Table 1 Raw Variable Description

Column	Description
X_id	Unique row identifier for open Data database
EVENT_UNIQUE_ID	Offence Number
REPORT_DATE	Date Offence was Reported.
OCC_DATE	Date of Offence
⋮	⋮

Table 2 : Sample of Clean Data : Part 1

X_id	OCCDATE	OCC_YEAR	OCC_MONTH	OCC_DAY	OCC_DOW
1	2014-01-01	2014	January	1	Wednesday
3	2014-01-01	2014	January	1	Wednesday
15	2014-01-01	2014	January	1	Wednesday
⋮	⋮	⋮	⋮	⋮	⋮

Table 3 : Sample of Clean Data : Part 2

OCC_HOUR	DIVISION	PREMISES_TYPE	UCR_CODE
8	D51	House	2142
11	D42	House	2142
0	D14	Outside	2142
⋮	⋮	⋮	⋮

Table 4: Sample of Clean Data: Part 3

OFFENCE	LONG_WGS84	LAT_WGS84
Theft From Motor Vehicle Under	-79.31453	43.65707
Theft From Motor Vehicle Unde	-79.27716	43.81731
Theft From Motor Vehicle Unde	-79.40111	43.65227
⋮	⋮	⋮

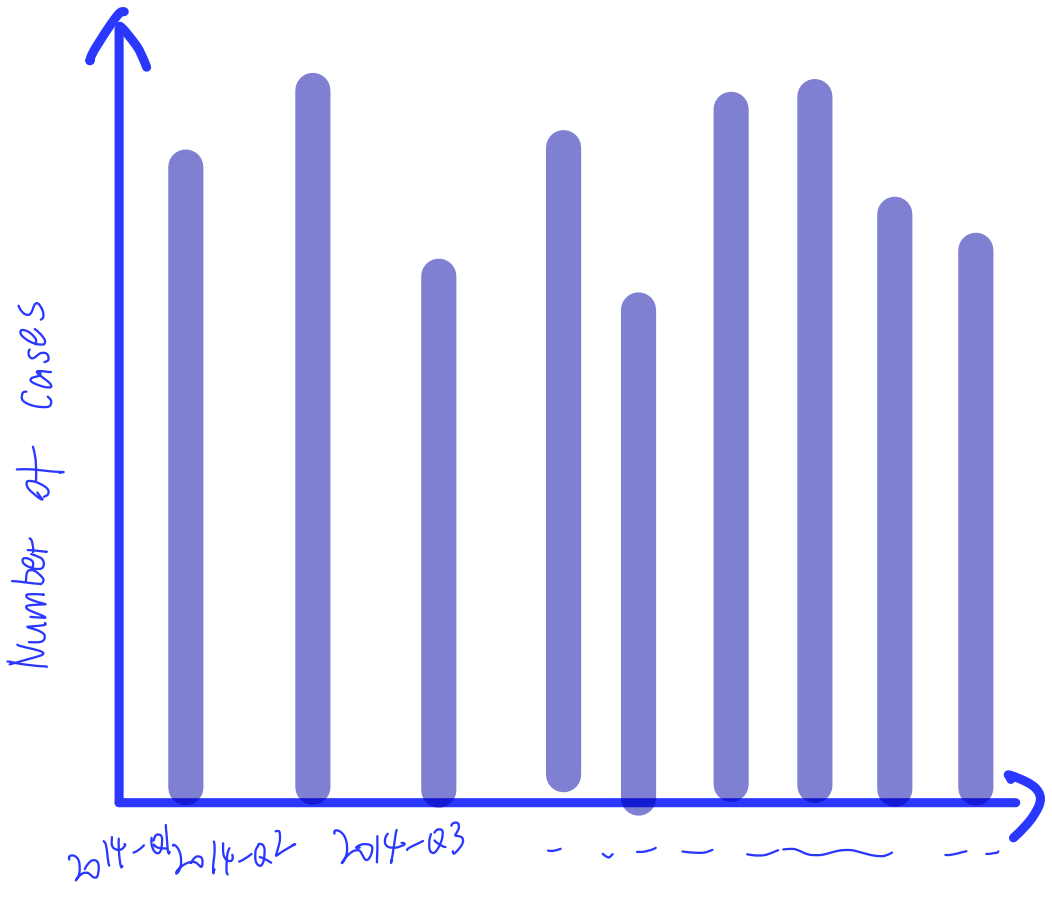

Figure 1: Histogram of quarterly count of car theft in Toronto

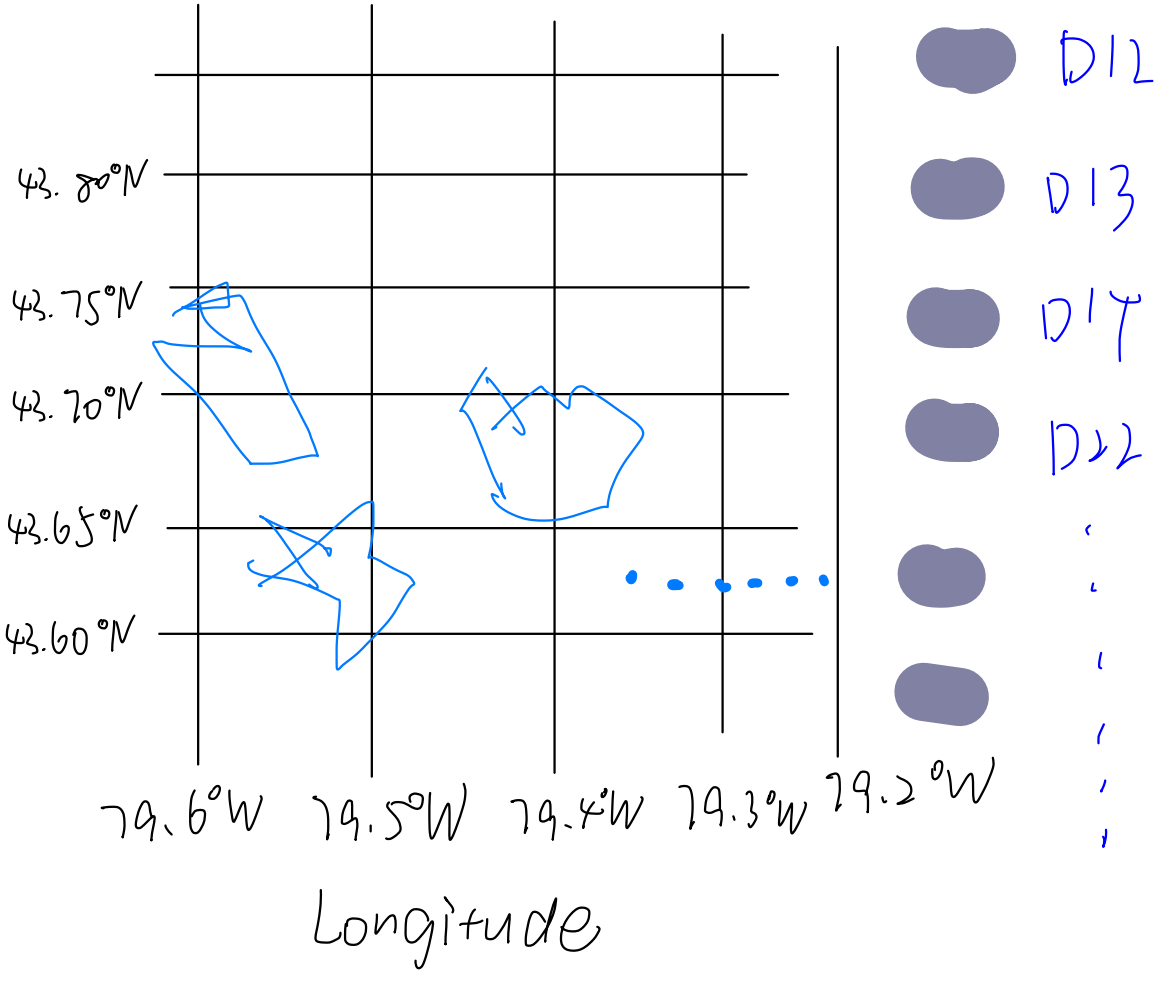

Figure 2: Spatial view of vehicle theft cases by division for September 2024

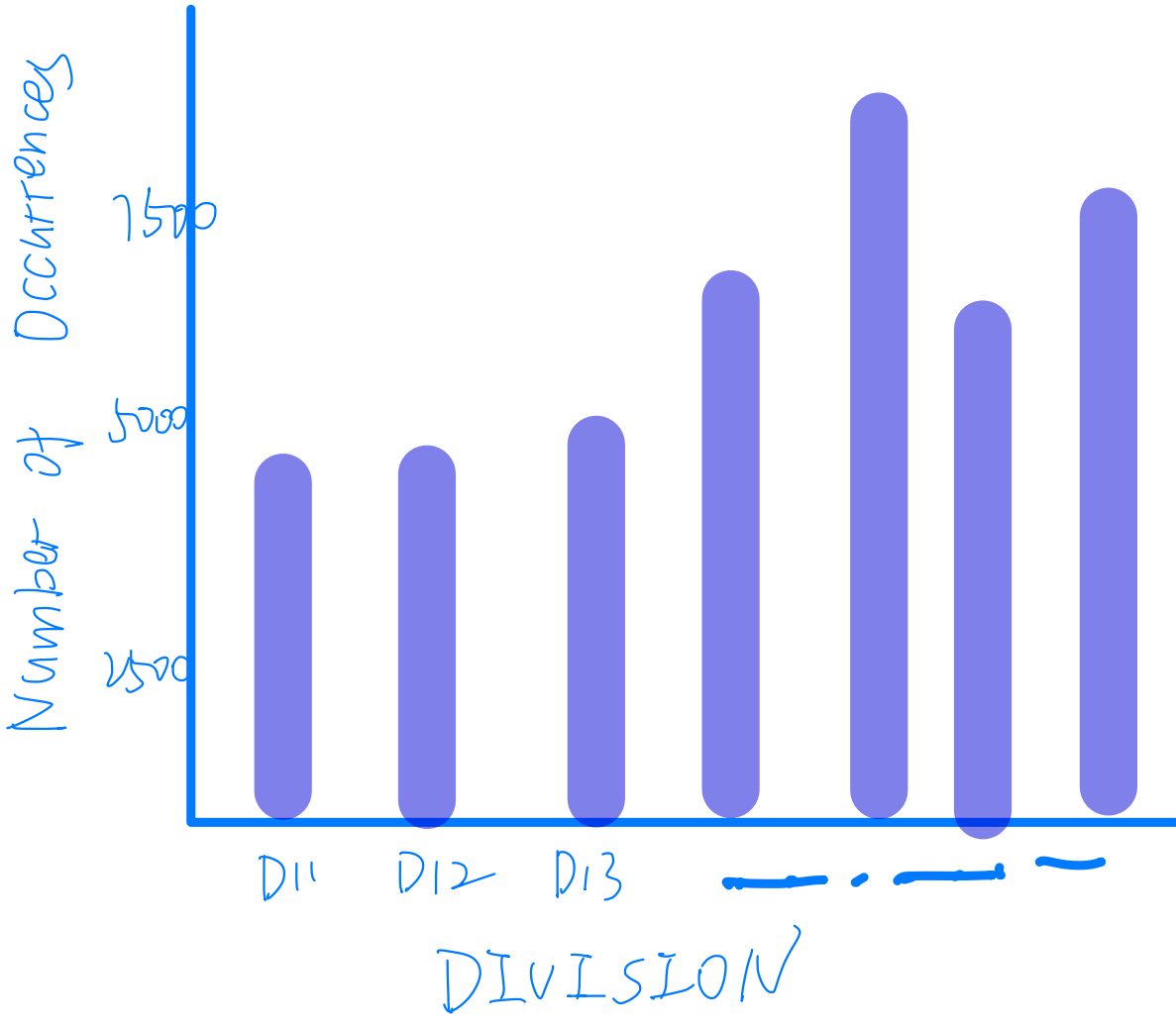

Figure 3: Barchart of count of occurrences by divisions

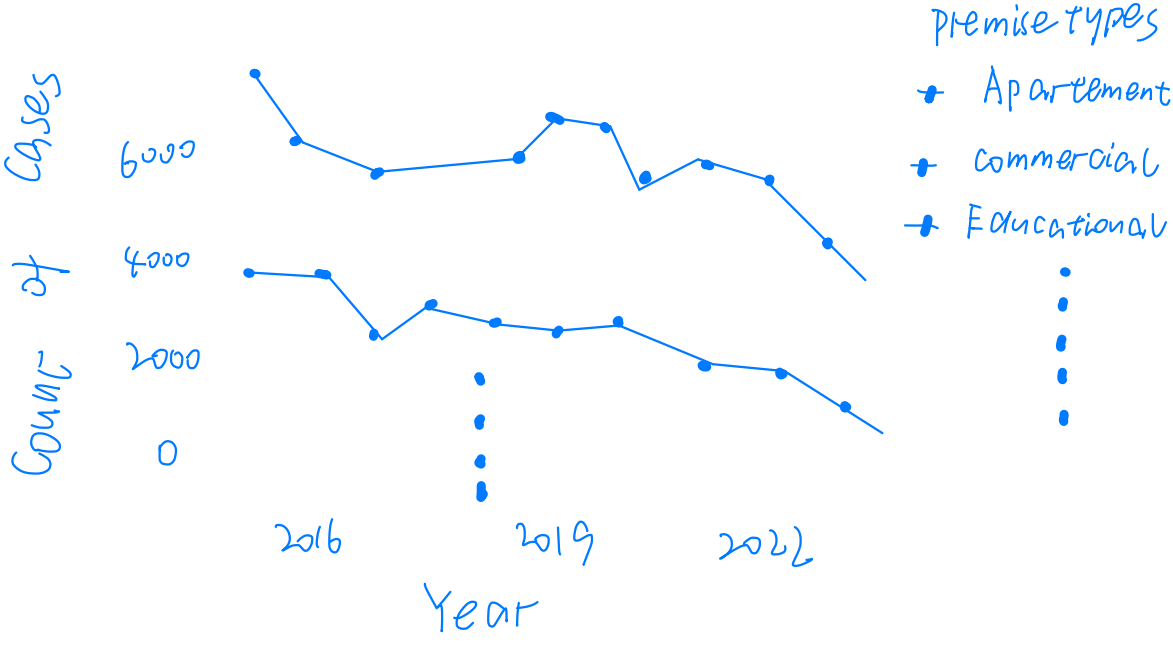

Figure 4: Linechart of count of occurrences by premise types and year

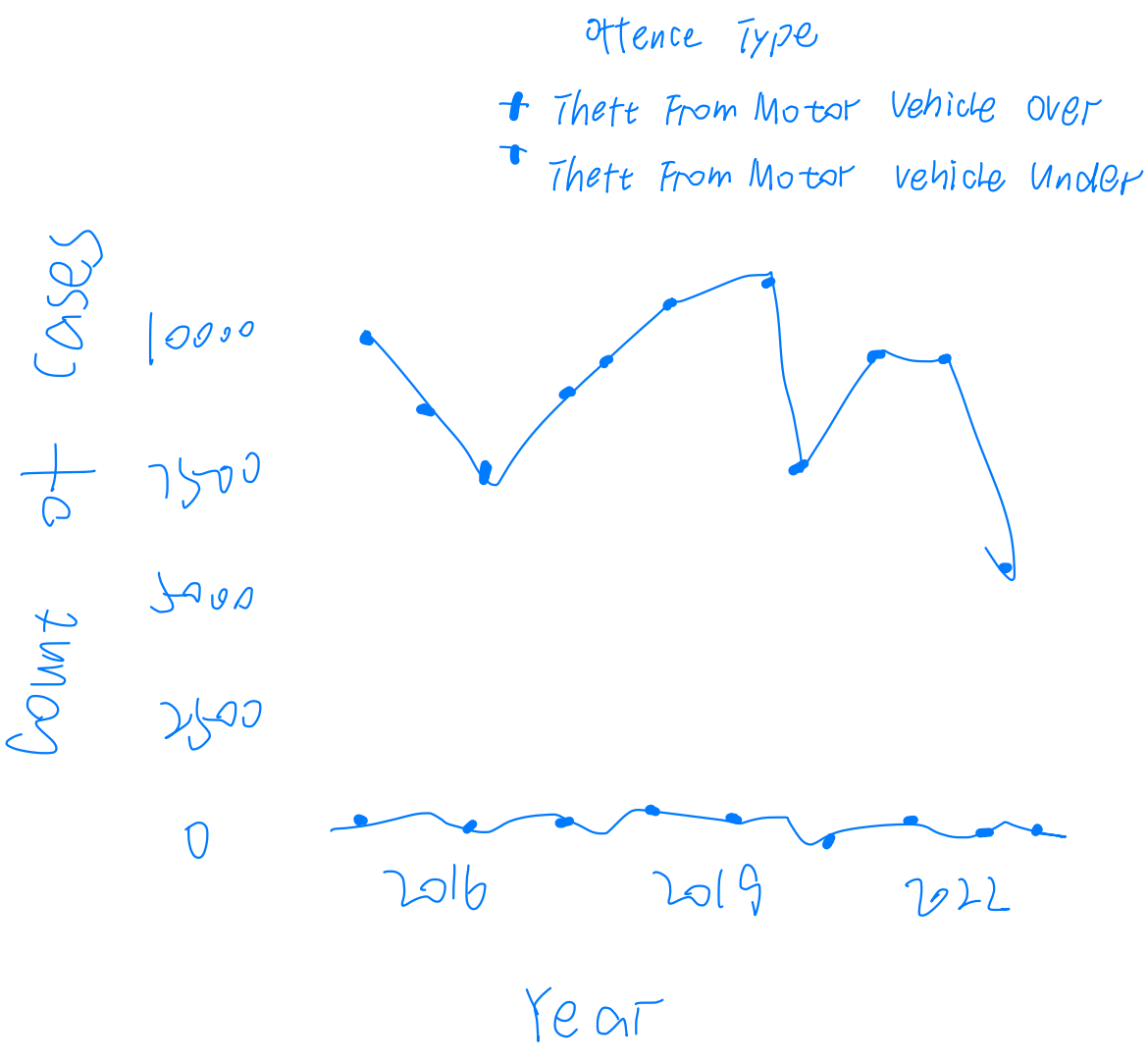

Figure 5: Linechart of count of occurrences by offence types and year

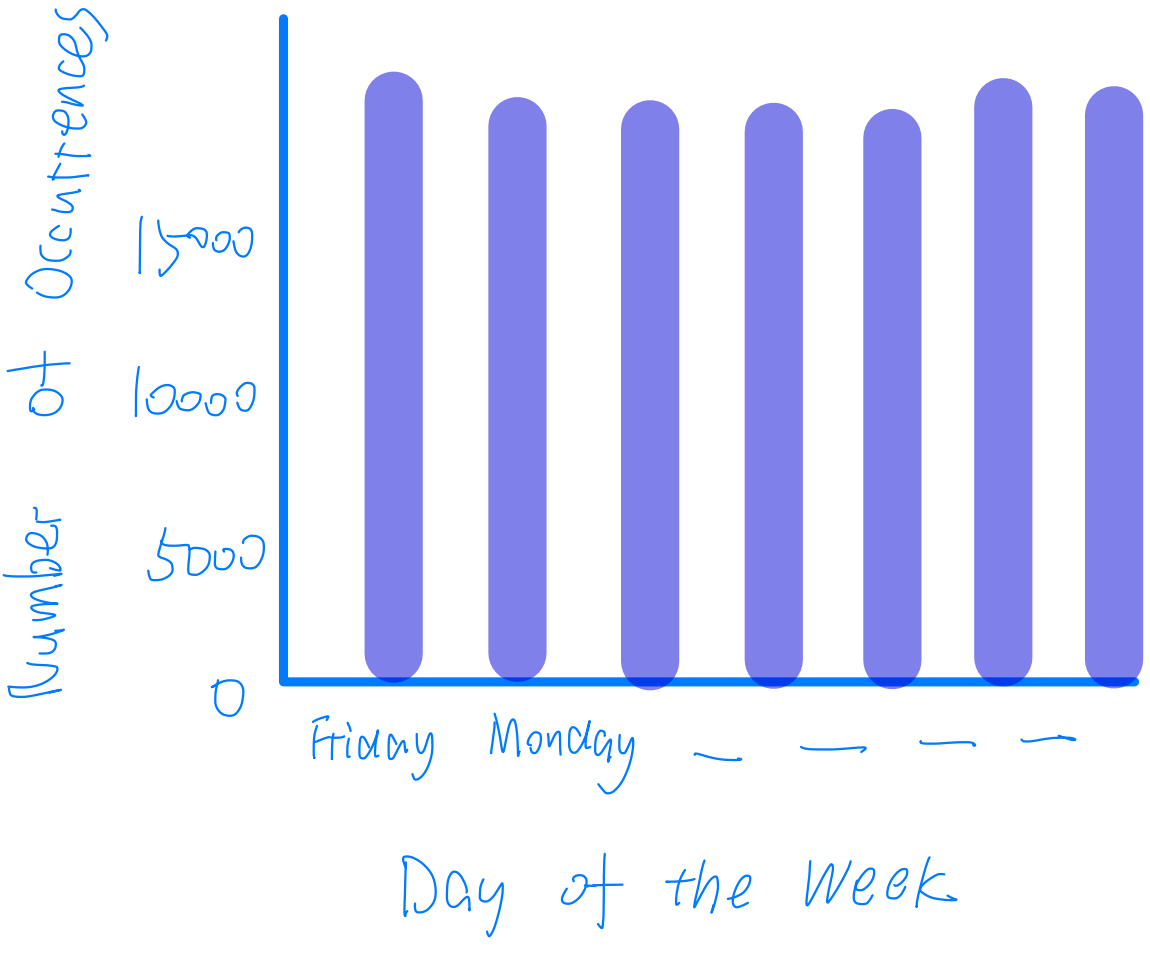

Figure 6: Barchart of count of occurrences by day of the week

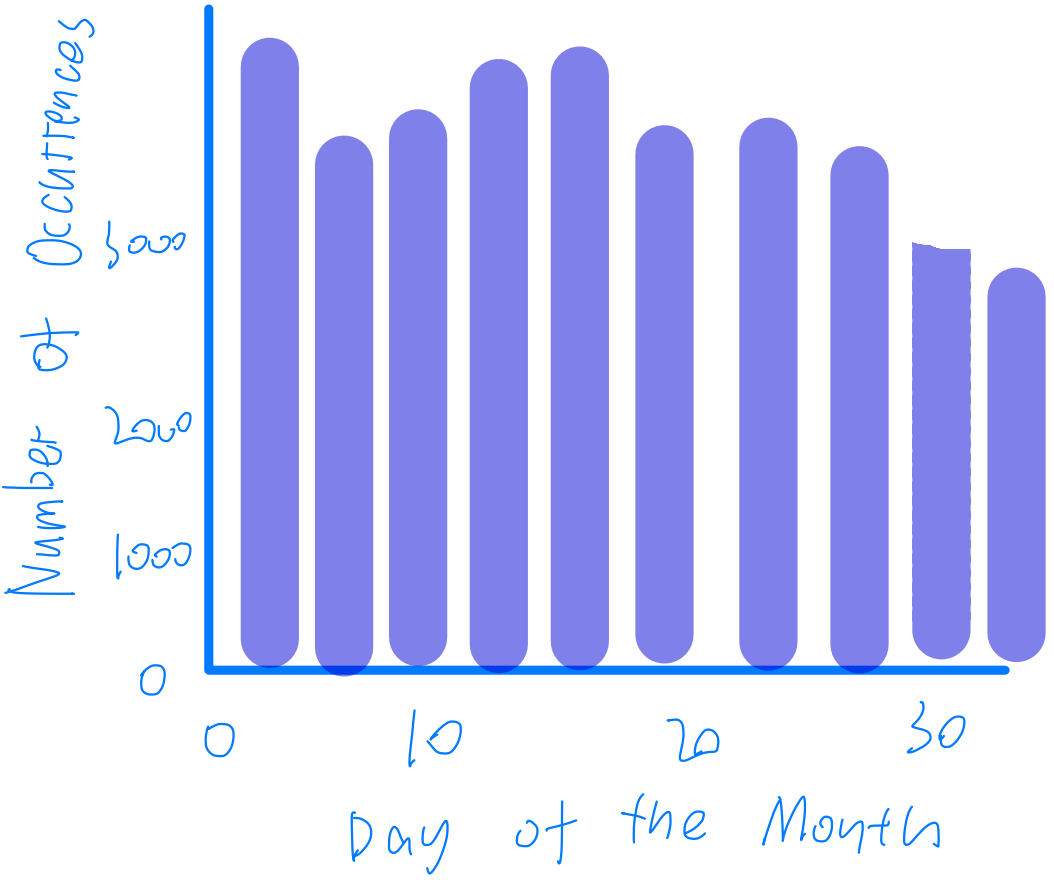

Figure 7: Barchart of count of occurrences by day of the month

Table 5: Poisson regression results

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	6.442634	0.056984	113.23177	0.0000000
time	⋮	⋮	⋮	⋮
action	⋮	⋮	⋮	⋮

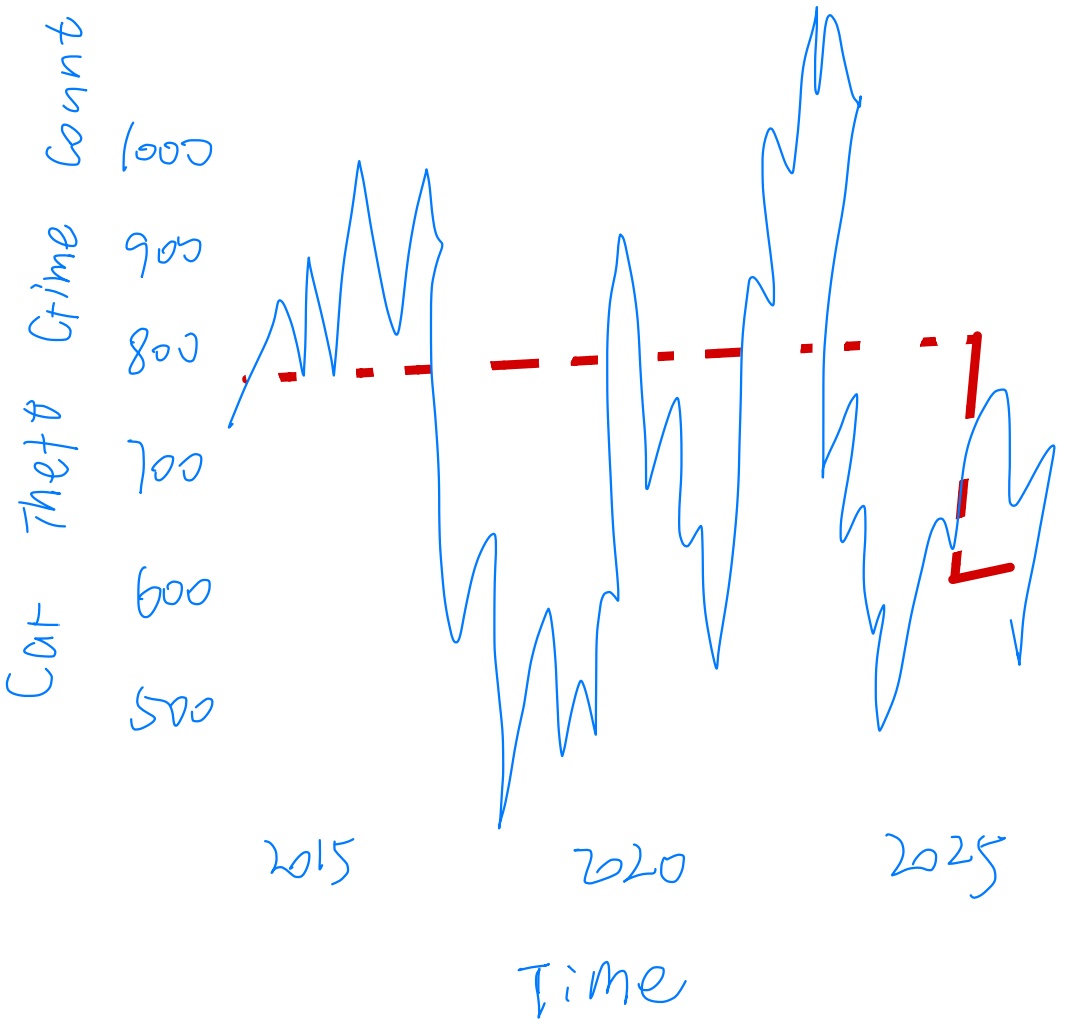

Figure 8. Poisson regression prediction

Table 6: Poisson regression dispersion factor

Stats	Value
Dispersion Factor	14.73955

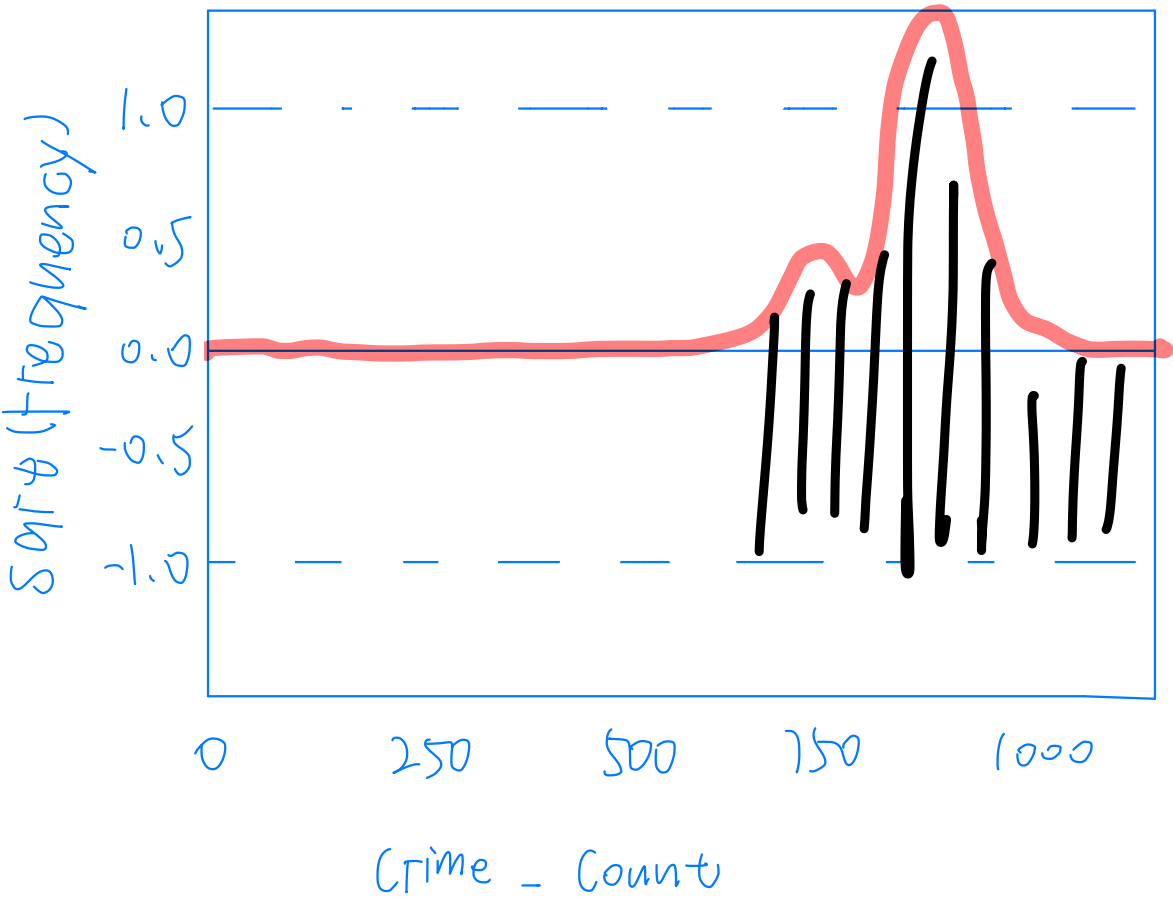

Figure 9: Poisson regression rootogram

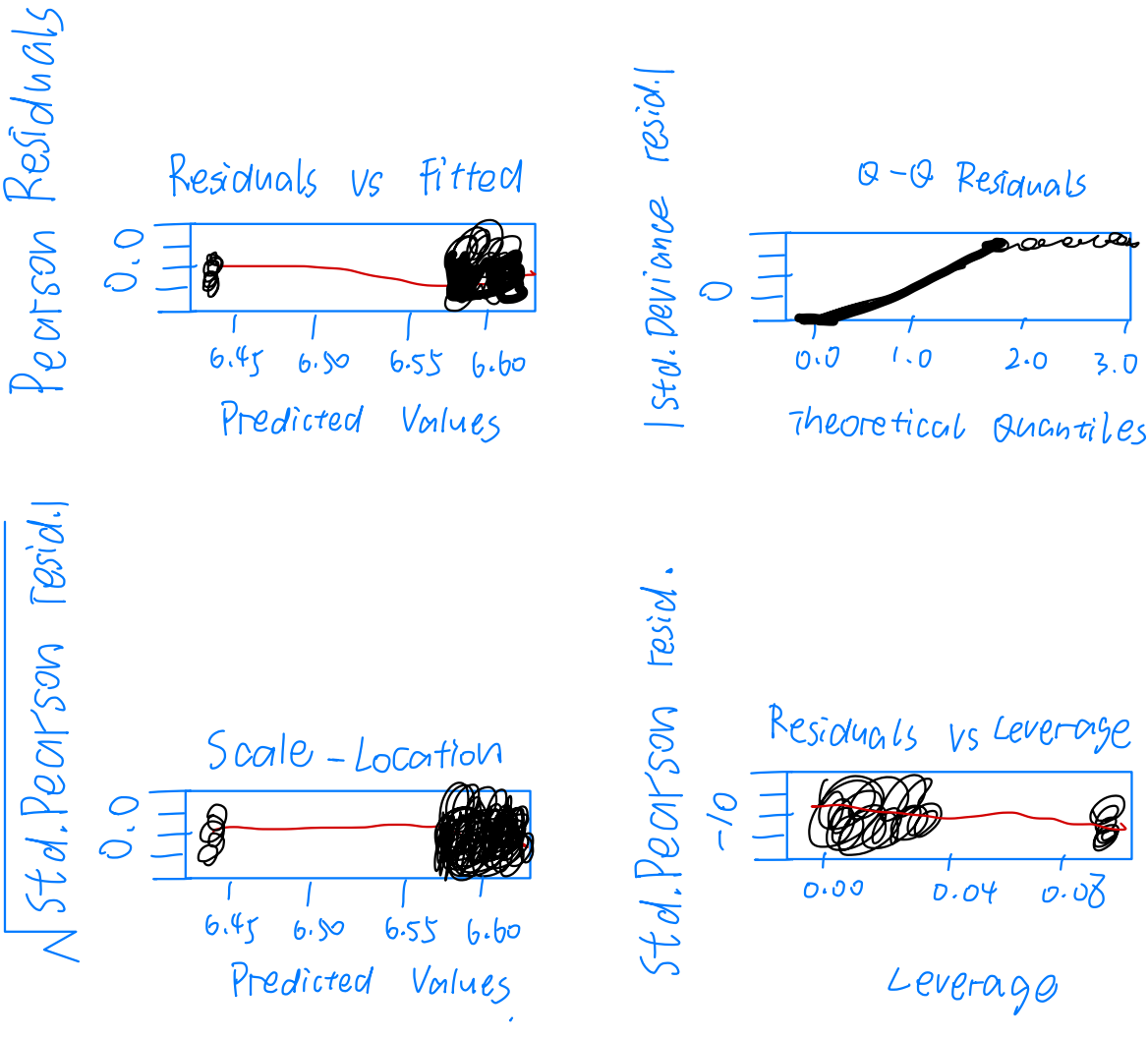

Figure 10: Poisson regression model diagnosis

Table 7: Quasi-likelihood Poisson regression results

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	6.442634	0.218296	29.493548	0.000000
time	⋮	⋮	⋮	⋮
action	⋮	⋮	⋮	⋮

Table 8: Comparison between Quasi-likelihood Poisson and Poisson estimated confidence intervals

	2.5%	97.5%	model_type
(Intercept)	6.3307293	6.5537516	Poisson Model
time	0.0000032	0.0000157	Poisson Model
action	⋮	⋮	⋮
(Intercept)1	⋮	⋮	⋮
time1	⋮	⋮	⋮
action1	⋮	⋮	⋮

Table 9: Quasi-likelihood Poisson regression with covariate of premise types

	Estimate	Std Error	t value	Pr(>|t|)
(Intercept)	3.869204	0.1853514	20.874597	0.0000000
time	0.0000089	0.0000101	0.8824230	0.3777879
PREMISES_TYPE Commercial				
PREMISES_TYPE Educational				
PREMISES_TYPE House				
PREMISES_TYPE Other				
PREMISES_TYPE Outside				
PREMISES_TYPE Transit				
Action				

Table 10: Quasi-likelihood Poisson regression with covariate of offence types

	Estimate	Std Error	t value	Pr(>|t|)
(Intecept)	3.098247	0.175279	17.678486	0.000000
time	0.000094			
OFFENCETheft From Motor Vehicle Under action				

Table 11: Quasi-likelihood Poisson regression with covariate of divisions

	Estimate	Std Error	t value	Pr(>|t|)
Intecept	2.824205	0.1359040	20.7808861	0.0000000
time	0.0000259	0.0000073	3.5471310	0.0003832
DIVISIONDIZ				
DIVISIONDI3				
DIVISIONDI4				
DIVISIONDZZ				