The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern, layered effect on the right side of the slide.

Prediction of crime affected districts of Chicago

Introduction

- ❖ Violent crimes, thefts, and robberies occur in majority of places. On daily basis, local businesses, houses etc encounter such crimes.
- ❖ Our job as data scientist is to analyze the pattern of crimes. study the distribution of types of crime that occur in various part of a particular place. It is important to know where the crimes are happening, usually areas with police stations farther in distance can result into increase crime count

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Data Understanding

Here in this project, I will utilize the crime dataset & police stations provided by [Chicago Data Portal](#).

Crime data set

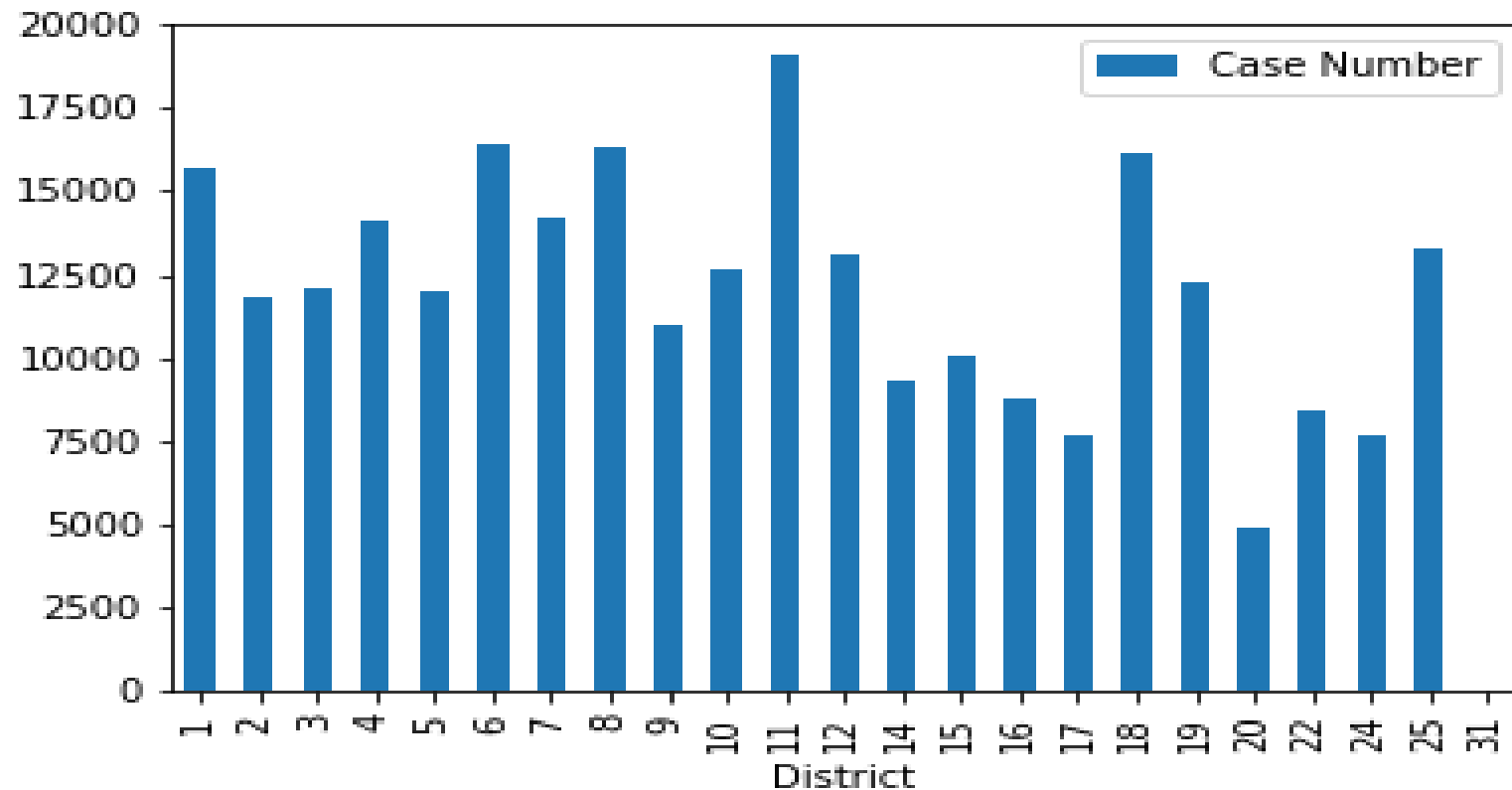
	Case Number	Date	Primary Type	Location Description	District	Community Area	Latitude	Longitude
1	JC104662	12/31/2018 11:59:00 PM	CRIMINAL DAMAGE	STREET	22	74.0	41.689079	-87.696064
2	JC100043	12/31/2018 11:57:00 PM	CRIMINAL DAMAGE	APARTMENT	6	71.0	41.740521	-87.647391
3	JC100006	12/31/2018 11:56:00 PM	BATTERY	OTHER	12	31.0	41.857068	-87.657625
4	JC100031	12/31/2018 11:55:00 PM	BATTERY	APARTMENT	6	71.0	41.751914	-87.647717
5	JC100026	12/31/2018 11:49:00 PM	BATTERY	STREET	15	25.0	41.875684	-87.760479
6	JC100011	12/31/2018 11:48:00 PM	BATTERY	APARTMENT	6	71.0	41.750154	-87.661009
7	JC100089	12/31/2018 11:47:00 PM	BATTERY	VEHICLE - OTHER RIDE SHARE SERVICE (E.G., UBER...	19	5.0	41.939625	-87.673996
8	JC101094	12/31/2018 11:45:00 PM	THEFT	BAR OR TAVERN	19	6.0	41.940519	-87.654124
9	JC101652	12/31/2018 11:45:00 PM	CRIMINAL DAMAGE	APARTMENT	14	23.0	41.905562	-87.707589
10	JB574407	12/31/2018 11:44:00 PM	CRIMINAL TRESPASS	MOVIE HOUSE/THEATER	19	3.0	41.968463	-87.659670

The dataset consist of **22 fields** and over **226K rows**. The fields include attributes related to crime such as *Case number, block, IUCR codes, Description, Type of Crime, location, Lattitude, Longitude, district*.

Police data set

	DISTRICT	DISTRICT NAME	STATE	ZIP	LATITUDE	LONGITUDE
0	1	Central	IL	60616	41.858373	-87.627356
1	2	Wentworth	IL	60609	41.801811	-87.630560
2	3	Grand Crossing	IL	60637	41.766431	-87.605748
3	4	South Chicago	IL	60617	41.707933	-87.568349
4	5	Calumet	IL	60628	41.692723	-87.604506

relation between each district and the number of recorded cases in 2018 for each of them.

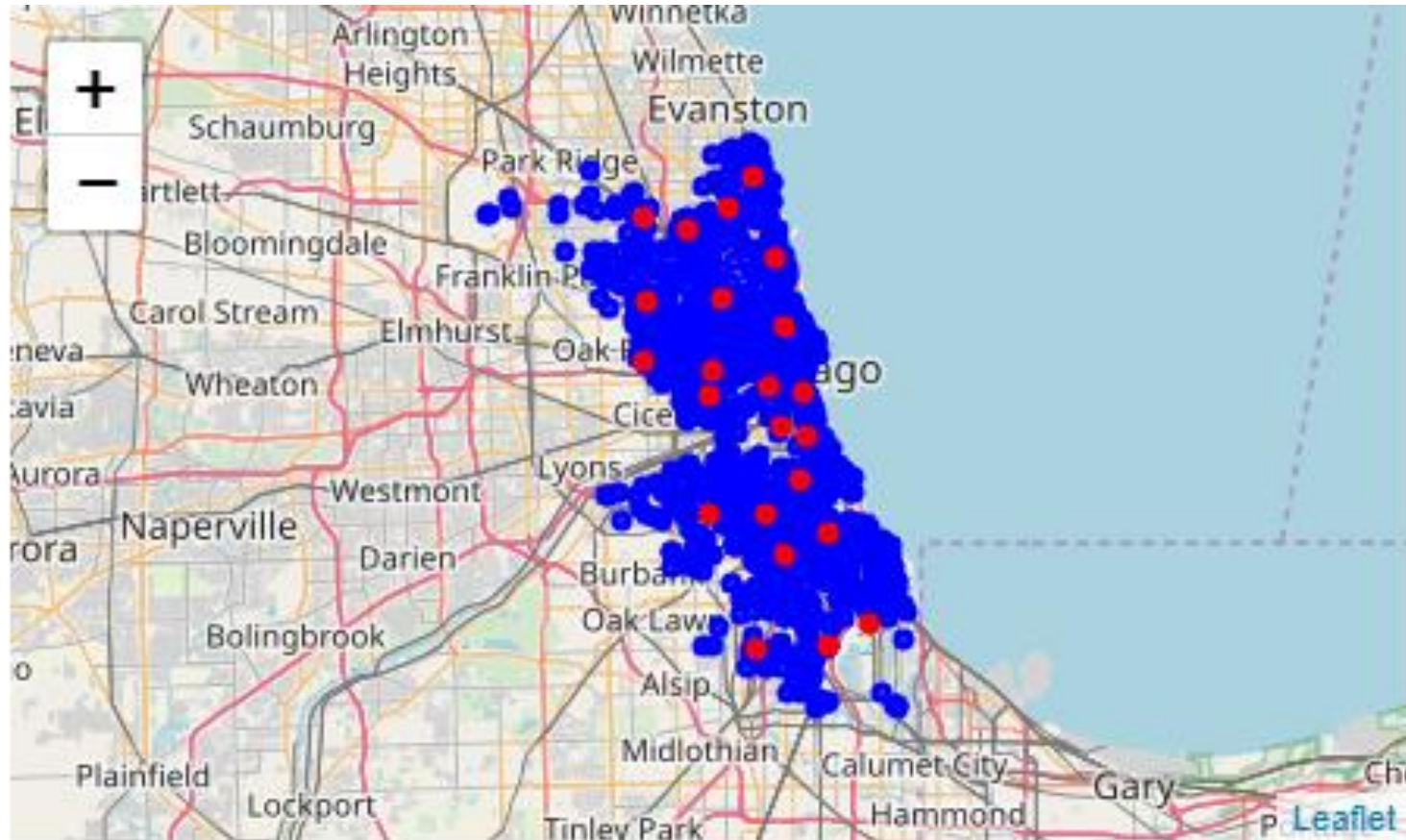


Analysing Top 10 crimes in the district

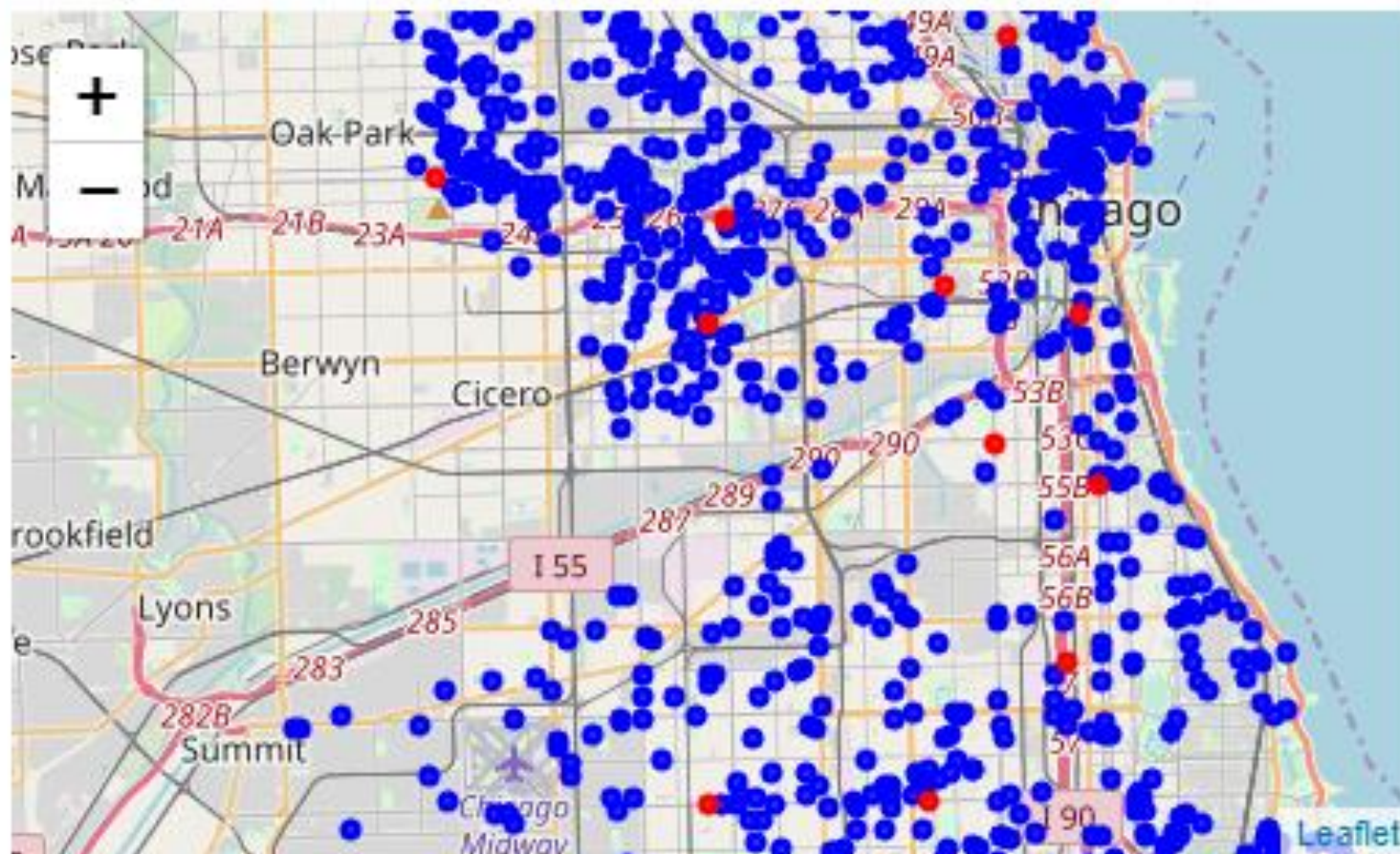
	District	1st Most Common Crime	2nd Most Common Crime	3rd Most Common Crime	4th Most Common Crime	5th Most Common Crime	6th Most Common Crime	7th Most Common Crime	8th Most Common Crime	9th Most Common Crime	10th Most Common Crime
0	1	THEFT	DECEPTIVE PRACTICE	BATTERY	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	ROBBERY	CRIMINAL TRESPASS	MOTOR VEHICLE THEFT	BURGLARY
1	2	THEFT	BATTERY	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	DECEPTIVE PRACTICE	ROBBERY	MOTOR VEHICLE THEFT	BURGLARY	CRIMINAL TRESPASS
2	3	BATTERY	THEFT	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	BURGLARY	DECEPTIVE PRACTICE	ROBBERY	NARCOTICS	MOTOR VEHICLE THEFT
3	4	BATTERY	THEFT	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	BURGLARY	DECEPTIVE PRACTICE	MOTOR VEHICLE THEFT	NARCOTICS	ROBBERY
4	5	BATTERY	THEFT	CRIMINAL DAMAGE	OTHER OFFENSE	ASSAULT	BURGLARY	DECEPTIVE PRACTICE	NARCOTICS	WEAPONS VIOLATION	ROBBERY
5	6	BATTERY	THEFT	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	NARCOTICS	DECEPTIVE PRACTICE	BURGLARY	ROBBERY	WEAPONS VIOLATION
6	7	BATTERY	THEFT	CRIMINAL DAMAGE	ASSAULT	OTHER OFFENSE	NARCOTICS	WEAPONS VIOLATION	BURGLARY	ROBBERY	DECEPTIVE PRACTICE

Scatter plot showing densely affected areas by crime

Out[6]:

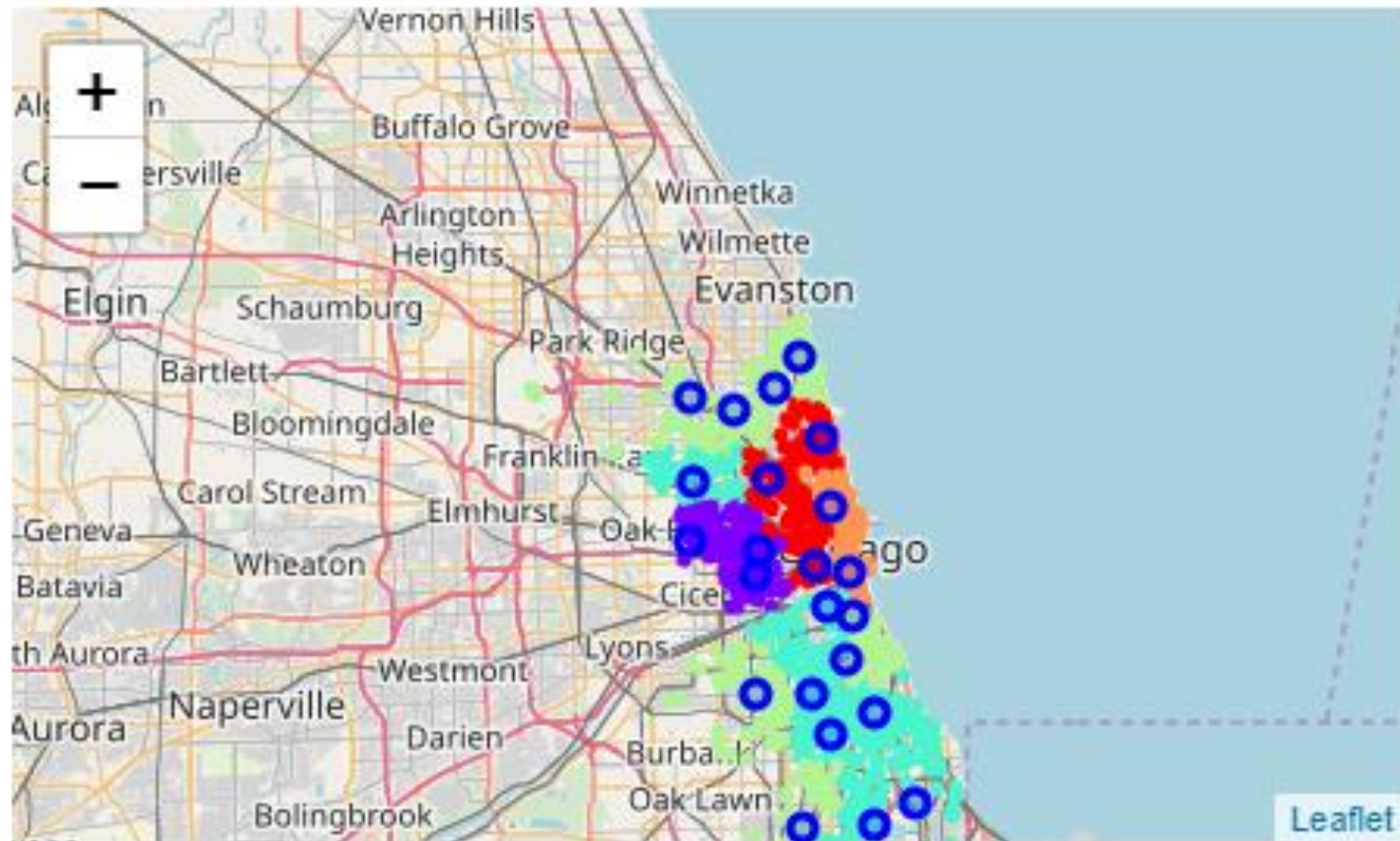


Out[6]:

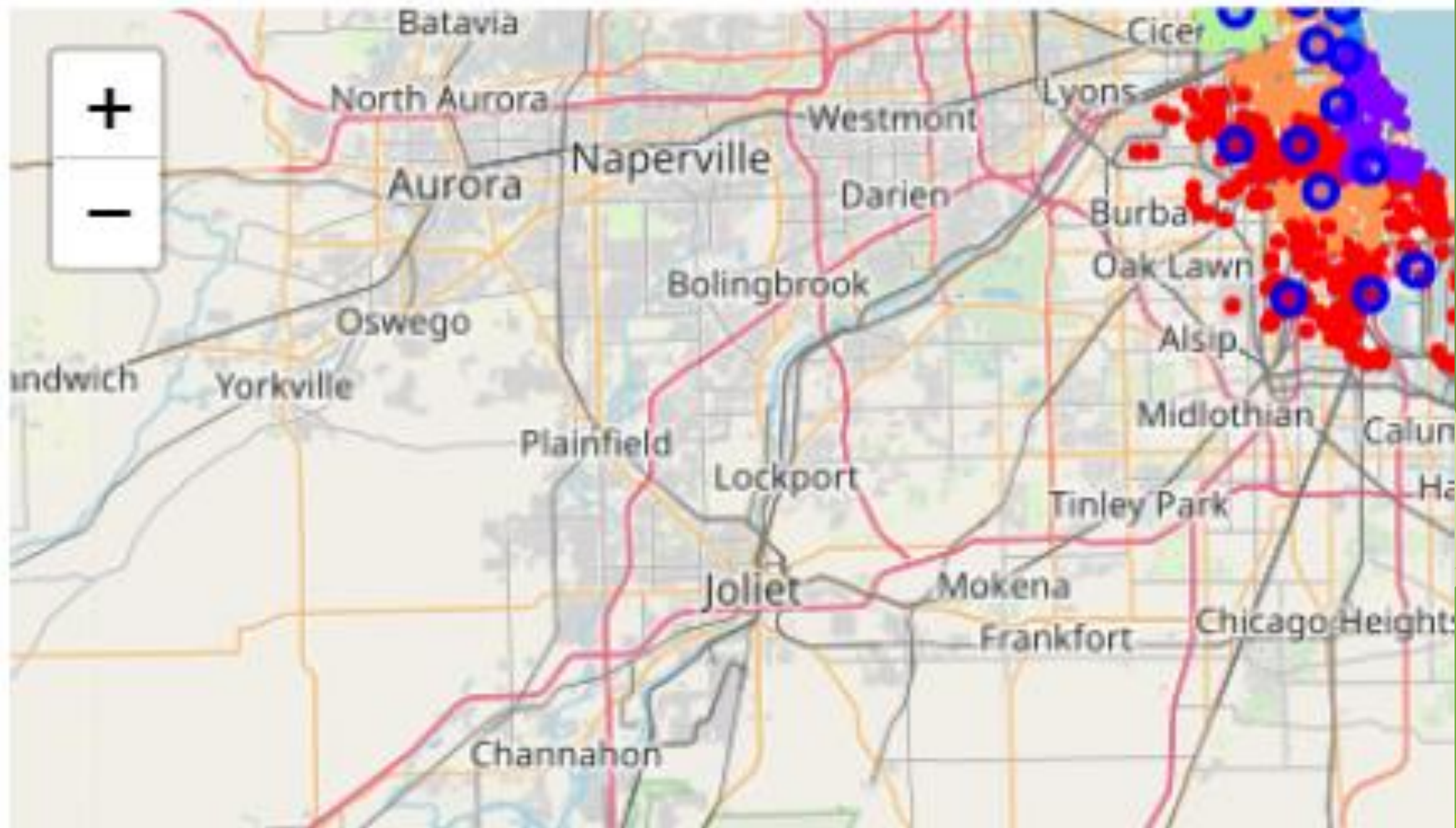


Provide relationship between the Location
Type of a crime and the districts

Out[26]:



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Conclusion

- In this project we analyzed various distribution of crimes in the chicago city area. The city being divided into 23 districts became the key driver of the distribution.
- As we can see there is a strong co-relation of the clusters along with its primary type as well as location of the crime that is taking place