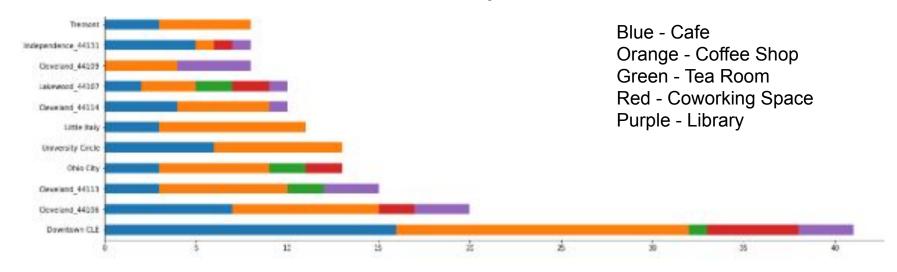
Data Sources

- Neighborhoods Cleveland Live
- Cafes, Coffee Houses, Tea Rooms Foursquare API
- Libraries Ohio Public Library Information Network (OPLIN) and Ohio Library Service
- Coworking Spaces Google search, word-of-mouth, visits

Methodology

- 1. Collected Data on geography and venues in Cuyahoga County
- 2. Uploaded into Jupyter notebook running python
- 3. Basic data analysis on location data, create maps using Folium
- 4. Used Foursquare API to collect data on cafes, coffee shops and tea rooms
- 5. Analyzed Downtown Cleveland neighborhood
- 6. Grouped and counted numbers of venues in each neighborhood or Cuyahoga County, used data visualization techniques
- 7. Performed KMeans analysis on neighborhoods to determine which neighborhoods were most closely related to other neighborhoods
- 8. Plotted Kmeans clusters on a map and analyzed

Results - Top 10 Areas for Day Use Work Space



- 1. Downtown Cleveland
- 2. Cleveland 44106
- 3. Cleveland_44113
- 4. Ohio City
- 5. University Circle

- 6. Little Italy
- 7. Cleveland_44114
- 8. Lakewood
- 9. Cleveland_44109
- 10. Independence

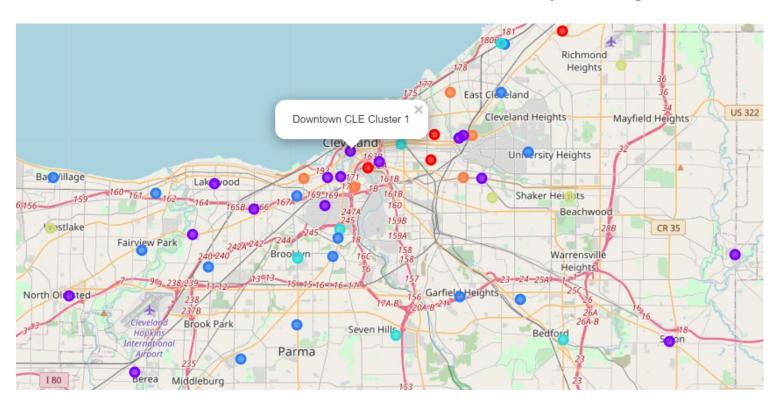
Table 1: Top 10 Areas in Cuyahoga County for Coworking-type Venues

	Café	Coffee Shop	Tea Room	coworking	Libraries
Area					
Downtown CLE	16	16	1	5	3
Cleveland_44106	7	8	0	2	3
Cleveland_44113	3	7	2	0	3
Ohio City	3	6	2	2	0
University Circle	6	7	0	0	0
Little Italy	3	8	0	0	0
Cleveland_44114	4	5	0	0	1
Lakewood_44107	2	3	2	2	1
Cleveland_44109	0	4	0	0	4
Independence_44131	5	1	0	1	1

KMeans Clustering

- Machine learning method for clustering data into similar groups
- 7 clusters were created
- Each element in a cluster is more similar to other elements than to those in other clusters

Map of KMeans Clusters in Cuyahoga County



Cluster Key

0:red 1:purple 2:dk blue 3:lt blue 4:green 5:yellow 6:orange

Clusters

- Cluster 0 (red): There are 5 areas in this cluster. All of them have Cafes only.
- Cluster 1 (purple): There are 18 areas in this cluster w/ a mix of venues.
- Cluster 2 (dk blue): 14 areas of mixed venues, all of which have a library, but no coworking spaces.
- Cluster 3 (It blue): 8 areas with mixed venues, but all contain both coffee shops and a library.
- Cluster 4 (green): Consists of only 1 area. Contains only a Tea Room.
- Cluster 5 (orange): Consists of 4 areas, all with both libraries and coworking spaces but no cafes.
- Cluster 6 (yellow): 5 areas containing only cafes and coffee houses.

Conclusions

- For the freelancer or entrepreneur:
 - There are several areas with multiple options for day use work space
 - Best Downtown Cleveland area, University Circle, Ohio City, and Lakewood
 - There are 22 dedicated coworking locations in the County
- For the Developer of dedicated coworking spaces Cluster 6
 - May be a good place to consider a dedicated coworking space
 - Has both coffee houses and cafes, but no cowork space
 - Little Italy, Tremont, Glenville, Detroit Shoreway, Buckeye-Woodhill