

**The Battle of Neighborhoods**

**“Which City to Settle in Collin County, Texas”**

Coursera IBM Applied Science Capstone Project

May 2019

# Problem Statement

Dallas-Fort Worth-Arlington metropolitan area has been evolving quickly and constantly over the past 10 years, it has become top 10 area in the nation for people to relocate. Collin county is one of the popular counties in the Dallas-Fort Worth-Arlington area. Many fortune 500 companies have their presence here, including PepsiCo, Toyota, JCPenney, JPMorgan Chase and many others. Collin County has 21 cities and offers safe, diverse, and vibrant environment that attracts many talent each year from all over the country.

**Question:** Which city would be a better option?

**Factors to Consider:**

- Collin county composing cities and their location
- Housing, employment, density, safety, school, entertainment/services and commute

# Approach

- Understanding data need, collect and prepare required data
- Gain general impression of Collin county
- Look deeper what each city offers
- Analyze, combine information gained and derive final recommendation

# Approach --- Step 1

Gain general impression of Collin county

Population

969,603

Median Age

37

Median Household Income

\$94,933

Proverty Rate

6.86%

Number of Employees

509,466

Median House Value

\$323,500

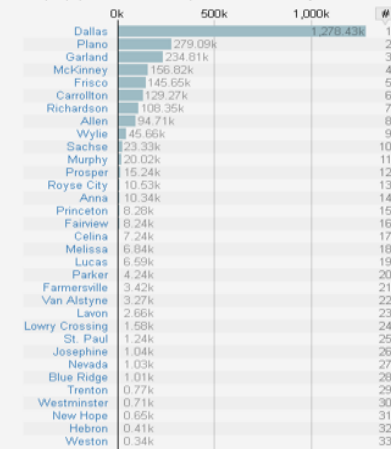
Avg Commute Time

30 Minues

There are 33 places that are fully or partially contained within Collin County (18 fully and 15 partially). This section compares all 33 of those to each other.

Total Population by Place

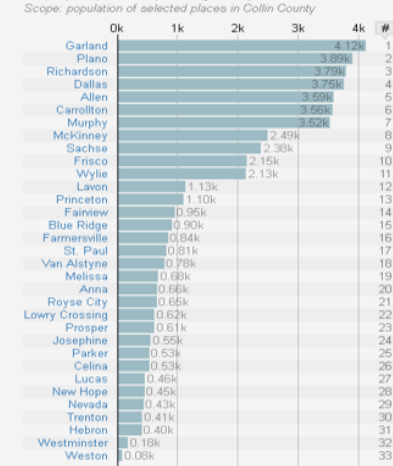
Scope: population of selected places in Collin County



# rank of place out of 33 by population

Population Density by Place

Scope: population of selected places in Collin County

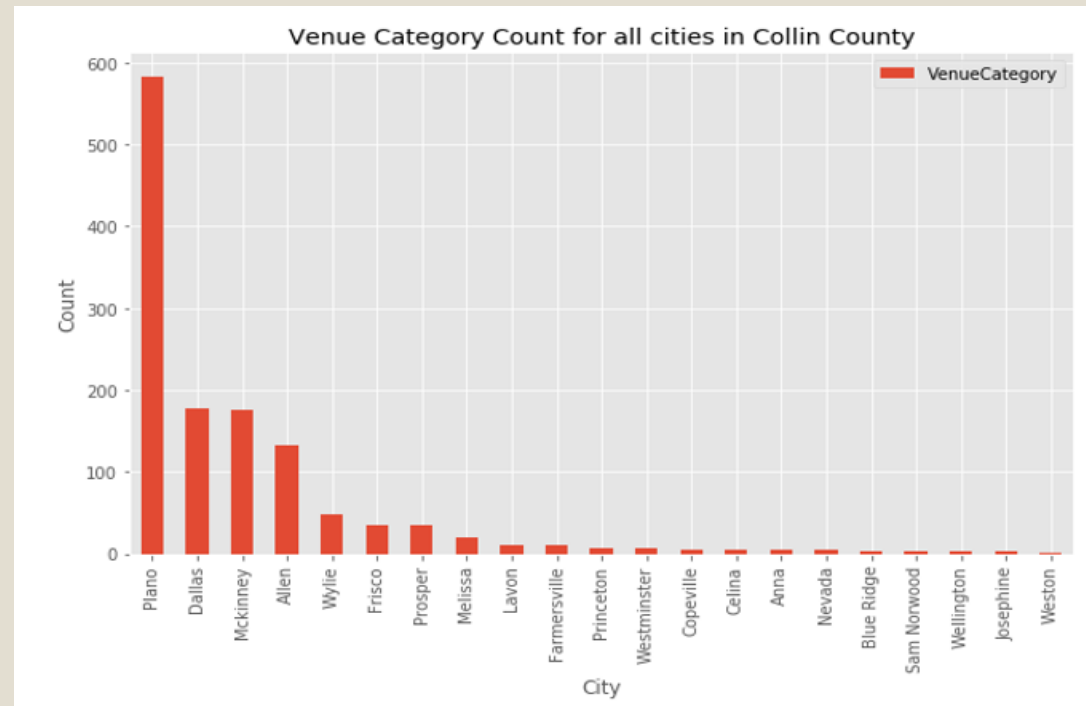


# rank of place out of 33 by population density

Source from statisticalatas.com

# Approach --- Step 2

Explore what each city offers by leveraging Foursquare local data, understand amount and variety of venues that each city has

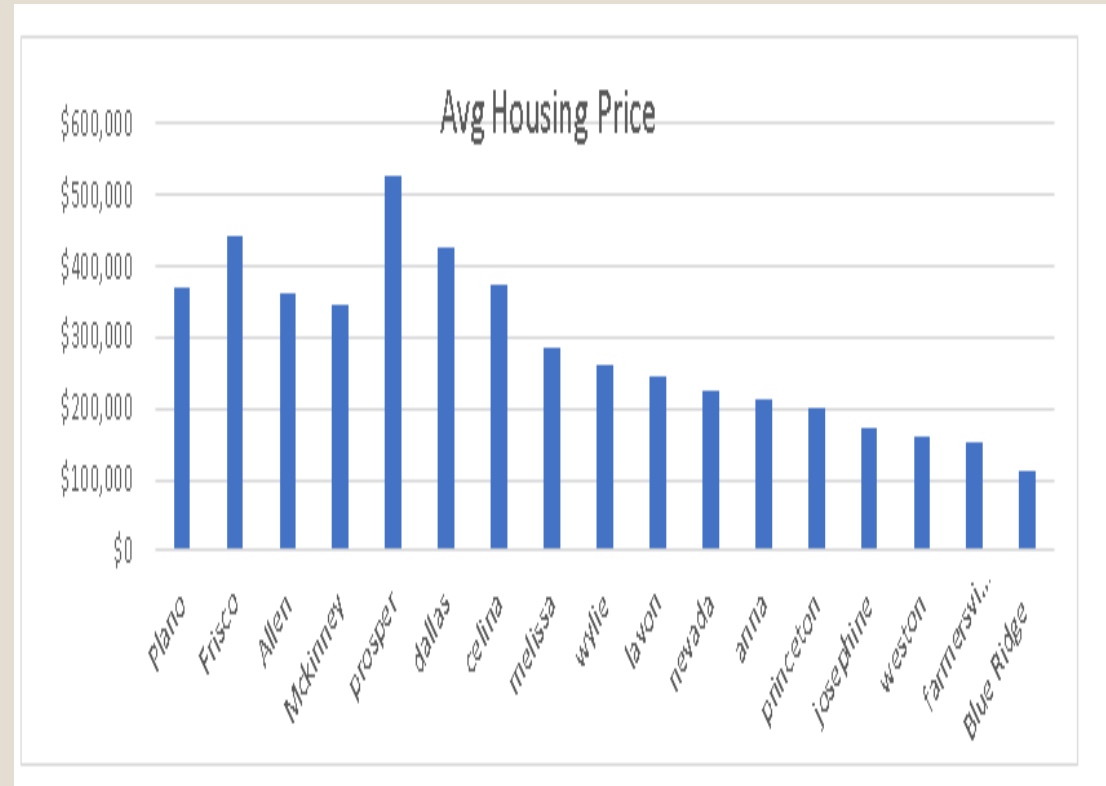
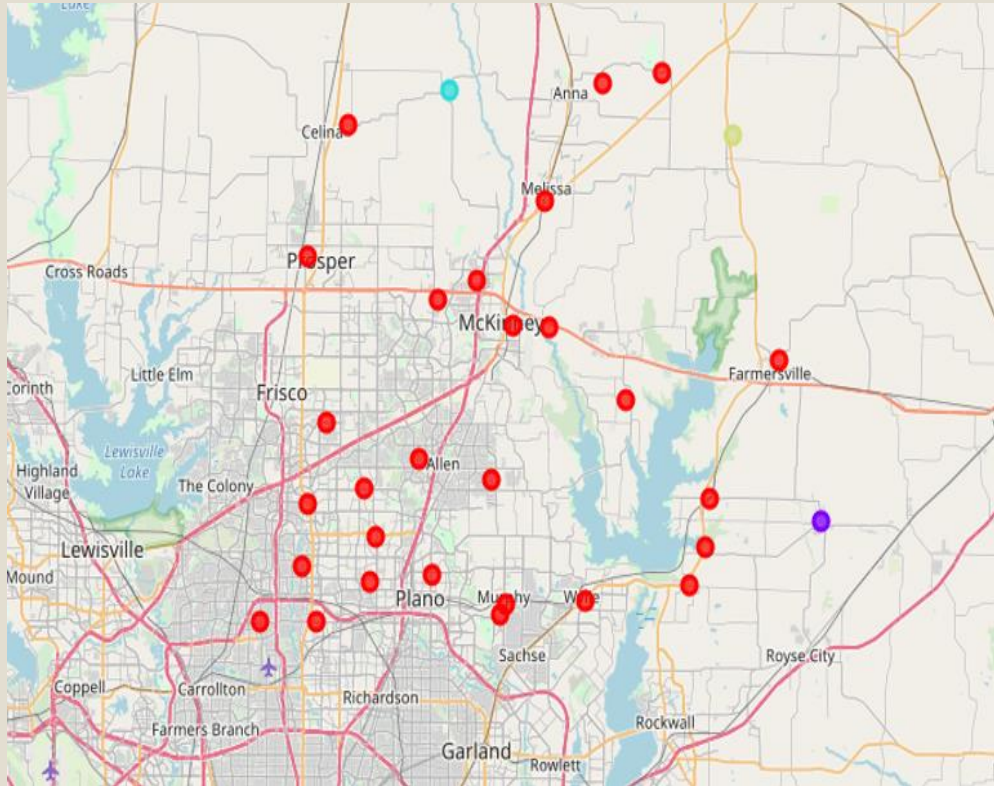


	City	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Allen	Fast Food Restaurant	Pizza Place	Pharmacy	Mexican Restaurant	Coffee Shop	Bank	Convenience Store	Burger Joint	Gym / Fitness Center	Gym
1	Anna	Antique Shop	Italian Restaurant	Event Service	Other Repair Shop	Yoga Studio	Fast Food Restaurant	French Restaurant	Football Stadium	Food Truck	Food Court
2	Blue Ridge	Football Stadium	Convenience Store	Clothing Store	Yoga Studio	Farmers Market	French Restaurant	Food Truck	Food Court	Food	Flower Shop
3	Celina	Café	Discount Store	Football Stadium	Pharmacy	Trail	Yoga Studio	French Restaurant	Food Truck	Food Court	Food
4	Copeville	Construction & Landscaping	River	Video Store	Farmers Market	French Restaurant	Football Stadium	Food Truck	Food Court	Food	Flower Shop
5	Dallas	Mexican Restaurant	Convenience Store	Fast Food Restaurant	Pizza Place	Sushi Restaurant	American Restaurant	Coffee Shop	Seafood Restaurant	Fried Chicken Joint	Grocery Store
6	Farmersville	Discount Store	Restaurant	Café	American Restaurant	Diner	Mexican Restaurant	Food	Chinese Restaurant	Gift Shop	Fast Food Restaurant
7	Frisco	Video Store	Pizza Place	Coffee Shop	Athletics & Sports	Convenience Store	Dessert Shop	Home Service	Donut Shop	South Indian Restaurant	Mobile Phone Shop
8	Josephine	Gas Station	Park	Yoga Studio	Fried Chicken Joint	Football Stadium	Food Truck	Food Court	Food	Flower Shop	Flea Market
9	Lavon	Mexican Restaurant	Discount Store	Convenience Store	BBQ Joint	Gas Station	Auto Garage	Fast Food Restaurant	Sandwich Place	Intersection	Donut Shop
10	McKinney	Pizza Place	Mexican Restaurant	American Restaurant	Sandwich Place	Café	Convenience Store	Burger Joint	Fried Chicken Joint	Discount Store	Pharmacy
11	Melissa	Gas Station	Convenience Store	Donut Shop	Home Service	Thai Restaurant	Pizza Place	Sandwich Place	Construction & Landscaping	Pharmacy	Fast Food Restaurant
12	Nevada	Dive Bar	Taco Place	Italian Restaurant	Gas Station	Yoga Studio	Fast Food Restaurant	French Restaurant	Football Stadium	Food Truck	Food Court
13	Plano	Pizza Place	Mexican Restaurant	Fast Food Restaurant	Sandwich Place	American Restaurant	Coffee Shop	Park	Pharmacy	Convenience Store	Burger Joint
14	Princeton	Farm	Stables	Insurance Office	Auto Workshop	Fast Food Restaurant	French Restaurant	Football Stadium	Food Truck	Food Court	Food
15	Prosper	Clothing Store	Café	American Restaurant	Pizza Place	Burger Joint	Fast Food Restaurant	Health & Beauty Service	Supermarket	Steakhouse	Spa
16	Sam Norwood	Hotel	Fast Food Restaurant	Motel	Discount Store	Fish & Chips Shop	Fried Chicken Joint	French Restaurant	Football Stadium	Food Truck	Food Court
17	Wellington	Diner	Fast Food Restaurant	Construction & Landscaping	Fried Chicken Joint	French Restaurant	Football Stadium	Food Truck	Food Court	Food	Flower Shop
18	Westminster	Campground	Golf Course	Burger Joint	Restaurant	Dive Bar	Discount Store	Football Stadium	Food Truck	Food Court	Food
19	Weston	American Restaurant	Yoga Studio	Fast Food Restaurant	Fried Chicken Joint	French Restaurant	Football Stadium	Food Truck	Food Court	Food	Flower Shop
20	Wylie	Fast Food Restaurant	Pizza Place	American Restaurant	Mexican Restaurant	Pharmacy	Grocery Store	Coffee Shop	Sandwich Place	Gas Station	Italian Restaurant

Picture 3 – top 10 venue list

# Approach --- Step 3

Apply K-mans clustering algorithm to group cities and combination the result with information gained from various resources



# Approach --- Step 4

Draw comprehensive picture of city groups

	<b>Plano, Frisco, Allen, Mckinney</b>	<b>Prosper, Wyllie, Melissa, Princeton</b>	<b>Weston, Blue Ridge, Josephine , Sam Norwood and cities around boarder</b>
<b>Location</b>	Center	Close to center	around boader area of the county
<b>Housing (\$)</b>	High	Medium - High	Low
<b>Population</b>	High	Medium	low
<b>No. Venues</b>	High	Medium	Low
<b>No. Corporations</b>	High	Medium - Low	Low
<b>Safety</b>	Good	Good	Good
<b>School Ranking</b>	A+	A-, A, A+	B-, B
school ranking source: <a href="https://www.niche.com/k12/search/best-school-districts/c/collin-county-tx/">https://www.niche.com/k12/search/best-school-districts/c/collin-county-tx/</a>			
employer source: <a href="https://www.planotexas.org/133/Leading-Employers">https://www.planotexas.org/133/Leading-Employers</a> ; <a href="http://www.discovercollincounty.com/top-employers-collin-county/">http://www.discovercollincounty.com/top-employers-collin-county/</a>			

# Recommendation

Collin county in general is a safe, fast-growing and relative low-cost area that offers different style of high quality living

For people who are considering moving into Collin county, following are three group of cities to consider

- **Plano, Frisco, McKinney, Allen**

These four cities are around central area of the county, they are good options for individuals or families who are seeking great employment opportunity, vibrant amenities, best schools (9 out of 10 or 10 ranking), short commute, easy access to variety of popular city venues. The downside is average housing price are rising and relatively higher than other cities within the county. Among these four cities, Frisco and Allen offer attractive sports facilities, Plano and Allen have many parks and natural trails.

- **Weston, Blue Ridge, Josephine , Sam Norwood**

For people or families like quiet rural and country style living but are within the proximity to bigger-city amenities, if top schools are not the primary concern and willing for longer commute, Weston, Blue Ridge, Josephine, and some of the cities around the county border are good choices. As an incentive, average housing prices are much lower compare to those in the center area.

- **Prosper, Wyllie, Melissa, Princeton**

If families are looking for mixed city-country living , relatively good schools (school ratings are 6 or higher out of 10) are preferred and doesn't want to sacrifice the convenience to good dining, shopping and recreation, willing to commute at certain degree in exchange of bigger and better housing with same or lower prices compare to those in Plano, Frisco, Allen and McKinney, cities like Melissa, Princeton, Wyllie, Anna are good alternatives. Prosper and Celina are two exceptional in terms of housing price in this group, this is due to explorative demand of housing in recent years along with people seeking some level of rural living environment.



**Thank You !**