

CLUSTERING THE CITY

VANCOUVER BC

DINO ROSSI - DEC. 2 2020

CLUSTERING THE CITY - VANCOUVER BC

- Data Collection
- Data Wrangling
- Data Analysis
- Clustering
- Conclusions

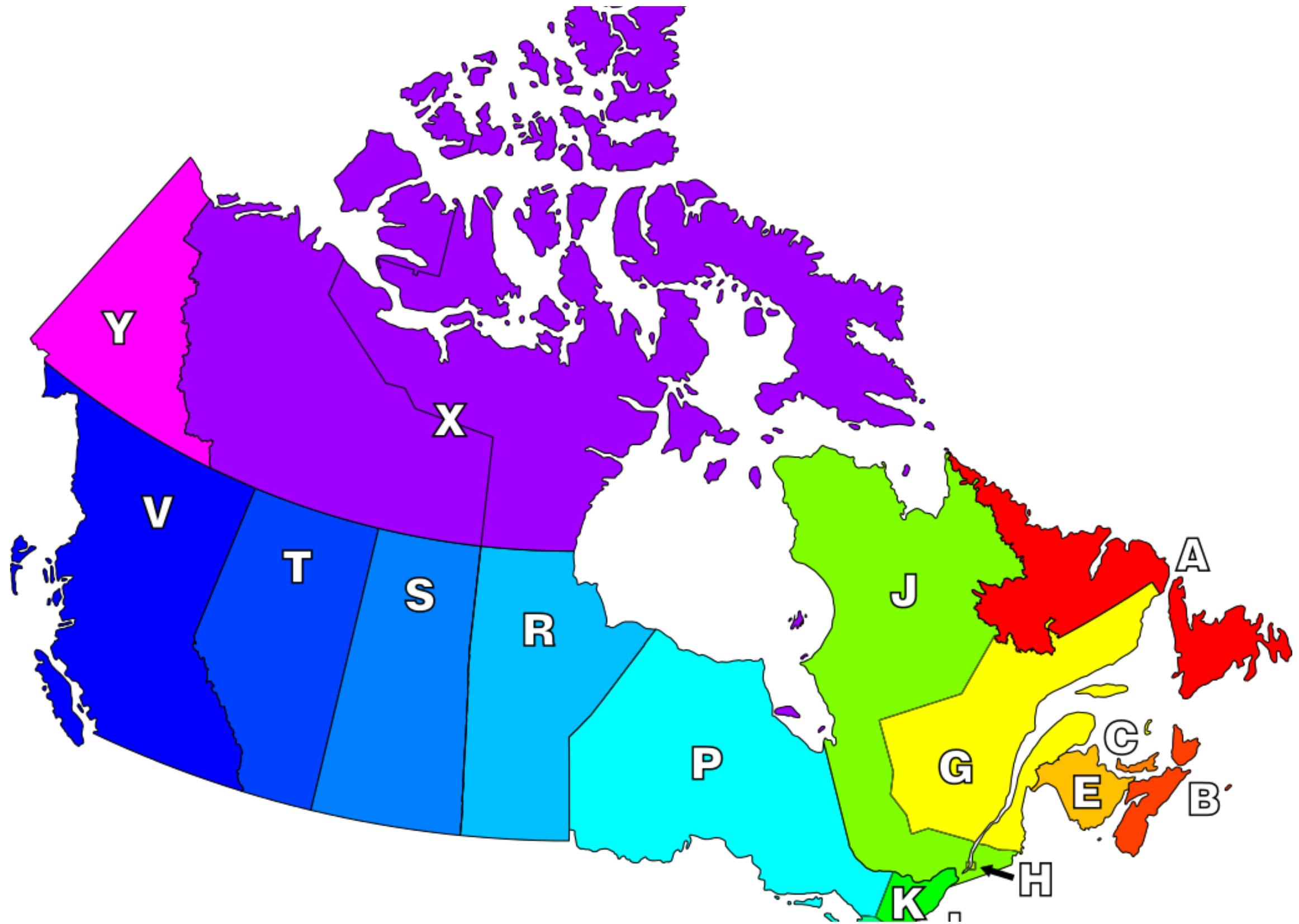
DATA COLLECTION

■ Vancouver BC



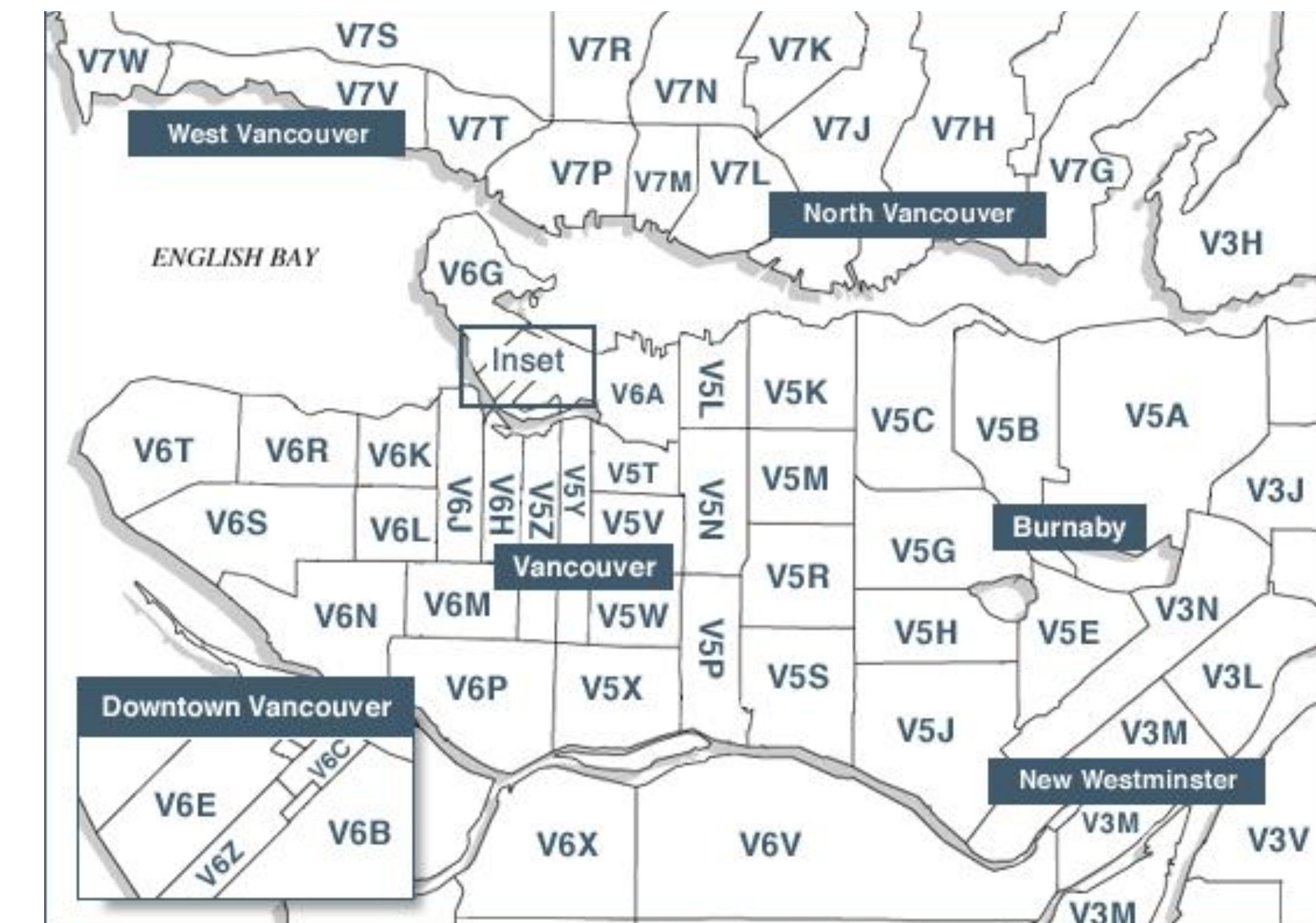
DATA COLLECTION

- Alphanumeric Postal Codes



DATA COLLECTION

Vancouver Postal Codes



DATA WRANGLING

Extracting Postal Codes

	0	1	2	3	4	5	6
0	V1AKimberley	V2APenticton	V3ALangley Township(Langley City)	V4ASurreySouthwest	V5ABurnaby(Government Road / Lake City / SFU /...)	V6AVancouver(Strathcona / Chinatown / Downtown...)	V7ARichmondSouth
1	V1BVernonEast	V2BKamloopsNorthwest	V3BPort CoquitlamCentral	V4BWhite Rock	V5BBurnaby(Parkcrest-Aubrey / Ardingley-Sprott)	V6BVancouver(NE Downtown / Gastown / Harbour C...)	V7BRichmond(Sea Island / YVR)
2	V1CCranbrook	V2CKamloopsCentral and Southeast	V3CPort CoquitlamSouth	V4CDeltaNortheast	V5CBurnaby(Burnaby Heights / Willingdon Height...)	V6CVancouver(Waterfront / Coal Harbour / Canad...)	V7CRichmondNorthwest
3	V1ESalmon Arm	V2EKamloopsSouth and West	V3ECoquitlamNorth	V4EDeltaEast	V5EBurnaby(Lakeview-Mayfield / Richmond Park /...)	V6EVancouver(SE West End / Davie Village)	V7ERichmondSouthwest
4	V1GDawson Creek	V2GWilliams Lake	V3GAbbotsfordEast	V4GDeltaEast Central	V5GBurnaby(Cascade-Schou / Douglas-Gilpin)	V6GVancouver(NW West End / Stanley Park)	V7GNorth Vancouver (district municipality)Oute...
5	V1HVernonWest	V2HKamloopsNorth	V3HPort Moody	V4HNot assigned	V5HBurnaby(Maywood / Marlborough / Oakalla / W...)	V6HVancouver(West Fairview / Granville Island ...)	V7HNorth Vancouver (district municipality)Inne...
6	V1JFort St. John	V2JQuesnel	V3JCoquitlamNorth	V4JNot assigned	V5JBurnaby(Suncrest / Sussex-Nelson / Clinton...)	V6JVancouver(NW Shaughnessy / East Kitsilano /...)	V7JNorth Vancouver (district municipality)East...
7	V1KMerritt	V2KPrince GeorgeNorth	V3KCoquitlamSouth	V4KDeltaNorthwest	V5KVancouver(North Hastings-Sunrise)	V6KVancouver(Central Kitsilano / Greektown)	V7KNorth Vancouver (district municipality)Nort...
8	V1LNelson	V2LPrince GeorgeEast Central	V3LNew WestminsterNortheast	V4LDeltaSoutheast	V5LVancouver(North Grandview-Woodland)	V6LVancouver(NW Arbutus Ridge / NE Dunbar-Sout...)	V7LNorth Vancouver (city)South Central
9	V1MLangley TownshipNorth	V2MPrince GeorgeWest Central	V3MNew WestminsterSouthwest(Includes Annacis I...	V4MDeltaSouthwest	V5MVancouver(South Hastings-Sunrise / North Re...)	V6MVancouver(South Shaughnessy / NW Oakridge /...)	V7MNorth Vancouver (city)Southwest Central
10	V1NCastlegar	V2NPrince GeorgeSouth	V3NBurnaby(East Big Bend / Stride Avenue / Edm...)	V4NSurreyNortheast	V5NVancouver(South Grandview-Woodland / NE Ken...)	V6NVancouver(West Kerrisdale / South Dunbar-So...)	V7NNorth Vancouver (district municipality)Nort...
11	V1PKelownaEast	V2PChilliwackCentral	V3PNot assigned	V4PSurreySouth	V5PVancouver(SE Kensington-Cedar Hills)	V6PVancouver(SE Kerrisdale (SW Oakridge / SE Kelowna))	V7PNorth Vancouver (city)North Vancouver
10	V1QVernonWest	V2QChilliwackWest	V3QNot assigned	V4QVernonWest	V5QVancouver(Vancouver West)	V6QVancouver(Vancouver West)	V7QVancouver(Vancouver West)
9	V1RKelownaCentral	V2RChilliwackCentral	V3RNot assigned	V4RVernonWest	V5RVancouver(Vancouver West)	V6RVancouver(Vancouver West)	V7RVancouver(Vancouver West)
8	V1SKelownaWest	V2SChilliwackCentral	V3SNot assigned	V4SVernonWest	V5SVancouver(Vancouver West)	V6SVancouver(Vancouver West)	V7SVancouver(Vancouver West)
7	V1TKelownaCentral	V2TChilliwackCentral	V3TNot assigned	V4TVernonWest	V5TVancouver(Vancouver West)	V6TVancouver(Vancouver West)	V7TVancouver(Vancouver West)
6	V1WKelownaWest	V2WChilliwackCentral	V3WNot assigned	V4WVernonWest	V5WVancouver(Vancouver West)	V6WVancouver(Vancouver West)	V7WVancouver(Vancouver West)
5	V1XVernonWest	V2XChilliwackCentral	V3XNot assigned	V4XVernonWest	V5XVancouver(Vancouver West)	V6XVancouver(Vancouver West)	V7XVancouver(Vancouver West)
4	V1YVernonWest	V2YChilliwackCentral	V3YNot assigned	V4YVernonWest	V5YVancouver(Vancouver West)	V6YVancouver(Vancouver West)	V7YVancouver(Vancouver West)
3	V1ZVernonWest	V2ZChilliwackCentral	V3ZNot assigned	V4ZVernonWest	V5ZVancouver(Vancouver West)	V6ZVancouver(Vancouver West)	V7ZVancouver(Vancouver West)
2	V1AVernonWest	V2AVernonWest	V3AVernonWest	V4AVernonWest	V5AVernonWest	V6AVernonWest	V7AVernonWest
1	V1BVernonWest	V2BVernonWest	V3BVernonWest	V4BVernonWest	V5BVernonWest	V6BVernonWest	V7BVernonWest
0	V1CVernonWest	V2CVernonWest	V3CVernonWest	V4CVernonWest	V5CVernonWest	V6CVernonWest	V7CVernonWest

DATA WRANGLING

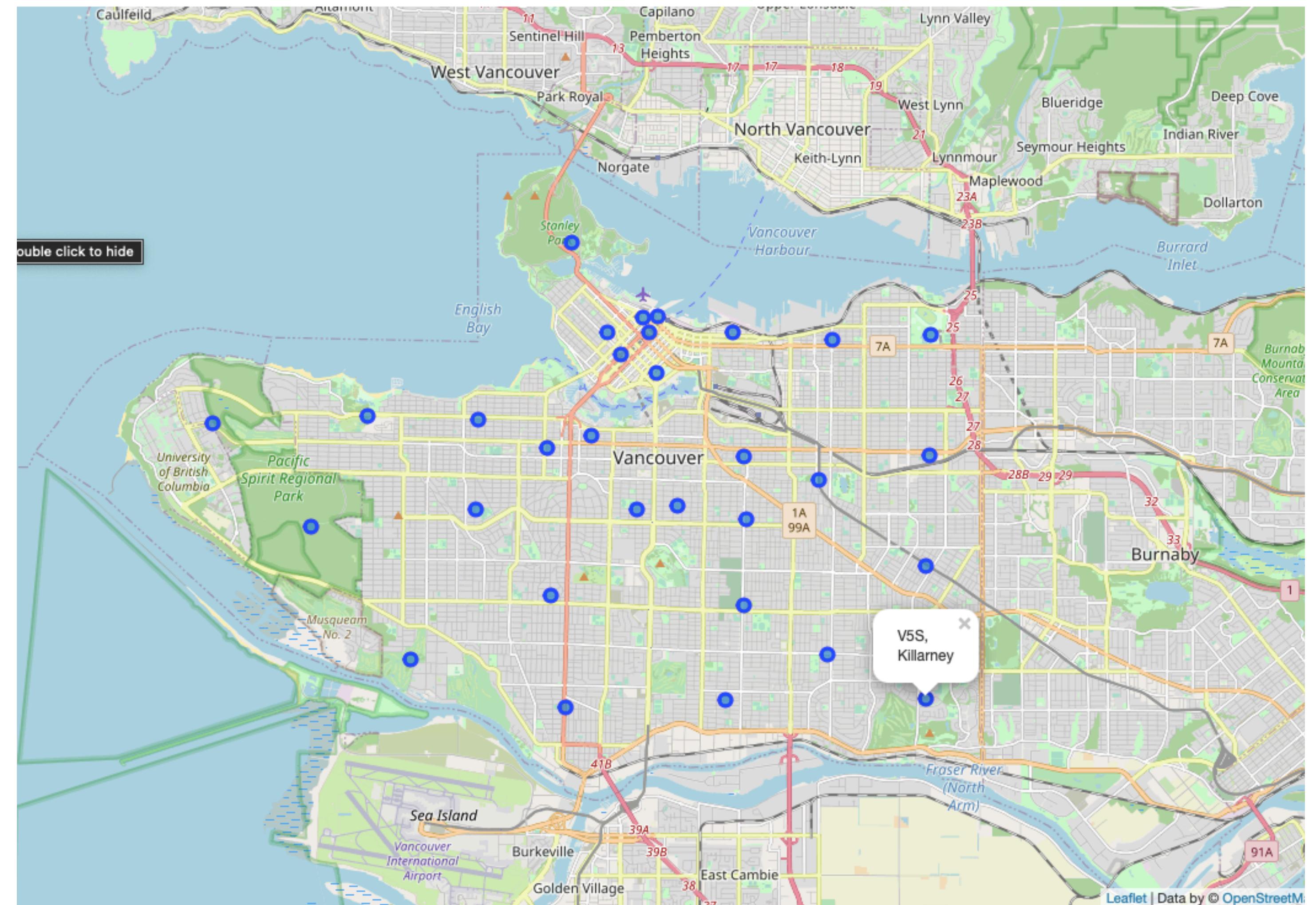
■ Appending Geolocations

	post_code	neighborhood	latitude	longitude
0	V5K	North Hastings-Sunrise	49.283199	-123.038055
1	V5L	North Grandview-Woodland	49.282318	-123.065453
2	V5M	South Hastings-Sunrise / North Renfrew-Collingwood	49.261265	-123.038399
3	V5N	South Grandview-Woodland / NE Kensington-Cedar Cottage	49.256790	-123.069305
4	V5P	SE Kensington-Cedar Cottage / Victoria-Fraserview	49.224976	-123.066719

5	V5R	Wilmerston-Bethel / Cedar-Capitol Hill	49.255544	-123.066719
6	V5V	False Creek-Main-Commercial / NE Dunbar-Kingsway	49.2599130	-123.066302

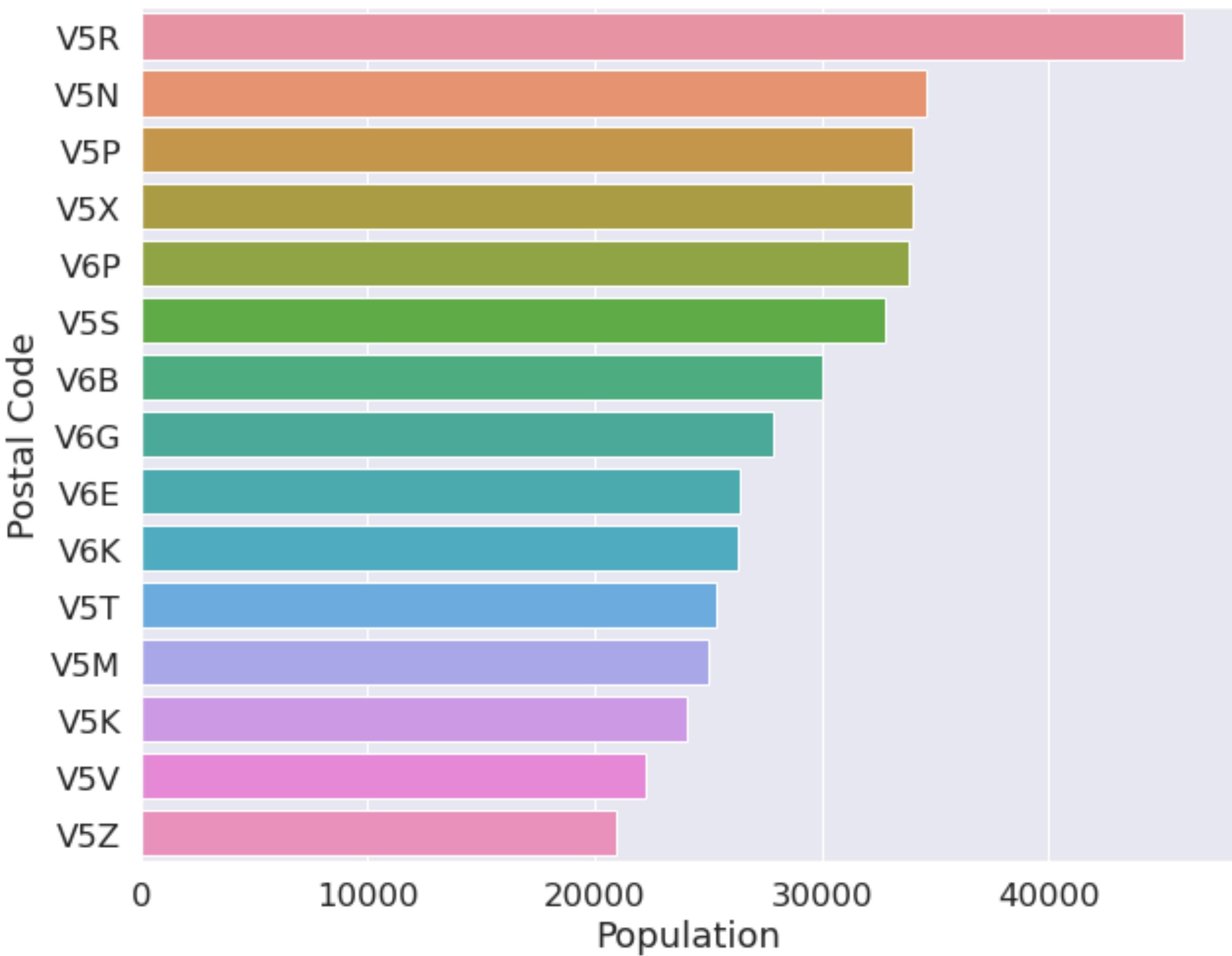
DATA WRANGLING

— Mapping Postal Codes



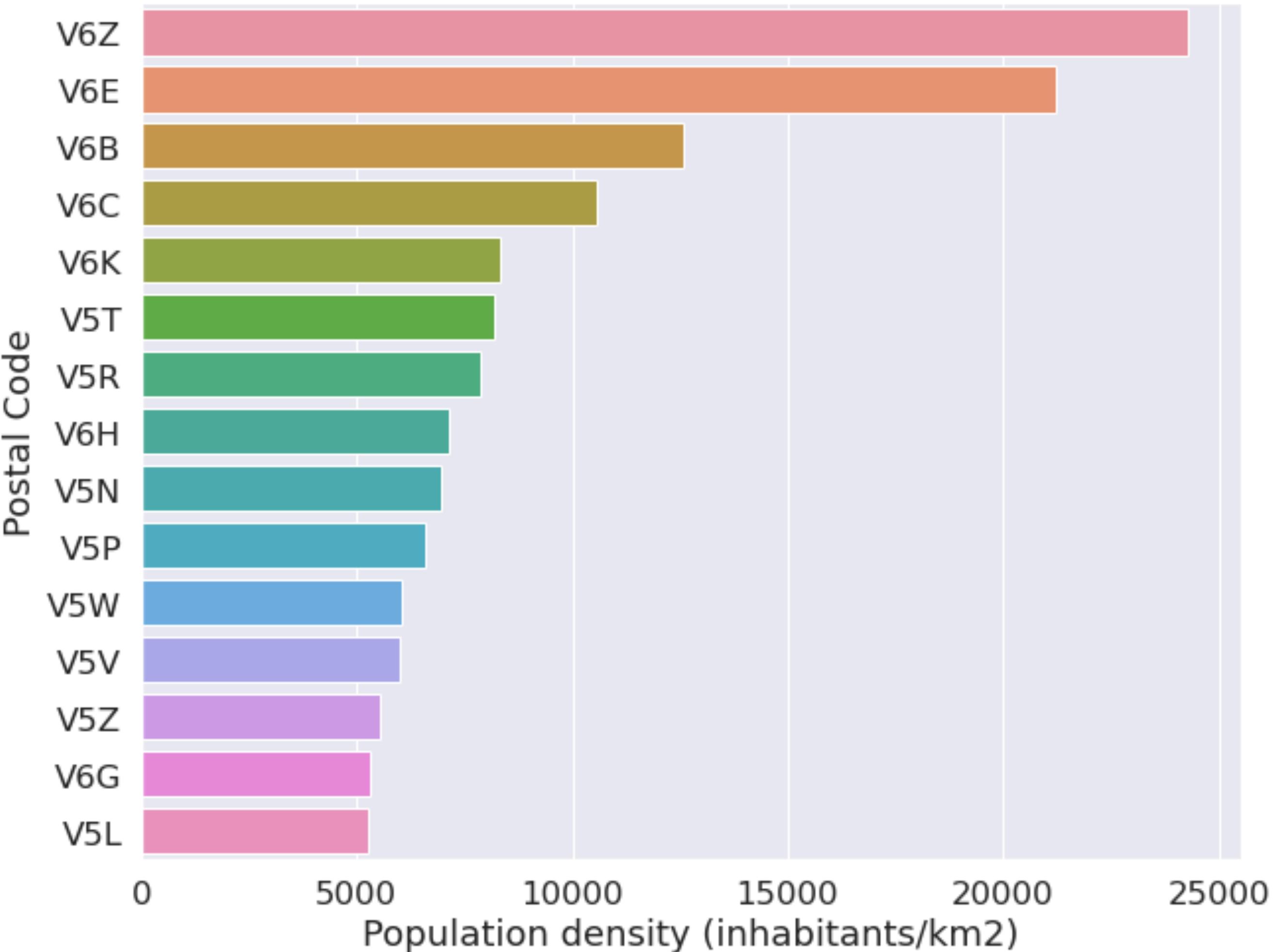
DATA ANALYSIS

■ Population



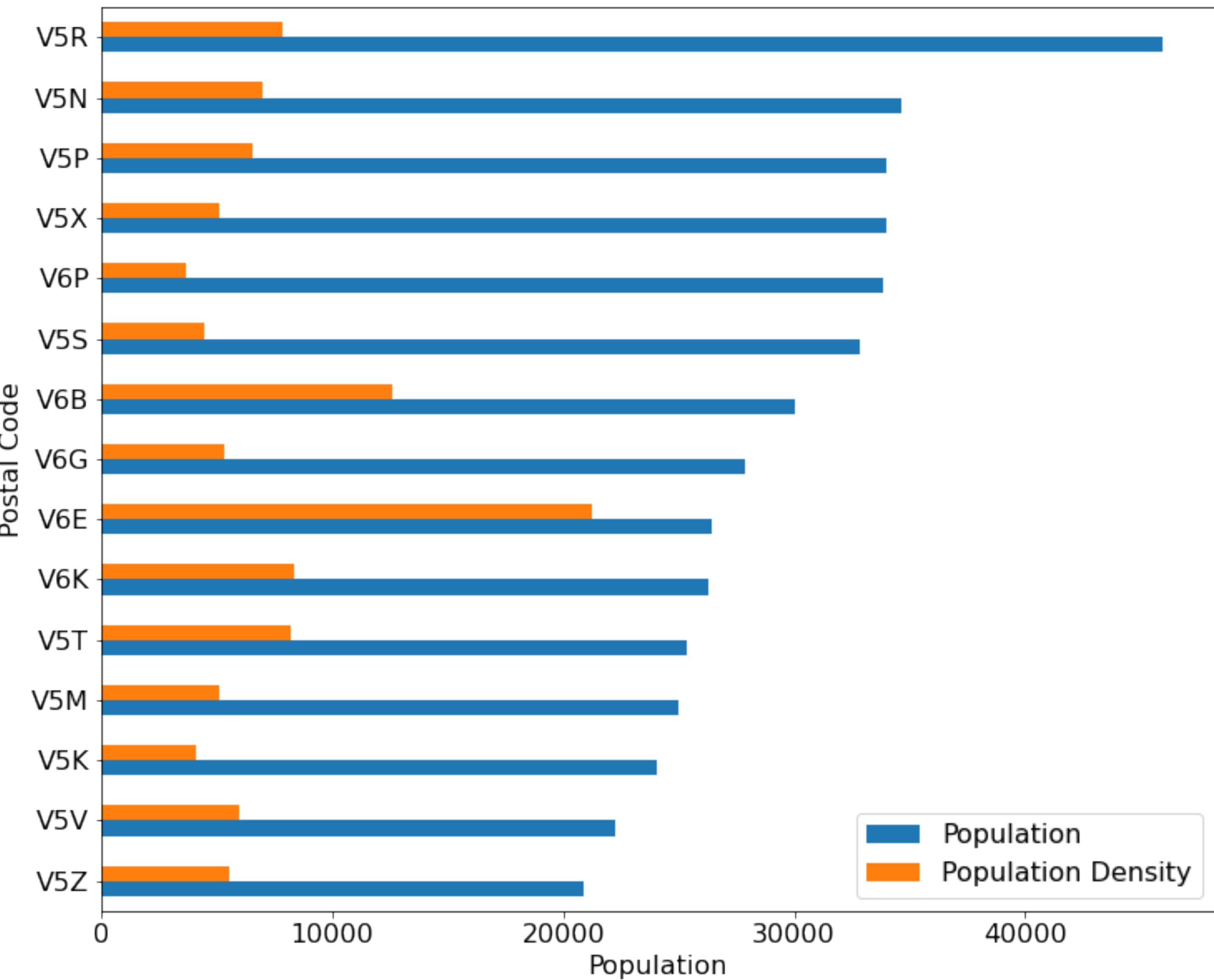
DATA ANALYSIS

■ Density



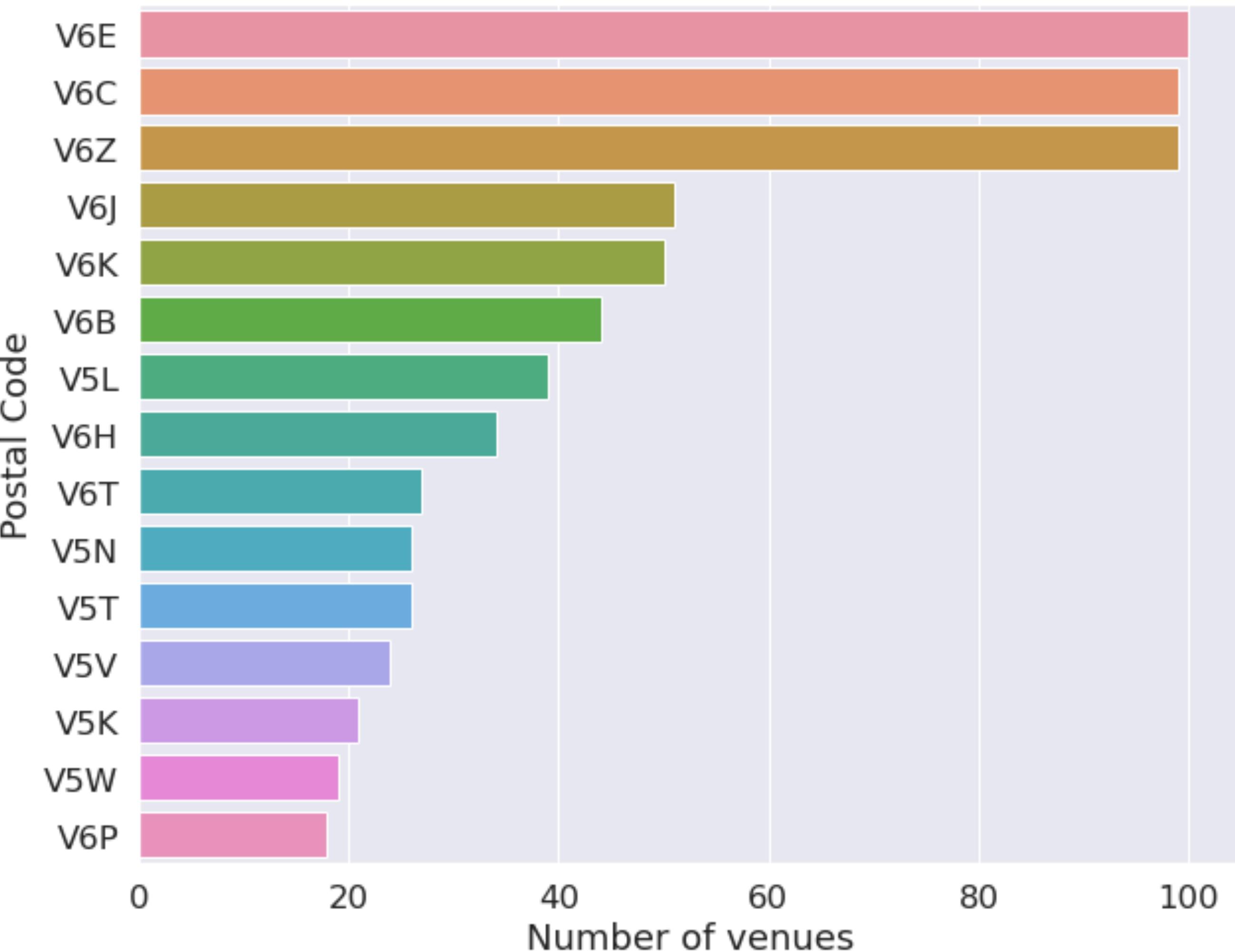
DATA ANALYSIS

Population & Density



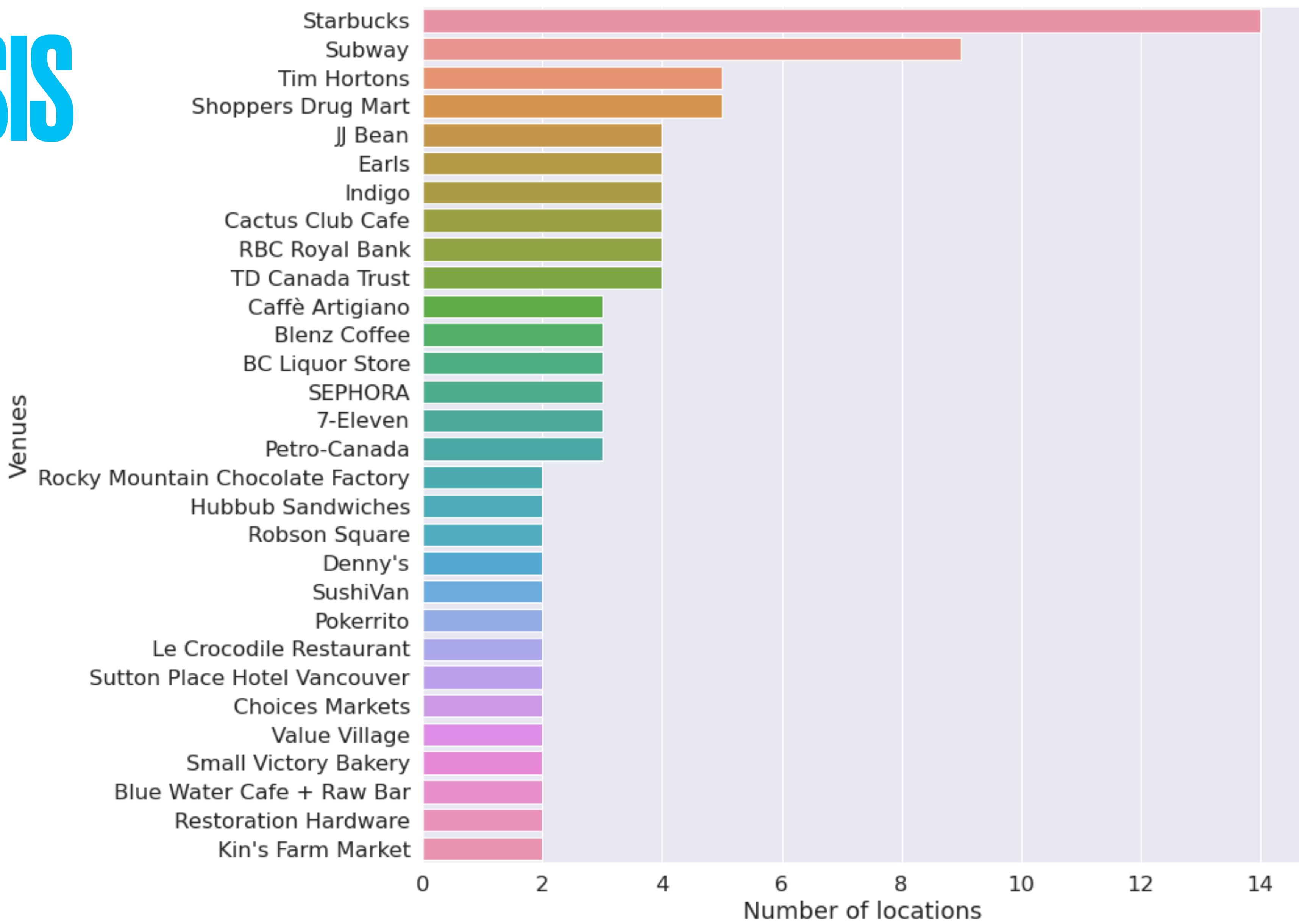
DATA ANALYSIS

Venues



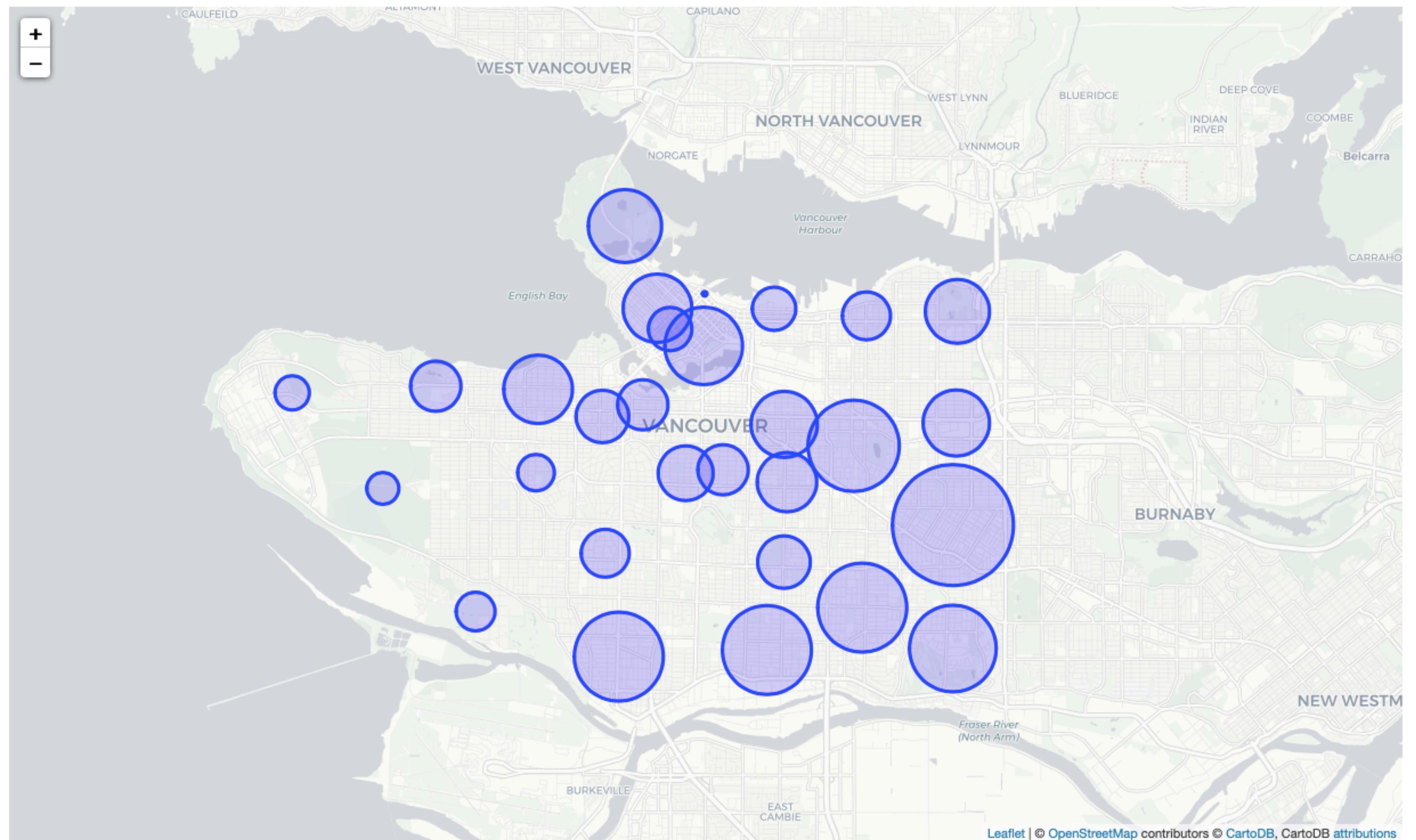
DATA ANALYSIS

Venue Frequency



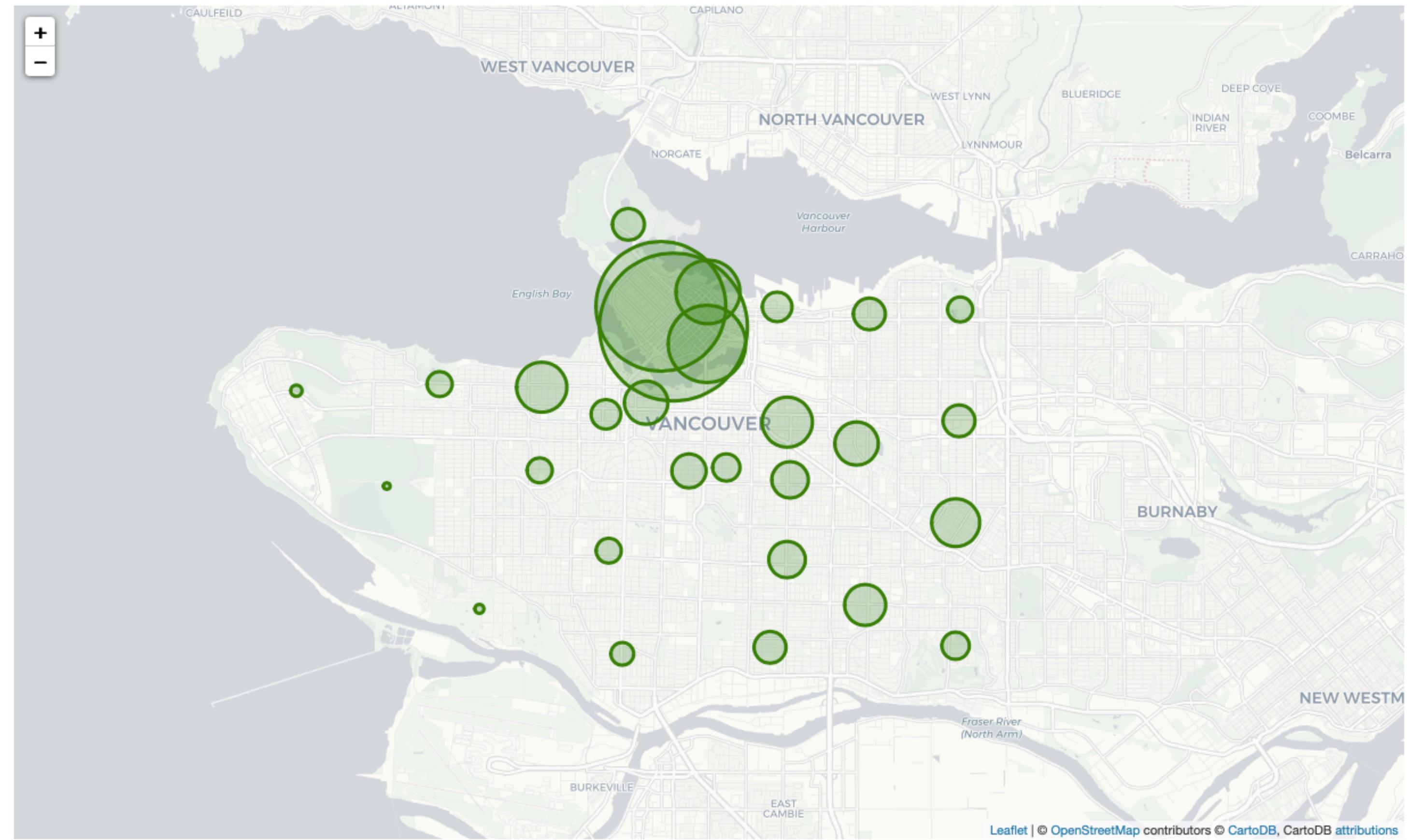
DATA ANALYSIS

■ Population Mapped



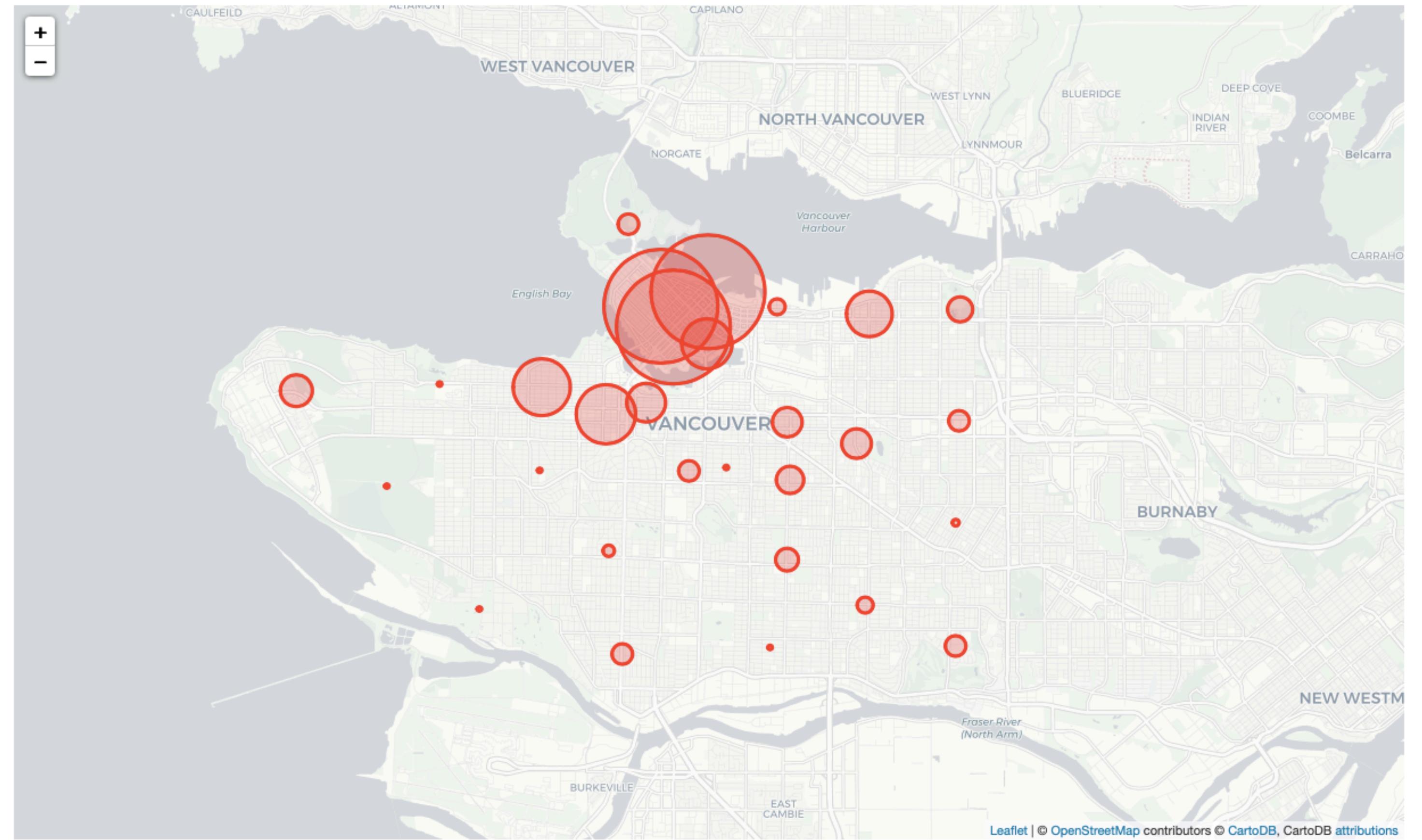
DATA ANALYSIS

■ Density Mapped



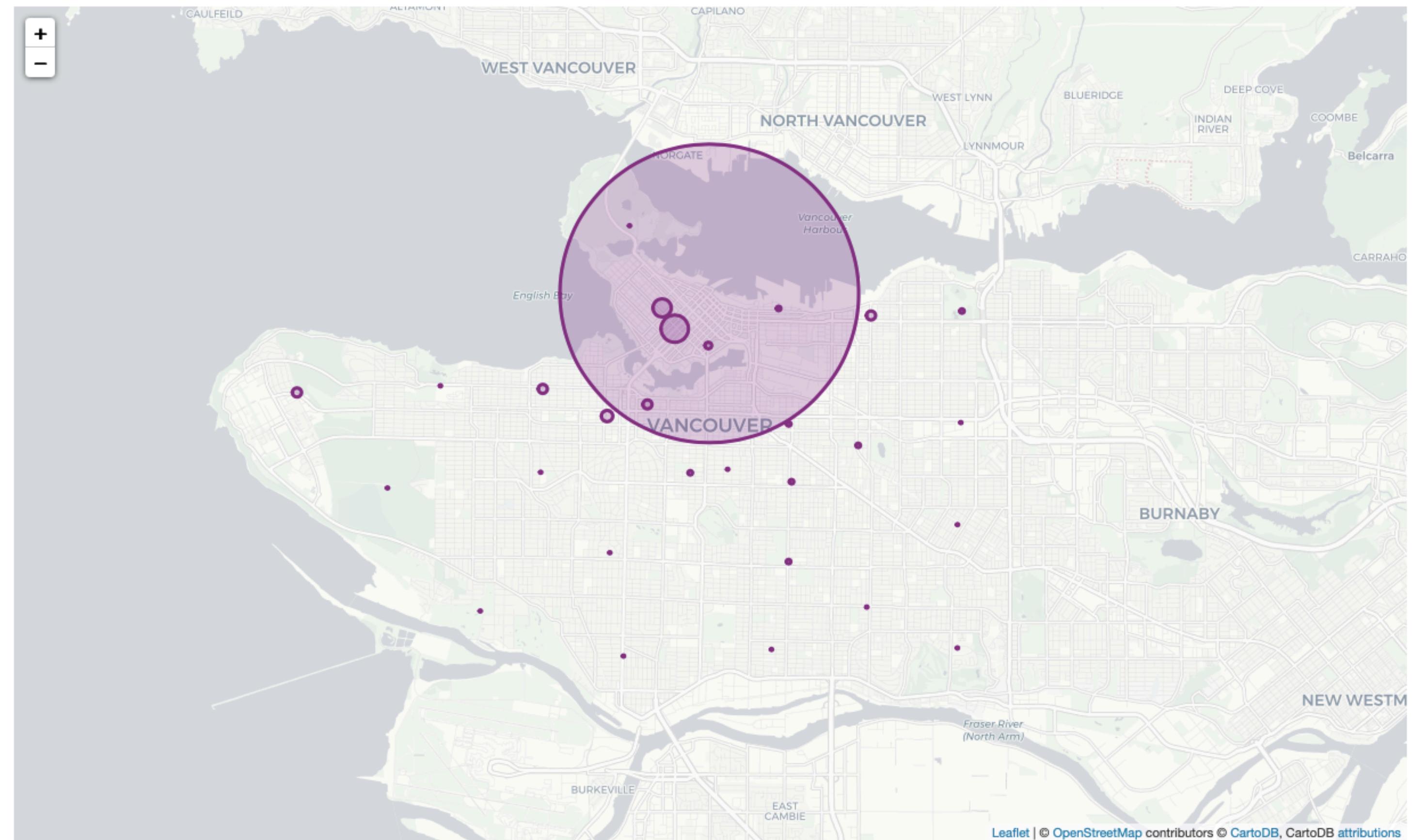
DATA ANALYSIS

■ Venues Mapped



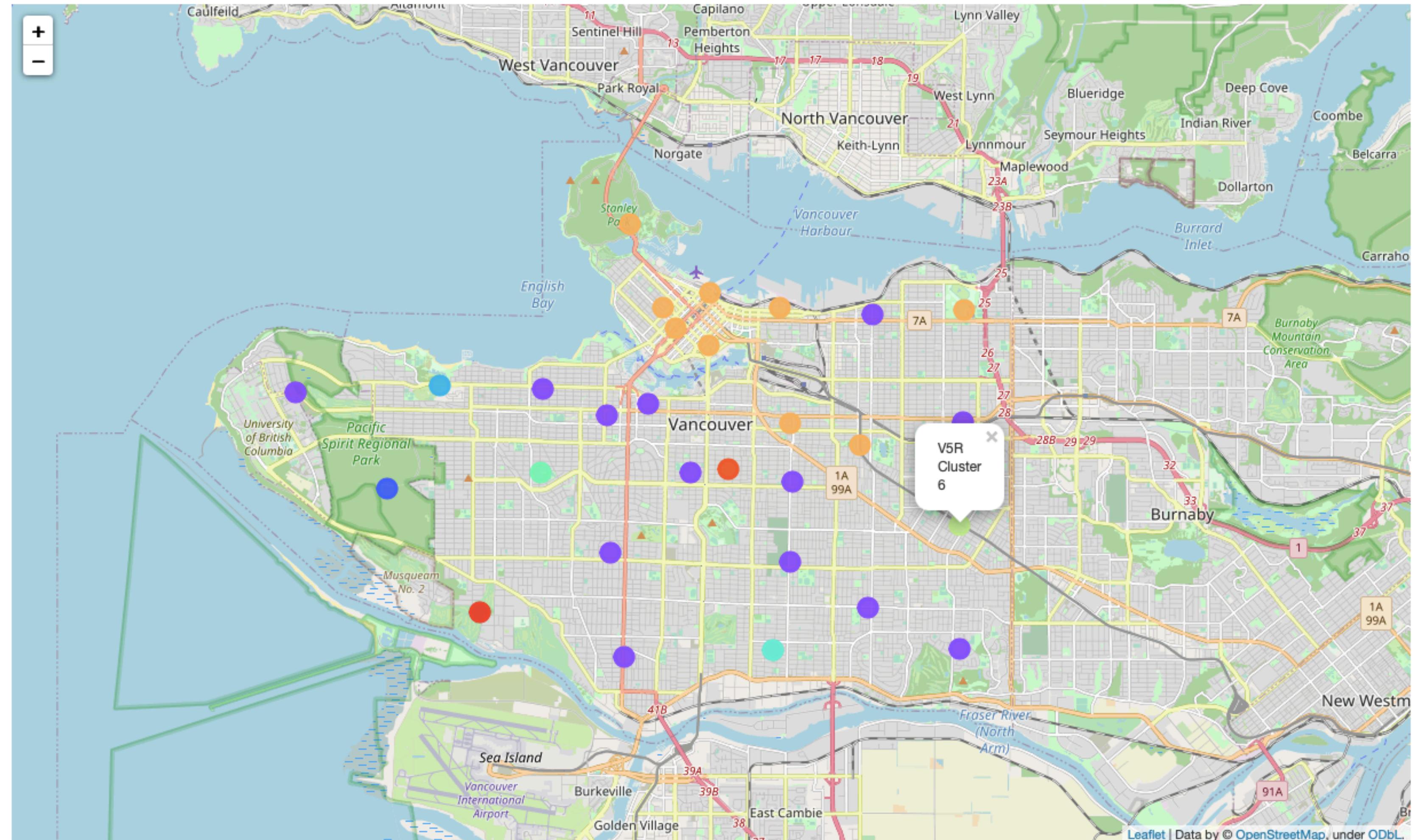
DATA ANALYSIS

■ Venues per Capita



CLUSTERING

— K-means



CONCLUSIONS

- Total Population/Population Density
- Venues per Capita
- Similar Areas via Cluster Analysis
- Example Concepts for Different Area Types
- Expanding the Data Set
- Applying to Other Cities

THANK YOU!

- **Danke!**
- **Merci!**
- **Grazie!**
- **Gracias!**
- **Takk!**
- **Arigato!**
- **Mahalo!**

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