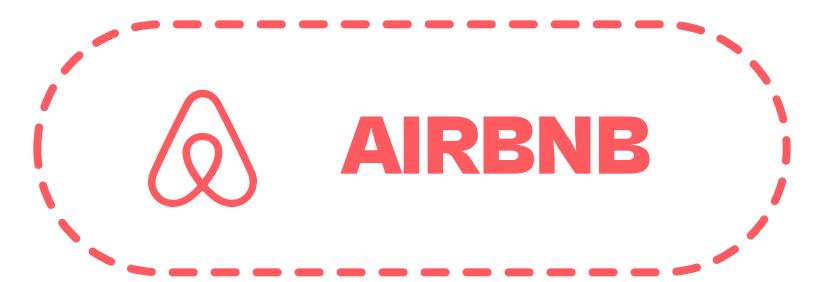


BDM-1024

ADDING SECURITY INTO RENTAL INDUSTRY.



Secure your trip, or you might end up with a souvenir mugshot!



OUR TEAM

- ↗ Antonio Carlos De Mello Mendes
- ↗ Jyothirmai Veeranki
- ↗ Uttam Tamang
- ↗ Brayan Leonardo Gil Guevara
- ↗ Maria Jessa Cruz
- ↗ Carlos Munoz Ebratt
- ↗ Oscar Felipe Fernandez Tovar



INDUSTRY DOMIAN

VACATION RENTAL INDUSTRY.

We have seen significant growth and disruption in recent years of the vacation rental industry. A vast amount of data is generated and collected by these platforms.

Airbnb allows individuals to rent out their properties or spare rooms for those who are looking for accommodations.



SOME FACTS.

According to “Grand View Research”, the global vacation rental market was valued at approximately **\$87.09** billion in **2019** and is expected to reach **\$113.9** billion by **2027**, with a compound annual growth rate of **3.4%** from **2020** to **2027**.

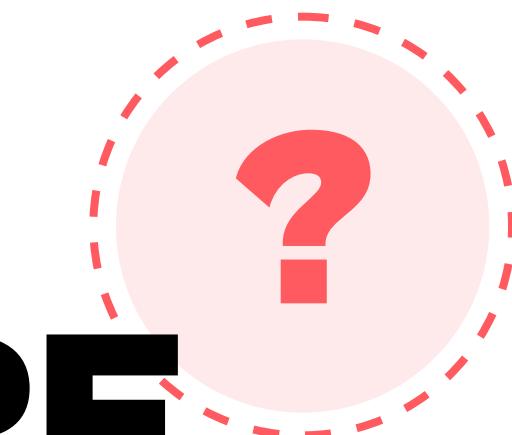
As of **2021**, Airbnb is one of the dominant players in the vacation rental market, with a global presence in over **220** countries and millions of listings.



PROBLEM STATEMENT

WHAT ARE THE PROBLEMS?

Generally, vacation rentals face safety risks due to differing neighborhood crime rates and unclear proximity to points of interest. Incomplete local crime data can lead to unsafe choices.



01.

Renting a place in Canada can be challenging due to limited information available.

02.

Existing platforms like Airbnb offer descriptions but lack comprehensive safety details.

03.

Users need to conduct separate searches to assess safety, costing time and money.

04.

An efficient tool is required to identify safe rental locations.

PROBLEM STATEMENT

WHAT HAVE WE FOUND?

Existing apps like **WALKSAFE** and **RENTALS.CA** have limitations.



- ↗ **WALKSAFE** is outdated and not available for Canada.
- ↗ **RENTALS.CA** lacks crime information for listings.



OUR OBJECTIVES

HOW/WHY ARE WE SOLVING?

Proper vetting, enhanced security measures, and transparent neighborhood insights are essential to ensure guests' safety and peace of mind



01.

Provide easily accessible safety details, crime statistics, and points of interest for rental locations to enable informed decisions and enhance renter safety.

02.

Ensure reliable, up-to-date, and transparent safety information to reduce crime rates and enhance trust in the rental market.

03.

Attain a specific user adoption rate within a defined timeframe, contributing to the growth and transformation of Canada's vacation rental industry.

OUR OBJECTIVES

FOR CONTINUOUS IMPROVEMENT.

We are planning to build an app or implementation services to achieve following objectives. ↗



01.

Create an efficient tool that integrates safety information, reducing users' time and effort while promoting safer rental options and contributing to industry growth.

02.

Maintain platform competitiveness through continuous enhancements in features, safety accuracy, and user experience to secure a leading role in the dynamic vacation rental market landscape.

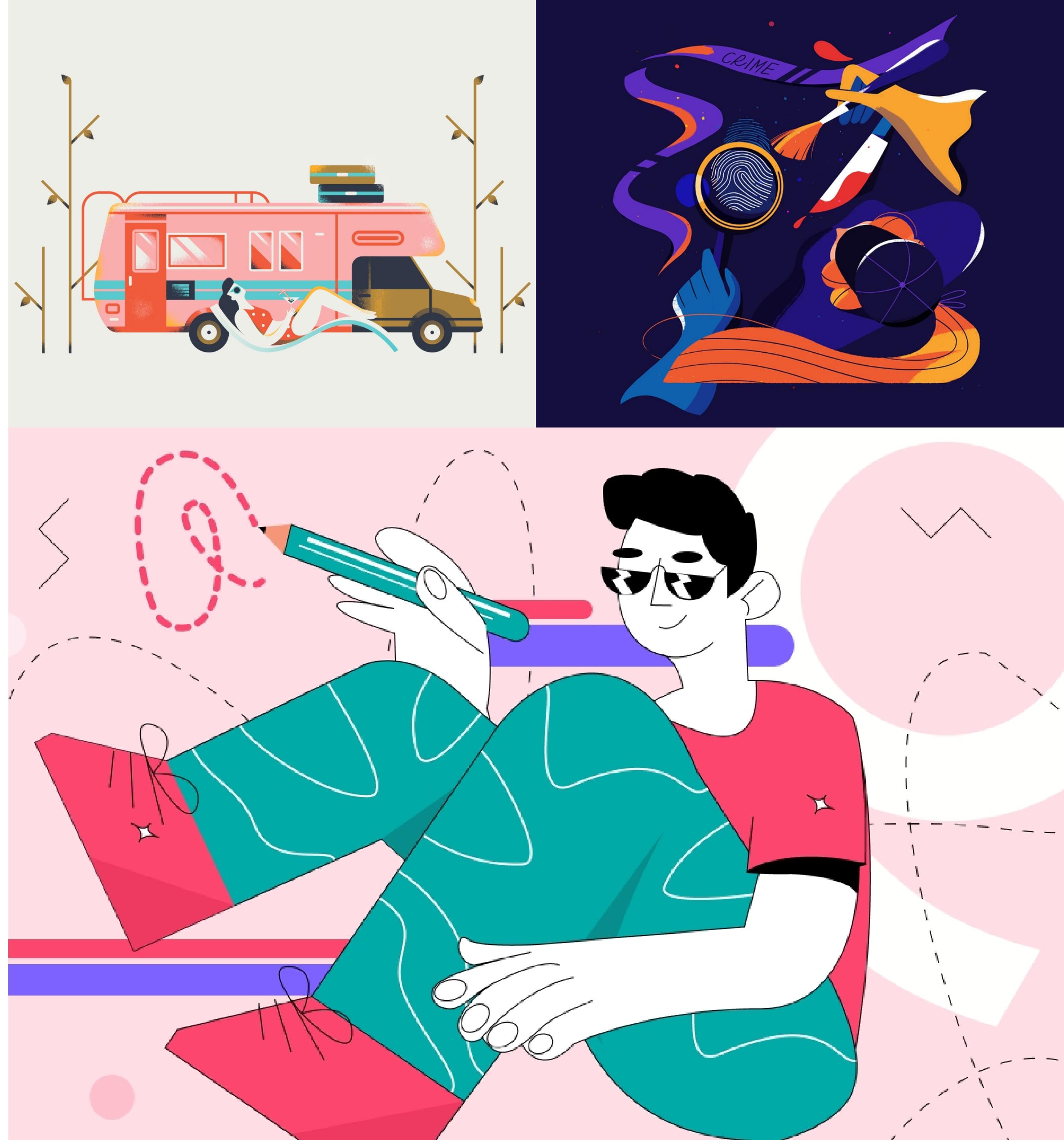
AN INTRODUCTION TO

OUR

DATASET

Our dataset is a combined dataset of three different datasets from three different sources.

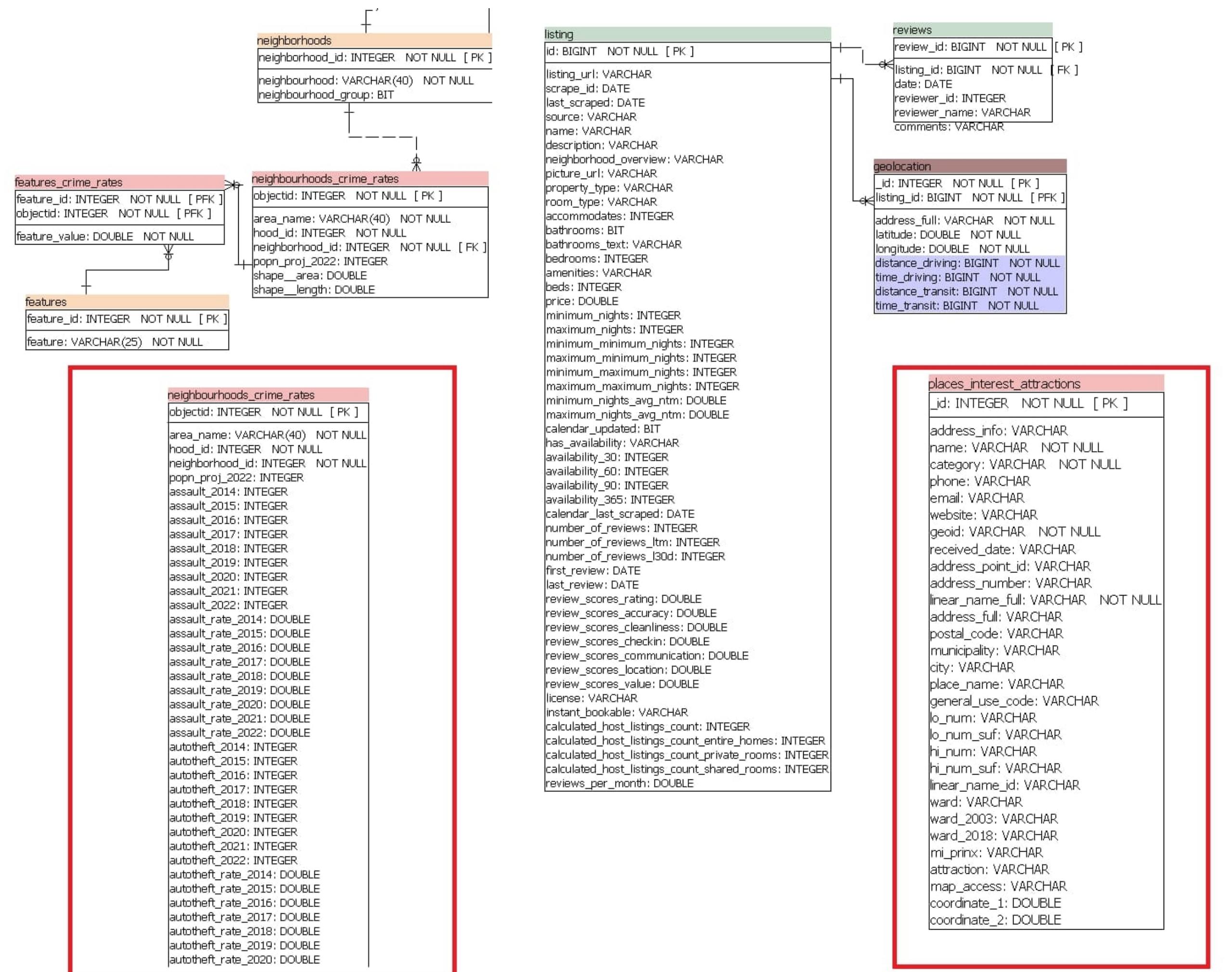
- ↗ **SOURCE 01:** AIRBNB DATASET (TORONTO)
- ↗ **SOURCE 02:** NEIGHBOURHOOD CRIME RATES
OPEN DATA
- ↗ **SOURCE 03:** PLACES OF INTEREST AND
TORONTO ATTRACTIONS



DATASET

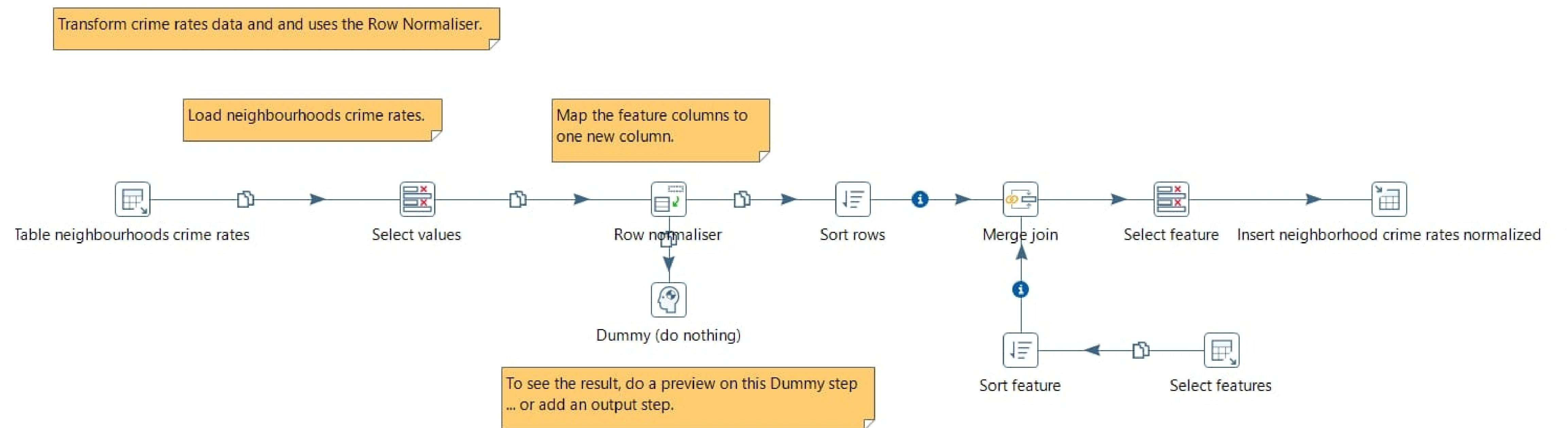
PRELIMINARY DATA MODEL

Preliminary data model was built to figure out a little more about the dataset before importing the entire dataset to a database.



PROCESS OF DATA TRANSFORMATION

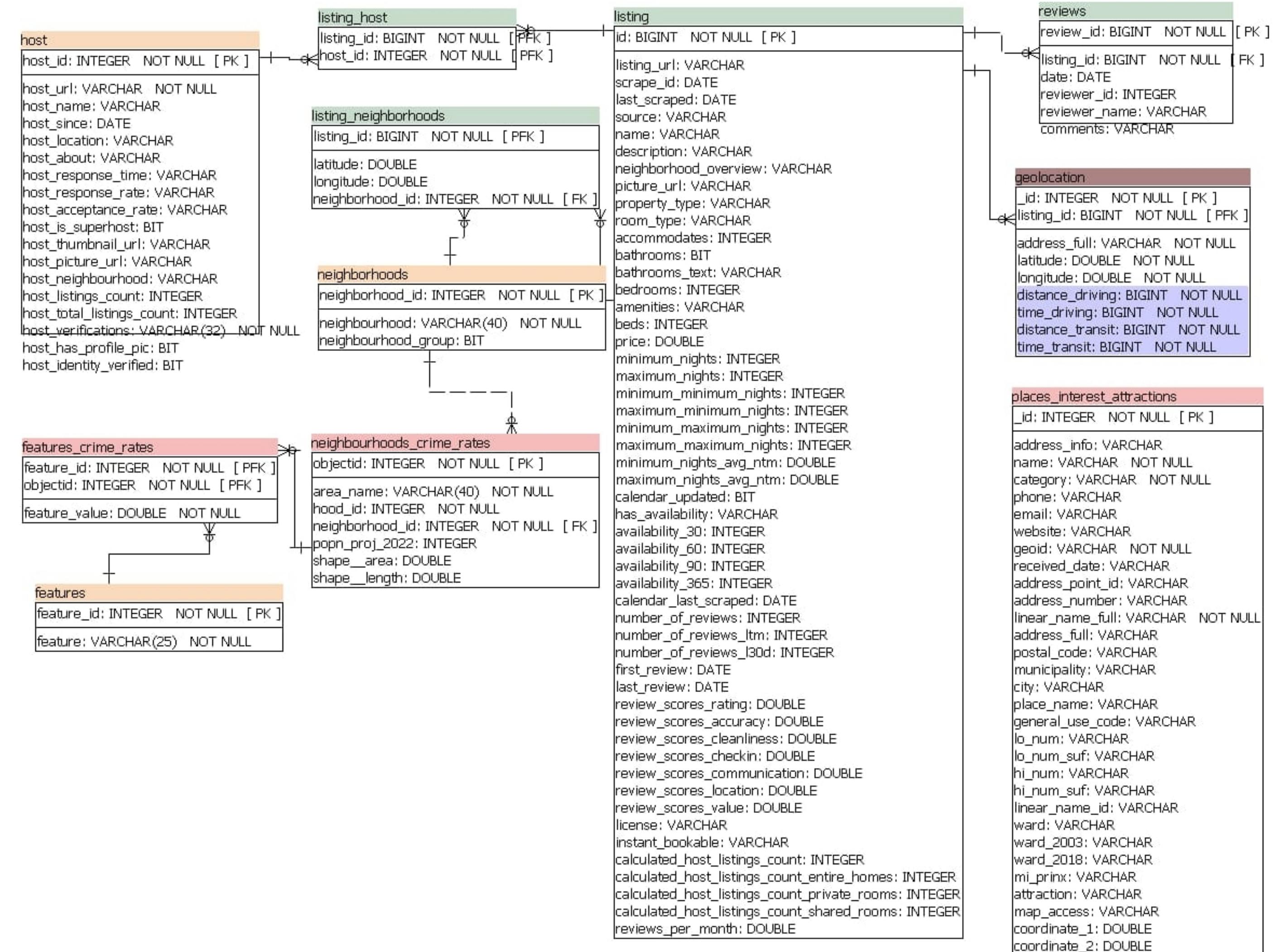
We have used **PENTAHO DATA INTEGRATION (PDI)** to execute, extract, transformation and load data from multiple sources.



DATASET

OUR FINAL DATA MODEL

In conclusion, the following image shows
the final version of the model for our project.



BIG DATA TOOLS

SIGNIFICANCE OF MAPREDUCE.

MapReduce is a programming paradigm that enables massive scalability across hundreds or thousands of servers in a Hadoop cluster.

- ↗ MapReduce is important because it enables **EFFICIENT PROCESSING** of large datasets by distributing tasks across a **CLUSTER OF MACHINES**.



BIG DATA TOOLS

SIGNIFICANCE OF SPARK.

Spark (Apache Spark) is a powerful and significant open-source distributed computing framework that provides an efficient and flexible platform for processing large-scale data.

- ↗ A Spark job is a unit of work that performs a specific data processing task within the **APACHE SPARK FRAMEWORK**.



BIG DATA TOOLS

UTILIZING VISUALIZATION TOOLS.

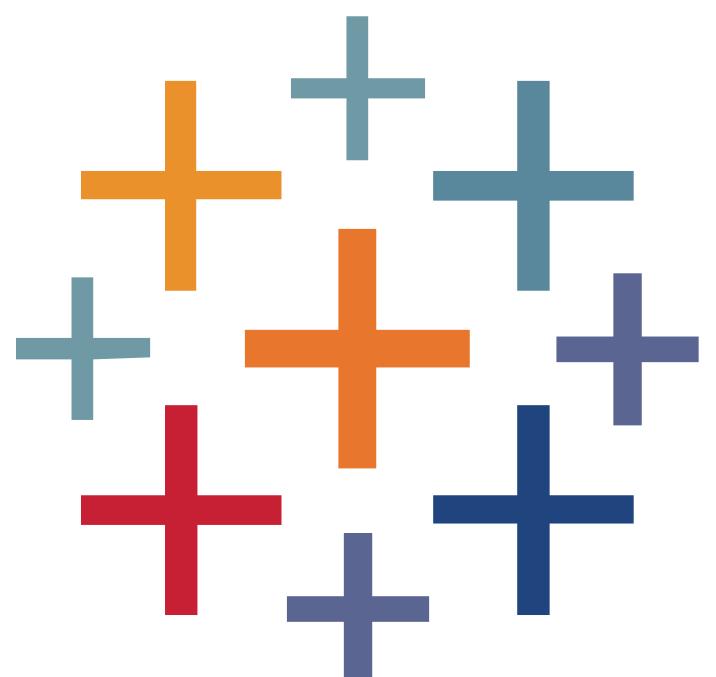
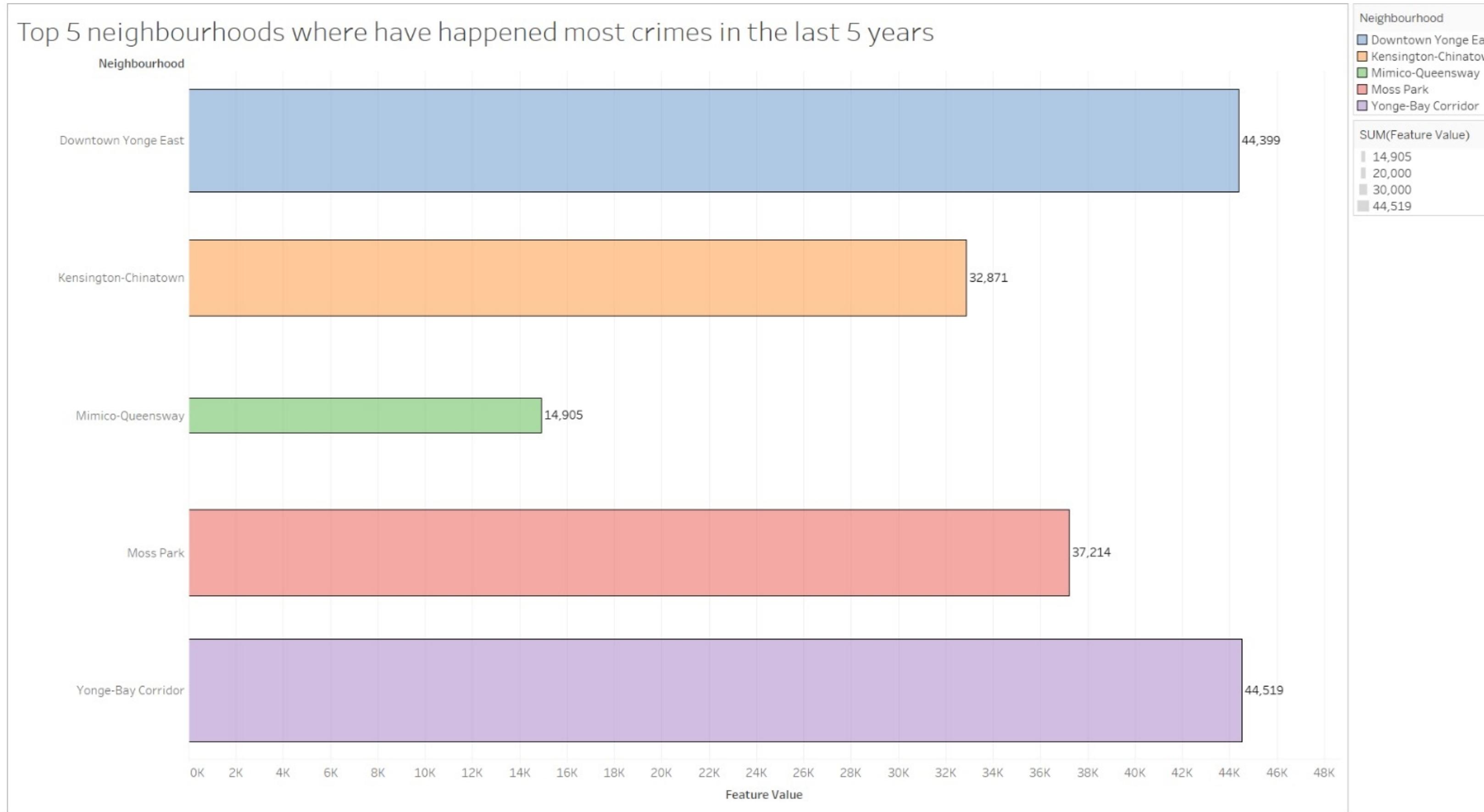


Tableau is a powerful data visualization and business intelligence tool that allows users to create interactive and shareable visualizations from various data sources.

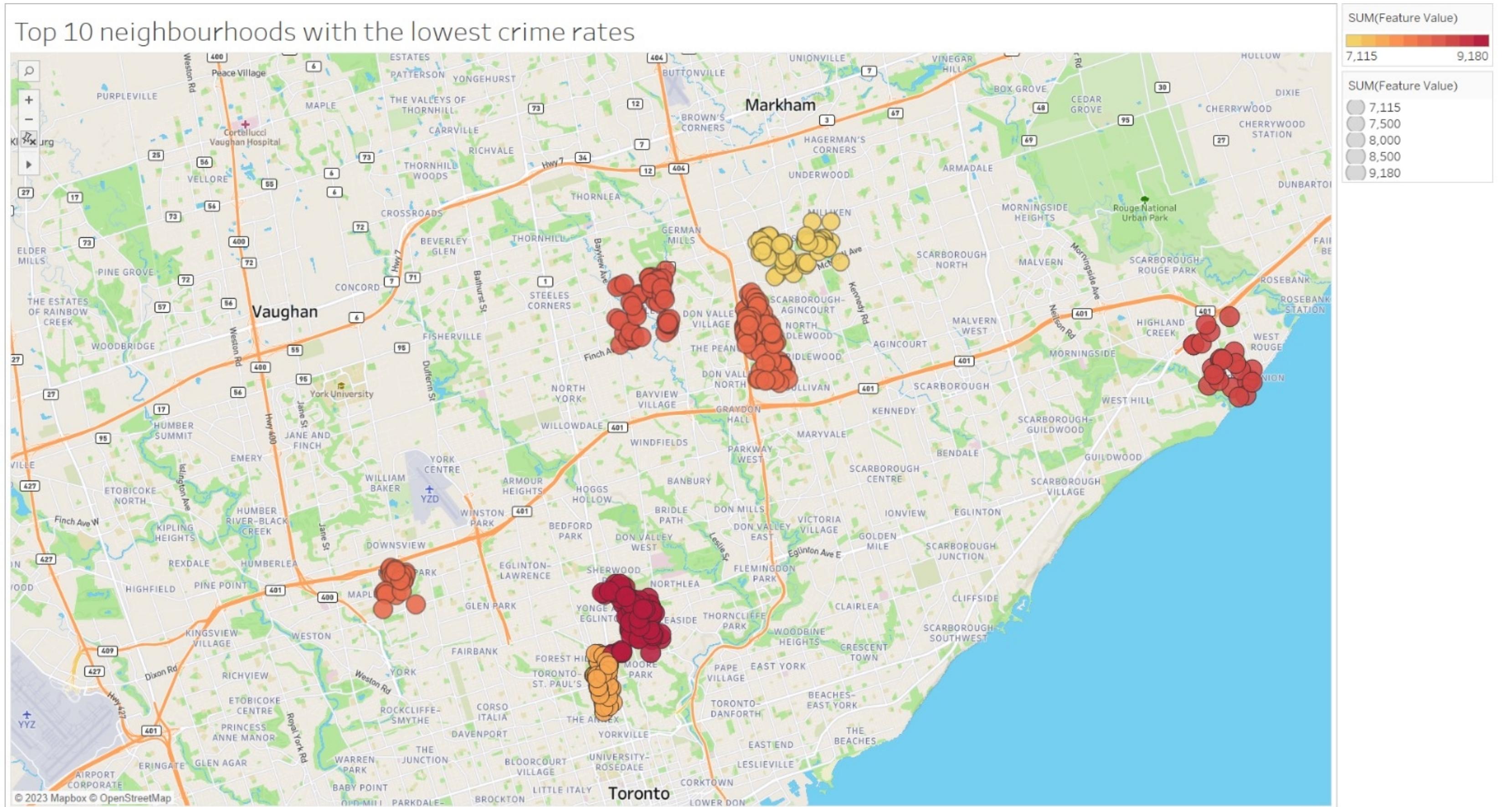


DATA VISUALIZATION

TOP 5 NEIGHBOURHOODS WHERE MOST CRIMES HAVE HAPPENED IN THE LAST 5 YEARS.



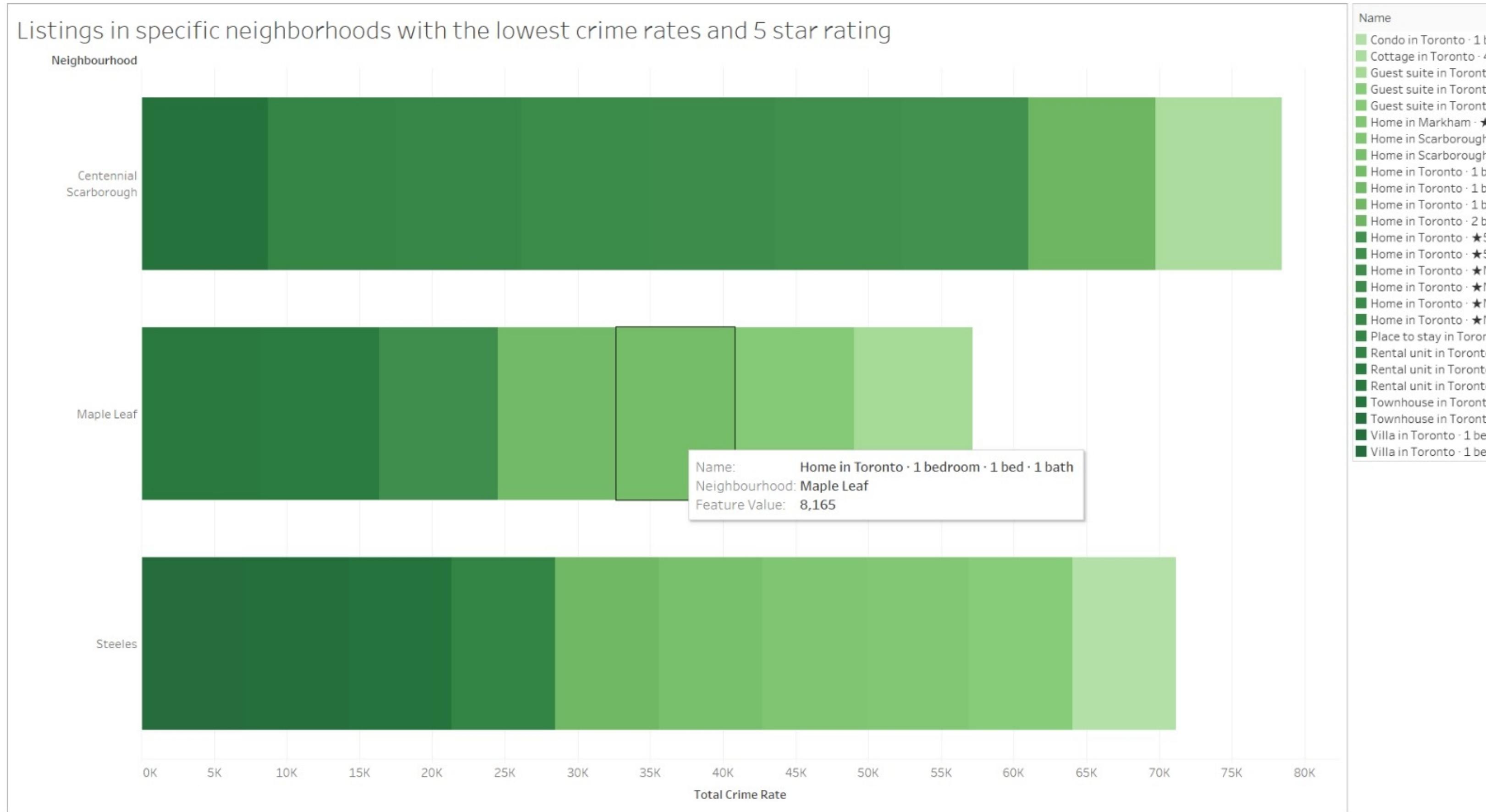
TOP 10 NEIGHBOURHOODS WITH THE LOWEST CRIME RATES.



DATA VISUALIZATION

03

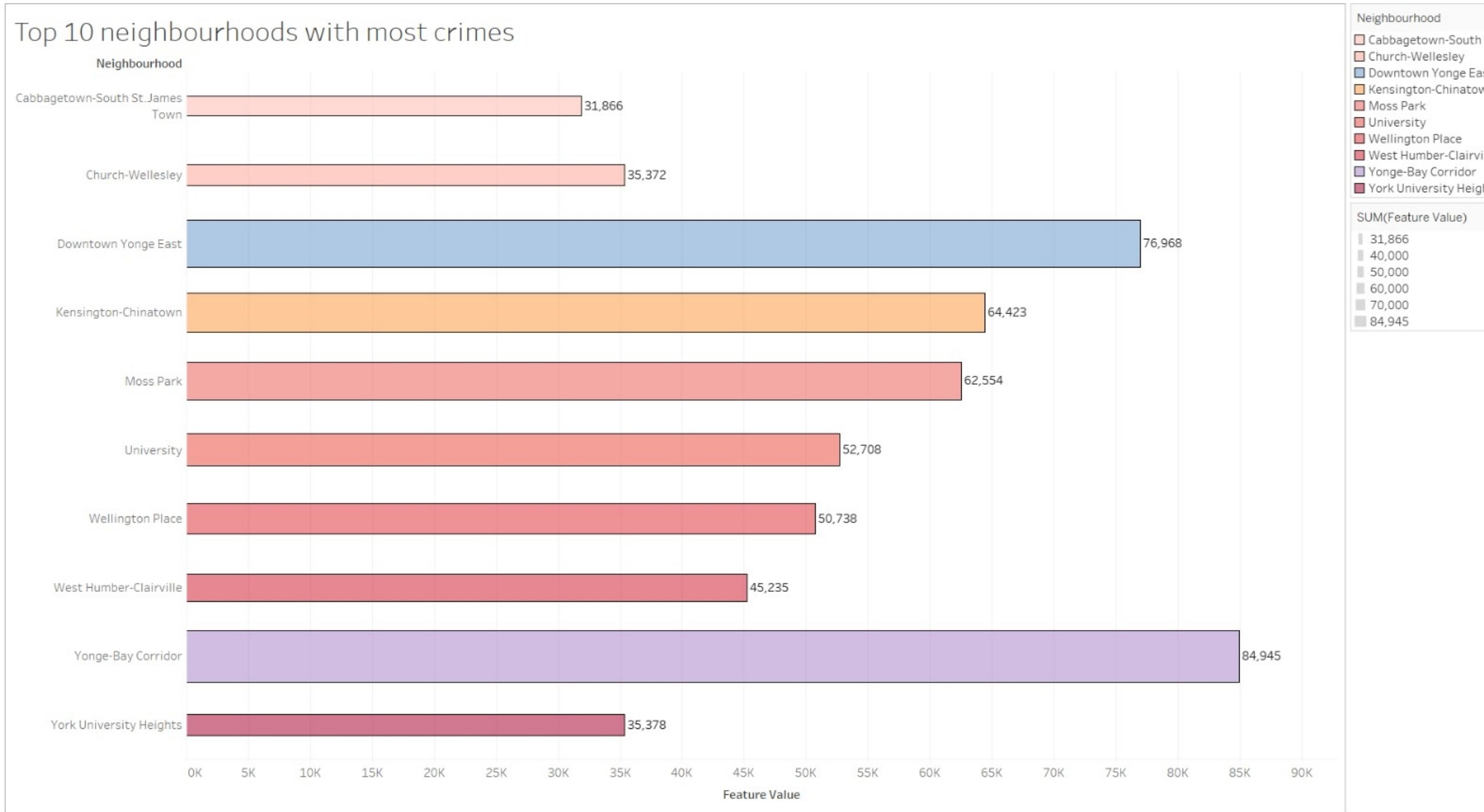
LISTINGS IN SPECIFIC NEIGHBOURHOODS WITH THE LOWEST CRIME RATES AND 5 STAR RATING.



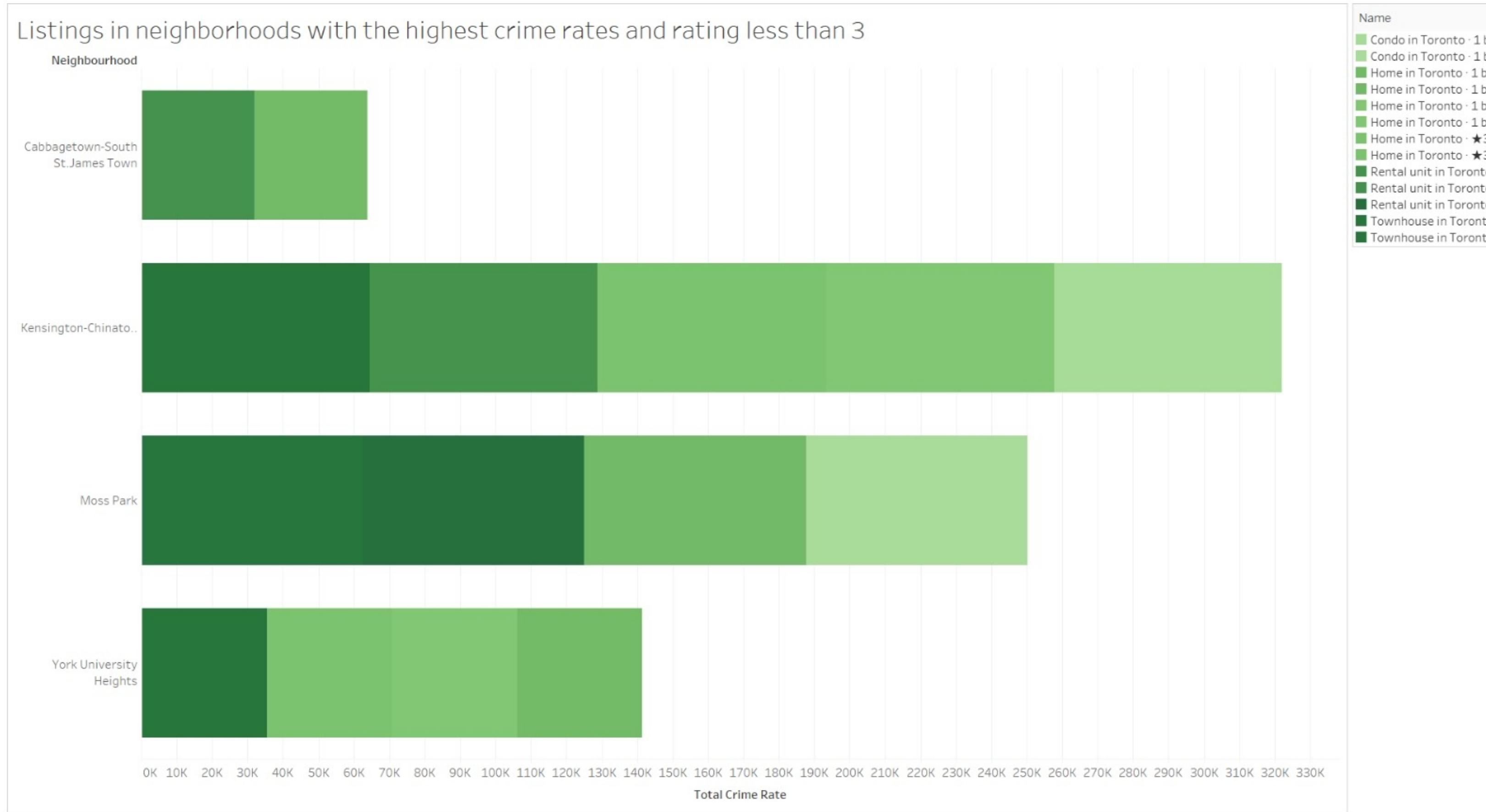
DATA VISUALIZATION

04

TOP 10 NEIGHBOURHOODS WITH MOST CRIMES.

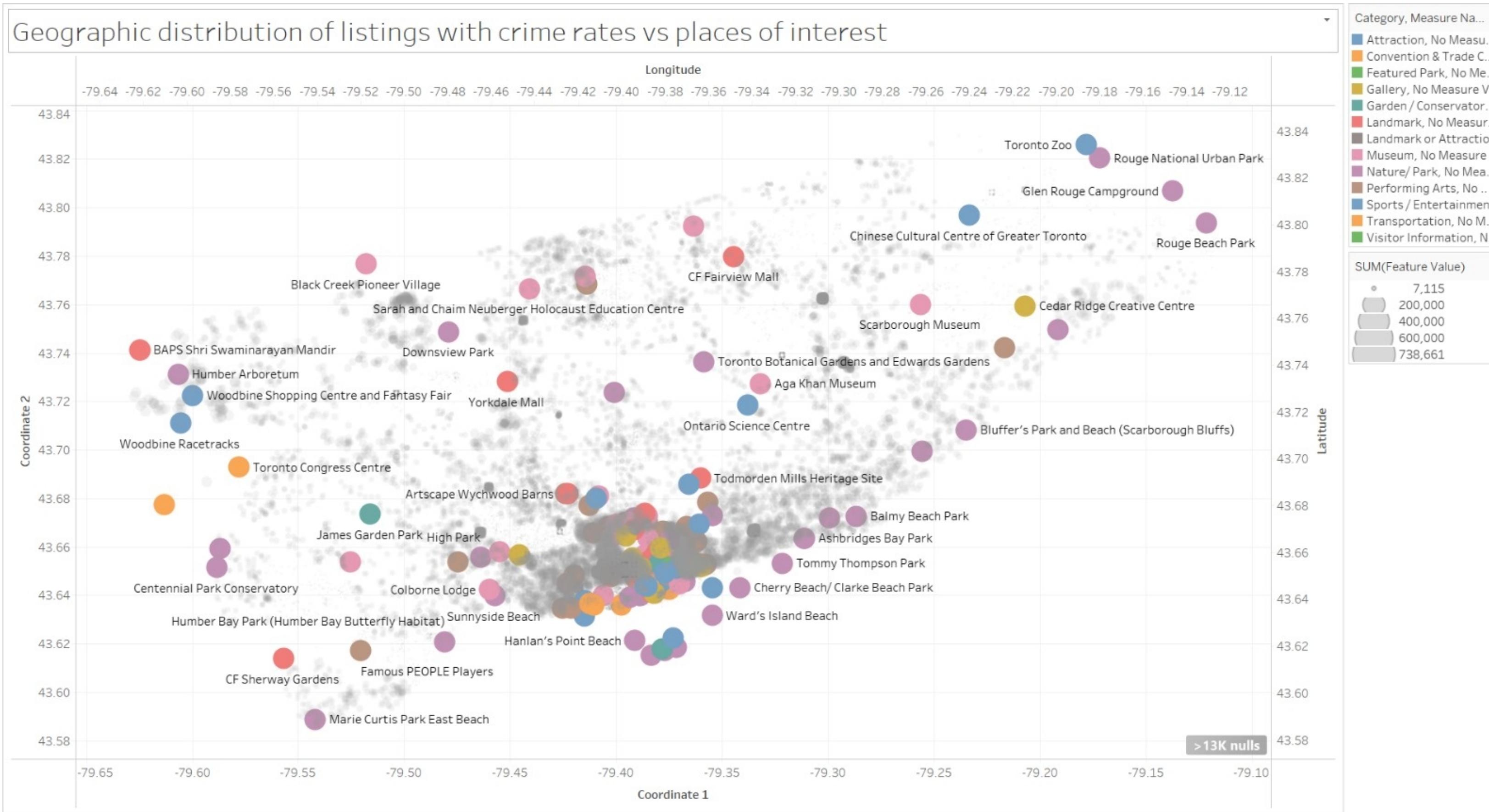


LISTINGS IN NEIGHBOURHOODS WITH THE HIGHEST CRIME RATES AND RATING LESS THAN 3.



06

GEOGRAPHIC DISTRIBUTION OF LISTINGS WITH CRIME RATES VS PLACE OF INTEREST.



CONCLUSION | RESULT

WHAT HAVE WE LEARNED?



01

COMPREHENSIVE SAFETY

We were able to outlined safety rates of each neighbourhoods.

02

LISTING VS POINT OF INTEREST VS CRIME RATE

We were able to plot a visualized diagram showing relations between listings with point of interest vs crime rates.

THANK YOU.

Thank you so much for your interest and attention.

