



# **Comparing Cities to Select Best Tourism Destination**

# Selecting Destination for Tour

- There are many international tourist destinations in the world like Paris, London, Sydney and many more.
- International Tour requires a good budget.
- It would be better if we know that we are guaranteed to have new experience or going to enjoy the tour.

# Data collection

- Foursquare API is used to get the data.
- For the project Paris, London, Sydney, New York, Toronto, and Wellington are considered for comparison.
- Top 10 venues with in radius of 100 m are taken from the Foursquare API.
- The latitudes and longitudes of cities are extracted from Geopy library.

# Datasets

	Cites	Latitude	Longitude
0	Paris	48.856610	2.351499
1	London	51.507322	-0.127647
2	Sydney	-33.854816	151.216454
3	New York	40.712728	-74.006015
4	Toronto	43.653963	-79.387207

Dataset of Cities which are Compared

# Datasets Continue...

	City	City Latitude	City Longitude	Venue	Venue id	Venue Latitude	Venue Longitude	Venue Category
0	Paris	48.856610	2.351499	Place de l'Hôtel de Ville – Esplanade de la Li...	4bf41231e5eba59334341f90	48.856925	2.351412	Plaza
1	Paris	48.856610	2.351499	Parc Rives de Seine	58e0f18f561ded7abcbbd01	48.855510	2.351419	Park
2	Paris	48.856610	2.351499	Berges de Seine – Rive droite	58d800df9435a979b8a645fa	48.855131	2.352289	Pedestrian Plaza
3	Paris	48.856610	2.351499	L'Alsacien	54351b59498e123ee4afc7ff	48.858275	2.350381	Alsatian Restaurant
4	Paris	48.856610	2.351499	Häagen-Dazs	4cb2fc20db32f04d6da9d34d	48.854879	2.350233	Ice Cream Shop

First 5 rows of complete dataset with venues details

# Dataset Analysis

- There are 45 unique venue categories as listed below
- 'Plaza' 'Park' 'Pedestrian Plaza' 'Alsatian Restaurant' 'Ice Cream Shop' 'Cosmetics Shop' 'Department Store' 'Pastry Shop' 'Historic Site' 'Art Museum' 'Fountain' 'Spa' 'Church' 'Hotel' 'Monument / Landmark' 'Art Gallery' 'Outdoor Sculpture' 'Concert Hall' 'Theater' 'Opera House' 'Australian Restaurant' 'Café' 'Cocktail Bar' 'Hotel Bar' 'Laundry Service' 'Coffee Shop' 'Dance Studio' 'French Restaurant' 'Gym / Fitness Center' 'Bakery' 'Indian Restaurant' 'Neighborhood' 'Sushi Restaurant' 'Poke Place' 'Ramen Restaurant' 'Tea Room' 'Japanese Restaurant' 'Arts & Crafts Store' 'Bubble Tea Shop' 'Waterfront' 'Creperie' 'Burger Joint' 'Gastropub' 'Vietnamese Restaurant' 'Beer Bar'

# K-means Clustering

- K-means clustering with  $k = 3$  is used for clustering the cities as per the similarities of venues in the cities.
- Venues are onehot coded first and the K-means algorithm is applied.

# Result





# Conclusion and Future Scope

- As we can see from the result that Wellington, Paris and Toronto are similar cities.
- Sydney is more similar to London as far as venues are considered.
- More cities can be included to get comparison of all major cities around world.
- To improve clustering, more venues or only specific venues like historic monuments, museums, parks, events etc., can be considered.