**Compare two cities (Hama and Homs) ‘neighborhood**

**Introduction:**

**The aim of this project to discover the similarity and difference of two cities regarding Neighborhoods.**

**We will collect infos about Neighborhood of each city (Name of Neighborhood, Venues, Location) and the cluster them and study the results.**

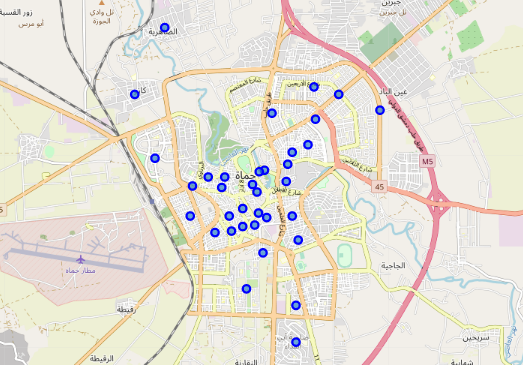
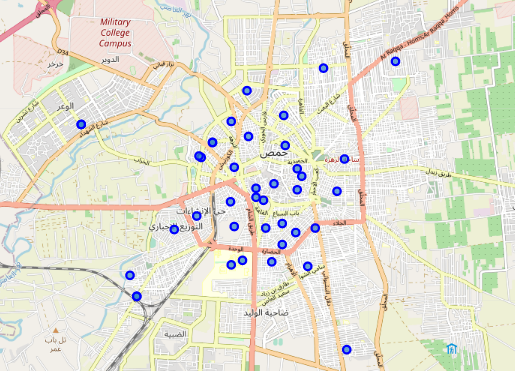
**Data Collection and Curation:**

**Data collected from the following sources**

* **Name of Neighborhood: wikiwand.com**
* **Geographic location: wikimapia.org**
* **Venues: Foursquare API**
* **Final data frame contains: City, Neighborhood, Ten most common venues (within 500-meter radius)**

**Data Analysis and Visualization:**

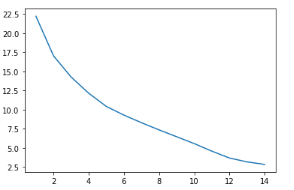
**Maps show the Neighborhood in both cities**

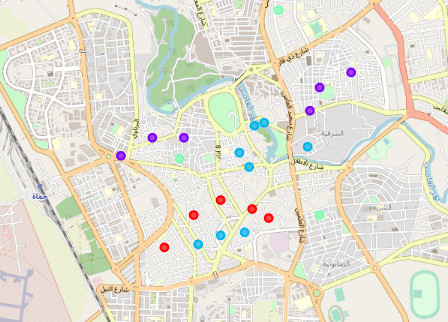
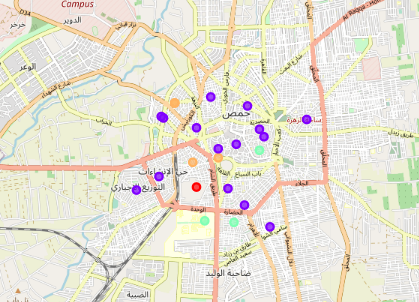
**Predictive Models:**

**We use k-means to cluster the Neighborhood regarding venues within 500 meter**

**Elbow technique used to determine the number of cluster (k=5)**



**Following maps show the results and comparing between the two cities**

**Red cluster: Neighborhood with Hotel, Supermarket, and bar which is suitable for tourist**

**purple cluster: Neighborhood with Bakery, Restaurant, and Café which is suitable for out-going**

**Dark cyan cluster: Neighborhood with Hotel and Dessert shop which is unique for Hama**

**Light cyan cluster: Neighbourhood with restaurant and markets (supermarket, market, or bakery)**

**Beige cluster: Neighbourhood with Pastry Shop mainly which is unique for Homs**

**Conclusion:**

**From the previous results we can conclude that:**

* **Hama has more common Neighborhood which may be suitable for tourist’s accommodation**
* **Homs has more suitable Neighborhood for out-going**
* **Both of them have few Neighborhood with Restaurant and Markets**
* **Hama is famous for dessert shops whereas Homs is famous for pastry shops**