Final Report

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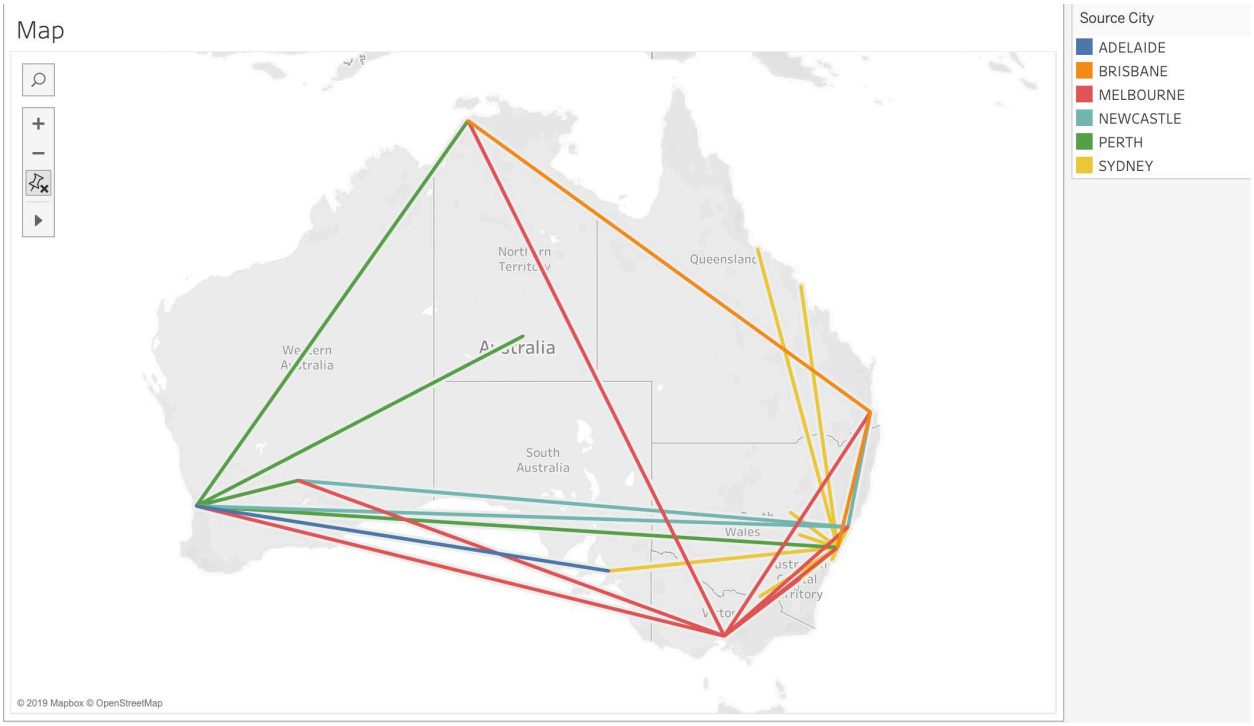
Part A - Displaying Routes and Calculating Distances

i) Replication

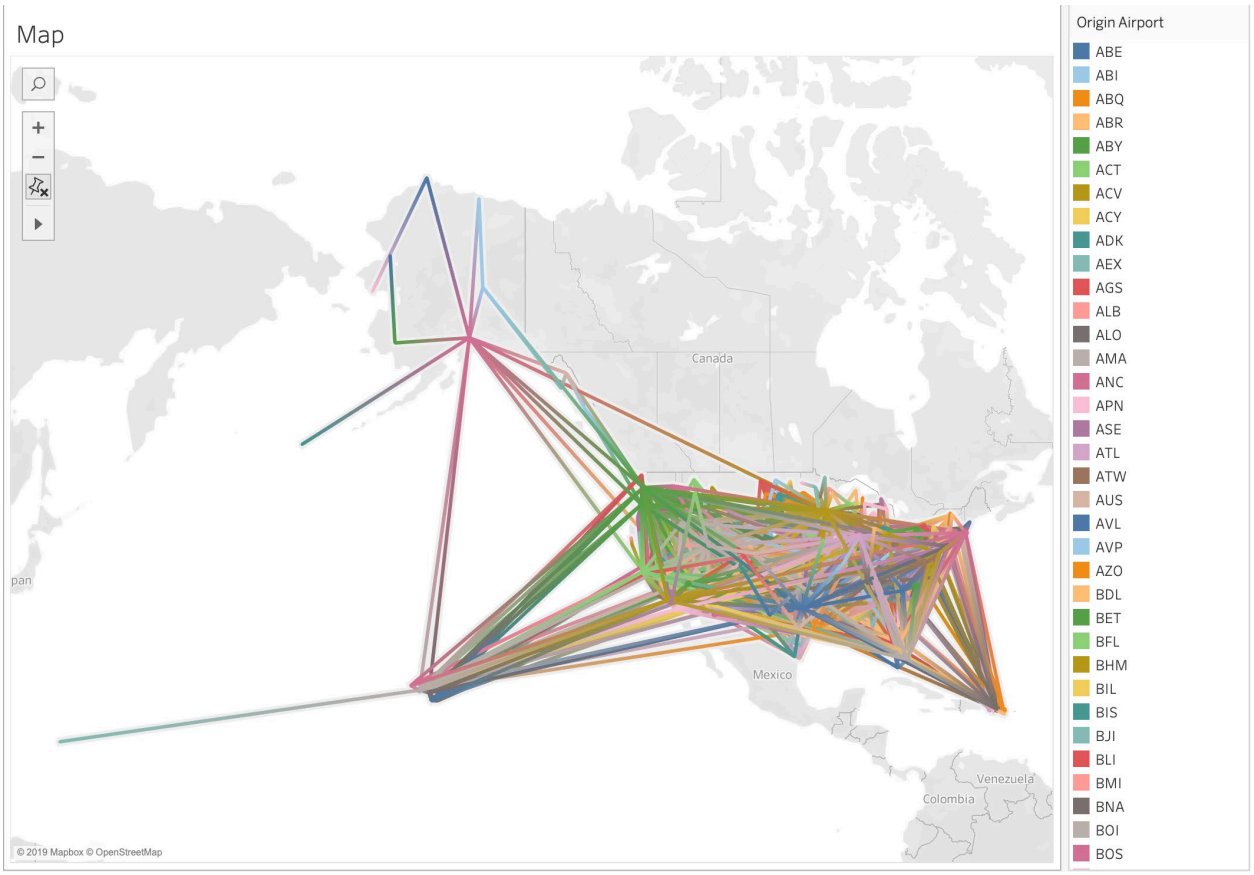
Screenshot:



File:
Part_A_Replication_Routes.twbx

ii) Application

Screenshot:



Comment:
The application showcases the domestic flights in the United States on 1 January 2015. It is analogous to the book's data because it demonstrates each airports' longitude, latitude, and the distance between origin and destination airports. The lines change colors from the origin airports to its destination airports. From the visualization, we can observe that the flights in the contiguous 48 states are more frequent than the outlying states and territories. For the 48 states, the major hubs like DFW, JFK, and LAX have huge amounts of flights going in and out. For the outlying states and territories, the flights to and from Hawaii and Puerto Rico are more frequent than to and from Alaska and Guam, probably because of their famous tourism.

File:
Part_A_Application_FlightRoutes.twbx

Part B - Creating a Template

i) Replication

Screenshot:

File:
Part_B_Replication_Template.twbx

ii) Application

Screenshot:

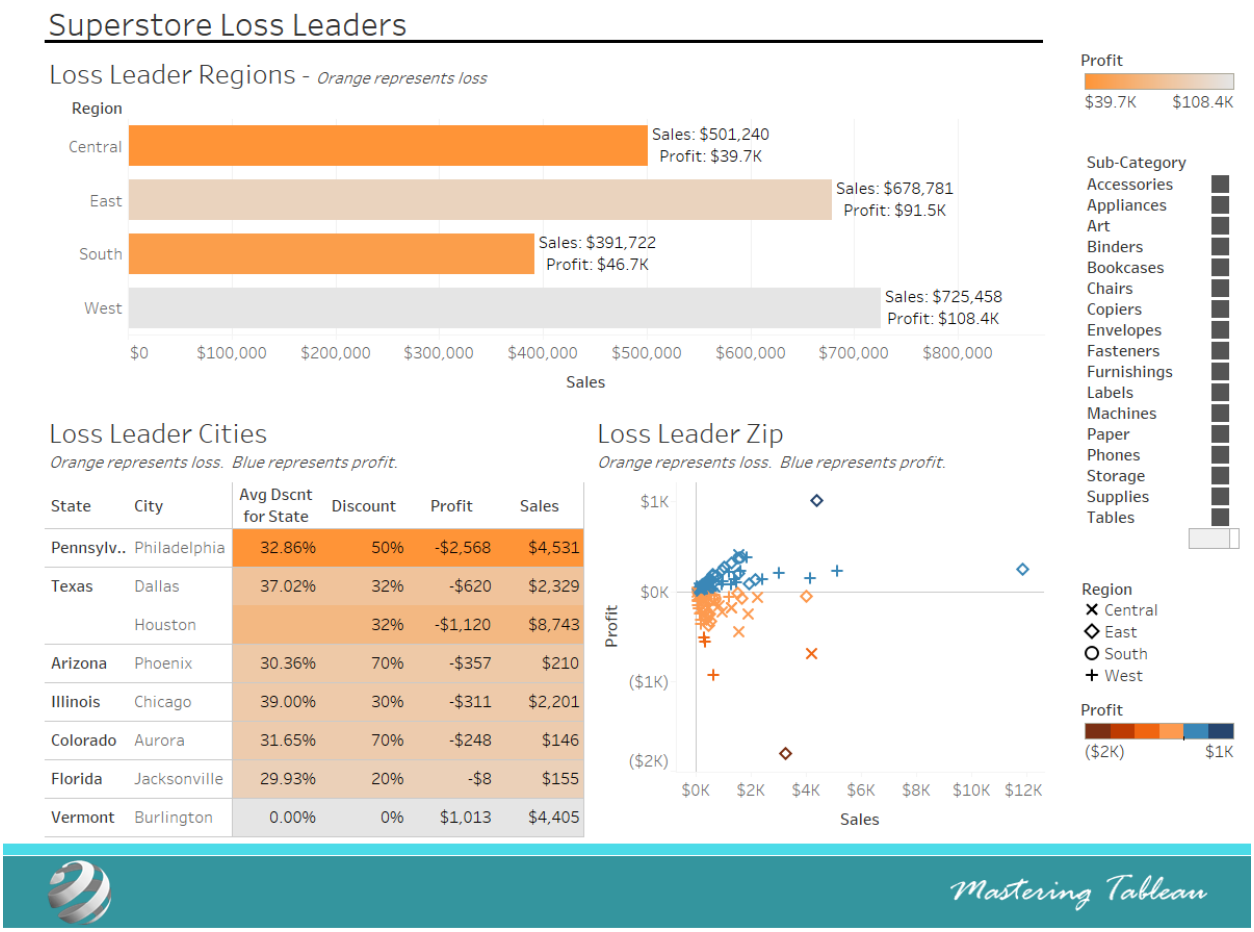
Comment:
Since this is a blank template, the data source does not affect the application. As for the creation of the template, the precise locations of pictures depend on their sizes. The thickness of the painted portions can be adjusted by width and height.

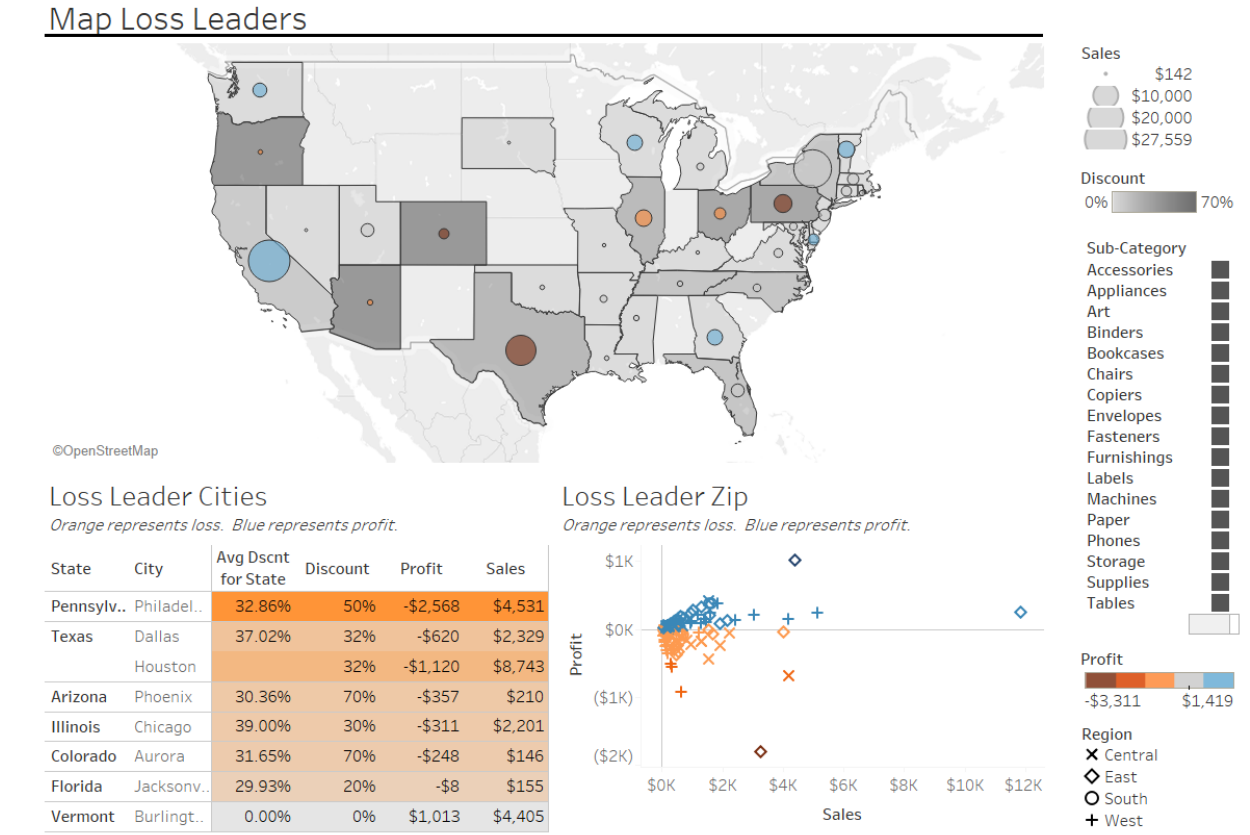
File:
Part_B_Application_NewTemplate.twbx

Part C - Creating Two Dashboards

i) Replication

Screenshot:

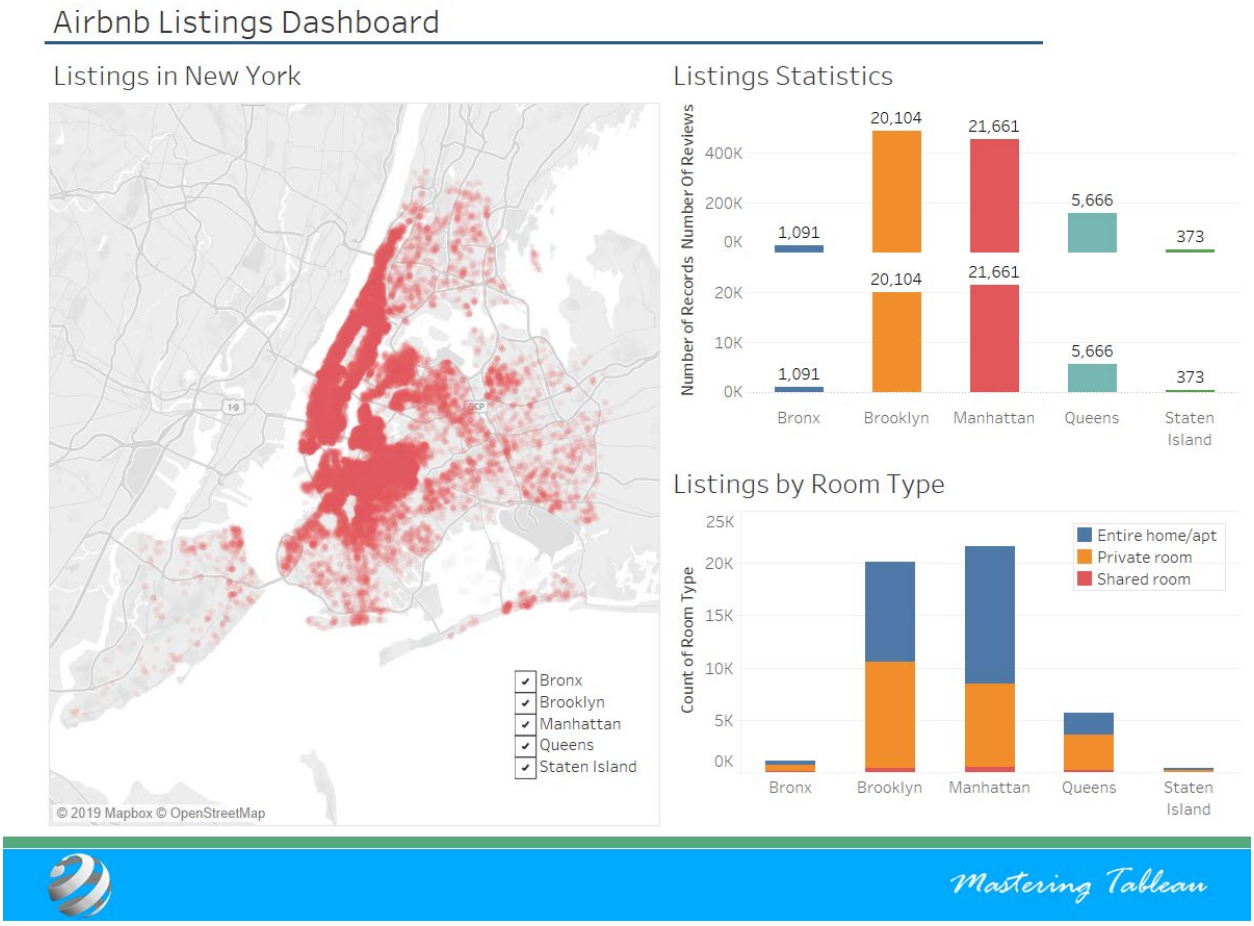


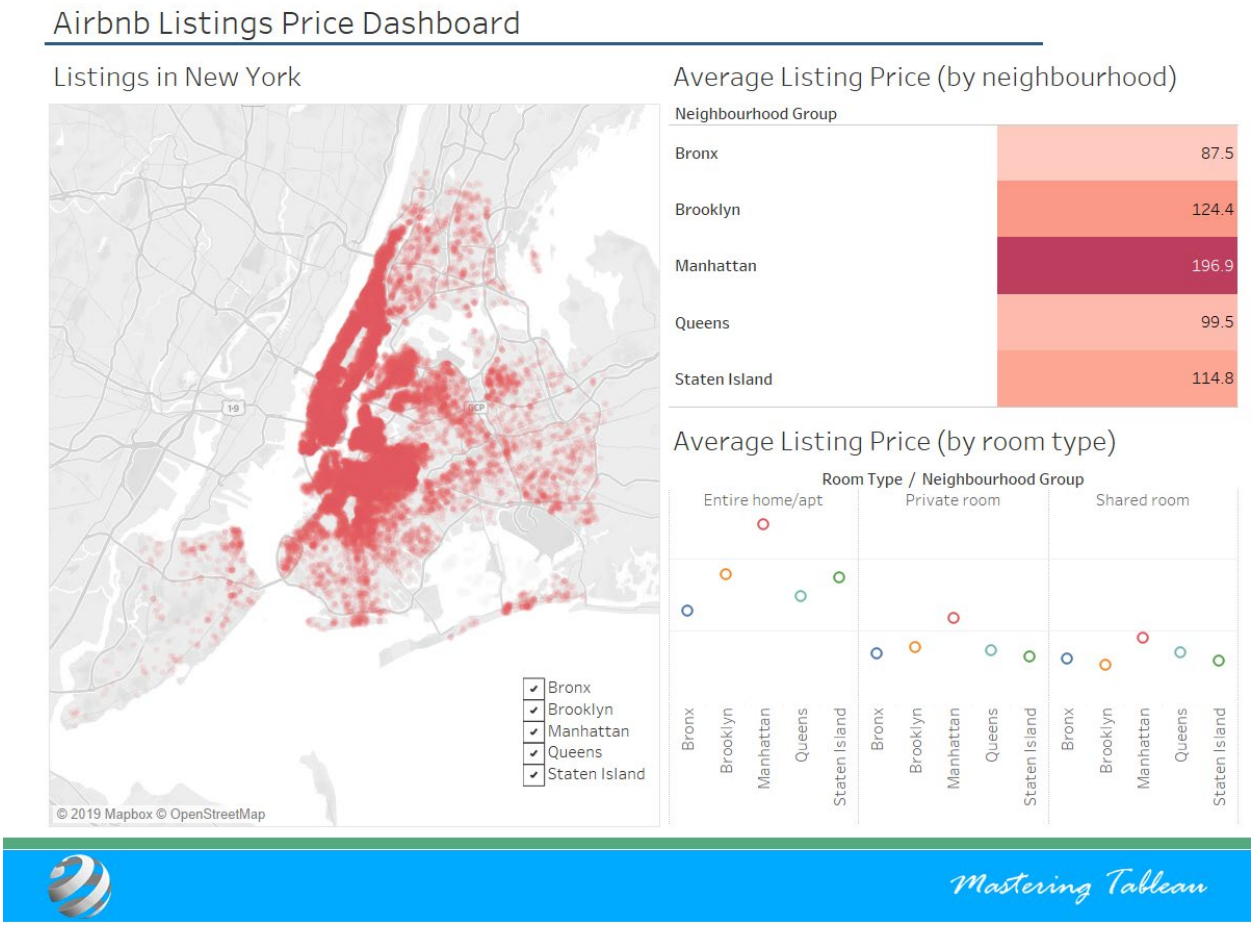


File:
Part_C_Replication_Dashboard.twbx
Part_C_Replication_Dashboard.pdf

ii) Application

Screenshot:





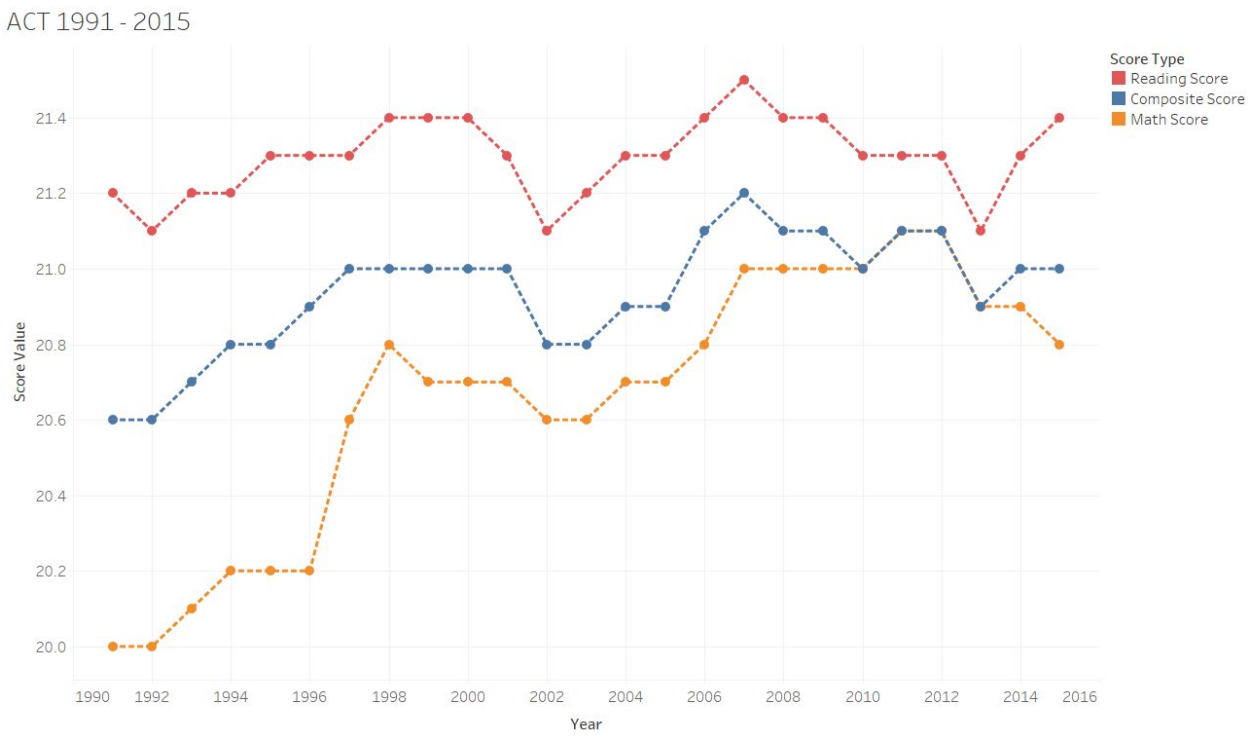
Comment:
The application showcases the data on Airbnb listings and metrics in New York City in 2019. As the book's data, the new dataset is thorough in terms of both the number of rows and the dimensions. It includes price, location, room, host, and other information of each listing.
When designing the visualization, we create a graph of the listing distribution in NYC with the longitude and latitude data. From this graph, we see that Airbnb is much more popular in Manhattan and Brooklynn than in other three neighbourhood groups of NYC.
As for the two dashboards created, the first one focuses on the listing details such as numbers of reviews, records, and rooms with different types. It is easy to see that renting an entire home/apartment costs much more than just a single room or a shared room. The second one focuses on the price distribution among different areas in NYC. We notice that the average listing price is at its highest in Manhattan. This could be due to more entire home listings in the area. Also, listings in Manhattan are much more expensive than those in other neighbourhood groups, regardless of room type, as shown in another graph on average listing price (by room type).

File:
Part_C_Application_AirbnbDashboard.twbx
Part_C_Application_AirbnbDashboard.pdf

Part D - Creating an Animation with Tableau

i) Replication

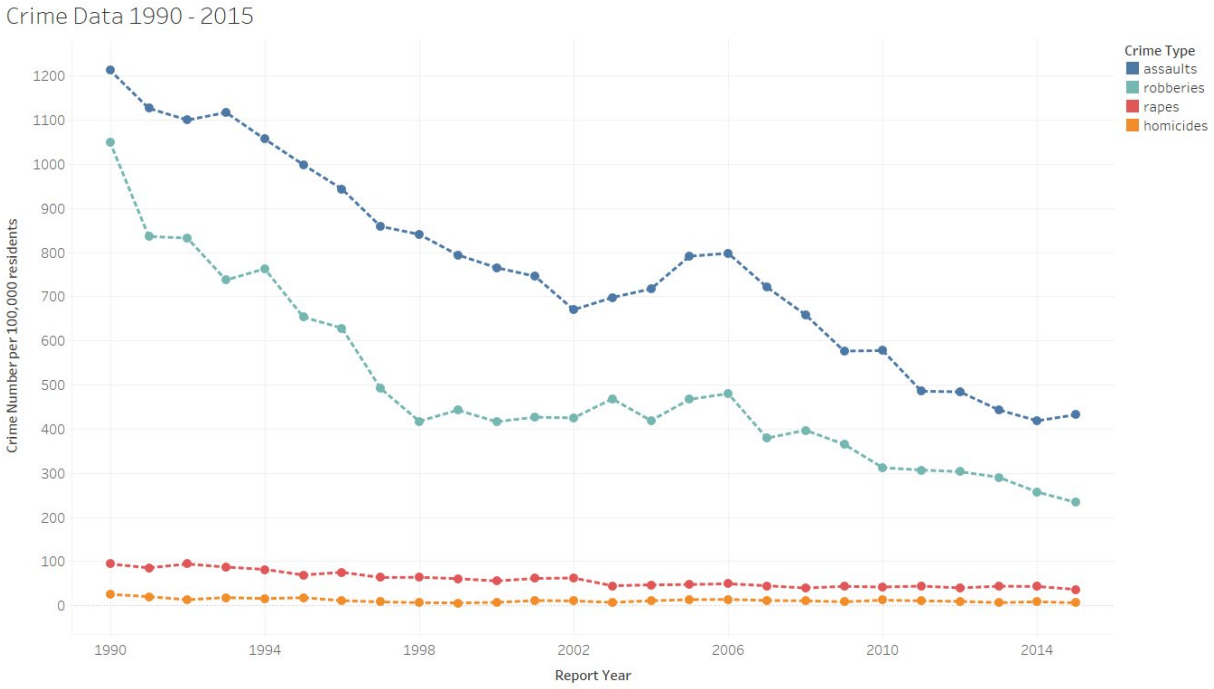
Screenshot:



File:
Part_D_Replication_Animation.twbx

ii) Application

Screenshot:



Comment:
The application showcases the data on four major crimes — homicide, rape, robbery, and assault — from Boston police jurisdiction from 1990 to 2015. It is analogous to the book's data since it is time series data with different categories. crime_type (category) is placed on the color shelf so that line colors vary among different types of crimes. report_year is added to Pages to create an animation where the user can play through the years. From the visualization, we can observe that assaults and robberies are the most critical types of crimes in Boston, while rape and homicide cases are relatively rare. Over the past few decades, the numbers of assaults and robberies and have remarkably decreased, and the numbers of rapes and homicides have stayed low. The decreasing trend might be credited to the Boston Police Department's dedication to fighting crimes.

File:
Part_D_Application.twbx