Churches and Coffee: The Best Geographically positioned churches

This project seeks the answer to two questions:

A. Given existing churches, which church is best located to take advantage of venues (cafes and coffee houses) to meet and discuss spiritual topics in order to share the gospel of Jesus Christ.

B. If a group of Christians were interested in starting a new church, what neighborhood would be an optimal choice in terms of nearby venues (cafes and coffee houses) that facilitate conversation and relationship building.

Part A

6.Define and apply a function that returns the closest centroid (church) for each point(venue or cafe/coffee house). We will use 'numpy broadcasting' to do this. Refer to the blog https://flothesof.github.io/k-means-numpy.html for an explanation of how numpy is used to identify which venue is assigned to which centroid.

7.Create a table of churches, sorted, in descending order, with the church having the most cafes/coffee houses nearby at the top.

No. of Nearby Cafes/Coffee Houses

Venue	
St Jamestown Community Church	29
St. Marys Church	24
Trinity-St Pauls United Church	23
Farmer Memorial Baptist Church	22
Metropolitan United Church	18
St Johns Parish Church	15
Corpus Christi Catholic Church	13
St. Michaels Cathedral	12
Holy Family Church	11
Holy Trinity Church	11
St Helens Church Band	9
St James Anglican Cathedral	7
St James Cathedral	5
St Peter Catholic Church	4
St. Barnabas Roman Catholic Church	3
Holy Name Church	3
United Church of God Toronto,ON	3
St Patricks Church	2
Little Trinity Church	1

Part B

8.This part of the project that deals with answering the question of where to locate a new church, uses steps 1. - 4. above as well as applying K-Means cluster analysis to the data in order to find the neighborhood with the attribute of having many cafes / Coffee Houses. This is the same analysis as done in the assignment for Week 3 of this Capstone Project.

Most Common Venue of Coffee Shops is in Downtown Toronto

	Borough	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	10th Most Common Venue
52	Downtown Toronto	1.0	Coffee Shop	Sushi Restaurant	Japanese Restaurant	Gay Bar	Restaurant	Pub	Men's Store	Mediterranean Restaurant	Hotel	Yoga Studio
53	Downtown Toronto	1.0	Coffee Shop	Bakery	Park	Pub	Breakfast Spot	Café	Theater	Distribution Center	Electronics Store	Bank
54	Downtown Toronto	1.0	Clothing Store	Coffee Shop	Café	Japanese Restaurant	Cosmetics Shop	Bubble Tea Shop	Pizza Place	Hotel	Furniture / Home Store	Bookstore
55	Downtown Toronto	1.0	Coffee Shop	Café	Restaurant	Cocktail Bar	American Restaurant	Beer Bar	Gastropub	Seafood Restaurant	Hotel	Japanese Restaurant
57	Downtown Toronto	1.0	Coffee Shop	Café	Italian Restaurant	Sandwich Place	Thai Restaurant	Salad Place	Japanese Restaurant	Burger Joint	Bubble Tea Shop	Department Store
58	Downtown Toronto	1.0	Coffee Shop	Café	Hotel	Gym	Restaurant	Bar	Clothing Store	Thai Restaurant	Bookstore	Office
59	Downtown Toronto	1.0	Coffee Shop	Aquarium	Café	Hotel	Scenic Lookout	Pizza Place	Fried Chicken Joint	Brewery	Restaurant	Italian Restaurant
60	Downtown Toronto	1.0	Coffee Shop	Hotel	Café	Restaurant	Japanese Restaurant	Salad Place	Seafood Restaurant	American Restaurant	Asian Restaurant	Deli / Bodega
61	Downtown Toronto	1.0	Coffee Shop	Restaurant	Café	Hotel	Gym	Japanese Restaurant	Deli / Bodega	Seafood Restaurant	Italian Restaurant	American Restaurant
69	Downtown Toronto	1.0	Coffee Shop	Italian Restaurant	Restaurant	Seafood Restaurant	Pub	Café	Hotel	Beer Bar	Japanese Restaurant	Breakfast Spot
70	Downtown Toronto	1.0	Coffee Shop	Café	Hotel	Restaurant	Gym	Japanese Restaurant	Salad Place	Steakhouse	American Restaurant	Seafood Restaurant