

Assignment 1 Crime Analytics for Seattle

Conclusion

Most of incidents happened in city center and more than half of them are robberies or thefts.

Incidents in Seattle – Most Incidents Happened in City Center

For people who don't know Seattle, it is very hard to understand the street name and other geo information. The most convenient to show the crime in Seattle is to use map. Figure 1 shows the crimes in Seattle 2014 and each red point represents an incident. We use latitude and longitude to pinpoint the crime location. There are 2050 observations don't have geo information, so we didn't plot them.

We can see darkest red appears in the city center. There is another area which has dark red but that area is small.

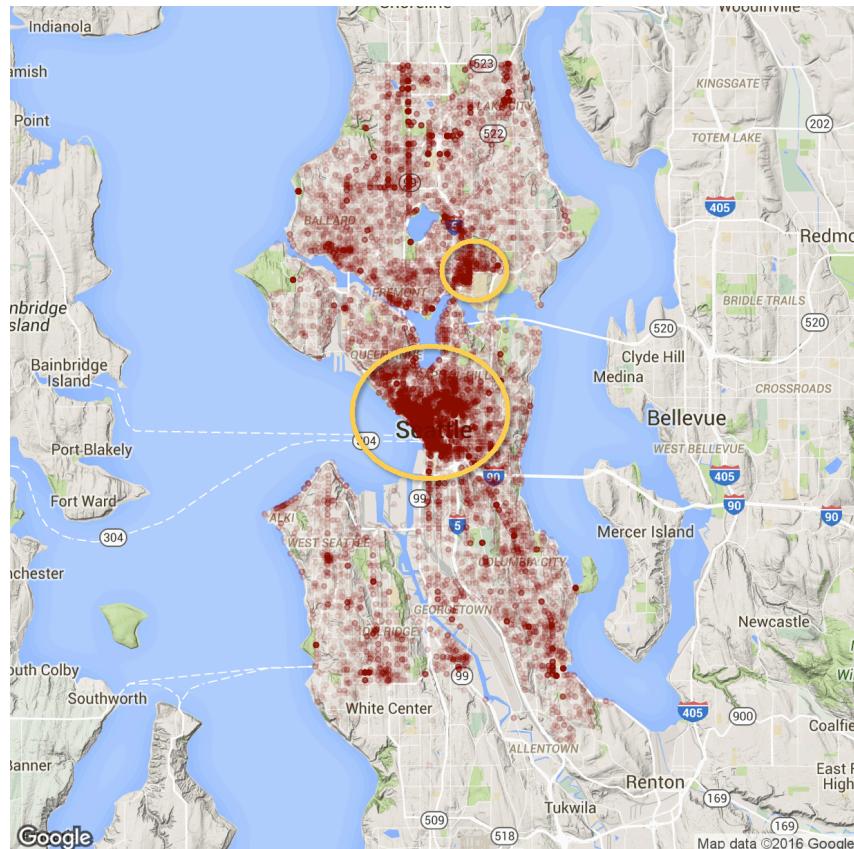
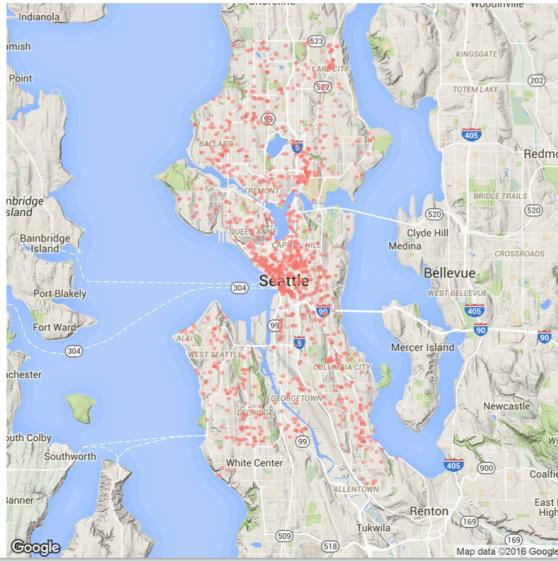
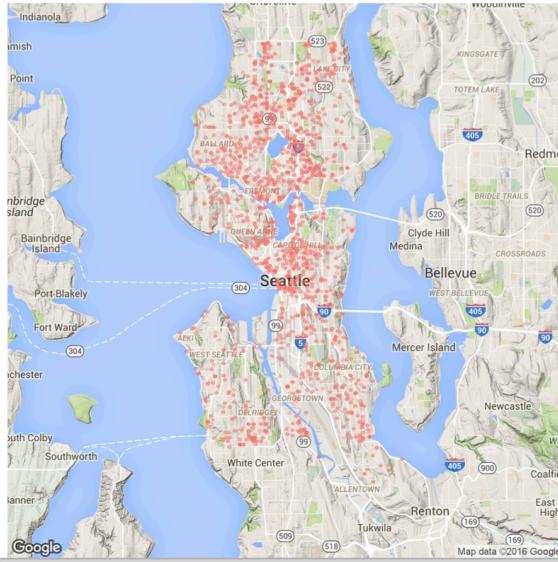
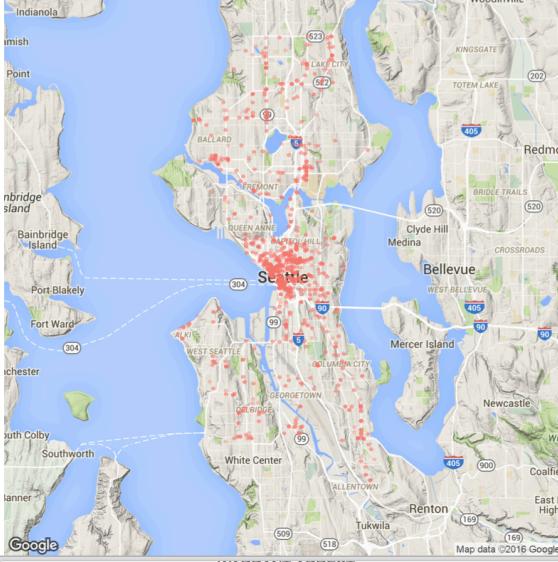
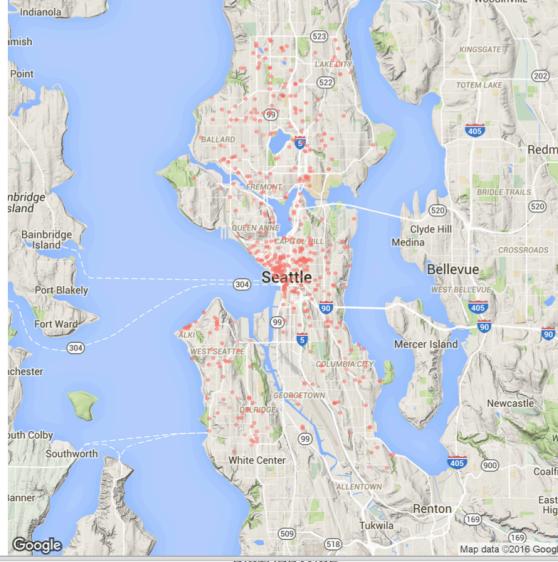
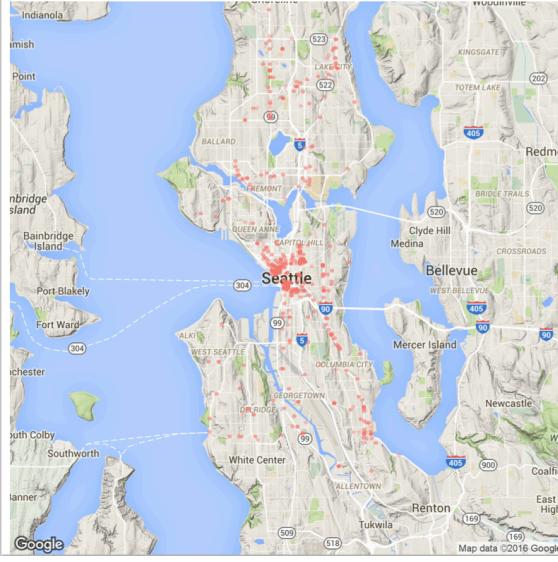
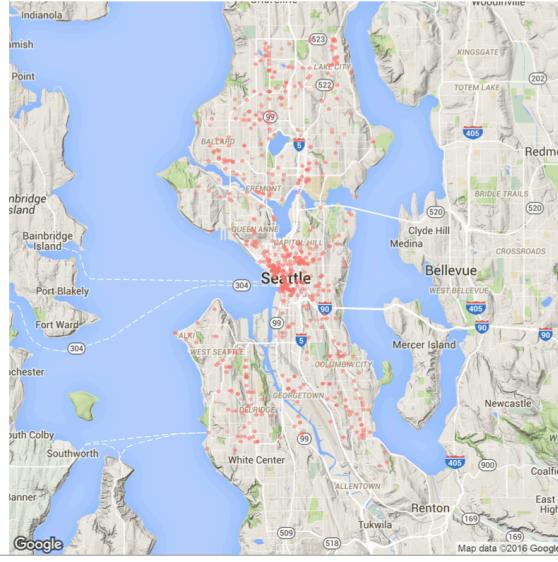


Figure 1. Crimes in Seattle

We plot the crime distribution plots for top 11 common incidents in Seattle. Except Burglary and Vehicle Theft, which are almost evenly distributed all over the city, others are all concentrate at the city center.



PROPERTY DAMAGE**VEHICLE THEFT****ASSAULT****STOLEN PROPERTY****WARRANT ARREST****DISTURBANCE**

Theft – Car Prowl is the Most Common Incident in City Center

It is difficult to identify the exact city center area. We find the geo location of Seattle on Wikipedia as 47.609722, -122.333056. So we consider area within 3km of the point as city center. There are 35.21% of incidents happened in city center and we have the bar plot for Top 10 incident types. We can see Car Prowl which refers to Theft – Car PROWL is the most common incident in city center.

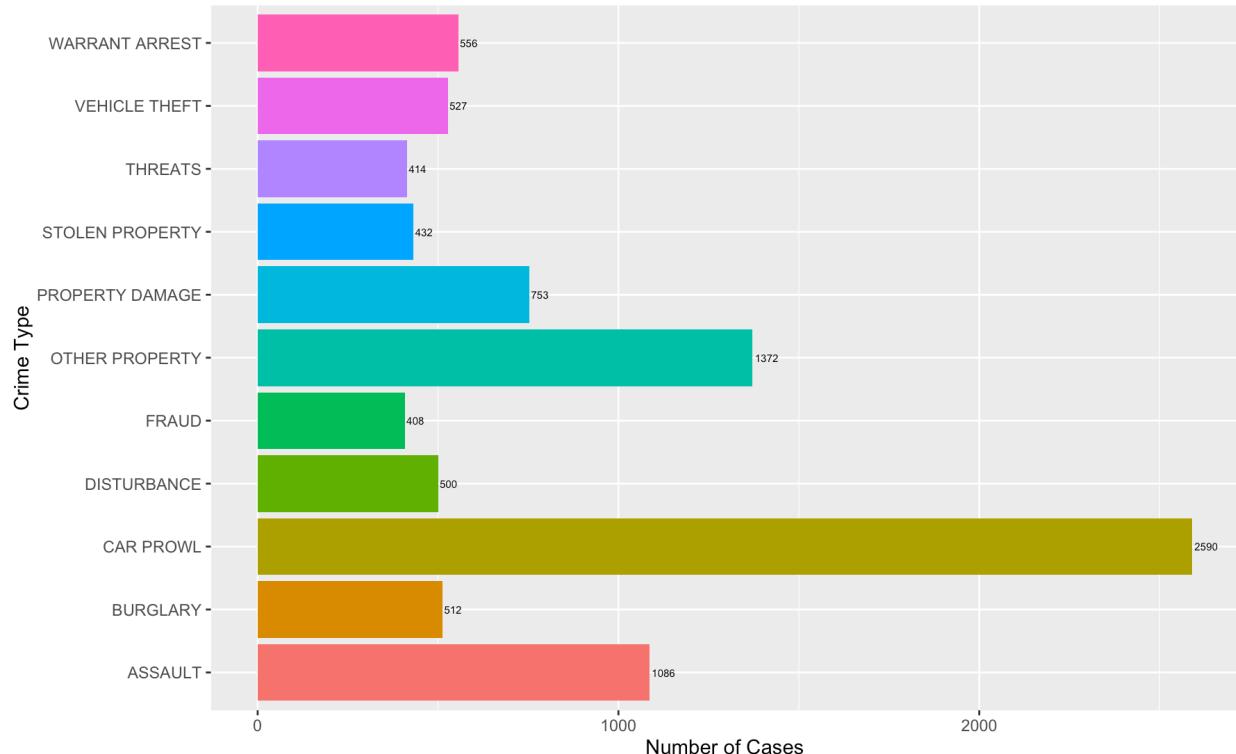


Figure 2. Bar Plot for City Center

City Center is Robberies and Thefts Most Common

There are 2 variables in the data describe the type of crime. One is Offense Type, another is Summarized Offense Description. Offense Type has more than 100 unique values and Summarized Offense Description has fewer than 50 types. So for previous steps, we use Summarized Offense Description. For this step, we use Offense Type. Any type contains "ROBBERY" or "THEFT" but not "FRAUD-IDENTITY THEFT" will be considered.

From Figure 3, we can see the most of Rubberries and Thefts happened in city center.

Robbery and Thefts

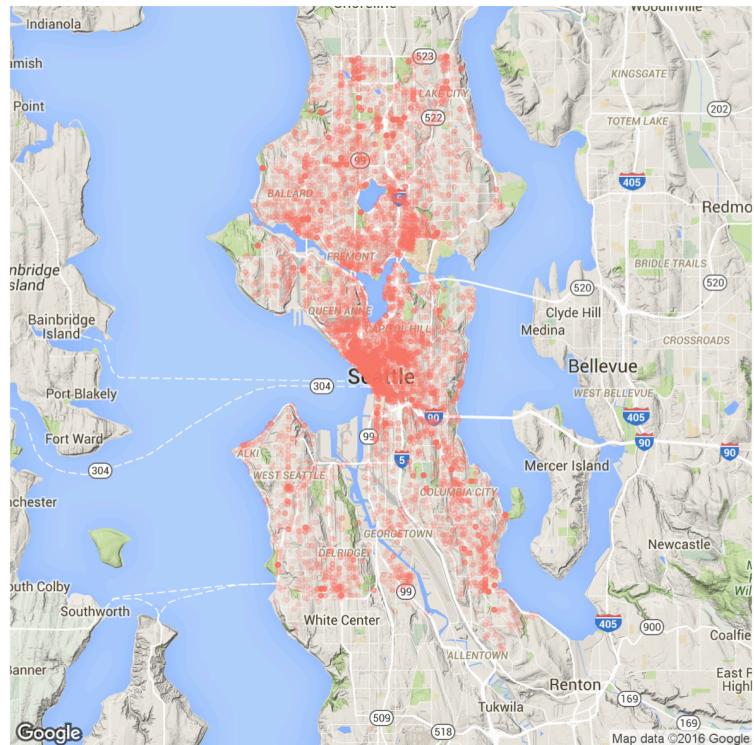


Figure 3. Robberies and Thefts in Seattle

Green Points are robberies and thefts. Red points are other crimes.
Robbery and Thefts

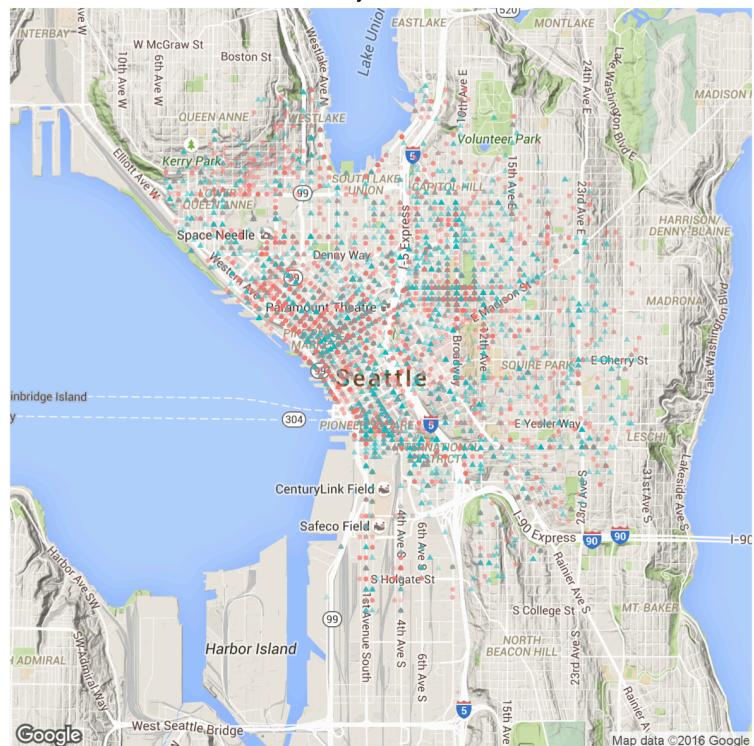


Figure 4. Crimes in City Center