

Project C740

January 13, 2019

1 Emergency 911 Call Analysis

```
In [1]: import pandas as pd
        from pandas import ExcelWriter
        from pandas import ExcelFile
        import seaborn as sns
        from scipy import stats
        import numpy as np
        from scipy.stats import zscore
        import matplotlib.pyplot as plt
        import plotly.plotly as py
        import plotly.tools as tls
        import pylab as plt
```

```
In [2]: #First read in the Excel File to a data frame for analysis
        df = pd.read_excel('Raw Data.xlsx', sheet_name = 'Seattle_Police_Departme')
```

1.1 I. Analyze the Data

```
In [3]: df
```

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Out[3]:
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	CAD CDW ID	CAD Event Number	General Offense Number \
0	1702311	16000104983	2016104983
1	1702312	16000104976	2016104976
2	1702316	16000104995	2016104995
3	1702317	16000104994	2016104994
4	1702318	16000104993	2016104993
5	1702319	16000104992	2016104992
6	1702321	16000104986	2016104986
7	1702322	16000104962	2016104962
8	1702323	16000104918	2016104918
9	1702324	16000104794	2016104794
10	1702325	16000105010	2016105010
11	1702326	16000105007	2016105007
12	1702327	16000105002	2016105002
13	1702328	16000104957	2016104957
14	1702329	16000104941	2016104941

15	1702330	16000104933	2016104933
16	1702331	16000104823	2016104823
17	1702332	16000104752	2016104752
18	1702333	16000105020	2016105020
19	1702334	16000105018	2016105018
20	1702335	16000105001	2016105001
21	1702336	16000104999	2016104999
22	1702337	16000104988	2016104988
23	1702338	16000104984	2016104984
24	1702339	16000104855	2016104855
25	1702340	16000104782	2016104782
26	1702341	16000104525	2016104525
27	1702342	16000104508	2016104508
28	1702343	16000104981	2016104981
29	1702344	16000104978	2016104978
...
1016	1703352	16000106578	2016106578
1017	1703354	16000106662	2016106662
1018	1703355	16000106656	2016106656
1019	1703356	16000106623	2016106623
1020	1703357	16000106596	2016106596
1021	1703358	16000106577	2016106577
1022	1703359	16000106499	2016106499
1023	1703360	16000106660	2016106660
1024	1703361	16000106650	2016106650
1025	1703362	16000106529	2016106529
1026	1703363	16000106461	2016106461
1027	1703364	16000106679	2016106679
1028	1703365	16000106675	2016106675
1029	1703366	16000106668	2016106668
1030	1703367	16000106664	2016106664
1031	1703368	16000106659	2016106659
1032	1703369	16000106644	2016106644
1033	1703370	16000106571	2016106571
1034	1703371	16000106458	2016106458
1035	1703372	16000106727	2016106727
1036	1703373	16000106693	2016106693
1037	1703374	16000106688	2016106688
1038	1703375	16000106738	2016106738
1039	1703376	16000106719	2016106719
1040	1703377	16000106692	2016106692
1041	1703378	16000106655	2016106655
1042	1703379	16000106592	2016106592
1043	1703380	16000106728	2016106728
1044	1703381	16000106612	2016106612
1045	1703382	16000106547	2016106547

Event Clearance Code

Event Clearance Description \

0	242	FIGHT DISTURBANCE
1	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
2	460	TRAFFIC (MOVING) VIOLATION
3	280	SUSPICIOUS PERSON
4	281	SUSPICIOUS VEHICLE
5	176	LIQUOR VIOLATION - ADULT
6	245	DISTURBANCE, OTHER
7	201	ALACAD - RESIDENTIAL BURGLARY (FALSE)
8	245	DISTURBANCE, OTHER
9	65	THEFT - MISCELLANEOUS
10	245	DISTURBANCE, OTHER
11	280	SUSPICIOUS PERSON
12	460	TRAFFIC (MOVING) VIOLATION
13	280	SUSPICIOUS PERSON
14	245	DISTURBANCE, OTHER
15	281	SUSPICIOUS VEHICLE
16	52	BURGLARY - COMMERCIAL
17	250	MISCHIEF, NUISANCE COMPLAINTS
18	177	LIQUOR VIOLATION - INTOXICATED PERSON
19	363	MISSING PERSON
20	245	DISTURBANCE, OTHER
21	430	MOTOR VEHICLE COLLISION
22	280	SUSPICIOUS PERSON
23	280	SUSPICIOUS PERSON
24	186	NARCOTICS, DRUG TRAFFIC LOITERING
25	245	DISTURBANCE, OTHER
26	372	PROPERTY - FOUND (FOLLOW UP TO SPD CASE)
27	63	THEFT - CAR PROWL
28	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
29	161	TRESPASS
...
1016	280	SUSPICIOUS PERSON
1017	460	TRAFFIC (MOVING) VIOLATION
1018	430	MOTOR VEHICLE COLLISION
1019	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1020	41	HARASSMENT, THREATS
1021	71	AUTO THEFT
1022	330	CASUALTY (NON CRIMINAL/TRAFFIC) - MAN DOWN, SI...
1023	371	PROPERTY - MISSING
1024	63	THEFT - CAR PROWL
1025	430	MOTOR VEHICLE COLLISION
1026	460	TRAFFIC (MOVING) VIOLATION
1027	202	ALACAD - COMMERCIAL PANIC (FALSE)
1028	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1029	245	DISTURBANCE, OTHER
1030	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1031	63	THEFT - CAR PROWL
1032	245	DISTURBANCE, OTHER

1033	245	DISTURBANCE, OTHER
1034	52	BURGLARY - COMMERCIAL
1035	280	SUSPICIOUS PERSON
1036	281	SUSPICIOUS VEHICLE
1037	73	AUTO RECOVERY
1038	250	MISCHIEF, NUISANCE COMPLAINTS
1039	245	DISTURBANCE, OTHER
1040	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1041	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1042	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1043	280	SUSPICIOUS PERSON
1044	460	TRAFFIC (MOVING) VIOLATION
1045	430	MOTOR VEHICLE COLLISION

	Event Clearance SubGroup	Event Clearance Group \
0	DISTURBANCES	DISTURBANCES
1	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
2	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
3	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
5	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
6	DISTURBANCES	DISTURBANCES
7	BURGLARY ALACAD (FALSE)	FALSE ALACAD
8	DISTURBANCES	DISTURBANCES
9	THEFT	OTHER PROPERTY
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
14	DISTURBANCES	DISTURBANCES
15	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
16	COMMERCIAL BURGLARIES	BURGLARY
17	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
20	DISTURBANCES	DISTURBANCES
21	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
24	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
25	DISTURBANCES	DISTURBANCES
26	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
27	CAR PROWL	CAR PROWL
28	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
29	TRESPASS	TRESPASS
...
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS

1018	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1019	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1020	THREATS, HARASSMENT	THREATS, HARASSMENT
1021	AUTO THEFTS	AUTO THEFTS
1022	CASUALTIES	PERSON DOWN/INJURY
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1024	CAR PROWL	CAR PROWL
1025	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1026	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1027	PANIC ALACAD (FALSE)	FALSE ALACAD
1028	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1029	DISTURBANCES	DISTURBANCES
1030	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1031	CAR PROWL	CAR PROWL
1032	DISTURBANCES	DISTURBANCES
1033	DISTURBANCES	DISTURBANCES
1034	COMMERCIAL BURGLARIES	BURGLARY
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO RECOVERIES	AUTO THEFTS
1038	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
1039	DISTURBANCES	DISTURBANCES
1040	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1041	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1042	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1045	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance Date	Hundred Block Location	District/Sector	\
0		2016-03-26 17:17:00	46XX BLOCK OF 38 AV S	R	
1		2016-03-26 17:15:00	29 AV / E ALDER ST	G	
2		2016-03-26 17:19:00	WEST SEATTLE BR WB / 1 AV S ON RP	O	
3		2016-03-26 17:26:00	24XX BLOCK OF 35 AV W	Q	
4		2016-03-26 17:19:00	24 AV / E ALDER ST	G	
5		2016-03-26 17:17:00	92XX BLOCK OF RAINIER AV S	S	
6		2016-03-26 17:18:00	27XX BLOCK OF RAINIER AV S	R	
7		2016-03-26 17:17:00	66XX BLOCK OF S BANGOR ST	S	
8		2016-03-26 17:18:00	4 AV S / S LANDER ST	O	
9		2016-03-26 17:14:00	9XX BLOCK OF 14 AV E	C	
10		2016-03-26 17:36:00	3XX BLOCK OF 2 AV S	K	
11		2016-03-26 17:31:00	S FINDLAY ST / 46 AV S	R	
12		2016-03-26 17:29:00	12 AV / E PIKE ST	E	
13		2016-03-26 17:28:00	4XX BLOCK OF S DAWSON ST	O	
14		2016-03-26 17:30:00	GREENWOOD AV N / N 84 ST	J	
15		2016-03-26 17:29:00	51 AV S / S HOLLY ST	S	
16		2016-03-26 17:32:00	31XX BLOCK OF S ALASKA ST	R	
17		2016-03-26 17:30:00	46XX BLOCK OF S FINDLAY ST	R	

18	2016-03-26 17:39:00	3 AV S / S LANDER ST	O
19	2016-03-26 17:37:00	59XX BLOCK OF 46 AV SW	W
20	2016-03-26 17:40:00	8 AV / PIKE ST	M
21	2016-03-26 17:39:00	DELBRIDGE WY SW / SW ALASKA ST	H
22	2016-03-26 17:30:00	N 77 ST / GREENWOOD AV N	J
23	2016-03-26 17:40:00	S HOLGATE ST / AIRPORT WY S	O
24	2016-03-26 17:31:00	NW 62 ST / 17 AV NW	B
25	2016-03-26 17:38:00	DENNY WY / 8 AV	D
26	2016-03-26 17:30:00	40XX BLOCK OF EASTERN AV N	B
27	2016-03-26 17:33:00	10XX BLOCK OF 1 AV W	Q
28	2016-03-26 17:43:00	BROADWAY E / E JOHN ST	E
29	2016-03-26 17:43:00	10XX BLOCK OF S JACKSON ST	G
...
1016	2016-03-28 10:16:00	4XX BLOCK OF 24 AV E	C
1017	2016-03-28 10:10:00	HOLLY PARK DR S / S MYRTLE PL	S
1018	2016-03-28 10:18:00	52XX BLOCK OF 24 AV S	R
1019	2016-03-28 10:15:00	67XX BLOCK OF ALONZO AV NW	J
1020	2016-03-28 10:13:00	92XX BLOCK OF RAINIER AV S	S
1021	2016-03-28 10:12:00	73XX BLOCK OF 29 AV SW	F
1022	2016-03-28 10:10:00	7XX BLOCK OF E DENNY WY	E
1023	2016-03-28 10:25:00	8XX BLOCK OF VIRGINIA ST	D
1024	2016-03-28 10:29:00	69XX BLOCK OF WEEDIN PL NE	J
1025	2016-03-28 10:26:00	GREENWOOD AV N / N 105 ST	N
1026	2016-03-28 10:28:00	17 AV NW / NW BALLARD WY	B
1027	2016-03-28 10:39:00	52XX BLOCK OF E MARGINAL WY S	O
1028	2016-03-28 10:34:00	TERRY AV / SPRING ST	E
1029	2016-03-28 10:31:00	45XX BLOCK OF STONE WY N	B
1030	2016-03-28 10:39:00	45XX BLOCK OF THACKERAY PL NE	B
1031	2016-03-28 10:37:00	14XX BLOCK OF ALASKAN WY	H
1032	2016-03-28 10:47:00	20XX BLOCK OF 2 AV	M
1033	2016-03-28 10:37:00	19XX BLOCK OF OCCIDENTAL AV S	O
1034	2016-03-28 10:37:00	38XX BLOCK OF LATONA AV NE	B
1035	2016-03-28 10:55:00	I5 EXPRESS / NE 42 ST OFF RP	U
1036	2016-03-28 10:45:00	39 AV SW / SW HANFORD ST	H
1037	2016-03-28 10:47:00	92XX BLOCK OF M L KING JR WY S	S
1038	2016-03-28 11:00:00	2XX BLOCK OF BROADWAY E	E
1039	2016-03-28 10:55:00	8XX BLOCK OF E PIKE ST	E
1040	2016-03-28 10:55:00	3XX BLOCK OF SENECA ST	K
1041	2016-03-28 10:53:00	NE 77 ST / 40 AV NE	U
1042	2016-03-28 10:55:00	NW 50 ST / 11 AV NW	B
1043	2016-03-28 11:03:00	23XX BLOCK OF SW WEBSTER ST	F
1044	2016-03-28 11:03:00	S CLOVERDALE ST / RENTON AV S	S
1045	2016-03-28 11:03:00	AIRPORT WY S / S HOLGATE ST	O

	Zone/Beat	Census Tract	Longitude	Latitude	Incident Location \
0	R3	10100.2019	-122.284904	47.561256	(47.561256, -122.284904)
1	G2	8800.3002	-122.294930	47.604195	(47.604195, -122.29493)
2	O1	9300.3060	-122.335240	47.571580	(47.57158, -122.33524)

3	Q1	5600.4030	-122.402370	47.640358	(47.640358, -122.40237)
4	G2	8800.3008	-122.301090	47.604320	(47.60432, -122.30109)
5	S3	11800.6020	-122.268030	47.519850	(47.51985, -122.26803)
6	R2	10001.1002	-122.299160	47.579674	(47.579674, -122.29916)
7	S3	11900.2016	-122.250630	47.506386	(47.506386, -122.25063)
8	O1	9300.3019	-122.329056	47.579807	(47.579807, -122.329056)
9	C1	6500.3017	-122.314590	47.627274	(47.627274, -122.31459)
10	K3	9200.2028	-122.330810	47.600464	(47.600464, -122.33081)
11	R3	10300.2004	-122.275380	47.551910	(47.55191, -122.27538)
12	E2	7500.4006	-122.316830	47.614105	(47.614105, -122.31683)
13	O2	9300.3167	-122.328960	47.555634	(47.555634, -122.32896)
14	J3	2900.1000	-122.355300	47.689835	(47.689835, -122.3553)
15	S2	11102.2008	-122.269910	47.542492	(47.542492, -122.26991)
16	R2	10100.3009	-122.292040	47.560780	(47.56078, -122.29204)
17	R3	10200.4025	-122.274760	47.551910	(47.55191, -122.27476)
18	O1	9300.3014	-122.329990	47.579807	(47.579807, -122.32999)
19	W2	10600.6004	-122.391174	47.549450	(47.54945, -122.391174)
20	M2	8200.1010	-122.332245	47.612072	(47.612072, -122.332245)
21	H3	9900.2019	-122.362870	47.561085	(47.561085, -122.36287)
22	J3	2900.2003	-122.355300	47.684746	(47.684746, -122.3553)
23	O1	9300.1047	-122.321396	47.586205	(47.586205, -122.321396)
24	B1	3300.3013	-122.378880	47.673820	(47.67382, -122.37888)
25	D2	7200.2001	-122.341370	47.618546	(47.618546, -122.34137)
26	B3	5100.2026	-122.329040	47.656120	(47.65612, -122.32904)
27	Q3	7000.6008	-122.357960	47.628220	(47.62822, -122.35796)
28	E1	7500.5004	-122.320880	47.619904	(47.619904, -122.32088)
29	G1	9100.1002	-122.318430	47.599186	(47.599186, -122.31843)
...
1016	C2	7700.2006	-122.301160	47.623520	(47.62352, -122.30116)
1017	S1	11001.1006	-122.286865	47.537300	(47.5373, -122.286865)
1018	R1	10401.2012	-122.301735	47.555080	(47.55508, -122.301735)
1019	J2	3300.1009	-122.375130	47.678673	(47.678673, -122.37513)
1020	S3	11800.4010	-122.269260	47.519920	(47.51992, -122.26926)
1021	F1	10701.2020	-122.369804	47.536453	(47.536453, -122.369804)
1022	E1	7402.1009	-122.322860	47.618730	(47.61873, -122.32286)
1023	D2	7300.3022	-122.336170	47.616055	(47.616055, -122.33617)
1024	J3	3600.4000	-122.322390	47.679140	(47.67914, -122.32239)
1025	N1	1701.3002	-122.355450	47.705082	(47.705082, -122.35545)
1026	B1	4700.4015	-122.378900	47.662937	(47.662937, -122.3789)
1027	O2	10900.2012	-122.337830	47.554977	(47.554977, -122.33783)
1028	E3	8300.1003	-122.326904	47.609585	(47.609585, -122.326904)
1029	B3	5000.3000	-122.342130	47.661755	(47.661755, -122.34213)
1030	B3	5200.4010	-122.326164	47.662260	(47.66226, -122.326164)
1031	H3	8100.1016	-122.341750	47.607258	(47.607258, -122.34175)
1032	M1	8002.1001	-122.342400	47.612118	(47.612118, -122.3424)
1033	O1	9300.3017	-122.333270	47.585040	(47.58504, -122.33327)
1034	B3	5200.3032	-122.325710	47.654335	(47.654335, -122.32571)
1035	U2	5200.3001	-122.322450	47.656002	(47.656002, -122.32245)

1036	H1	9800.2010	-122.381370	47.575596	(47.575596, -122.38137)
1037	S1	11700.4001	-122.279830	47.518880	(47.51888, -122.27983)
1038	E1	7402.1000	-122.320885	47.620490	(47.62049, -122.320885)
1039	E2	8400.1007	-122.321450	47.614070	(47.61407, -122.32145)
1040	K1	8100.2032	-122.334770	47.607285	(47.607285, -122.33477)
1041	U3	2400.2005	-122.285260	47.684853	(47.684853, -122.28526)
1042	B2	4700.2031	-122.370766	47.665043	(47.665043, -122.370766)
1043	F1	10701.2011	-122.362150	47.535515	(47.535515, -122.36215)
1044	S2	11800.5001	-122.276940	47.526115	(47.526115, -122.27694)
1045	O1	9300.1047	-122.321396	47.586205	(47.586205, -122.321396)

	Initial Type Description \
0	FIGHT - IP - PHYSICAL (NO WEAPONS)
1	PARKING VIOLATION (EXCEPT ABANDONED CAR)
2	TRAFFIC - MOVING VIOLATION
3	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
4	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
5	LIQUOR VIOLATIONS - ADULT
6	TRESPASS
7	ALARM - RESIDENTIAL - BURGLARY, SILENT/AUDIBLE
8	HARAS - NO BIAS, THREATS OR MALICIOUSNESS
9	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
10	DISTURBANCE, MISCELLANEOUS/OTHER
11	UNKNOWN - COMPLAINT OF UNKNOWN NATURE
12	TRAFFIC STOP - OFFICER INITIATED ONVIEW
13	TRESPASS
14	DISTURBANCE, MISCELLANEOUS/OTHER
15	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
16	BIAS -RACIAL, POLITICAL, SEXUAL MOTIVATION
17	NOISE - DISTURBANCE (PARTY, ETC)
18	DETOX - REQUEST FOR
19	MISSING - CHILD
20	WEAPN - GUN,DEADLY WPN (NO THRSTS/ASLT/DIST)
21	MOTOR VEHICLE COLLISION, BLOCKING
22	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
23	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
24	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)
25	WEAPN-IP/JO-GUN,DEADLY WPN (NO THRT/ASLT/DIST)
26	PROPERTY - FOUND
27	SECONDARY - THEFT (NOT SHOPLIFT OR SERVICES)
28	PARKING VIOLATION (EXCEPT ABANDONED CAR)
29	TRESPASS
...	...
1016	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1017	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1018	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
1019	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1020	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)

1021 AUTO THEFT - VEH THEFT OR THEFT AND RECOVERY
 1022 TRESPASS
 1023 PROPERTY, LOST OR MISSING
 1024 TRU - THEFT
 1025 MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
 1026 TRAFFIC STOP - OFFICER INITIATED ONVIEW
 1027 ALARM - COMM, HOLD-UP/PANIC (EXCEPT BANKS)
 1028 PARKING VIOLATION (EXCEPT ABANDONED CAR)
 1029 TRESPASS
 1030 PARKING VIOLATION (EXCEPT ABANDONED CAR)
 1031 TRU - THEFT
 1032 DISTURBANCE, MISCELLANEOUS/OTHER
 1033 THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
 1034 BURG - COMM BURGLARY (INCLUDES SCHOOLS)
 1035 SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
 1036 SUSPICIOUS PERSON, VEHICLE OR INCIDENT
 1037 AUTO RECOVERY
 1038 SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
 1039 FIGHT - IP - PHYSICAL (NO WEAPONS)
 1040 PARKING VIOLATION (EXCEPT ABANDONED CAR)
 1041 PARKING VIOLATION (EXCEPT ABANDONED CAR)
 1042 PARKING VIOLATION (EXCEPT ABANDONED CAR)
 1043 SUSPICIOUS PERSON, VEHICLE OR INCIDENT
 1044 MOTOR VEHICLE COLLISION WITH INJURIES - PRIORI...
 1045 MOTOR VEHICLE COLLISION, BLOCKING

	Initial Type Subgroup	Initial Type Group \
0	DISTURBANCES	DISTURBANCES
1	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
2	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
3	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
5	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
6	TRESPASS	TRESPASS
7	ALACAD	SUSPICIOUS CIRCUMSTANCES
8	THREATS, HARASSMENT	THREATS, HARASSMENT
9	OTHER PROPERTY	THEFT
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	TRESPASS	TRESPASS
14	DISTURBANCES	DISTURBANCES
15	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
16	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
17	DISTURBANCES	DISTURBANCES
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
20	WEAPONS CALLS	WEAPONS CALLS

21	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	HAZARDS	HAZARDS
24	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
25	WEAPONS CALLS	WEAPONS CALLS
26	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
27	OTHER PROPERTY	THEFT
28	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
29	TRESPASS	TRESPASS
...
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1019	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1020	THREATS, HARASSMENT	THREATS, HARASSMENT
1021	AUTO THEFTS	AUTO RECOVERIES
1022	TRESPASS	TRESPASS
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1024	OTHER PROPERTY	THEFT
1025	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1026	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1027	ALACAD	SUSPICIOUS CIRCUMSTANCES
1028	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1029	TRESPASS	TRESPASS
1030	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1031	OTHER PROPERTY	THEFT
1032	DISTURBANCES	DISTURBANCES
1033	THREATS, HARASSMENT	THREATS, HARASSMENT
1034	BURGLARY	COMMERCIAL BURGLARIES
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO THEFTS	AUTO RECOVERIES
1038	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1039	DISTURBANCES	DISTURBANCES
1040	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1041	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1042	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1045	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

	At Scene Time	OFFICERS_AT_SCENE
0	NaT	2
1	NaT	2
2	NaT	0
3	NaT	2
4	NaT	1
5	NaT	2

6	NaT	3
7	NaT	1
8	2016-03-26 15:56:00	3
9	NaT	1
10	NaT	3
11	NaT	2
12	NaT	0
13	NaT	3
14	NaT	3
15	NaT	3
16	2016-03-26 15:21:00	2
17	NaT	4
18	NaT	0
19	NaT	2
20	NaT	3
21	NaT	1
22	NaT	1
23	NaT	2
24	2016-03-26 15:29:00	3
25	2016-03-26 14:03:00	0
26	2016-03-26 16:20:00	2
27	2016-03-26 15:04:00	3
28	NaT	0
29	NaT	2
...
1016	NaT	1
1017	NaT	0
1018	NaT	1
1019	NaT	1
1020	2016-03-28 08:59:00	1
1021	2016-03-28 08:58:00	3
1022	2016-03-28 07:24:00	1
1023	2016-03-28 09:39:00	0
1024	NaT	0
1025	2016-03-28 07:49:00	1
1026	2016-03-28 05:17:00	3
1027	NaT	3
1028	NaT	1
1029	NaT	1
1030	NaT	1
1031	2016-03-28 09:51:00	1
1032	2016-03-28 09:30:00	3
1033	2016-03-28 08:33:00	3
1034	2016-03-28 05:35:00	1
1035	NaT	2
1036	NaT	2
1037	NaT	3
1038	NaT	3

1039	NaT	3
1040	NaT	4
1041	NaT	1
1042	2016-03-28 09:32:00	1
1043	NaT	2
1044	2016-03-28 08:52:00	1
1045	2016-03-28 08:00:00	2

[1046 rows x 20 columns]

From initial inspection, some features carry redundant information: longitude, Latitude, Incident Location, Hundred Block Location; District/Sector and Zone/Beat

Additionally, At Scene Time is missing many values

In [4]: df.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1046 entries, 0 to 1045
Data columns (total 20 columns):
CAD CDW ID                1046 non-null int64
CAD Event Number          1046 non-null int64
General Offense Number    1046 non-null int64
Event Clearance Code       1046 non-null int64
Event Clearance Description 1046 non-null object
Event Clearance SubGroup   1046 non-null object
Event Clearance Group      1046 non-null object
Event Clearance Date       1046 non-null datetime64[ns]
Hundred Block Location     1046 non-null object
District/Sector           1045 non-null object
Zone/Beat                 1046 non-null object
Census Tract              1045 non-null float64
Longitude                 1046 non-null float64
Latitude                  1046 non-null float64
Incident Location         1046 non-null object
Initial Type Description   1046 non-null object
Initial Type Subgroup     1046 non-null object
Initial Type Group        1046 non-null object
At Scene Time             400 non-null datetime64[ns]
OFFICERS_AT_SCENE        1046 non-null int64
dtypes: datetime64[ns](2), float64(3), int64(5), object(10)
memory usage: 163.5+ KB
```

This information validates the fact that only 400 values are present in the At Scene Time Column

For consistency's sake, the OFFICERS_AT_SCENE feature should be altered in style to match the others

Zone/Beats, Incident Type Group, Incident Type Subgroup, District/Sector, Event Clearance Group, Event Clearance Subgroup, Event Clearance Code should be changed into categories instead of a Strings/int64

CAD CDW ID, CAD Event Number, General Offense Number should be changed to strings instead of int64

```
In [5]: df[df['CAD CDW ID'].duplicated()]
```

```
Out[5]: Empty DataFrame
```

```
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code, I  
Index: []
```

The lack of duplicated events seems to indicate accurate recording for the most part and a trustworthy data set

```
In [6]: df[df['At Scene Time'].isnull()]
```

```
Out[6]:
```

	CAD CDW ID	CAD Event Number	General Offense Number \
0	1702311	16000104983	2016104983
1	1702312	16000104976	2016104976
2	1702316	16000104995	2016104995
3	1702317	16000104994	2016104994
4	1702318	16000104993	2016104993
5	1702319	16000104992	2016104992
6	1702321	16000104986	2016104986
7	1702322	16000104962	2016104962
9	1702324	16000104794	2016104794
10	1702325	16000105010	2016105010
11	1702326	16000105007	2016105007
12	1702327	16000105002	2016105002
13	1702328	16000104957	2016104957
14	1702329	16000104941	2016104941
15	1702330	16000104933	2016104933
17	1702332	16000104752	2016104752
18	1702333	16000105020	2016105020
19	1702334	16000105018	2016105018
20	1702335	16000105001	2016105001
21	1702336	16000104999	2016104999
22	1702337	16000104988	2016104988
23	1702338	16000104984	2016104984
28	1702343	16000104981	2016104981
29	1702344	16000104978	2016104978
32	1702347	16000104898	2016104898
34	1702349	16000105036	2016105036

35	1702350	16000105030	2016105030
36	1702351	16000105026	2016105026
37	1702352	16000105021	2016105021
38	1702353	16000105011	2016105011
...
999	1703335	16000106606	2016106606
1000	1703336	16000106582	2016106582
1001	1703337	16000106665	2016106665
1002	1703338	16000106641	2016106641
1003	1703339	16000106634	2016106634
1004	1703340	16000106628	2016106628
1005	1703341	16000106615	2016106615
1006	1703342	16000106647	2016106647
1007	1703343	16000106638	2016106638
1008	1703344	16000106630	2016106630
1011	1703347	16000106576	2016106576
1013	1703349	16000106642	2016106642
1014	1703350	16000106633	2016106633
1016	1703352	16000106578	2016106578
1017	1703354	16000106662	2016106662
1018	1703355	16000106656	2016106656
1019	1703356	16000106623	2016106623
1024	1703361	16000106650	2016106650
1027	1703364	16000106679	2016106679
1028	1703365	16000106675	2016106675
1029	1703366	16000106668	2016106668
1030	1703367	16000106664	2016106664
1035	1703372	16000106727	2016106727
1036	1703373	16000106693	2016106693
1037	1703374	16000106688	2016106688
1038	1703375	16000106738	2016106738
1039	1703376	16000106719	2016106719
1040	1703377	16000106692	2016106692
1041	1703378	16000106655	2016106655
1043	1703380	16000106728	2016106728

	Event Clearance Code	Event Clearance Description \
0	242	FIGHT DISTURBANCE
1	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
2	460	TRAFFIC (MOVING) VIOLATION
3	280	SUSPICIOUS PERSON
4	281	SUSPICIOUS VEHICLE
5	176	LIQUOR VIOLATION - ADULT
6	245	DISTURBANCE, OTHER
7	201	ALACAD - RESIDENTIAL BURGLARY (FALSE)
9	65	THEFT - MISCELLANEOUS
10	245	DISTURBANCE, OTHER
11	280	SUSPICIOUS PERSON

12	460	TRAFFIC (MOVING) VIOLATION
13	280	SUSPICIOUS PERSON
14	245	DISTURBANCE, OTHER
15	281	SUSPICIOUS VEHICLE
17	250	MISCHIEF, NUISANCE COMPLAINTS
18	177	LIQUOR VIOLATION - INTOXICATED PERSON
19	363	MISSING PERSON
20	245	DISTURBANCE, OTHER
21	430	MOTOR VEHICLE COLLISION
22	280	SUSPICIOUS PERSON
23	280	SUSPICIOUS PERSON
28	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
29	161	TRESPASS
32	280	SUSPICIOUS PERSON
34	460	TRAFFIC (MOVING) VIOLATION
35	245	DISTURBANCE, OTHER
36	341	HARBOR - DEBRIS, NAVIGATIONAL HAZARDS
37	245	DISTURBANCE, OTHER
38	245	DISTURBANCE, OTHER
...
999	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1000	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1001	64	SHOPLIFT
1002	101	FORGERY, BAD CHECKS
1003	430	MOTOR VEHICLE COLLISION
1004	63	THEFT - CAR PROWL
1005	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1006	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1007	176	LIQUOR VIOLATION - ADULT
1008	161	TRESPASS
1011	245	DISTURBANCE, OTHER
1013	245	DISTURBANCE, OTHER
1014	177	LIQUOR VIOLATION - INTOXICATED PERSON
1016	280	SUSPICIOUS PERSON
1017	460	TRAFFIC (MOVING) VIOLATION
1018	430	MOTOR VEHICLE COLLISION
1019	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1024	63	THEFT - CAR PROWL
1027	202	ALACAD - COMMERCIAL PANIC (FALSE)
1028	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1029	245	DISTURBANCE, OTHER
1030	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1035	280	SUSPICIOUS PERSON
1036	281	SUSPICIOUS VEHICLE
1037	73	AUTO RECOVERY
1038	250	MISCHIEF, NUISANCE COMPLAINTS
1039	245	DISTURBANCE, OTHER
1040	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)

1041	470	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1043	280	SUSPICIOUS PERSON

	Event Clearance SubGroup		Event Clearance Group \
0	DISTURBANCES		DISTURBANCES
1	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
2	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
3	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
5	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
6	DISTURBANCES		DISTURBANCES
7	BURGLARY ALACAD (FALSE)		FALSE ALACAD
9	THEFT		OTHER PROPERTY
10	DISTURBANCES		DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
13	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
14	DISTURBANCES		DISTURBANCES
15	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
17	NUISANCE, MISCHIEF COMPLAINTS		NUISANCE, MISCHIEF
18	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING		PERSONS - LOST, FOUND, MISSING
20	DISTURBANCES		DISTURBANCES
21	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
22	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
23	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
28	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
29	TRESPASS		TRESPASS
32	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
34	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
35	DISTURBANCES		DISTURBANCES
36	HARBOR CALLS		HARBOR CALLS
37	DISTURBANCES		DISTURBANCES
38	DISTURBANCES		DISTURBANCES
...
999	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1000	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1001	THEFT		SHOPLIFTING
1002	FRAUD CALLS		FRAUD CALLS
1003	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
1004	CAR PROWL		CAR PROWL
1005	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1006	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1007	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
1008	TRESPASS		TRESPASS
1011	DISTURBANCES		DISTURBANCES
1013	DISTURBANCES		DISTURBANCES
1014	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS

1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1019	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1024	CAR PROWL	CAR PROWL
1027	PANIC ALACAD (FALSE)	FALSE ALACAD
1028	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1029	DISTURBANCES	DISTURBANCES
1030	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO RECOVERIES	AUTO THEFTS
1038	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
1039	DISTURBANCES	DISTURBANCES
1040	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1041	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES

	Event	Clearance Date	Hundred Block Location	District/Sector	\
0		2016-03-26 17:17:00	46XX BLOCK OF 38 AV S		R
1		2016-03-26 17:15:00	29 AV / E ALDER ST		G
2		2016-03-26 17:19:00	WEST SEATTLE BR WB / 1 AV S ON RP		O
3		2016-03-26 17:26:00	24XX BLOCK OF 35 AV W		Q
4		2016-03-26 17:19:00	24 AV / E ALDER ST		G
5		2016-03-26 17:17:00	92XX BLOCK OF RAINIER AV S		S
6		2016-03-26 17:18:00	27XX BLOCK OF RAINIER AV S		R
7		2016-03-26 17:17:00	66XX BLOCK OF S BANGOR ST		S
9		2016-03-26 17:14:00	9XX BLOCK OF 14 AV E		C
10		2016-03-26 17:36:00	3XX BLOCK OF 2 AV S		K
11		2016-03-26 17:31:00	S FINDLAY ST / 46 AV S		R
12		2016-03-26 17:29:00	12 AV / E PIKE ST		E
13		2016-03-26 17:28:00	4XX BLOCK OF S DAWSON ST		O
14		2016-03-26 17:30:00	GREENWOOD AV N / N 84 ST		J
15		2016-03-26 17:29:00	51 AV S / S HOLLY ST		S
17		2016-03-26 17:30:00	46XX BLOCK OF S FINDLAY ST		R
18		2016-03-26 17:39:00	3 AV S / S LANDER ST		O
19		2016-03-26 17:37:00	59XX BLOCK OF 46 AV SW		W
20		2016-03-26 17:40:00	8 AV / PIKE ST		M
21		2016-03-26 17:39:00	DELRIDGE WY SW / SW ALASKA ST		H
22		2016-03-26 17:30:00	N 77 ST / GREENWOOD AV N		J
23		2016-03-26 17:40:00	S HOLGATE ST / AIRPORT WY S		O
28		2016-03-26 17:43:00	BROADWAY E / E JOHN ST		E
29		2016-03-26 17:43:00	10XX BLOCK OF S JACKSON ST		G
32		2016-03-26 17:52:00	13XX BLOCK OF ALASKAN WY		M
34		2016-03-26 17:56:00	SR509 SB / W MARGINAL WY SW OFF RP		F
35		2016-03-26 18:02:00	19XX BLOCK OF 6 AV		M
36		2016-03-26 17:44:00	21XX BLOCK OF N NORTHLAKE WY		B
37		2016-03-26 18:01:00	142XX BLOCK OF LINDEN AV N		H

38	2016-03-26 18:02:00	11 AV / E PIKE ST	E
...
999	2016-03-28 09:31:00	140XX BLOCK OF LINDEN AV N	N
1000	2016-03-28 09:32:00	11XX BLOCK OF NW 54 ST	B
1001	2016-03-28 09:48:00	14XX BLOCK OF S LANE ST	H
1002	2016-03-28 09:45:00	4XX BLOCK OF 26 AV E	C
1003	2016-03-28 09:49:00	ROOSEVELT WY NE / NE 50 ST	U
1004	2016-03-28 09:51:00	4XX BLOCK OF 26 AV E	C
1005	2016-03-28 09:42:00	28XX BLOCK OF 62 AV SW	W
1006	2016-03-28 09:50:00	15XX BLOCK OF THORNDYKE AV W	Q
1007	2016-03-28 09:54:00	NE 45 ST / ROOSEVELT WY NE	U
1008	2016-03-28 09:56:00	14XX BLOCK OF NW 54 ST	B
1011	2016-03-28 09:53:00	57XX BLOCK OF 22 AV NW	B
1013	2016-03-28 10:07:00	4XX BLOCK OF 2 AV S	K
1014	2016-03-28 10:06:00	35 AV NW / NW 67 ST	J
1016	2016-03-28 10:16:00	4XX BLOCK OF 24 AV E	C
1017	2016-03-28 10:10:00	HOLLY PARK DR S / S MYRTLE PL	S
1018	2016-03-28 10:18:00	52XX BLOCK OF 24 AV S	R
1019	2016-03-28 10:15:00	67XX BLOCK OF ALONZO AV NW	J
1024	2016-03-28 10:29:00	69XX BLOCK OF WEEDIN PL NE	J
1027	2016-03-28 10:39:00	52XX BLOCK OF E MARGINAL WY S	O
1028	2016-03-28 10:34:00	TERRY AV / SPRING ST	E
1029	2016-03-28 10:31:00	45XX BLOCK OF STONE WY N	B
1030	2016-03-28 10:39:00	45XX BLOCK OF THACKERAY PL NE	B
1035	2016-03-28 10:55:00	I5 EXPRESS / NE 42 ST OFF RP	U
1036	2016-03-28 10:45:00	39 AV SW / SW HANFORD ST	H
1037	2016-03-28 10:47:00	92XX BLOCK OF M L KING JR WY S	S
1038	2016-03-28 11:00:00	2XX BLOCK OF BROADWAY E	E
1039	2016-03-28 10:55:00	8XX BLOCK OF E PIKE ST	E
1040	2016-03-28 10:55:00	3XX BLOCK OF SENECA ST	K
1041	2016-03-28 10:53:00	NE 77 ST / 40 AV NE	U
1043	2016-03-28 11:03:00	23XX BLOCK OF SW WEBSTER ST	F

	Zone/Beat	Census Tract	Longitude	Latitude	Incident Location \
0	R3	10100.2019	-122.284904	47.561256	(47.561256, -122.284904)
1	G2	8800.3002	-122.294930	47.604195	(47.604195, -122.29493)
2	O1	9300.3060	-122.335240	47.571580	(47.57158, -122.33524)
3	Q1	5600.4030	-122.402370	47.640358	(47.640358, -122.40237)
4	G2	8800.3008	-122.301090	47.604320	(47.60432, -122.30109)
5	S3	11800.6020	-122.268030	47.519850	(47.51985, -122.26803)
6	R2	10001.1002	-122.299160	47.579674	(47.579674, -122.29916)
7	S3	11900.2016	-122.250630	47.506386	(47.506386, -122.25063)
9	C1	6500.3017	-122.314590	47.627274	(47.627274, -122.31459)
10	K3	9200.2028	-122.330810	47.600464	(47.600464, -122.33081)
11	R3	10300.2004	-122.275380	47.551910	(47.55191, -122.27538)
12	E2	7500.4006	-122.316830	47.614105	(47.614105, -122.31683)
13	O2	9300.3167	-122.328960	47.555634	(47.555634, -122.32896)
14	J3	2900.1000	-122.355300	47.689835	(47.689835, -122.3553)

15	S2	11102.2008	-122.269910	47.542492	(47.542492, -122.26991)
17	R3	10200.4025	-122.274760	47.551910	(47.55191, -122.27476)
18	O1	9300.3014	-122.329990	47.579807	(47.579807, -122.32999)
19	W2	10600.6004	-122.391174	47.549450	(47.54945, -122.391174)
20	M2	8200.1010	-122.332245	47.612072	(47.612072, -122.332245)
21	H3	9900.2019	-122.362870	47.561085	(47.561085, -122.36287)
22	J3	2900.2003	-122.355300	47.684746	(47.684746, -122.3553)
23	O1	9300.1047	-122.321396	47.586205	(47.586205, -122.321396)
28	E1	7500.5004	-122.320880	47.619904	(47.619904, -122.32088)
29	G1	9100.1002	-122.318430	47.599186	(47.599186, -122.31843)
32	M1	8100.1015	-122.340870	47.606407	(47.606407, -122.34087)
34	F3	11200.2066	-122.334910	47.534718	(47.534718, -122.33491)
35	M2	7200.1061	-122.337940	47.614170	(47.61417, -122.33794)
36	B3	5400.2012	-122.332500	47.648296	(47.648296, -122.3325)
37	H2	401.1006	-122.347770	47.731678	(47.731678, -122.34777)
38	E2	7500.4006	-122.318140	47.614094	(47.614094, -122.31814)
...
999	N2	401.1007	-122.347755	47.730316	(47.730316, -122.347755)
1000	B2	4700.1015	-122.372180	47.667890	(47.66789, -122.37218)
1001	H3	9000.2033	-122.313440	47.596653	(47.596653, -122.31344)
1002	C2	7700.2008	-122.298775	47.623127	(47.623127, -122.298775)
1003	U1	5200.5000	-122.317406	47.664936	(47.664936, -122.317406)
1004	C2	7700.2008	-122.298775	47.623127	(47.623127, -122.298775)
1005	W1	9701.2001	-122.411980	47.578250	(47.57825, -122.41198)
1006	Q1	5600.5046	-122.391870	47.633327	(47.633327, -122.39187)
1007	U2	5301.2006	-122.317640	47.661297	(47.661297, -122.31764)
1008	B1	4700.2004	-122.374900	47.667890	(47.66789, -122.3749)
1011	B1	4700.4004	-122.384740	47.670547	(47.670547, -122.38474)
1013	K3	9200.2002	-122.331390	47.601074	(47.601074, -122.33139)
1014	J2	3200.7020	-122.402130	47.677013	(47.677013, -122.40213)
1016	C2	7700.2006	-122.301160	47.623520	(47.62352, -122.30116)
1017	S1	11001.1006	-122.286865	47.537300	(47.5373, -122.286865)
1018	R1	10401.2012	-122.301735	47.555080	(47.55508, -122.301735)
1019	J2	3300.1009	-122.375130	47.678673	(47.678673, -122.37513)
1024	J3	3600.4000	-122.322390	47.679140	(47.67914, -122.32239)
1027	O2	10900.2012	-122.337830	47.554977	(47.554977, -122.33783)
1028	E3	8300.1003	-122.326904	47.609585	(47.609585, -122.326904)
1029	B3	5000.3000	-122.342130	47.661755	(47.661755, -122.34213)
1030	B3	5200.4010	-122.326164	47.662260	(47.66226, -122.326164)
1035	U2	5200.3001	-122.322450	47.656002	(47.656002, -122.32245)
1036	H1	9800.2010	-122.381370	47.575596	(47.575596, -122.38137)
1037	S1	11700.4001	-122.279830	47.518880	(47.51888, -122.27983)
1038	E1	7402.1000	-122.320885	47.620490	(47.62049, -122.320885)
1039	E2	8400.1007	-122.321450	47.614070	(47.61407, -122.32145)
1040	K1	8100.2032	-122.334770	47.607285	(47.607285, -122.33477)
1041	U3	2400.2005	-122.285260	47.684853	(47.684853, -122.28526)
1043	F1	10701.2011	-122.362150	47.535515	(47.535515, -122.36215)

	Initial Type Description \
0	FIGHT - IP - PHYSICAL (NO WEAPONS)
1	PARKING VIOLATION (EXCEPT ABANDONED CAR)
2	TRAFFIC - MOVING VIOLATION
3	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
4	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
5	LIQUOR VIOLATIONS - ADULT
6	TRESPASS
7	ALARM - RESIDENTIAL - BURGLARY, SILENT/AUDIBLE
9	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
10	DISTURBANCE, MISCELLANEOUS/OTHER
11	UNKNOWN - COMPLAINT OF UNKNOWN NATURE
12	TRAFFIC STOP - OFFICER INITIATED ONVIEW
13	TRESPASS
14	DISTURBANCE, MISCELLANEOUS/OTHER
15	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
17	NOISE - DISTURBANCE (PARTY, ETC)
18	DETOX - REQUEST FOR
19	MISSING - CHILD
20	WEAPN - GUN, DEADLY WPN (NO THRTS/ASLT/DIST)
21	MOTOR VEHICLE COLLISION, BLOCKING
22	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
23	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
28	PARKING VIOLATION (EXCEPT ABANDONED CAR)
29	TRESPASS
32	FRAUD - FORGERY, BUNCO, SCAMS, ID THEFT, ETC
34	TRAFFIC - MOVING VIOLATION
35	TRESPASS
36	HARBOR - WATER DEBRIS, NAVIGATIONAL HAZARDS
37	TRESPASS
38	DISTURBANCE, MISCELLANEOUS/OTHER
...	...
999	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1000	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1001	SHOPLIFT - THEFT
1002	TRU - FORGERY/CHKS/BUNCO/SCAMS/ID THEFT
1003	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
1004	TRU - THEFT
1005	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1006	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1007	DISTURBANCE, MISCELLANEOUS/OTHER
1008	DISTURBANCE, MISCELLANEOUS/OTHER
1011	TRESPASS
1013	FIGHT - IP - PHYSICAL (NO WEAPONS)
1014	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1016	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1017	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1018	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...

1019	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1024	TRU - THEFT
1027	ALARM - COMM, HOLD-UP/PANIC (EXCEPT BANKS)
1028	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1029	TRESPASS
1030	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1035	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1036	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1037	AUTO RECOVERY
1038	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1039	FIGHT - IP - PHYSICAL (NO WEAPONS)
1040	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1041	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1043	SUSPICIOUS PERSON, VEHICLE OR INCIDENT

	Initial Type Subgroup	Initial Type Group \
0	DISTURBANCES	DISTURBANCES
1	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
2	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
3	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
5	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
6	TRESPASS	TRESPASS
7	ALACAD	SUSPICIOUS CIRCUMSTANCES
9	OTHER PROPERTY	THEFT
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	TRESPASS	TRESPASS
14	DISTURBANCES	DISTURBANCES
15	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
17	DISTURBANCES	DISTURBANCES
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
20	WEAPONS CALLS	WEAPONS CALLS
21	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	HAZARDS	HAZARDS
28	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
29	TRESPASS	TRESPASS
32	FRAUD CALLS	FRAUD CALLS
34	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
35	TRESPASS	TRESPASS
36	HARBOR CALLS	HARBOR CALLS
37	TRESPASS	TRESPASS
38	DISTURBANCES	DISTURBANCES
...
999	TRAFFIC RELATED CALLS	PARKING VIOLATIONS

1000	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1001	SHOPLIFTING	THEFT
1002	FRAUD CALLS	FRAUD CALLS
1003	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1004	OTHER PROPERTY	THEFT
1005	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1006	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1007	DISTURBANCES	DISTURBANCES
1008	DISTURBANCES	DISTURBANCES
1011	TRESPASS	TRESPASS
1013	DISTURBANCES	DISTURBANCES
1014	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1019	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1024	OTHER PROPERTY	THEFT
1027	ALACAD	SUSPICIOUS CIRCUMSTANCES
1028	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1029	TRESPASS	TRESPASS
1030	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO THEFTS	AUTO RECOVERIES
1038	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1039	DISTURBANCES	DISTURBANCES
1040	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1041	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES

	At Scene Time	OFFICERS_AT_SCENE
0	NaT	2
1	NaT	2
2	NaT	0
3	NaT	2
4	NaT	1
5	NaT	2
6	NaT	3
7	NaT	1
9	NaT	1
10	NaT	3
11	NaT	2
12	NaT	0
13	NaT	3
14	NaT	3
15	NaT	3
17	NaT	4
18	NaT	0

19	NaT	2
20	NaT	3
21	NaT	1
22	NaT	1
23	NaT	2
28	NaT	0
29	NaT	2
32	NaT	2
34	NaT	2
35	NaT	1
36	NaT	3
37	NaT	1
38	NaT	3
...
999	NaT	2
1000	NaT	3
1001	NaT	1
1002	NaT	3
1003	NaT	2
1004	NaT	2
1005	NaT	4
1006	NaT	1
1007	NaT	4
1008	NaT	1
1011	NaT	1
1013	NaT	1
1014	NaT	1
1016	NaT	1
1017	NaT	0
1018	NaT	1
1019	NaT	1
1024	NaT	0
1027	NaT	3
1028	NaT	1
1029	NaT	1
1030	NaT	1
1035	NaT	2
1036	NaT	2
1037	NaT	3
1038	NaT	3
1039	NaT	3
1040	NaT	4
1041	NaT	1
1043	NaT	2

[646 rows x 20 columns]

In [7]: *#This equation takes NaN At Scene Time Values, divided by total observations, in order*

```
#Null values that the feature contains
```

```
646/1046
```

```
Out[7]: 0.6175908221797323
```

At Scene Time contains 646 rows of NaN values. This is over 62% of the data set, indicating the feature should be removed.

```
In [8]: #The info() feature showed one Null value in the Census Tract Feature. This code explores
```

```
df[df['Census Tract'].isnull()]
```

```
Out[8]:
```

	CAD CDW ID	CAD Event Number	General Offense Number	\
224	1702543	16000105361	2016105361	
	Event Clearance Code	Event Clearance Description	\	
224	460	TRAFFIC (MOVING) VIOLATION		
	Event Clearance SubGroup	Event Clearance Group	Event Clearance Date	\
224	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS	2016-03-26 23:39:00	
	Hundred Block Location	District/Sector Zone/Beat	Census Tract	\
224	S KENYON ST / KENYON ON RP	NaN	FS	NaN
	Longitude	Latitude	Incident Location	\
224	-122.334335	47.53204	(47.53204, -122.334335)	
	Initial Type Description	Initial Type Subgroup	\	
224	TRAFFIC STOP - OFFICER INITIATED ONVIEW	TRAFFIC RELATED CALLS		
	Initial Type Group	At Scene Time	OFFICERS_AT_SCENE	
224	TRAFFIC RELATED CALLS	NaT	1	

The above observation has many NaN values and the Zone/Beat information value does not match the format of any other entries. This observation should therefore be removed due to the chance of input error skewing results.

```
In [9]: df.describe()
```

```
Out[9]:
```

	CAD CDW ID	CAD Event Number	General Offense Number	\
count	1.046000e+03	1.046000e+03	1.046000e+03	
mean	1.702849e+06	1.600011e+10	2.016106e+09	
std	3.084839e+02	5.299296e+02	5.299296e+02	
min	1.702311e+06	1.600010e+10	2.016105e+09	
25%	1.702584e+06	1.600011e+10	2.016105e+09	
50%	1.702850e+06	1.600011e+10	2.016106e+09	
75%	1.703117e+06	1.600011e+10	2.016106e+09	
max	1.703382e+06	1.600011e+10	2.016107e+09	

	Event Clearance Code	Census Tract	Longitude	Latitude	\
count	1046.000000	1045.000000	1046.000000	1046.000000	
mean	251.477055	7032.281362	-122.332415	47.620956	
std	130.859335	3007.366113	0.029592	0.050883	
min	30.000000	100.200200	-122.419030	47.503387	
25%	172.250000	5100.202600	-122.347785	47.598301	
50%	245.000000	7900.400000	-122.332835	47.614090	
75%	289.500000	9200.202800	-122.315780	47.661684	
max	470.000000	12100.201300	-122.249120	47.734050	

	OFFICERS_AT_SCENE
count	1046.000000
mean	1.889101
std	1.189723
min	0.000000
25%	1.000000
50%	2.000000
75%	3.000000
max	4.000000

The Census Tract feature max and 75% numbers seem extrordinarily high

1.1.1 Issues to be Fixed:

- From initial inspection, some features carry redundant information: Longitude, Latitude, Incident Location, Hundred Block Location; District/Sector and Zone/Beat
- Additionally, At Scene Time is missing many values
- For consistency's sake, the OFFICERS_AT_SCENE feature should be altered in style to match the others
- Zone/Beats, Incident Type Group, Incident Type Subgroup, District/Sector, Event Clearance Group, Event Clearance Subgroup, Event Clearance Code should be changed into categories instead of a Strings/int64
- CAD CDW ID, CAD Event Number, General Offense Number should be changed to strings instead of int64
- The Census Tract feature max and 75% numbers seem extrordinarily high
- Remove NaN census observation

2 II. Clean the Data

Problem 1:

- From initial inspection, some features carry redundant information: longitude, Latitude, Incident Location, Hundred Block Location; District/Sector and Zone/Beat

```
In [10]: # In this code, I will remove the redundant columns: Incident Location, Hundred Block
# While Hundred Block Location does provide additional information, for the purposes
# detail and clouds the general message of the data set
```

```

# First create a copy of the dataframe to facilitate reproducibility
df_copy = df.copy()

# Drop the Incident Location feature
df_copy = df_copy.drop(['Incident Location'], axis=1)

# Drop the Hundred Block Location feature
df_copy = df_copy.drop(['Hundred Block Location'], axis=1)

# Drop the District/Sector feature
#df_copy = df_copy.drop(['District/Sector'], axis=1)

```

- Test:

```
In [11]: df_copy.head()
```

```

Out[11]:
  CAD CDW ID  CAD Event Number  General Offense Number  Event Clearance Code \
0      1702311      16000104983      2016104983      242
1      1702312      16000104976      2016104976      470
2      1702316      16000104995      2016104995      460
3      1702317      16000104994      2016104994      280
4      1702318      16000104993      2016104993      281

      Event Clearance Description  Event Clearance SubGroup \
0      FIGHT DISTURBANCE      DISTURBANCES
1  PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)  PARKING VIOLATIONS
2      TRAFFIC (MOVING) VIOLATION  TRAFFIC RELATED CALLS
3      SUSPICIOUS PERSON  SUSPICIOUS CIRCUMSTANCES
4      SUSPICIOUS VEHICLE  SUSPICIOUS CIRCUMSTANCES

      Event Clearance Group  Event Clearance Date  District/Sector  Zone/Beat \
0      DISTURBANCES  2016-03-26 17:17:00      R      R3
1  TRAFFIC RELATED CALLS  2016-03-26 17:15:00      G      G2
2  TRAFFIC RELATED CALLS  2016-03-26 17:19:00      O      O1
3  SUSPICIOUS CIRCUMSTANCES  2016-03-26 17:26:00      Q      Q1
4  SUSPICIOUS CIRCUMSTANCES  2016-03-26 17:19:00      G      G2

      Census Tract  Longitude  Latitude \
0      10100.2019 -122.284904  47.561256
1      8800.3002 -122.294930  47.604195
2      9300.3060 -122.335240  47.571580
3      5600.4030 -122.402370  47.640358
4      8800.3008 -122.301090  47.604320

      Initial Type Description  Initial Type Subgroup \
0      FIGHT - IP - PHYSICAL (NO WEAPONS)  DISTURBANCES
1  PARKING VIOLATION (EXCEPT ABANDONED CAR)  TRAFFIC RELATED CALLS

```

2	TRAFFIC - MOVING VIOLATION	TRAFFIC RELATED CALLS
3	SUSPICIOUS PERSON, VEHICLE OR INCIDENT	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS PERSON, VEHICLE OR INCIDENT	SUSPICIOUS CIRCUMSTANCES

	Initial Type Group	At Scene Time	OFFICERS_AT_SCENE
0	DISTURBANCES	NaT	2
1	PARKING VIOLATIONS	NaT	2
2	PARKING VIOLATIONS	NaT	0
3	SUSPICIOUS CIRCUMSTANCES	NaT	2
4	SUSPICIOUS CIRCUMSTANCES	NaT	1

Problem 2:

- Additionally, At Scene Time is missing many values
- As Chapter 7 indicated, the proper approach for features missing extensive values is to either fill in the missing values, use a data mining feature capable of handling missing values, or to discard the feature entirely. In this case, the feature is missing 61.76% of the values, so the method I decided was most appropriate was to discard the feature

In [12]: df_copy = df_copy.drop(['At Scene Time'], axis=1)

- Test:

In [13]: df_copy.head()

```
Out[13]:
```

	CAD CDW ID	CAD Event Number	General Offense Number	Event Clearance Code	\
0	1702311	16000104983	2016104983	242	
1	1702312	16000104976	2016104976	470	
2	1702316	16000104995	2016104995	460	
3	1702317	16000104994	2016104994	280	
4	1702318	16000104993	2016104993	281	

	Event Clearance Description	Event Clearance SubGroup	\
0	FIGHT DISTURBANCE	DISTURBANCES	
1	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	PARKING VIOLATIONS	
2	TRAFFIC (MOVING) VIOLATION	TRAFFIC RELATED CALLS	
3	SUSPICIOUS PERSON	SUSPICIOUS CIRCUMSTANCES	
4	SUSPICIOUS VEHICLE	SUSPICIOUS CIRCUMSTANCES	

	Event Clearance Group	Event Clearance Date	District/Sector	Zone/Beat	\
0	DISTURBANCES	2016-03-26 17:17:00	R	R3	
1	TRAFFIC RELATED CALLS	2016-03-26 17:15:00	G	G2	
2	TRAFFIC RELATED CALLS	2016-03-26 17:19:00	O	O1	
3	SUSPICIOUS CIRCUMSTANCES	2016-03-26 17:26:00	Q	Q1	
4	SUSPICIOUS CIRCUMSTANCES	2016-03-26 17:19:00	G	G2	

	Census Tract	Longitude	Latitude	\
0	10100.2019	-122.284904	47.561256	
1	8800.3002	-122.294930	47.604195	

```

2      9300.3060 -122.335240  47.571580
3      5600.4030 -122.402370  47.640358
4      8800.3008 -122.301090  47.604320

```

	Initial Type Description	Initial Type Subgroup \
0	FIGHT - IP - PHYSICAL (NO WEAPONS)	DISTURBANCES
1	PARKING VIOLATION (EXCEPT ABANDONED CAR)	TRAFFIC RELATED CALLS
2	TRAFFIC - MOVING VIOLATION	TRAFFIC RELATED CALLS
3	SUSPICIOUS PERSON, VEHICLE OR INCIDENT	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS PERSON, VEHICLE OR INCIDENT	SUSPICIOUS CIRCUMSTANCES

	Initial Type Group	OFFICERS_AT_SCENE
0	DISTURBANCES	2
1	PARKING VIOLATIONS	2
2	PARKING VIOLATIONS	0
3	SUSPICIOUS CIRCUMSTANCES	2
4	SUSPICIOUS CIRCUMSTANCES	1

Problem 3:

- For consistency's sake, the OFFICERS_AT_SCENE feature should be altered in style to match the others

In [14]: *# Here I use the rename function to match the style*

```
df_copy = df_copy.rename(index=str, columns={"OFFICERS_AT_SCENE": "Officers at Scene"})
```

Problem 4:

- Zone/Beat, Incident Type Group, Incident Type Subgroup, Event Clearance Group, Event Clearance Subgroup, Event Clearance Code should be changed into categories instead of a Strings/int64

In [15]: *# Change Zone/Beat feature to category*

```
df_copy['Zone/Beat'] = df_copy['Zone/Beat'].astype('category')
```

Change Incident Type Group to category

```
df_copy['Initial Type Group'] = df_copy['Initial Type Group'].astype('category')
```

Change Incident Type Subgroup to category

```
df_copy['Initial Type Subgroup'] = df_copy['Initial Type Subgroup'].astype('category')
```

Change Event Clearance Code to category

```
df_copy['Event Clearance Code'] = df_copy['Event Clearance Code'].astype('category')
```

```

# Change Event Clearance Group to category

df_copy['Event Clearance Group'] = df_copy['Event Clearance Group'].astype('category')

# Change Event Clearance Subgroup to category

df_copy['Event Clearance SubGroup'] = df_copy['Event Clearance SubGroup'].astype('category')

```

- Test:

```
In [16]: df_copy.info()
```

```

<class 'pandas.core.frame.DataFrame'>
Index: 1046 entries, 0 to 1045
Data columns (total 17 columns):
CAD CDW ID                1046 non-null int64
CAD Event Number          1046 non-null int64
General Offense Number    1046 non-null int64
Event Clearance Code       1046 non-null category
Event Clearance Description 1046 non-null object
Event Clearance SubGroup   1046 non-null category
Event Clearance Group      1046 non-null category
Event Clearance Date       1046 non-null datetime64[ns]
District/Sector           1045 non-null object
Zone/Beat                 1046 non-null category
Census Tract              1045 non-null float64
Longitude                 1046 non-null float64
Latitude                  1046 non-null float64
Initial Type Description   1046 non-null object
Initial Type Subgroup     1046 non-null category
Initial Type Group        1046 non-null category
Officers at Scene         1046 non-null int64
dtypes: category(6), datetime64[ns](1), float64(3), int64(4), object(3)
memory usage: 116.1+ KB

```

Problem 5:

- CAD CDW ID, CAD Event Number, General Offense Number should be changed to strings instead of int64

```
In [17]: # Change CAD CDW ID to String
```

```

df_copy['CAD CDW ID'] = df_copy['CAD CDW ID'].astype('str')

# Change CAD Event Number to String

df_copy['CAD Event Number'] = df_copy['CAD Event Number'].astype('str')

```

```
# Change General Offense Number to String
```

```
df_copy['General Offense Number'] = df_copy['General Offense Number'].astype('str')
```

- Test:

```
In [18]: df_copy.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 1046 entries, 0 to 1045
Data columns (total 17 columns):
CAD CDW ID                1046 non-null object
CAD Event Number          1046 non-null object
General Offense Number    1046 non-null object
Event Clearance Code      1046 non-null category
Event Clearance Description 1046 non-null object
Event Clearance SubGroup   1046 non-null category
Event Clearance Group      1046 non-null category
Event Clearance Date       1046 non-null datetime64[ns]
District/Sector           1045 non-null object
Zone/Beat                 1046 non-null category
Census Tract              1045 non-null float64
Longitude                 1046 non-null float64
Latitude                  1046 non-null float64
Initial Type Description   1046 non-null object
Initial Type Subgroup      1046 non-null category
Initial Type Group         1046 non-null category
Officers at Scene         1046 non-null int64
dtypes: category(6), datetime64[ns](1), float64(3), int64(1), object(6)
memory usage: 116.1+ KB
```

Problem 6:

- Remove NaN census observation

```
In [19]: df_copy['Census Tract'] = df_copy['Census Tract'].dropna()
```

- Test:

```
In [20]: df_copy[df_copy['Census Tract'].isnull()]
```

```
Out[20]:
```

	CAD CDW ID	CAD Event Number	General Offense Number	Event Clearance Code	\
	224	1702543	16000105361	2016105361	460
	Event Clearance Description	Event Clearance SubGroup	\		
224	TRAFFIC (MOVING) VIOLATION	TRAFFIC RELATED CALLS			

	Event Clearance Group	Event Clearance Date	District/Sector	Zone/Beat	\
224	TRAFFIC RELATED CALLS	2016-03-26 23:39:00		NaN	FS

	Census Tract	Longitude	Latitude	\
224		NaN -122.334335	47.53204	

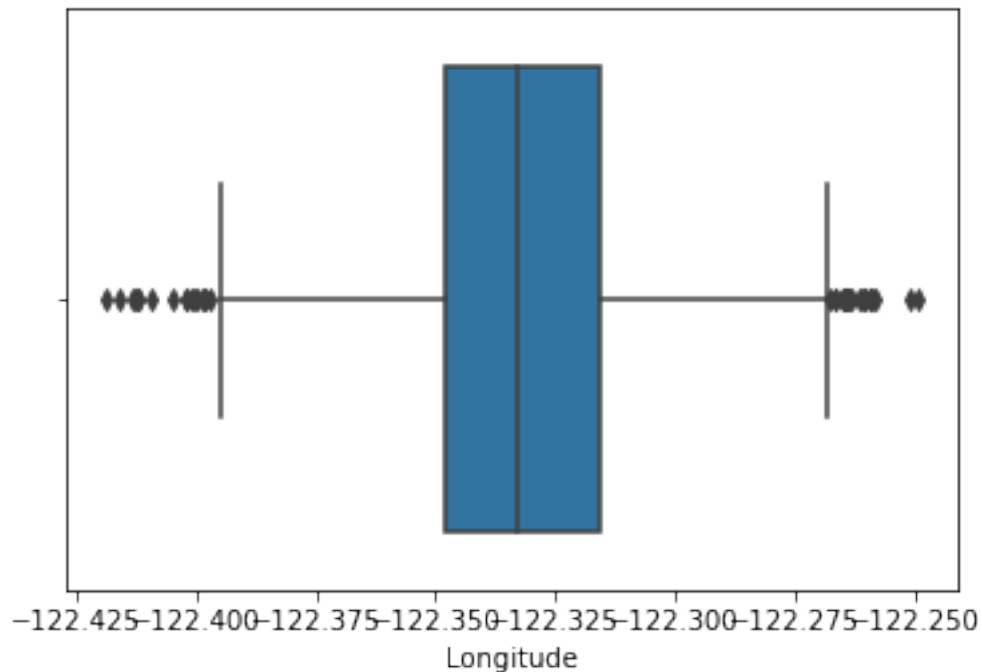
	Initial Type Description	Initial Type Subgroup	\
224	TRAFFIC STOP - OFFICER INITIATED ONVIEW	TRAFFIC RELATED CALLS	

	Initial Type Group	Officers at Scene
224	TRAFFIC RELATED CALLS	1

2.1 II. Find the Outliers

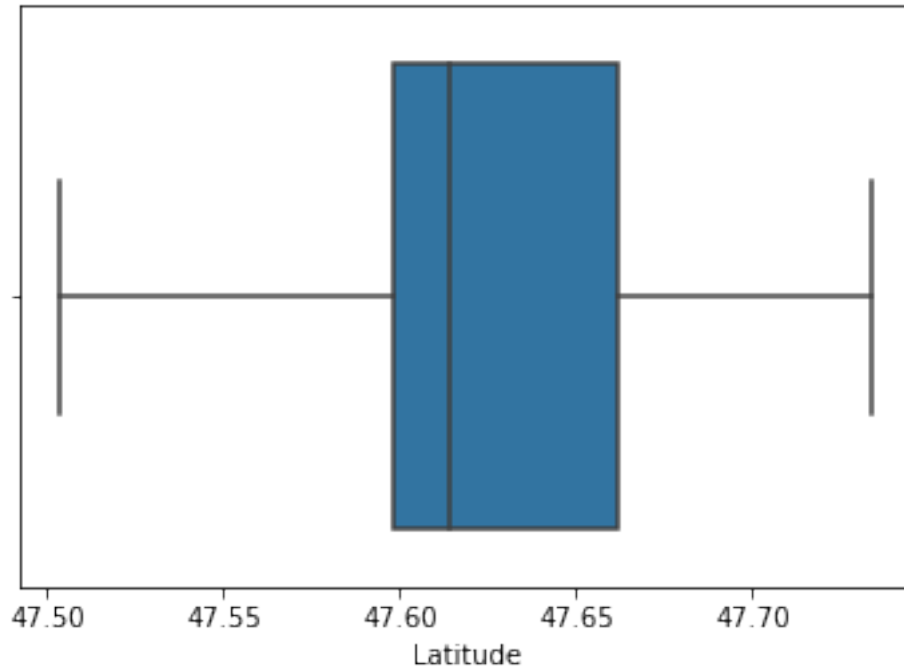
In [21]: *#Boxplot demonstrates any outlier values*
`sns.boxplot(x=df_copy['Longitude'])`

Out[21]: <matplotlib.axes._subplots.AxesSubplot at 0x284b4c87f98>



In [22]: *#Boxplot demonstrates any outlier values*
`sns.boxplot(x=df_copy['Latitude'])`

Out[22]: <matplotlib.axes._subplots.AxesSubplot at 0x284b4f87d68>



```
In [23]: #The following code removes the numeric columns from the DataFrame
integer_cols = df.select_dtypes(include=[np.number]).columns
```

```
#The following then examines the zscore of the integer columns
z = df[integer_cols].apply(zscore)
```

```
#This code shows the index of zscore values over 2. From our chapter readings, outliers
#than 2 standard deviations from the mean.
np.where(z>2)
```

```
#This code was inspired by the following resources:
```

```
#https://towardsdatascience.com/ways-to-detect-and-remove-the-outliers-404d16608dba
```

```
#https://stackoverflow.com/questions/24761998/pandas-compute-z-score-for-all-columns
```

```
Out[23]: (array([ 5,  7, 15, 37, 44, 50, 55, 56, 78, 102, 104,
124, 143, 158, 163, 190, 195, 196, 197, 198, 292, 322,
363, 387, 418, 427, 439, 460, 464, 490, 491, 525, 532,
565, 614, 620, 631, 653, 654, 672, 673, 688, 772, 775,
782, 792, 793, 807, 816, 860, 884, 904, 907, 909, 922,
982, 989, 999, 1020], dtype=int64),
array([5, 5, 5, 6, 5, 5, 5, 5, 5, 6, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6, 5,
5, 5, 5, 5, 5, 5, 6, 5, 5, 5, 6, 5, 6, 6, 6, 6, 6, 6, 5, 6, 5,
5, 5, 5, 6, 5, 5, 5, 6, 5, 6, 6, 6, 6, 6, 6, 5], dtype=int64))
```

```
In [24]: #The following code then removes the indexes of the outliers. Outliers were removed d
#forty-four, so removing the outliers would be the most sensible way forward.
```


#This code utilized the following resource:

```
df_copy = df_copy.drop([df_copy.index[5], df_copy.index[7], df_copy.index[15], df_copy.index[50], df_copy.index[55], df_copy.index[56], df_copy.index[104], df_copy.index[124], df_copy.index[143], df_copy.index[190], df_copy.index[195], df_copy.index[196], df_copy.index[292], df_copy.index[322], df_copy.index[363], df_copy.index[427], df_copy.index[439], df_copy.index[460], df_copy.index[491], df_copy.index[525], df_copy.index[532], df_copy.index[620], df_copy.index[631], df_copy.index[653], df_copy.index[673], df_copy.index[688], df_copy.index[772], df_copy.index[792], df_copy.index[793], df_copy.index[807], df_copy.index[884], df_copy.index[904], df_copy.index[907], df_copy.index[982], df_copy.index[989], df_copy.index[999], df_copy.index[1000]])
```

```
In [25]: #This validates the removal of outliers
```

df_copy

Out[25]:	CAD	CDW	ID	CAD	Event	Number	General	Offense	Number	Event	Clearance	Code	\
0	1702311			16000104983				2016104983				242	
1	1702312			16000104976				2016104976				470	
2	1702316			16000104995				2016104995				460	
3	1702317			16000104994				2016104994				280	
4	1702318			16000104993				2016104993				281	
6	1702321			16000104986				2016104986				245	
8	1702323			16000104918				2016104918				245	
9	1702324			16000104794				2016104794				65	
10	1702325			16000105010				2016105010				245	
11	1702326			16000105007				2016105007				280	
12	1702327			16000105002				2016105002				460	
13	1702328			16000104957				2016104957				280	
14	1702329			16000104941				2016104941				245	
16	1702331			16000104823				2016104823				52	
17	1702332			16000104752				2016104752				250	
18	1702333			16000105020				2016105020				177	
19	1702334			16000105018				2016105018				363	
20	1702335			16000105001				2016105001				245	
21	1702336			16000104999				2016104999				430	
22	1702337			16000104988				2016104988				280	
23	1702338			16000104984				2016104984				280	
24	1702339			16000104855				2016104855				186	
25	1702340			16000104782				2016104782				245	
26	1702341			16000104525				2016104525				372	
27	1702342			16000104508				2016104508				63	
28	1702343			16000104981				2016104981				470	
29	1702344			16000104978				2016104978				161	
30	1702345			16000104969				2016104969				74	
31	1702346			16000104932				2016104932				430	

32	1702347	16000104898	2016104898	280
...
1015	1703351	16000106605	2016106605	281
1016	1703352	16000106578	2016106578	280
1017	1703354	16000106662	2016106662	460
1018	1703355	16000106656	2016106656	430
1019	1703356	16000106623	2016106623	470
1021	1703358	16000106577	2016106577	71
1022	1703359	16000106499	2016106499	330
1023	1703360	16000106660	2016106660	371
1024	1703361	16000106650	2016106650	63
1025	1703362	16000106529	2016106529	430
1026	1703363	16000106461	2016106461	460
1027	1703364	16000106679	2016106679	202
1028	1703365	16000106675	2016106675	470
1029	1703366	16000106668	2016106668	245
1030	1703367	16000106664	2016106664	470
1031	1703368	16000106659	2016106659	63
1032	1703369	16000106644	2016106644	245
1033	1703370	16000106571	2016106571	245
1034	1703371	16000106458	2016106458	52
1035	1703372	16000106727	2016106727	280
1036	1703373	16000106693	2016106693	281
1037	1703374	16000106688	2016106688	73
1038	1703375	16000106738	2016106738	250
1039	1703376	16000106719	2016106719	245
1040	1703377	16000106692	2016106692	470
1041	1703378	16000106655	2016106655	470
1042	1703379	16000106592	2016106592	470
1043	1703380	16000106728	2016106728	280
1044	1703381	16000106612	2016106612	460
1045	1703382	16000106547	2016106547	430

	Event Clearance Description \
0	FIGHT DISTURBANCE
1	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
2	TRAFFIC (MOVING) VIOLATION
3	SUSPICIOUS PERSON
4	SUSPICIOUS VEHICLE
6	DISTURBANCE, OTHER
8	DISTURBANCE, OTHER
9	THEFT - MISCELLANEOUS
10	DISTURBANCE, OTHER
11	SUSPICIOUS PERSON
12	TRAFFIC (MOVING) VIOLATION
13	SUSPICIOUS PERSON
14	DISTURBANCE, OTHER
16	BURGLARY - COMMERCIAL

17	MISCHIEF, NUISANCE COMPLAINTS
18	LIQUOR VIOLATION - INTOXICATED PERSON
19	MISSING PERSON
20	DISTURBANCE, OTHER
21	MOTOR VEHICLE COLLISION
22	SUSPICIOUS PERSON
23	SUSPICIOUS PERSON
24	NARCOTICS, DRUG TRAFFIC LOITERING
25	DISTURBANCE, OTHER
26	PROPERTY - FOUND (FOLLOW UP TO SPD CASE)
27	THEFT - CAR PROWL
28	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
29	TRESPASS
30	LICENSE PLATE THEFT OR LOSS
31	MOTOR VEHICLE COLLISION
32	SUSPICIOUS PERSON
...	...
1015	SUSPICIOUS VEHICLE
1016	SUSPICIOUS PERSON
1017	TRAFFIC (MOVING) VIOLATION
1018	MOTOR VEHICLE COLLISION
1019	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1021	AUTO THEFT
1022	CASUALTY (NON CRIMINAL/TRAFFIC) - MAN DOWN, SI...
1023	PROPERTY - MISSING
1024	THEFT - CAR PROWL
1025	MOTOR VEHICLE COLLISION
1026	TRAFFIC (MOVING) VIOLATION
1027	ALACAD - COMMERCIAL PANIC (FALSE)
1028	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1029	DISTURBANCE, OTHER
1030	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1031	THEFT - CAR PROWL
1032	DISTURBANCE, OTHER
1033	DISTURBANCE, OTHER
1034	BURGLARY - COMMERCIAL
1035	SUSPICIOUS PERSON
1036	SUSPICIOUS VEHICLE
1037	AUTO RECOVERY
1038	MISCHIEF, NUISANCE COMPLAINTS
1039	DISTURBANCE, OTHER
1040	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1041	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1042	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1043	SUSPICIOUS PERSON
1044	TRAFFIC (MOVING) VIOLATION
1045	MOTOR VEHICLE COLLISION

	Event Clearance SubGroup		Event Clearance Group \
0	DISTURBANCES		DISTURBANCES
1	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
2	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
3	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
6	DISTURBANCES		DISTURBANCES
8	DISTURBANCES		DISTURBANCES
9	THEFT		OTHER PROPERTY
10	DISTURBANCES		DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
13	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
14	DISTURBANCES		DISTURBANCES
16	COMMERCIAL BURGLARIES		BURGLARY
17	NUISANCE, MISCHIEF COMPLAINTS		NUISANCE, MISCHIEF
18	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING		PERSONS - LOST, FOUND, MISSING
20	DISTURBANCES		DISTURBANCES
21	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
22	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
23	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
24	NARCOTICS COMPLAINTS		NARCOTICS COMPLAINTS
25	DISTURBANCES		DISTURBANCES
26	PROPERTY - MISSING, FOUND		PROPERTY - MISSING, FOUND
27	CAR PROWL		CAR PROWL
28	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
29	TRESPASS		TRESPASS
30	CAR PROWL		CAR PROWL
31	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
32	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
...
1015	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
1016	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
1018	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
1019	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1021	AUTO THEFTS		AUTO THEFTS
1022	CASUALTIES		PERSON DOWN/INJURY
1023	PROPERTY - MISSING, FOUND		PROPERTY - MISSING, FOUND
1024	CAR PROWL		CAR PROWL
1025	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
1026	TRAFFIC RELATED CALLS		TRAFFIC RELATED CALLS
1027	PANIC ALACAD (FALSE)		FALSE ALACAD
1028	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1029	DISTURBANCES		DISTURBANCES
1030	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
1031	CAR PROWL		CAR PROWL

1032	DISTURBANCES	DISTURBANCES
1033	DISTURBANCES	DISTURBANCES
1034	COMMERCIAL BURGLARIES	BURGLARY
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO RECOVERIES	AUTO THEFTS
1038	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
1039	DISTURBANCES	DISTURBANCES
1040	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1041	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1042	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1045	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance	Date	District/Sector	Zone/Beat	Census Tract	Longitude	\
0	2016-03-26	17:17:00		R	R3	10100.2019	-122.284904	
1	2016-03-26	17:15:00		G	G2	8800.3002	-122.294930	
2	2016-03-26	17:19:00		O	O1	9300.3060	-122.335240	
3	2016-03-26	17:26:00		Q	Q1	5600.4030	-122.402370	
4	2016-03-26	17:19:00		G	G2	8800.3008	-122.301090	
6	2016-03-26	17:18:00		R	R2	10001.1002	-122.299160	
8	2016-03-26	17:18:00		O	O1	9300.3019	-122.329056	
9	2016-03-26	17:14:00		C	C1	6500.3017	-122.314590	
10	2016-03-26	17:36:00		K	K3	9200.2028	-122.330810	
11	2016-03-26	17:31:00		R	R3	10300.2004	-122.275380	
12	2016-03-26	17:29:00		E	E2	7500.4006	-122.316830	
13	2016-03-26	17:28:00		O	O2	9300.3167	-122.328960	
14	2016-03-26	17:30:00		J	J3	2900.1000	-122.355300	
16	2016-03-26	17:32:00		R	R2	10100.3009	-122.292040	
17	2016-03-26	17:30:00		R	R3	10200.4025	-122.274760	
18	2016-03-26	17:39:00		O	O1	9300.3014	-122.329990	
19	2016-03-26	17:37:00		W	W2	10600.6004	-122.391174	
20	2016-03-26	17:40:00		M	M2	8200.1010	-122.332245	
21	2016-03-26	17:39:00		H	H3	9900.2019	-122.362870	
22	2016-03-26	17:30:00		J	J3	2900.2003	-122.355300	
23	2016-03-26	17:40:00		O	O1	9300.1047	-122.321396	
24	2016-03-26	17:31:00		B	B1	3300.3013	-122.378880	
25	2016-03-26	17:38:00		D	D2	7200.2001	-122.341370	
26	2016-03-26	17:30:00		B	B3	5100.2026	-122.329040	
27	2016-03-26	17:33:00		Q	Q3	7000.6008	-122.357960	
28	2016-03-26	17:43:00		E	E1	7500.5004	-122.320880	
29	2016-03-26	17:43:00		G	G1	9100.1002	-122.318430	
30	2016-03-26	17:47:00		U	U3	4200.4006	-122.290260	
31	2016-03-26	17:42:00		U	U2	5301.2006	-122.317420	
32	2016-03-26	17:52:00		M	M1	8100.1015	-122.340870	
...	
1015	2016-03-28	10:04:00		L	L3	700.2016	-122.297810	

1016	2016-03-28	10:16:00	C	C2	7700.2006	-122.301160
1017	2016-03-28	10:10:00	S	S1	11001.1006	-122.286865
1018	2016-03-28	10:18:00	R	R1	10401.2012	-122.301735
1019	2016-03-28	10:15:00	J	J2	3300.1009	-122.375130
1021	2016-03-28	10:12:00	F	F1	10701.2020	-122.369804
1022	2016-03-28	10:10:00	E	E1	7402.1009	-122.322860
1023	2016-03-28	10:25:00	D	D2	7300.3022	-122.336170
1024	2016-03-28	10:29:00	J	J3	3600.4000	-122.322390
1025	2016-03-28	10:26:00	N	N1	1701.3002	-122.355450
1026	2016-03-28	10:28:00	B	B1	4700.4015	-122.378900
1027	2016-03-28	10:39:00	O	O2	10900.2012	-122.337830
1028	2016-03-28	10:34:00	E	E3	8300.1003	-122.326904
1029	2016-03-28	10:31:00	B	B3	5000.3000	-122.342130
1030	2016-03-28	10:39:00	B	B3	5200.4010	-122.326164
1031	2016-03-28	10:37:00	H	H3	8100.1016	-122.341750
1032	2016-03-28	10:47:00	M	M1	8002.1001	-122.342400
1033	2016-03-28	10:37:00	O	O1	9300.3017	-122.333270
1034	2016-03-28	10:37:00	B	B3	5200.3032	-122.325710
1035	2016-03-28	10:55:00	U	U2	5200.3001	-122.322450
1036	2016-03-28	10:45:00	H	H1	9800.2010	-122.381370
1037	2016-03-28	10:47:00	S	S1	11700.4001	-122.279830
1038	2016-03-28	11:00:00	E	E1	7402.1000	-122.320885
1039	2016-03-28	10:55:00	E	E2	8400.1007	-122.321450
1040	2016-03-28	10:55:00	K	K1	8100.2032	-122.334770
1041	2016-03-28	10:53:00	U	U3	2400.2005	-122.285260
1042	2016-03-28	10:55:00	B	B2	4700.2031	-122.370766
1043	2016-03-28	11:03:00	F	F1	10701.2011	-122.362150
1044	2016-03-28	11:03:00	S	S2	11800.5001	-122.276940
1045	2016-03-28	11:03:00	O	O1	9300.1047	-122.321396

	Latitude	Initial Type Description \
0	47.561256	FIGHT - IP - PHYSICAL (NO WEAPONS)
1	47.604195	PARKING VIOLATION (EXCEPT ABANDONED CAR)
2	47.571580	TRAFFIC - MOVING VIOLATION
3	47.640358	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
4	47.604320	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
6	47.579674	TRESPASS
8	47.579807	HARAS - NO BIAS, THREATS OR MALICIOUSNESS
9	47.627274	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
10	47.600464	DISTURBANCE, MISCELLANEOUS/OTHER
11	47.551910	UNKNOWN - COMPLAINT OF UNKNOWN NATURE
12	47.614105	TRAFFIC STOP - OFFICER INITIATED ONVIEW
13	47.555634	TRESPASS
14	47.689835	DISTURBANCE, MISCELLANEOUS/OTHER
16	47.560780	BIAS -RACIAL, POLITICAL, SEXUAL MOTIVATION
17	47.551910	NOISE - DISTURBANCE (PARTY, ETC)
18	47.579807	DETOX - REQUEST FOR
19	47.549450	MISSING - CHILD

20	47.612072	WEAPN - GUN,DEADLY WPN (NO THRTS/ASLT/DIST)
21	47.561085	MOTOR VEHICLE COLLISION, BLOCKING
22	47.684746	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
23	47.586205	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
24	47.673820	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)
25	47.618546	WEAPN-IP/JO-GUN,DEADLY WPN (NO THRT/ASLT/DIST)
26	47.656120	PROPERTY - FOUND
27	47.628220	SECONDARY - THEFT (NOT SHOPLIFT OR SERVICES)
28	47.619904	PARKING VIOLATION (EXCEPT ABANDONED CAR)
29	47.599186	TRESPASS
30	47.674885	AUTO - THEFT/LOSS, PLATES AND/OR TAB
31	47.663116	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
32	47.606407	FRAUD - FORGERY,BUNCO, SCAMS, ID THEFT, ETC
...
1015	47.714912	ILLEGAL DUMPING
1016	47.623520	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1017	47.537300	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1018	47.555080	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
1019	47.678673	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1021	47.536453	AUTO THEFT - VEH THEFT OR THEFT AND RECOVERY
1022	47.618730	TRESPASS
1023	47.616055	PROPERTY, LOST OR MISSING
1024	47.679140	TRU - THEFT
1025	47.705082	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
1026	47.662937	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1027	47.554977	ALARM - COMM, HOLD-UP/PANIC (EXCEPT BANKS)
1028	47.609585	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1029	47.661755	TRESPASS
1030	47.662260	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1031	47.607258	TRU - THEFT
1032	47.612118	DISTURBANCE, MISCELLANEOUS/OTHER
1033	47.585040	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
1034	47.654335	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
1035	47.656002	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1036	47.575596	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1037	47.518880	AUTO RECOVERY
1038	47.620490	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1039	47.614070	FIGHT - IP - PHYSICAL (NO WEAPONS)
1040	47.607285	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1041	47.684853	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1042	47.665043	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1043	47.535515	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1044	47.526115	MOTOR VEHICLE COLLISION WITH INJURIES - PRIORI...
1045	47.586205	MOTOR VEHICLE COLLISION, BLOCKING

	Initial Type Subgroup	Initial Type Group \
0	DISTURBANCES	DISTURBANCES
1	TRAFFIC RELATED CALLS	PARKING VIOLATIONS

2	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
3	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
6	TRESPASS	TRESPASS
8	THREATS, HARASSMENT	THREATS, HARASSMENT
9	OTHER PROPERTY	THEFT
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	TRESPASS	TRESPASS
14	DISTURBANCES	DISTURBANCES
16	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
17	DISTURBANCES	DISTURBANCES
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
19	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
20	WEAPONS CALLS	WEAPONS CALLS
21	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	HAZARDS	HAZARDS
24	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
25	WEAPONS CALLS	WEAPONS CALLS
26	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
27	OTHER PROPERTY	THEFT
28	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
29	TRESPASS	TRESPASS
30	AUTO THEFTS	AUTO RECOVERIES
31	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
32	FRAUD CALLS	FRAUD CALLS
...
1015	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1019	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1021	AUTO THEFTS	AUTO RECOVERIES
1022	TRESPASS	TRESPASS
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1024	OTHER PROPERTY	THEFT
1025	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1026	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1027	ALACAD	SUSPICIOUS CIRCUMSTANCES
1028	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1029	TRESPASS	TRESPASS
1030	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1031	OTHER PROPERTY	THEFT
1032	DISTURBANCES	DISTURBANCES
1033	THREATS, HARASSMENT	THREATS, HARASSMENT
1034	BURGLARY	COMMERCIAL BURGLARIES

1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO THEFTS	AUTO RECOVERIES
1038	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1039	DISTURBANCES	DISTURBANCES
1040	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1041	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1042	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1045	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

Officers at Scene

0	2
1	2
2	0
3	2
4	1
6	3
8	3
9	1
10	3
11	2
12	0
13	3
14	3
16	2
17	4
18	0
19	2
20	3
21	1
22	1
23	2
24	3
25	0
26	2
27	3
28	0
29	2
30	4
31	1
32	2
...	...
1015	1
1016	1
1017	0
1018	1

1019	1
1021	3
1022	1
1023	0
1024	0
1025	1
1026	3
1027	3
1028	1
1029	1
1030	1
1031	1
1032	3
1033	3
1034	1
1035	2
1036	2
1037	3
1038	3
1039	3
1040	4
1041	1
1042	1
1043	2
1044	1
1045	2

[987 rows x 17 columns]

In [26]: *#The next code examines the categories for the Event Clearance Code column to assess*
df_copy['Event Clearance Code'].value_counts()

Out[26]:

245	119
280	96
470	64
460	64
430	56
161	54
63	51
177	50
250	39
200	31
281	30
220	23
244	23
64	21
40	21
201	19

450	16
65	16
130	14
71	13
350	12
242	11
282	10
372	10
52	9
50	8
184	7
246	6
203	6
74	5
...	
330	4
188	3
31	3
440	3
415	3
465	3
51	3
202	3
363	3
139	3
261	3
73	3
186	2
371	2
62	2
192	2
101	2
141	2
160	2
243	1
292	1
221	1
341	1
170	1
171	1
410	1
191	1
181	1
183	1
260	1

Name: Event Clearance Code, Length: 65, dtype: int64

In [27]: *#The next code examines the categories for Event Clearance Group to assess value-feas*

```
df_copy['Event Clearance Group'].value_counts()
```

```
Out[27]:
```

DISTURBANCES	160
TRAFFIC RELATED CALLS	154
SUSPICIOUS CIRCUMSTANCES	136
FALSE ALACAD	59
CAR PROWL	56
MOTOR VEHICLE COLLISION INVESTIGATION	56
LIQUOR VIOLATIONS	54
TRESPASS	54
NUISANCE, MISCHIEF	39
BEHAVIORAL HEALTH	24
BURGLARY	24
ASSAULTS	21
SHOPLIFTING	21
PROPERTY DAMAGE	17
OTHER PROPERTY	16
AUTO THEFTS	16
NARCOTICS COMPLAINTS	14
PROPERTY - MISSING, FOUND	12
HAZARDS	12
ROBBERY	7
FRAUD CALLS	6
THREATS, HARASSMENT	5
PERSON DOWN/INJURY	4
ANIMAL COMPLAINTS	4
PERSONS - LOST, FOUND, MISSING	3
ARREST	3
MISCELLANEOUS MISDEMEANORS	2
BIKE	2
LEWD CONDUCT	2
PROWLER	2
HARBOR CALLS	1
WEAPONS CALLS	1

Name: Event Clearance Group, dtype: int64

In [28]: *#The next code examines the categories for the Event Clearance Subgroup column to ass*

```
df_copy['Event Clearance SubGroup'].value_counts()
```

```
Out[28]:
```

DISTURBANCES	154
TRAFFIC RELATED CALLS	145
SUSPICIOUS CIRCUMSTANCES	136
PARKING VIOLATIONS	65
CAR PROWL	56
LIQUOR VIOLATIONS	56
TRESPASS	54
BURGLARY ALACAD (FALSE)	50

THEFT	39
NUISANCE, MISCHIEF COMPLAINTS	39
CRISIS CALL	24
ASSAULTS	21
PROPERTY DAMAGE	17
RESIDENTIAL BURGLARIES	15
NARCOTICS COMPLAINTS	14
AUTO THEFTS	13
PROPERTY - MISSING, FOUND	12
HAZARDS	12
PANIC ALACAD (FALSE)	9
COMMERCIAL BURGLARIES	9
FRAUD CALLS	6
NOISE DISTURBANCE	6
THREATS, HARASSMENT	5
CASUALTIES	4
ANIMAL COMPLAINTS	4
GUN CALLS	4
WARRANT CALLS	3
PERSONS - LOST, FOUND, MISSING	3
AUTO RECOVERIES	3
ROBBERY	3
PROWLER	2
HARBOR CALLS	1
MISCELLANEOUS MISDEMEANORS	1
PARKS EXCLUSIONS	1
WEAPONS CALLS	1

Name: Event Clearance SubGroup, dtype: int64

In [29]: *#The next code examines the categories for the Zone/Beat column to assess value-feasi*

```
df_copy['Zone/Beat'].value_counts()
```

Out[29]:

H2	44
H3	38
M2	36
E2	35
H1	35
B1	33
E1	33
M1	31
K3	31
B2	25
B3	25
M3	24
Q3	23
R1	22
N3	22

W1	22
D2	22
Q2	21
D1	20
K2	19
S1	19
E3	18
D3	18
C2	18
O1	18
Q1	18
R2	18
U2	17
U1	17
N1	17
J1	16
C3	16
G1	16
J3	14
K1	14
L2	13
F2	13
U3	12
F1	12
R3	12
G2	12
G3	11
J2	11
W2	11
F3	10
C1	10
S2	9
O2	8
L1	7
N2	6
L3	5
O3	5
W3	4
FS	1
S3	0

Name: Zone/Beat, dtype: int64

In [30]: *#The next code examines the categories for the Officers at Scene column to assess val*

```
df_copy['Officers at Scene'].value_counts()
# 0 seems incorrect - replace with 1
```

Out[30]:

1	301
2	238

```

3    233
0    116
4     99
Name: Officers at Scene, dtype: int64

```

```

In [31]: #Replace all the Zero Values with Ones in Officers at Scene Column
df_copy['Officers at Scene'] = df_copy[['Officers at Scene']].replace({0:1})

```

```

In [32]: #Test the code
df_copy['Officers at Scene'].value_counts()

```

```

Out[32]: 1    417
         2    238
         3    233
         4     99
Name: Officers at Scene, dtype: int64

```

```

In [33]: #The following code will demonstrate any duplicates in the data for the CAD CDW ID va
df_copy[df_copy['CAD CDW ID'].duplicated()]

```

```

Out[33]: Empty DataFrame
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code,
Index: []

```

```

In [34]: #The following code will demonstrate any duplicates in the data for the CAD Event Num
df_copy[df_copy['CAD Event Number'].duplicated()]

```

```

Out[34]: Empty DataFrame
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code,
Index: []

```

```

In [35]: #The following code will demonstrate any duplicates in the data for the General Offen
df_copy[df_copy['General Offense Number'].duplicated()]

```

```

Out[35]: Empty DataFrame
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code,
Index: []

```

```

In [36]: #The following code will demonstrate any duplicates in the data for the Event Clearan
#This search is evidently too wide and pulls up nearly the entire data set
df_copy[df_copy['Event Clearance Description'].duplicated()]

```

```

Out[36]:
   CAD CDW ID  CAD Event Number  General Offense Number  Event Clearance Code  \
8         1702323         16000104918         2016104918         245
10        1702325         16000105010         2016105010         245
11        1702326         16000105007         2016105007         280
12        1702327         16000105002         2016105002         460
13        1702328         16000104957         2016104957         280
14        1702329         16000104941         2016104941         245
20        1702335         16000105001         2016105001         245

```

22	1702337	16000104988	2016104988	280
23	1702338	16000104984	2016104984	280
25	1702340	16000104782	2016104782	245
28	1702343	16000104981	2016104981	470
31	1702346	16000104932	2016104932	430
32	1702347	16000104898	2016104898	280
33	1702348	16000104893	2016104893	245
34	1702349	16000105036	2016105036	460
35	1702350	16000105030	2016105030	245
38	1702353	16000105011	2016105011	245
39	1702354	16000105000	2016105000	280
40	1702355	16000104920	2016104920	363
45	1702361	16000104607	2016104607	250
46	1702362	16000105056	2016105056	177
47	1702363	16000105022	2016105022	245
48	1702364	16000105013	2016105013	161
49	1702365	16000104997	2016104997	280
52	1702368	16000104919	2016104919	430
53	1702369	16000104843	2016104843	430
54	1702370	16000104571	2016104571	63
58	1702375	16000104929	2016104929	430
59	1702376	16000104888	2016104888	430
60	1702377	16000105081	2016105081	177
...
1015	1703351	16000106605	2016106605	281
1016	1703352	16000106578	2016106578	280
1017	1703354	16000106662	2016106662	460
1018	1703355	16000106656	2016106656	430
1019	1703356	16000106623	2016106623	470
1021	1703358	16000106577	2016106577	71
1022	1703359	16000106499	2016106499	330
1023	1703360	16000106660	2016106660	371
1024	1703361	16000106650	2016106650	63
1025	1703362	16000106529	2016106529	430
1026	1703363	16000106461	2016106461	460
1027	1703364	16000106679	2016106679	202
1028	1703365	16000106675	2016106675	470
1029	1703366	16000106668	2016106668	245
1030	1703367	16000106664	2016106664	470
1031	1703368	16000106659	2016106659	63
1032	1703369	16000106644	2016106644	245
1033	1703370	16000106571	2016106571	245
1034	1703371	16000106458	2016106458	52
1035	1703372	16000106727	2016106727	280
1036	1703373	16000106693	2016106693	281
1037	1703374	16000106688	2016106688	73
1038	1703375	16000106738	2016106738	250
1039	1703376	16000106719	2016106719	245

1040	1703377	16000106692	2016106692	470
1041	1703378	16000106655	2016106655	470
1042	1703379	16000106592	2016106592	470
1043	1703380	16000106728	2016106728	280
1044	1703381	16000106612	2016106612	460
1045	1703382	16000106547	2016106547	430

	Event Clearance Description \
8	DISTURBANCE, OTHER
10	DISTURBANCE, OTHER
11	SUSPICIOUS PERSON
12	TRAFFIC (MOVING) VIOLATION
13	SUSPICIOUS PERSON
14	DISTURBANCE, OTHER
20	DISTURBANCE, OTHER
22	SUSPICIOUS PERSON
23	SUSPICIOUS PERSON
25	DISTURBANCE, OTHER
28	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
31	MOTOR VEHICLE COLLISION
32	SUSPICIOUS PERSON
33	DISTURBANCE, OTHER
34	TRAFFIC (MOVING) VIOLATION
35	DISTURBANCE, OTHER
38	DISTURBANCE, OTHER
39	SUSPICIOUS PERSON
40	MISSING PERSON
45	MISCHIEF, NUISANCE COMPLAINTS
46	LIQUOR VIOLATION - INTOXICATED PERSON
47	DISTURBANCE, OTHER
48	TRESPASS
49	SUSPICIOUS PERSON
52	MOTOR VEHICLE COLLISION
53	MOTOR VEHICLE COLLISION
54	THEFT - CAR PROWL
58	MOTOR VEHICLE COLLISION
59	MOTOR VEHICLE COLLISION
60	LIQUOR VIOLATION - INTOXICATED PERSON
...	...
1015	SUSPICIOUS VEHICLE
1016	SUSPICIOUS PERSON
1017	TRAFFIC (MOVING) VIOLATION
1018	MOTOR VEHICLE COLLISION
1019	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1021	AUTO THEFT
1022	CASUALTY (NON CRIMINAL/TRAFFIC) - MAN DOWN, SI...
1023	PROPERTY - MISSING
1024	THEFT - CAR PROWL

1025	MOTOR VEHICLE COLLISION
1026	TRAFFIC (MOVING) VIOLATION
1027	ALACAD - COMMERCIAL PANIC (FALSE)
1028	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1029	DISTURBANCE, OTHER
1030	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1031	THEFT - CAR PROWL
1032	DISTURBANCE, OTHER
1033	DISTURBANCE, OTHER
1034	BURGLARY - COMMERCIAL
1035	SUSPICIOUS PERSON
1036	SUSPICIOUS VEHICLE
1037	AUTO RECOVERY
1038	MISCHIEF, NUISANCE COMPLAINTS
1039	DISTURBANCE, OTHER
1040	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1041	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1042	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1043	SUSPICIOUS PERSON
1044	TRAFFIC (MOVING) VIOLATION
1045	MOTOR VEHICLE COLLISION

	Event Clearance SubGroup	Event Clearance Group \
8	DISTURBANCES	DISTURBANCES
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
14	DISTURBANCES	DISTURBANCES
20	DISTURBANCES	DISTURBANCES
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
25	DISTURBANCES	DISTURBANCES
28	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
31	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
32	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
33	DISTURBANCES	DISTURBANCES
34	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
35	DISTURBANCES	DISTURBANCES
38	DISTURBANCES	DISTURBANCES
39	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
40	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
45	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
46	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
47	DISTURBANCES	DISTURBANCES
48	TRESPASS	TRESPASS
49	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
52	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

53	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
54	CAR PROWL	CAR PROWL
58	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
59	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
60	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
...
1015	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1019	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1021	AUTO THEFTS	AUTO THEFTS
1022	CASUALTIES	PERSON DOWN/INJURY
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1024	CAR PROWL	CAR PROWL
1025	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1026	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1027	PANIC ALACAD (FALSE)	FALSE ALACAD
1028	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1029	DISTURBANCES	DISTURBANCES
1030	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1031	CAR PROWL	CAR PROWL
1032	DISTURBANCES	DISTURBANCES
1033	DISTURBANCES	DISTURBANCES
1034	COMMERCIAL BURGLARIES	BURGLARY
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO RECOVERIES	AUTO THEFTS
1038	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
1039	DISTURBANCES	DISTURBANCES
1040	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1041	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1042	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1045	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance Date	District/Sector	Zone/Beat	Census Tract	Longitude	\
8		2016-03-26 17:18:00		O 01	9300.3019	-122.329056	
10		2016-03-26 17:36:00		K K3	9200.2028	-122.330810	
11		2016-03-26 17:31:00		R R3	10300.2004	-122.275380	
12		2016-03-26 17:29:00		E E2	7500.4006	-122.316830	
13		2016-03-26 17:28:00		O 02	9300.3167	-122.328960	
14		2016-03-26 17:30:00		J J3	2900.1000	-122.355300	
20		2016-03-26 17:40:00		M M2	8200.1010	-122.332245	
22		2016-03-26 17:30:00		J J3	2900.2003	-122.355300	
23		2016-03-26 17:40:00		O 01	9300.1047	-122.321396	
25		2016-03-26 17:38:00		D D2	7200.2001	-122.341370	

28	2016-03-26 17:43:00	E	E1	7500.5004	-122.320880
31	2016-03-26 17:42:00	U	U2	5301.2006	-122.317420
32	2016-03-26 17:52:00	M	M1	8100.1015	-122.340870
33	2016-03-26 17:45:00	K	K1	8100.1036	-122.334040
34	2016-03-26 17:56:00	F	F3	11200.2066	-122.334910
35	2016-03-26 18:02:00	M	M2	7200.1061	-122.337940
38	2016-03-26 18:02:00	E	E2	7500.4006	-122.318140
39	2016-03-26 17:57:00	B	B2	3500.2016	-122.354360
40	2016-03-26 17:56:00	C	C2	7600.2002	-122.304700
45	2016-03-26 18:14:00	B	B3	5100.1012	-122.331350
46	2016-03-26 18:20:00	H	H1	9100.2003	-122.327675
47	2016-03-26 18:23:00	M	M2	8100.2001	-122.337970
48	2016-03-26 18:14:00	H	H1	7500.3005	-122.320915
49	2016-03-26 18:17:00	L	L3	100.3003	-122.292496
52	2016-03-26 18:14:00	D	D1	8002.2016	-122.345640
53	2016-03-26 18:17:00	E	E1	7500.5000	-122.316930
54	2016-03-26 18:12:00	F	F3	11200.3008	-122.314920
58	2016-03-26 18:30:00	J	J3	3600.4012	-122.326836
59	2016-03-26 18:39:00	N	N3	1200.5008	-122.332660
60	2016-03-26 18:49:00	G	G1	9100.1004	-122.317220
...
1015	2016-03-28 10:04:00	L	L3	700.2016	-122.297810
1016	2016-03-28 10:16:00	C	C2	7700.2006	-122.301160
1017	2016-03-28 10:10:00	S	S1	11001.1006	-122.286865
1018	2016-03-28 10:18:00	R	R1	10401.2012	-122.301735
1019	2016-03-28 10:15:00	J	J2	3300.1009	-122.375130
1021	2016-03-28 10:12:00	F	F1	10701.2020	-122.369804
1022	2016-03-28 10:10:00	E	E1	7402.1009	-122.322860
1023	2016-03-28 10:25:00	D	D2	7300.3022	-122.336170
1024	2016-03-28 10:29:00	J	J3	3600.4000	-122.322390
1025	2016-03-28 10:26:00	N	N1	1701.3002	-122.355450
1026	2016-03-28 10:28:00	B	B1	4700.4015	-122.378900
1027	2016-03-28 10:39:00	O	O2	10900.2012	-122.337830
1028	2016-03-28 10:34:00	E	E3	8300.1003	-122.326904
1029	2016-03-28 10:31:00	B	B3	5000.3000	-122.342130
1030	2016-03-28 10:39:00	B	B3	5200.4010	-122.326164
1031	2016-03-28 10:37:00	H	H3	8100.1016	-122.341750
1032	2016-03-28 10:47:00	M	M1	8002.1001	-122.342400
1033	2016-03-28 10:37:00	O	O1	9300.3017	-122.333270
1034	2016-03-28 10:37:00	B	B3	5200.3032	-122.325710
1035	2016-03-28 10:55:00	U	U2	5200.3001	-122.322450
1036	2016-03-28 10:45:00	H	H1	9800.2010	-122.381370
1037	2016-03-28 10:47:00	S	S1	11700.4001	-122.279830
1038	2016-03-28 11:00:00	E	E1	7402.1000	-122.320885
1039	2016-03-28 10:55:00	E	E2	8400.1007	-122.321450
1040	2016-03-28 10:55:00	K	K1	8100.2032	-122.334770
1041	2016-03-28 10:53:00	U	U3	2400.2005	-122.285260
1042	2016-03-28 10:55:00	B	B2	4700.2031	-122.370766

1043	2016-03-28 11:03:00	F	F1	10701.2011 -122.362150
1044	2016-03-28 11:03:00	S	S2	11800.5001 -122.276940
1045	2016-03-28 11:03:00	O	O1	9300.1047 -122.321396

	Latitude	Initial Type Description \
8	47.579807	HARAS - NO BIAS, THREATS OR MALICIOUSNESS
10	47.600464	DISTURBANCE, MISCELLANEOUS/OTHER
11	47.551910	UNKNOWN - COMPLAINT OF UNKNOWN NATURE
12	47.614105	TRAFFIC STOP - OFFICER INITIATED ONVIEW
13	47.555634	TRESPASS
14	47.689835	DISTURBANCE, MISCELLANEOUS/OTHER
20	47.612072	WEAPN - GUN, DEADLY WPN (NO THRTS/ASLT/DIST)
22	47.684746	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
23	47.586205	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
25	47.618546	WEAPN-IP/JO-GUN, DEADLY WPN (NO THRT/ASLT/DIST)
28	47.619904	PARKING VIOLATION (EXCEPT ABANDONED CAR)
31	47.663116	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
32	47.606407	FRAUD - FORGERY, BUNCO, SCAMS, ID THEFT, ETC
33	47.601723	DISTURBANCE, MISCELLANEOUS/OTHER
34	47.534718	TRAFFIC - MOVING VIOLATION
35	47.614170	TRESPASS
38	47.614094	DISTURBANCE, MISCELLANEOUS/OTHER
39	47.674570	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
40	47.622295	MISSING - CHILD
45	47.662000	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
46	47.598354	DETOX - PICKUP (FIRE / POLICE STANDING BY)
47	47.612423	THEFT OF SERVICES
48	47.622560	DISTURBANCE, MISCELLANEOUS/OTHER
49	47.721010	PROPERTY - DAMAGE
52	47.611404	MOTOR VEHICLE COLLISION, HIT AND RUN
53	47.619934	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
54	47.526016	SECONDARY - THEFT (NOT SHOPLIFT OR SERVICES)
58	47.678555	MOTOR VEHICLE COLLISION, HIT AND RUN
59	47.708656	MOTOR VEHICLE COLLISION WITH INJURIES - PRIORI...
60	47.599186	DETOX - REQUEST FOR
...
1015	47.714912	ILLEGAL DUMPING
1016	47.623520	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1017	47.537300	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1018	47.555080	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
1019	47.678673	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1021	47.536453	AUTO THEFT - VEH THEFT OR THEFT AND RECOVERY
1022	47.618730	TRESPASS
1023	47.616055	PROPERTY, LOST OR MISSING
1024	47.679140	TRU - THEFT
1025	47.705082	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
1026	47.662937	TRAFFIC STOP - OFFICER INITIATED ONVIEW
1027	47.554977	ALARM - COMM, HOLD-UP/PANIC (EXCEPT BANKS)

1028	47.609585	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1029	47.661755	TRESPASS
1030	47.662260	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1031	47.607258	TRU - THEFT
1032	47.612118	DISTURBANCE, MISCELLANEOUS/OTHER
1033	47.585040	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
1034	47.654335	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
1035	47.656002	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1036	47.575596	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1037	47.518880	AUTO RECOVERY
1038	47.620490	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1039	47.614070	FIGHT - IP - PHYSICAL (NO WEAPONS)
1040	47.607285	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1041	47.684853	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1042	47.665043	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1043	47.535515	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1044	47.526115	MOTOR VEHICLE COLLISION WITH INJURIES - PRIORI...
1045	47.586205	MOTOR VEHICLE COLLISION, BLOCKING

	Initial Type Subgroup	Initial Type Group \
8	THREATS, HARASSMENT	THREATS, HARASSMENT
10	DISTURBANCES	DISTURBANCES
11	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
12	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
13	TRESPASS	TRESPASS
14	DISTURBANCES	DISTURBANCES
20	WEAPONS CALLS	WEAPONS CALLS
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	HAZARDS	HAZARDS
25	WEAPONS CALLS	WEAPONS CALLS
28	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
31	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
32	FRAUD CALLS	FRAUD CALLS
33	DISTURBANCES	DISTURBANCES
34	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
35	TRESPASS	TRESPASS
38	DISTURBANCES	DISTURBANCES
39	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
40	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
45	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
46	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
47	OTHER PROPERTY	THEFT
48	DISTURBANCES	DISTURBANCES
49	PROPERTY DAMAGE	PROPERTY DAMAGE
52	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
53	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
54	OTHER PROPERTY	THEFT
58	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

59	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
60	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
...
1015	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
1016	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1017	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1018	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1019	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1021	AUTO THEFTS	AUTO RECOVERIES
1022	TRESPASS	TRESPASS
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1024	OTHER PROPERTY	THEFT
1025	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1026	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1027	ALACAD	SUSPICIOUS CIRCUMSTANCES
1028	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1029	TRESPASS	TRESPASS
1030	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1031	OTHER PROPERTY	THEFT
1032	DISTURBANCES	DISTURBANCES
1033	THREATS, HARASSMENT	THREATS, HARASSMENT
1034	BURGLARY	COMMERCIAL BURGLARIES
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1036	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1037	AUTO THEFTS	AUTO RECOVERIES
1038	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1039	DISTURBANCES	DISTURBANCES
1040	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1041	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1042	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1044	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1045	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

Officers at Scene

8	3
10	3
11	2
12	1
13	3
14	3
20	3
22	1
23	2
25	1
28	1
31	1
32	2

33	3
34	2
35	1
38	3
39	3
40	1
45	1
46	3
47	3
48	1
49	1
52	1
53	2
54	1
58	3
59	4
60	3
...	...
1015	1
1016	1
1017	1
1018	1
1019	1
1021	3
1022	1
1023	1
1024	1
1025	1
1026	3
1027	3
1028	1
1029	1
1030	1
1031	1
1032	3
1033	3
1034	1
1035	2
1036	2
1037	3
1038	3
1039	3
1040	4
1041	1
1042	1
1043	2
1044	1
1045	2

[922 rows x 17 columns]

```
In [37]: #The following code will demonstrate any duplicates in the data for the Event Clearance
#This search wasnt useful either, showing 200 observations
df_copy[df_copy['Event Clearance Date'].duplicated()]
```

```
Out[37]:
```

	CAD CDW ID	CAD Event Number	General Offense Number	Event Clearance Code	\
4	1702318	16000104993	2016104993	281	
8	1702323	16000104918	2016104918	245	
17	1702332	16000104752	2016104752	250	
21	1702336	16000104999	2016104999	430	
22	1702337	16000104988	2016104988	280	
23	1702338	16000104984	2016104984	280	
24	1702339	16000104855	2016104855	186	
26	1702341	16000104525	2016104525	372	
29	1702344	16000104978	2016104978	161	
38	1702353	16000105011	2016105011	245	
40	1702355	16000104920	2016104920	363	
42	1702357	16000104619	2016104619	40	
48	1702364	16000105013	2016105013	161	
52	1702368	16000104919	2016104919	430	
53	1702369	16000104843	2016104843	430	
62	1702379	16000105034	2016105034	245	
68	1702385	16000104977	2016104977	430	
71	1702388	16000104970	2016104970	281	
76	1702393	16000104824	2016104824	430	
85	1702402	16000104579	2016104579	100	
91	1702408	16000105025	2016105025	40	
93	1702410	16000105012	2016105012	430	
94	1702411	16000104967	2016104967	470	
95	1702412	16000104940	2016104940	184	
97	1702414	16000104854	2016104854	161	
98	1702415	16000104775	2016104775	245	
99	1702416	16000104740	2016104740	281	
111	1702428	16000104950	2016104950	41	
115	1702432	16000104724	2016104724	63	
118	1702435	16000105101	2016105101	220	
...	
889	1703223	16000106398	2016106398	280	
890	1703224	16000105974	2016105974	245	
901	1703235	16000106419	2016106419	200	
913	1703247	16000106414	2016106414	220	
919	1703253	16000106446	2016106446	430	
925	1703259	16000106472	2016106472	245	
929	1703263	16000106463	2016106463	161	
930	1703264	16000106459	2016106459	470	
952	1703287	16000106436	2016106436	460	

970	1703306	16000106563	2016106563	460
973	1703309	16000106514	2016106514	41
976	1703312	16000106503	2016106503	280
980	1703316	16000106570	2016106570	430
981	1703317	16000106550	2016106550	130
985	1703321	16000106588	2016106588	161
986	1703322	16000106587	2016106587	63
987	1703323	16000106585	2016106585	470
988	1703324	16000106557	2016106557	160
1009	1703345	16000106617	2016106617	63
1012	1703348	16000106496	2016106496	52
1022	1703359	16000106499	2016106499	330
1030	1703367	16000106664	2016106664	470
1033	1703370	16000106571	2016106571	245
1034	1703371	16000106458	2016106458	52
1037	1703374	16000106688	2016106688	73
1039	1703376	16000106719	2016106719	245
1040	1703377	16000106692	2016106692	470
1042	1703379	16000106592	2016106592	470
1044	1703381	16000106612	2016106612	460
1045	1703382	16000106547	2016106547	430

	Event Clearance Description \
4	SUSPICIOUS VEHICLE
8	DISTURBANCE, OTHER
17	MISCHIEF, NUISANCE COMPLAINTS
21	MOTOR VEHICLE COLLISION
22	SUSPICIOUS PERSON
23	SUSPICIOUS PERSON
24	NARCOTICS, DRUG TRAFFIC LOITERING
26	PROPERTY - FOUND (FOLLOW UP TO SPD CASE)
29	TRESPASS
38	DISTURBANCE, OTHER
40	MISSING PERSON
42	ASSAULTS, OTHER
48	TRESPASS
52	MOTOR VEHICLE COLLISION
53	MOTOR VEHICLE COLLISION
62	DISTURBANCE, OTHER
68	MOTOR VEHICLE COLLISION
71	SUSPICIOUS VEHICLE
76	MOTOR VEHICLE COLLISION
85	FRAUD (INCLUDING IDENTITY THEFT)
91	ASSAULTS, OTHER
93	MOTOR VEHICLE COLLISION
94	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
95	NARCOTICS, OTHER
97	TRESPASS

98		DISTURBANCE, OTHER
99		SUSPICIOUS VEHICLE
111		HARASSMENT, THREATS
115		THEFT - CAR PROWL
118		CRISIS COMPLAINT - GENERAL
...		...
889		SUSPICIOUS PERSON
890		DISTURBANCE, OTHER
901	ALACAD -	COMMERCIAL BURGLARY (FALSE)
913		CRISIS COMPLAINT - GENERAL
919		MOTOR VEHICLE COLLISION
925		DISTURBANCE, OTHER
929		TRESPASS
930	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
952		TRAFFIC (MOVING) VIOLATION
970		TRAFFIC (MOVING) VIOLATION
973		HARASSMENT, THREATS
976		SUSPICIOUS PERSON
980		MOTOR VEHICLE COLLISION
981		PROPERTY DESTRUCTION
985		TRESPASS
986		THEFT - CAR PROWL
987	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
988		PROWLER
1009		THEFT - CAR PROWL
1012		BURGLARY - COMMERCIAL
1022	CASUALTY (NON CRIMINAL/TRAFFIC) - MAN DOWN, SI...	
1030	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
1033		DISTURBANCE, OTHER
1034		BURGLARY - COMMERCIAL
1037		AUTO RECOVERY
1039		DISTURBANCE, OTHER
1040	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
1042	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
1044		TRAFFIC (MOVING) VIOLATION
1045		MOTOR VEHICLE COLLISION

	Event Clearance SubGroup	Event Clearance Group \
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
8	DISTURBANCES	DISTURBANCES
17	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
21	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
24	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
26	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
29	TRESPASS	TRESPASS
38	DISTURBANCES	DISTURBANCES

40	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
42	ASSAULTS	ASSAULTS
48	TRESPASS	TRESPASS
52	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
53	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
62	DISTURBANCES	DISTURBANCES
68	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
71	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
76	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
85	FRAUD CALLS	FRAUD CALLS
91	ASSAULTS	ASSAULTS
93	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
94	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
95	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
97	TRESPASS	TRESPASS
98	DISTURBANCES	DISTURBANCES
99	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
111	THREATS, HARASSMENT	THREATS, HARASSMENT
115	CAR PROWL	CAR PROWL
118	CRISIS CALL	BEHAVIORAL HEALTH
...
889	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
890	DISTURBANCES	DISTURBANCES
901	BURGLARY ALACAD (FALSE)	FALSE ALACAD
913	CRISIS CALL	BEHAVIORAL HEALTH
919	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
925	DISTURBANCES	DISTURBANCES
929	TRESPASS	TRESPASS
930	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
952	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
970	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
973	THREATS, HARASSMENT	THREATS, HARASSMENT
976	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
980	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
981	PROPERTY DAMAGE	PROPERTY DAMAGE
985	TRESPASS	TRESPASS
986	CAR PROWL	CAR PROWL
987	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
988	PROWLER	PROWLER
1009	CAR PROWL	CAR PROWL
1012	COMMERCIAL BURGLARIES	BURGLARY
1022	CASUALTIES	PERSON DOWN/INJURY
1030	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1033	DISTURBANCES	DISTURBANCES
1034	COMMERCIAL BURGLARIES	BURGLARY
1037	AUTO RECOVERIES	AUTO THEFTS
1039	DISTURBANCES	DISTURBANCES
1040	PARKING VIOLATIONS	TRAFFIC RELATED CALLS

1042	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1044	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
1045	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance Date	District/Sector	Zone/Beat	Census Tract	Longitude	\
4		2016-03-26 17:19:00		G G2	8800.3008	-122.301090	
8		2016-03-26 17:18:00		O O1	9300.3019	-122.329056	
17		2016-03-26 17:30:00		R R3	10200.4025	-122.274760	
21		2016-03-26 17:39:00		H H3	9900.2019	-122.362870	
22		2016-03-26 17:30:00		J J3	2900.2003	-122.355300	
23		2016-03-26 17:40:00		O O1	9300.1047	-122.321396	
24		2016-03-26 17:31:00		B B1	3300.3013	-122.378880	
26		2016-03-26 17:30:00		B B3	5100.2026	-122.329040	
29		2016-03-26 17:43:00		G G1	9100.1002	-122.318430	
38		2016-03-26 18:02:00		E E2	7500.4006	-122.318140	
40		2016-03-26 17:56:00		C C2	7600.2002	-122.304700	
42		2016-03-26 17:52:00		J J1	2900.1001	-122.357990	
48		2016-03-26 18:14:00		H H1	7500.3005	-122.320915	
52		2016-03-26 18:14:00		D D1	8002.2016	-122.345640	
53		2016-03-26 18:17:00		E E1	7500.5000	-122.316930	
62		2016-03-26 18:57:00		C C3	7900.3002	-122.311480	
68		2016-03-26 18:57:00		C C2	6200.2042	-122.304610	
71		2016-03-26 19:03:00		J J1	1701.2015	-122.353970	
76		2016-03-26 19:16:00		U U3	3900.1002	-122.285070	
85		2016-03-26 19:20:00		F F1	10701.1016	-122.361650	
91		2016-03-26 19:38:00		R R2	10001.1002	-122.299160	
93		2016-03-26 19:33:00		M M3	8100.2005	-122.335580	
94		2016-03-26 19:38:00		S S2	11101.2003	-122.280790	
95		2016-03-26 19:33:00		M M2	8100.2004	-122.337590	
97		2016-03-26 19:33:00		H H2	7300.2023	-122.332940	
98		2016-03-26 19:31:00		H H3	7300.2010	-122.329155	
99		2016-03-26 19:32:00		B B2	4800.3008	-122.363990	
111		2016-03-26 19:56:00		H H2	2800.1015	-122.344490	
115		2016-03-26 19:56:00		M M2	8200.1010	-122.331440	
118		2016-03-26 20:09:00		M M2	8100.2000	-122.337320	
...		
889		2016-03-28 03:21:00		D D3	6600.2009	-122.325900	
890		2016-03-27 17:34:00		G G3	9100.1012	-122.317230	
901		2016-03-28 04:21:00		M M1	8100.3008	-122.340630	
913		2016-03-28 05:05:00		U U1	4400.4009	-122.313070	
919		2016-03-28 05:21:00		W W1	9900.4065	-122.366000	
925		2016-03-28 06:03:00		K K3	8100.2046	-122.329190	
929		2016-03-28 05:58:00		K K2	9200.2006	-122.334180	
930		2016-03-28 05:51:00		H H2	600.6002	-122.316810	
952		2016-03-28 07:25:00		E E2	8400.1006	-122.322110	
970		2016-03-28 08:30:00		Q Q2	5802.2010	-122.373920	
973		2016-03-28 08:29:00		J J2	2900.1008	-122.356636	
976		2016-03-28 08:30:00		F F2	11402.2012	-122.357850	

980	2016-03-28 08:48:00	C	C1	7600.3010	-122.311390
981	2016-03-28 08:49:00	D	D2	7200.1070	-122.341736
985	2016-03-28 08:56:00	D	D2	7300.2023	-122.333790
986	2016-03-28 08:56:00	E	E2	7500.4001	-122.316895
987	2016-03-28 08:50:00	G	G1	8600.2021	-122.318756
988	2016-03-28 08:56:00	J	J1	1701.2015	-122.353960
1009	2016-03-28 09:51:00	O	O2	9300.3224	-122.329056
1012	2016-03-28 09:56:00	U	U1	4400.2002	-122.315000
1022	2016-03-28 10:10:00	E	E1	7402.1009	-122.322860
1030	2016-03-28 10:39:00	B	B3	5200.4010	-122.326164
1033	2016-03-28 10:37:00	O	O1	9300.3017	-122.333270
1034	2016-03-28 10:37:00	B	B3	5200.3032	-122.325710
1037	2016-03-28 10:47:00	S	S1	11700.4001	-122.279830
1039	2016-03-28 10:55:00	E	E2	8400.1007	-122.321450
1040	2016-03-28 10:55:00	K	K1	8100.2032	-122.334770
1042	2016-03-28 10:55:00	B	B2	4700.2031	-122.370766
1044	2016-03-28 11:03:00	S	S2	11800.5001	-122.276940
1045	2016-03-28 11:03:00	O	O1	9300.1047	-122.321396

	Latitude	Initial Type Description \
4	47.604320	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
8	47.579807	HARAS - NO BIAS, THREATS OR MALICIOUSNESS
17	47.551910	NOISE - DISTURBANCE (PARTY, ETC)
21	47.561085	MOTOR VEHICLE COLLISION, BLOCKING
22	47.684746	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
23	47.586205	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
24	47.673820	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)
26	47.656120	PROPERTY - FOUND
29	47.599186	TRESPASS
38	47.614094	DISTURBANCE, MISCELLANEOUS/OTHER
40	47.622295	MISSING - CHILD
42	47.690610	FIGHT - IP - PHYSICAL (NO WEAPONS)
48	47.622560	DISTURBANCE, MISCELLANEOUS/OTHER
52	47.611404	MOTOR VEHICLE COLLISION, HIT AND RUN
53	47.619934	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
62	47.612225	DISTURBANCE, MISCELLANEOUS/OTHER
68	47.645554	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
71	47.694214	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
76	47.681458	MOTOR VEHICLE COLLISION, HIT AND RUN
85	47.544970	FRAUD - FORGERY, BUNCO, SCAMS, ID THEFT, ETC
91	47.579674	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
93	47.610676	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...
94	47.539825	PARKING VIOLATION (EXCEPT ABANDONED CAR)
95	47.611206	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)
97	47.615883	TRESPASS
98	47.618237	ASLT - WITH OR W/O WEAPONS (NO SHOOTINGS)
99	47.658943	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
111	47.684402	HARAS - NO BIAS, THREATS OR MALICIOUSNESS

115	47.611710	SECONDARY - THEFT (NOT SHOPLIFT OR SERVICES)
118	47.611320	WEAPN-IP/JO-GUN,DEADLY WPN (NO THRT/ASLT/DIST)
...
889	47.637510	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
890	47.598340	CRISIS - PERSON IN BEHAVIORAL/EMOTIONAL CRISIS
901	47.608723	ALARM - COMM, SILENT/AUD BURG (INCL BANKS)
913	47.664898	DOWN - CHECK FOR PERSON DOWN
919	47.571373	TRAFFIC - BLOCKING ROADWAY
925	47.602040	TRESPASS
929	47.601303	DISTURBANCE, MISCELLANEOUS/OTHER
930	47.718193	PARKING VIOLATION (EXCEPT ABANDONED CAR)
952	47.614063	TRAFFIC STOP - OFFICER INITIATED ONVIEW
970	47.630882	TRAFFIC STOP - OFFICER INITIATED ONVIEW
973	47.688390	WEAPN-IP/JO-GUN,DEADLY WPN (NO THRT/ASLT/DIST)
976	47.518280	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
980	47.620087	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
981	47.619717	PROPERTY - DAMAGE
985	47.615223	TRESPASS
986	47.617600	TRU - THEFT
987	47.604360	PARKING VIOLATION (EXCEPT ABANDONED CAR)
988	47.693314	TRESPASS
1009	47.576650	TRU - THEFT
1012	47.675808	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
1022	47.618730	TRESPASS
1030	47.662260	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1033	47.585040	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
1034	47.654335	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
1037	47.518880	AUTO RECOVERY
1039	47.614070	FIGHT - IP - PHYSICAL (NO WEAPONS)
1040	47.607285	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1042	47.665043	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1044	47.526115	MOTOR VEHICLE COLLISION WITH INJURIES - PRIORI...
1045	47.586205	MOTOR VEHICLE COLLISION, BLOCKING

	Initial Type Subgroup	Initial Type Group \
4	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
8	THREATS, HARASSMENT	THREATS, HARASSMENT
17	DISTURBANCES	DISTURBANCES
21	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
23	HAZARDS	HAZARDS
24	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
26	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
29	TRESPASS	TRESPASS
38	DISTURBANCES	DISTURBANCES
40	PERSONS - LOST, FOUND, MISSING	PERSONS - LOST, FOUND, MISSING
42	DISTURBANCES	DISTURBANCES
48	DISTURBANCES	DISTURBANCES

52	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
53	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
62	DISTURBANCES	DISTURBANCES
68	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
71	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
76	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
85	FRAUD CALLS	FRAUD CALLS
91	ASSAULTS	ASSAULTS
93	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
94	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
95	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
97	TRESPASS	TRESPASS
98	ASSAULTS	ASSAULTS
99	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
111	THREATS, HARASSMENT	THREATS, HARASSMENT
115	OTHER PROPERTY	THEFT
118	WEAPONS CALLS	WEAPONS CALLS
...
889	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
890	BEHAVIORAL HEALTH	CRISIS CALL
901	ALACAD	SUSPICIOUS CIRCUMSTANCES
913	PERSON DOWN/INJURY	CASUALTIES
919	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
925	TRESPASS	TRESPASS
929	DISTURBANCES	DISTURBANCES
930	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
952	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
970	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
973	WEAPONS CALLS	WEAPONS CALLS
976	OTHER PROPERTY	THEFT
980	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
981	PROPERTY DAMAGE	PROPERTY DAMAGE
985	TRESPASS	TRESPASS
986	OTHER PROPERTY	THEFT
987	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
988	TRESPASS	TRESPASS
1009	OTHER PROPERTY	THEFT
1012	BURGLARY	COMMERCIAL BURGLARIES
1022	TRESPASS	TRESPASS
1030	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1033	THREATS, HARASSMENT	THREATS, HARASSMENT
1034	BURGLARY	COMMERCIAL BURGLARIES
1037	AUTO THEFTS	AUTO RECOVERIES
1039	DISTURBANCES	DISTURBANCES
1040	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1042	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1044	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1045	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

	Officers at Scene
4	1
8	3
17	4
21	1
22	1
23	2
24	3
26	2
29	2
38	3
40	1
42	1
48	1
52	1
53	2
62	2
68	2
71	3
76	3
85	1
91	1
93	1
94	3
95	1
97	2
98	1
99	1
111	2
115	2
118	3
...	...
889	4
890	1
901	4
913	2
919	1
925	3
929	2
930	2
952	1
970	2
973	3
976	4
980	3
981	3
985	3

986	1
987	4
988	1
1009	1
1012	1
1022	1
1030	1
1033	3
1034	1
1037	3
1039	3
1040	4
1042	1
1044	1
1045	2

[198 rows x 17 columns]

In [38]: *#The following code will demonstrate any duplicates in the data for the Longitude val*
df_copy[df_copy['Longitude'].duplicated()]

Out[38]:

	CAD CDW ID	CAD Event Number	General Offense Number	Event Clearance Code \
22	1702337	16000104988	2016104988	280
51	1702367	16000104928	2016104928	41
90	1702407	16000105062	2016105062	40
91	1702408	16000105025	2016105025	40
107	1702424	16000105033	2016105033	220
131	1702448	16000105163	2016105163	177
138	1702455	16000105085	2016105085	430
152	1702469	16000105214	2016105214	177
170	1702487	16000105120	2016105120	245
179	1702496	16000105218	2016105218	245
186	1702503	16000105278	2016105278	177
194	1702511	16000105229	2016105229	63
206	1702524	16000105285	2016105285	161
209	1702527	16000105249	2016105249	280
213	1702532	16000105345	2016105345	177
219	1702538	16000105228	2016105228	63
229	1702549	16000105243	2016105243	245
237	1702558	16000105208	2016105208	71
252	1702574	16000105397	2016105397	177
253	1702575	16000105392	2016105392	161
275	1702598	16000105343	2016105343	280
281	1702604	16000105421	2016105421	177
283	1702606	16000105387	2016105387	430
285	1702608	16000105356	2016105356	245
290	1702613	16000105154	2016105154	245
293	1702617	16000105436	2016105436	177

304	1702628	16000105457	2016105457	177
305	1702629	16000105442	2016105442	245
313	1702637	16000105483	2016105483	177
315	1702639	16000105474	2016105474	245
...
965	1703301	16000106530	2016106530	470
968	1703304	16000106568	2016106568	245
975	1703311	16000106579	2016106579	245
976	1703312	16000106503	2016106503	280
978	1703314	16000106583	2016106583	250
979	1703315	16000106574	2016106574	40
981	1703317	16000106550	2016106550	130
983	1703319	16000106595	2016106595	52
990	1703326	16000106602	2016106602	430
994	1703330	16000106611	2016106611	64
995	1703331	16000106653	2016106653	245
996	1703332	16000106636	2016106636	64
997	1703333	16000106626	2016106626	245
1001	1703337	16000106665	2016106665	64
1004	1703340	16000106628	2016106628	63
1008	1703344	16000106630	2016106630	161
1009	1703345	16000106617	2016106617	63
1011	1703347	16000106576	2016106576	245
1013	1703349	16000106642	2016106642	245
1018	1703355	16000106656	2016106656	430
1022	1703359	16000106499	2016106499	330
1023	1703360	16000106660	2016106660	371
1028	1703365	16000106675	2016106675	470
1029	1703366	16000106668	2016106668	245
1032	1703369	16000106644	2016106644	245
1033	1703370	16000106571	2016106571	245
1035	1703372	16000106727	2016106727	280
1042	1703379	16000106592	2016106592	470
1043	1703380	16000106728	2016106728	280
1045	1703382	16000106547	2016106547	430

	Event Clearance Description \
22	SUSPICIOUS PERSON
51	HARASSMENT, THREATS
90	ASSAULTS, OTHER
91	ASSAULTS, OTHER
107	CRISIS COMPLAINT - GENERAL
131	LIQUOR VIOLATION - INTOXICATED PERSON
138	MOTOR VEHICLE COLLISION
152	LIQUOR VIOLATION - INTOXICATED PERSON
170	DISTURBANCE, OTHER
179	DISTURBANCE, OTHER
186	LIQUOR VIOLATION - INTOXICATED PERSON

194		THEFT - CAR PROWL
206		TRESPASS
209		SUSPICIOUS PERSON
213	LIQUOR VIOLATION -	INTOXICATED PERSON
219		THEFT - CAR PROWL
229		DISTURBANCE, OTHER
237		AUTO THEFT
252	LIQUOR VIOLATION -	INTOXICATED PERSON
253		TRESPASS
275		SUSPICIOUS PERSON
281	LIQUOR VIOLATION -	INTOXICATED PERSON
283		MOTOR VEHICLE COLLISION
285		DISTURBANCE, OTHER
290		DISTURBANCE, OTHER
293	LIQUOR VIOLATION -	INTOXICATED PERSON
304	LIQUOR VIOLATION -	INTOXICATED PERSON
305		DISTURBANCE, OTHER
313	LIQUOR VIOLATION -	INTOXICATED PERSON
315		DISTURBANCE, OTHER
...		...
965	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
968		DISTURBANCE, OTHER
975		DISTURBANCE, OTHER
976		SUSPICIOUS PERSON
978	MISCHIEF, NUISANCE COMPLAINTS	
979		ASSAULTS, OTHER
981		PROPERTY DESTRUCTION
983		BURGLARY - COMMERCIAL
990		MOTOR VEHICLE COLLISION
994		SHOPLIFT
995		DISTURBANCE, OTHER
996		SHOPLIFT
997		DISTURBANCE, OTHER
1001		SHOPLIFT
1004		THEFT - CAR PROWL
1008		TRESPASS
1009		THEFT - CAR PROWL
1011		DISTURBANCE, OTHER
1013		DISTURBANCE, OTHER
1018		MOTOR VEHICLE COLLISION
1022	CASUALTY (NON CRIMINAL/TRAFFIC) - MAN DOWN, SI...	
1023		PROPERTY - MISSING
1028	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	
1029		DISTURBANCE, OTHER
1032		DISTURBANCE, OTHER
1033		DISTURBANCE, OTHER
1035		SUSPICIOUS PERSON
1042	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)	

1043
1045

SUSPICIOUS PERSON
MOTOR VEHICLE COLLISION

	Event Clearance SubGroup		Event Clearance Group \
22	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
51	THREATS, HARASSMENT		THREATS, HARASSMENT
90	ASSAULTS		ASSAULTS
91	ASSAULTS		ASSAULTS
107	CRISIS CALL		BEHAVIORAL HEALTH
131	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
138	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
152	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
170	DISTURBANCES		DISTURBANCES
179	DISTURBANCES		DISTURBANCES
186	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
194	CAR PROWL		CAR PROWL
206	TRESPASS		TRESPASS
209	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
213	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
219	CAR PROWL		CAR PROWL
229	DISTURBANCES		DISTURBANCES
237	AUTO THEFTS		AUTO THEFTS
252	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
253	TRESPASS		TRESPASS
275	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
281	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
283	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
285	DISTURBANCES		DISTURBANCES
290	DISTURBANCES		DISTURBANCES
293	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
304	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
305	DISTURBANCES		DISTURBANCES
313	LIQUOR VIOLATIONS		LIQUOR VIOLATIONS
315	DISTURBANCES		DISTURBANCES
...
965	PARKING VIOLATIONS		TRAFFIC RELATED CALLS
968	DISTURBANCES		DISTURBANCES
975	DISTURBANCES		DISTURBANCES
976	SUSPICIOUS CIRCUMSTANCES		SUSPICIOUS CIRCUMSTANCES
978	NUISANCE, MISCHIEF COMPLAINTS		NUISANCE, MISCHIEF
979	ASSAULTS		ASSAULTS
981	PROPERTY DAMAGE		PROPERTY DAMAGE
983	COMMERCIAL BURGLARIES		BURGLARY
990	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION	
994	THEFT		SHOPLIFTING
995	DISTURBANCES		DISTURBANCES
996	THEFT		SHOPLIFTING
997	DISTURBANCES		DISTURBANCES

1001	THEFT	SHOPLIFTING
1004	CAR PROWL	CAR PROWL
1008	TRESPASS	TRESPASS
1009	CAR PROWL	CAR PROWL
1011	DISTURBANCES	DISTURBANCES
1013	DISTURBANCES	DISTURBANCES
1018	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
1022	CASUALTIES	PERSON DOWN/INJURY
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1028	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1029	DISTURBANCES	DISTURBANCES
1032	DISTURBANCES	DISTURBANCES
1033	DISTURBANCES	DISTURBANCES
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1042	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1045	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance	Date	District/Sector	Zone/Beat	Census	Tract	Longitude	\
22	2016-03-26	17:30:00		J	J3	2900.2003	-122.355300		
51	2016-03-26	18:10:00		E	E1	7400.2000	-122.320915		
90	2016-03-26	19:37:00		K	K3	9200.2028	-122.330810		
91	2016-03-26	19:38:00		R	R2	10001.1002	-122.299160		
107	2016-03-26	19:45:00		G	G1	9100.1002	-122.318430		
131	2016-03-26	20:23:00		H	H1	8100.3011	-122.342880		
138	2016-03-26	20:36:00		G	G2	8800.3015	-122.296770		
152	2016-03-26	21:15:00		M	M1	8100.3011	-122.342880		
170	2016-03-26	21:35:00		C	C3	7900.3002	-122.311480		
179	2016-03-26	21:56:00		K	K3	9200.2028	-122.330810		
186	2016-03-26	22:16:00		H	H1	9200.2028	-122.330810		
194	2016-03-26	22:20:00		B	B2	3400.1007	-122.366035		
206	2016-03-26	23:00:00		E	E2	8400.1008	-122.320770		
209	2016-03-26	22:57:00		L	L2	2000.1011	-122.306335		
213	2016-03-26	23:12:00		O	O1	9300.3019	-122.329056		
219	2016-03-26	23:18:00		E	E2	7500.4007	-122.315540		
229	2016-03-26	23:38:00		E	E1	7401.2004	-122.320915		
237	2016-03-26	22:32:00		H	H2	9100.2007	-122.323760		
252	2016-03-27	00:27:00		M	M1	8100.3011	-122.342880		
253	2016-03-27	00:36:00		H	H3	4700.4007	-122.384740		
275	2016-03-27	00:52:00		C	C2	7900.4000	-122.309494		
281	2016-03-27	01:01:00		R	R1	9400.4013	-122.313805		
283	2016-03-27	01:02:00		E	E2	7500.4015	-122.320790		
285	2016-03-27	00:31:00		E	E2	7500.4006	-122.318140		
290	2016-03-27	01:02:00		E	E2	8400.1008	-122.320770		
293	2016-03-27	01:22:00		D	D1	8002.2005	-122.345860		
304	2016-03-27	01:40:00		K	K3	9200.2028	-122.330810		
305	2016-03-27	01:56:00		E	E2	8600.1003	-122.316780		
313	2016-03-27	02:10:00		K	K3	9200.2028	-122.330810		

315	2016-03-27 02:04:00	R	R3	10100.2013	-122.288010
...
965	2016-03-28 08:08:00	B	B1	4700.3011	-122.378880
968	2016-03-28 08:30:00	M	M1	8100.3001	-122.339460
975	2016-03-28 08:31:00	M	M2	7200.1067	-122.341545
976	2016-03-28 08:30:00	F	F2	11402.2012	-122.357850
978	2016-03-28 08:47:00	M	M2	8100.2000	-122.337320
979	2016-03-28 08:49:00	N	N1	1400.3010	-122.362730
981	2016-03-28 08:49:00	D	D2	7200.1070	-122.341736
983	2016-03-28 08:56:00	H	H3	2800.4003	-122.355300
990	2016-03-28 09:06:00	G	G1	8600.3009	-122.319410
994	2016-03-28 09:20:00	Q	Q3	7000.3021	-122.354750
995	2016-03-28 09:37:00	M	M2	8100.2004	-122.337590
996	2016-03-28 09:33:00	G	G3	9000.2033	-122.313440
997	2016-03-28 09:34:00	E	E2	7500.4016	-122.320760
1001	2016-03-28 09:48:00	H	H3	9000.2033	-122.313440
1004	2016-03-28 09:51:00	C	C2	7700.2008	-122.298775
1008	2016-03-28 09:56:00	B	B1	4700.2004	-122.374900
1009	2016-03-28 09:51:00	O	O2	9300.3224	-122.329056
1011	2016-03-28 09:53:00	B	B1	4700.4004	-122.384740
1013	2016-03-28 10:07:00	K	K3	9200.2002	-122.331390
1018	2016-03-28 10:18:00	R	R1	10401.2012	-122.301735
1022	2016-03-28 10:10:00	E	E1	7402.1009	-122.322860
1023	2016-03-28 10:25:00	D	D2	7300.3022	-122.336170
1028	2016-03-28 10:34:00	E	E3	8300.1003	-122.326904
1029	2016-03-28 10:31:00	B	B3	5000.3000	-122.342130
1032	2016-03-28 10:47:00	M	M1	8002.1001	-122.342400
1033	2016-03-28 10:37:00	O	O1	9300.3017	-122.333270
1035	2016-03-28 10:55:00	U	U2	5200.3001	-122.322450
1042	2016-03-28 10:55:00	B	B2	4700.2031	-122.370766
1043	2016-03-28 11:03:00	F	F1	10701.2011	-122.362150
1045	2016-03-28 11:03:00	O	O1	9300.1047	-122.321396

	Latitude	Initial Type Description \
22	47.684746	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
51	47.622560	HARAS - NO BIAS, THREATS OR MALICIOUSNESS
90	47.600464	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
91	47.579674	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
107	47.599186	DOWN - CHECK FOR PERSON DOWN
131	47.609814	DETOX - REQUEST FOR
138	47.601654	MOTOR VEHICLE COLLISION, HIT AND RUN
152	47.609814	DETOX - REQUEST FOR
170	47.612225	DISTURBANCE, MISCELLANEOUS/OTHER
179	47.600464	FIGHT - IP/JO - WITH WEAPONS
186	47.600464	DETOX - REQUEST FOR
194	47.675625	TRU - THEFT
206	47.613518	LEWD - (EXPOSING, FLASHING, URINATING IN PUB)
209	47.693027	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)

213	47.579807	DETOX - REQUEST FOR
219	47.614693	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
229	47.622560	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
237	47.597507	AUTO THEFT - VEH THEFT OR THEFT AND RECOVERY
252	47.609814	DETOX - REQUEST FOR
253	47.669820	NUISANCE - MISCHIEF
275	47.615864	NUISANCE - MISCHIEF
281	47.581013	DETOX - REQUEST FOR
283	47.614655	MOTOR VEHICLE COLLISION, HIT AND RUN
285	47.614094	DISTURBANCE, MISCELLANEOUS/OTHER
290	47.613518	NUISANCE - MISCHIEF
293	47.612990	DETOX - REQUEST FOR
304	47.600464	DETOX - REQUEST FOR
305	47.610977	FIGHT - IP - PHYSICAL (NO WEAPONS)
313	47.600464	DETOX - REQUEST FOR
315	47.563457	FIGHT - VERBAL/ORAL (NO WEAPONS)
...
965	47.670540	PARKING VIOLATION (EXCEPT ABANDONED CAR)
968	47.609055	DISTURBANCE, MISCELLANEOUS/OTHER
975	47.612780	DISTURBANCE, MISCELLANEOUS/OTHER
976	47.518280	THEFT (DOES NOT INCLUDE SHOPLIFT OR SVCS)
978	47.611320	NUISANCE - MISCHIEF
979	47.701393	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
981	47.619717	PROPERTY - DAMAGE
983	47.690216	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
990	47.603520	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
994	47.624577	SHOPLIFT - THEFT
995	47.611206	FIGHT - IP - PHYSICAL (NO WEAPONS)
996	47.596653	ROBBERY (INCLUDES STRONG ARM)
997	47.612960	DISTURBANCE, MISCELLANEOUS/OTHER
1001	47.596653	SHOPLIFT - THEFT
1004	47.623127	TRU - THEFT
1008	47.667890	DISTURBANCE, MISCELLANEOUS/OTHER
1009	47.576650	TRU - THEFT
1011	47.670547	TRESPASS
1013	47.601074	FIGHT - IP - PHYSICAL (NO WEAPONS)
1018	47.555080	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
1022	47.618730	TRESPASS
1023	47.616055	PROPERTY, LOST OR MISSING
1028	47.609585	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1029	47.661755	TRESPASS
1032	47.612118	DISTURBANCE, MISCELLANEOUS/OTHER
1033	47.585040	THREATS (INCLS IN-PERSON/BY PHONE/IN WRITING)
1035	47.656002	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
1042	47.665043	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1043	47.535515	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
1045	47.586205	MOTOR VEHICLE COLLISION, BLOCKING

	Initial Type Subgroup	Initial Type Group \
22	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
51	THREATS, HARASSMENT	THREATS, HARASSMENT
90	ASSAULTS	ASSAULTS
91	ASSAULTS	ASSAULTS
107	PERSON DOWN/INJURY	CASUALTIES
131	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
138	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
152	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
170	DISTURBANCES	DISTURBANCES
179	DISTURBANCES	DISTURBANCES
186	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
194	OTHER PROPERTY	THEFT
206	LEWD CONDUCT	SUSPICIOUS CIRCUMSTANCES
209	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
213	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
219	OTHER PROPERTY	THEFT
229	THREATS, HARASSMENT	THREATS, HARASSMENT
237	AUTO THEFTS	AUTO RECOVERIES
252	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
253	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
275	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
281	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
283	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
285	DISTURBANCES	DISTURBANCES
290	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
293	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
304	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
305	DISTURBANCES	DISTURBANCES
313	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
315	DISTURBANCES	DISTURBANCES
...
965	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
968	DISTURBANCES	DISTURBANCES
975	DISTURBANCES	DISTURBANCES
976	OTHER PROPERTY	THEFT
978	MISCELLANEOUS MISDEMEANORS	MISCELLANEOUS MISDEMEANORS
979	ASSAULTS	ASSAULTS
981	PROPERTY DAMAGE	PROPERTY DAMAGE
983	BURGLARY	COMMERCIAL BURGLARIES
990	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
994	SHOPLIFTING	THEFT
995	DISTURBANCES	DISTURBANCES
996	ROBBERY	ROBBERY
997	DISTURBANCES	DISTURBANCES
1001	SHOPLIFTING	THEFT
1004	OTHER PROPERTY	THEFT
1008	DISTURBANCES	DISTURBANCES

1009	OTHER PROPERTY	THEFT
1011	TRESPASS	TRESPASS
1013	DISTURBANCES	DISTURBANCES
1018	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
1022	TRESPASS	TRESPASS
1023	PROPERTY - MISSING, FOUND	PROPERTY - MISSING, FOUND
1028	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1029	TRESPASS	TRESPASS
1032	DISTURBANCES	DISTURBANCES
1033	THREATS, HARASSMENT	THREATS, HARASSMENT
1035	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1042	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1043	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
1045	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

Officers at Scene

22	1
51	3
90	1
91	1
107	2
131	1
138	1
152	1
170	3
179	4
186	3
194	3
206	2
209	2
213	3
219	1
229	1
237	1
252	1
253	1
275	1
281	4
283	1
285	2
290	3
293	1
304	1
305	3
313	3
315	2
...	...
965	4

968	3
975	2
976	4
978	2
979	2
981	3
983	2
990	2
994	3
995	1
996	2
997	1
1001	1
1004	2
1008	1
1009	1
1011	1
1013	1
1018	1
1022	1
1023	1
1028	1
1029	1
1032	3
1033	3
1035	2
1042	1
1043	2
1045	2

[247 rows x 17 columns]

In [39]: *#This code keeps the first Longitude entry and drops the duplicate*
df_copy.drop_duplicates(subset='Longitude', keep='first', inplace=True)

In [40]: *#Test the code*
df_copy[df_copy['Longitude'].duplicated()]

Out[40]: Empty DataFrame
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code,
Index: []

In [41]: *#The following code will demonstrate any duplicates in the data for the Latitude value*
df_copy[df_copy['Latitude'].duplicated()]

Out[41]:

	CAD CDW ID	CAD Event Number	General Offense Number	Event Clearance Code	\
17	1702332	16000104752	2016104752	250	
18	1702333	16000105020	2016105020	177	
60	1702377	16000105081	2016105081	177	

137	1702454	16000105145	2016105145	245
346	1702670	16000105358	2016105358	40
377	1702702	16000105405	2016105405	184
386	1702712	16000105589	2016105589	350
432	1702759	16000105633	2016105633	470
451	1702778	16000105624	2016105624	245
476	1702803	16000105668	2016105668	430
505	1702832	16000105760	2016105760	245
638	1702965	16000106036	2016106036	280
679	1703009	16000106103	2016106103	245
713	1703044	16000106041	2016106041	161
718	1703049	16000106046	2016106046	64
733	1703064	16000105851	2016105851	470
785	1703118	16000106270	2016106270	177
786	1703119	16000106265	2016106265	176
788	1703121	16000106246	2016106246	160
802	1703135	16000106226	2016106226	282
806	1703139	16000106276	2016106276	245
867	1703200	16000106370	2016106370	280
887	1703221	16000106402	2016106402	40
900	1703234	16000106430	2016106430	244
902	1703236	16000106364	2016106364	53
908	1703242	16000106394	2016106394	450
941	1703276	16000106495	2016106495	200
946	1703281	16000106490	2016106490	470
962	1703298	16000106555	2016106555	280
985	1703321	16000106588	2016106588	161
992	1703328	16000106618	2016106618	470
1007	1703343	16000106638	2016106638	176
1019	1703356	16000106623	2016106623	470
1025	1703362	16000106529	2016106529	430

	Event Clearance Description \
17	MISCHIEF, NUISANCE COMPLAINTS
18	LIQUOR VIOLATION - INTOXICATED PERSON
60	LIQUOR VIOLATION - INTOXICATED PERSON
137	DISTURBANCE, OTHER
346	ASSAULTS, OTHER
377	NARCOTICS, OTHER
386	HAZARDS
432	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
451	DISTURBANCE, OTHER
476	MOTOR VEHICLE COLLISION
505	DISTURBANCE, OTHER
638	SUSPICIOUS PERSON
679	DISTURBANCE, OTHER
713	TRESPASS
718	SHOPLIFT

733	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
785	LIQUOR VIOLATION - INTOXICATED PERSON
786	LIQUOR VIOLATION - ADULT
788	PROWLER
802	SUSPICIOUS CIRCUMSTANCES - BUILDING (OPEN DOOR...
806	DISTURBANCE, OTHER
867	SUSPICIOUS PERSON
887	ASSAULTS, OTHER
900	NOISE DISTURBANCE
902	BURGLARY - UNOCCUPIED STRUCTURE ON RESIDENTIAL...
908	DRIVING WHILE UNDER INFLUENCE (DUI)
941	ALACAD - COMMERCIAL BURGLARY (FALSE)
946	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
962	SUSPICIOUS PERSON
985	TRESPASS
992	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1007	LIQUOR VIOLATION - ADULT
1019	PARKING VIOLATION (EXCEPT ABANDONED VEHICLES)
1025	MOTOR VEHICLE COLLISION

	Event Clearance SubGroup	Event Clearance Group \
17	NUISANCE, MISCHIEF COMPLAINTS	NUISANCE, MISCHIEF
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
60	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
137	DISTURBANCES	DISTURBANCES
346	ASSAULTS	ASSAULTS
377	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
386	HAZARDS	HAZARDS
432	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
451	DISTURBANCES	DISTURBANCES
476	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION
505	DISTURBANCES	DISTURBANCES
638	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
679	DISTURBANCES	DISTURBANCES
713	TRESPASS	TRESPASS
718	THEFT	SHOPLIFTING
733	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
785	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
786	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
788	PROWLER	PROWLER
802	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
806	DISTURBANCES	DISTURBANCES
867	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
887	ASSAULTS	ASSAULTS
900	DISTURBANCES	DISTURBANCES
902	RESIDENTIAL BURGLARIES	BURGLARY
908	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
941	BURGLARY ALACAD (FALSE)	FALSE ALACAD

946	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
962	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
985	TRESPASS	TRESPASS
992	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1007	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
1019	PARKING VIOLATIONS	TRAFFIC RELATED CALLS
1025	TRAFFIC RELATED CALLS	MOTOR VEHICLE COLLISION INVESTIGATION

	Event	Clearance	Date	District/Sector	Zone/Beat	Census Tract	Longitude	\
17	2016-03-26	17:30:00		R	R3	10200.4025	-122.274760	
18	2016-03-26	17:39:00		O	O1	9300.3014	-122.329990	
60	2016-03-26	18:49:00		G	G1	9100.1004	-122.317220	
137	2016-03-26	20:42:00		R	R2	10100.4001	-122.291000	
346	2016-03-27	03:18:00		K	K2	8100.1057	-122.332870	
377	2016-03-27	04:35:00		E	E2	7500.4014	-122.318794	
386	2016-03-27	05:15:00		K	K1	8100.1022	-122.339410	
432	2016-03-27	08:02:00		W	W2	10500.4003	-122.386780	
451	2016-03-27	09:16:00		K	K3	9100.2002	-122.327010	
476	2016-03-27	10:38:00		B	B3	5100.1021	-122.333720	
505	2016-03-27	11:54:00		B	B1	3200.3007	-122.391500	
638	2016-03-27	17:28:00		G	G2	8700.1012	-122.306320	
679	2016-03-27	18:55:00		G	G1	9100.1002	-122.320335	
713	2016-03-27	19:50:00		B	B1	4700.2042	-122.374855	
718	2016-03-27	19:51:00		B	B3	5000.1042	-122.339910	
733	2016-03-27	20:19:00		J	J2	2900.1006	-122.359314	
785	2016-03-27	22:20:00		H	H3	9200.2000	-122.329025	
786	2016-03-27	22:18:00		E	E2	7500.5009	-122.320020	
788	2016-03-27	22:25:00		F	F2	11402.2022	-122.356500	
802	2016-03-27	22:56:00		F	F2	11402.2002	-122.359146	
806	2016-03-27	23:17:00		U	U2	5301.2007	-122.316530	
867	2016-03-28	02:17:00		U	U2	5301.2004	-122.315810	
887	2016-03-28	03:21:00		E	E2	7500.4016	-122.319450	
900	2016-03-28	04:26:00		H	H3	11300.3007	-122.355120	
902	2016-03-28	04:32:00		Q	Q2	6700.4034	-122.344230	
908	2016-03-28	04:49:00		E	E3	8400.1004	-122.324460	
941	2016-03-28	06:59:00		F	F3	11300.1000	-122.339005	
946	2016-03-28	07:03:00		E	E1	7402.3006	-122.326744	
962	2016-03-28	08:07:00		J	J2	2900.1001	-122.360650	
985	2016-03-28	08:56:00		D	D2	7300.2023	-122.333790	
992	2016-03-28	09:16:00		E	E1	7500.3002	-122.317795	
1007	2016-03-28	09:54:00		U	U2	5301.2006	-122.317640	
1019	2016-03-28	10:15:00		J	J2	3300.1009	-122.375130	
1025	2016-03-28	10:26:00		N	N1	1701.3002	-122.355450	

	Latitude	Initial Type Description	\
17	47.551910	NOISE - DISTURBANCE (PARTY, ETC)	
18	47.579807	DETOX - REQUEST FOR	
60	47.599186	DETOX - REQUEST FOR	

137	47.571580	ANIMAL - DANGEROUS
346	47.601720	ASLT - WITH OR W/O WEAPONS (NO SHOOTINGS)
377	47.614090	NARCOTICS - VIOLATIONS (LOITER, USE, SELL, NARS)
386	47.605340	HAZ - POTENTIAL THRT TO PHYS SAFETY (NO HAZMAT)
432	47.561104	PARKING VIOLATION (EXCEPT ABANDONED CAR)
451	47.599194	DISTURBANCE, MISCELLANEOUS/OTHER
476	47.661385	TRU- MOTOR VEHICLE COLLISION, HIT AND RUN AFTE...
505	47.668663	DISTURBANCE, MISCELLANEOUS/OTHER
638	47.608017	SHOPLIFT - THEFT
679	47.599186	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
713	47.663662	TRESPASS
718	47.661385	SHOPLIFT - THEFT
733	47.689835	PARKING VIOLATION (EXCEPT ABANDONED CAR)
785	47.601720	DETOX - PICKUP (FIRE / POLICE STANDING BY)
786	47.615240	SUSPICIOUS STOP - OFFICER INITIATED ONVIEW
788	47.518100	TRESPASS
802	47.522335	BURG - IP/JO - RES (INCL UNOCC STRUCTURES)
806	47.662205	FIGHT - IP - PHYSICAL (NO WEAPONS)
867	47.663110	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
887	47.614082	ASLT - IP/JO - WITH OR W/O WPNS (NO SHOOTINGS)
900	47.521950	NOISE - DIST, GENERAL (CONST, RESID, BALL PLAY)
902	47.630585	BURG - COMM BURGLARY (INCLUDES SCHOOLS)
908	47.614090	TRAFFIC STOP - OFFICER INITIATED ONVIEW
941	47.536040	ALARM - COMM, SILENT/AUD BURG (INCL BANKS)
946	47.618114	PARKING VIOLATION (EXCEPT ABANDONED CAR)
962	47.689835	SUSPICIOUS PERSON, VEHICLE OR INCIDENT
985	47.615223	TRESPASS
992	47.623690	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1007	47.661297	DISTURBANCE, MISCELLANEOUS/OTHER
1019	47.678673	PARKING VIOLATION (EXCEPT ABANDONED CAR)
1025	47.705082	MOTOR VEHICLE COLLISION, REPORT ONLY - NON INJ...

	Initial Type Subgroup	Initial Type Group \
17	DISTURBANCES	DISTURBANCES
18	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
60	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
137	ANIMAL COMPLAINTS	ANIMAL COMPLAINTS
346	ASSAULTS	ASSAULTS
377	NARCOTICS COMPLAINTS	NARCOTICS COMPLAINTS
386	HAZARDS	HAZARDS
432	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
451	DISTURBANCES	DISTURBANCES
476	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS
505	DISTURBANCES	DISTURBANCES
638	SHOPLIFTING	THEFT
679	ASSAULTS	ASSAULTS
713	TRESPASS	TRESPASS
718	SHOPLIFTING	THEFT

733	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
785	LIQUOR VIOLATIONS	LIQUOR VIOLATIONS
786	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
788	TRESPASS	TRESPASS
802	BURGLARY	RESIDENTIAL BURGLARIES
806	DISTURBANCES	DISTURBANCES
867	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
887	ASSAULTS	ASSAULTS
900	DISTURBANCES	NOISE DISTURBANCE
902	BURGLARY	COMMERCIAL BURGLARIES
908	TRAFFIC RELATED CALLS	TRAFFIC RELATED CALLS
941	ALACAD	SUSPICIOUS CIRCUMSTANCES
946	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
962	SUSPICIOUS CIRCUMSTANCES	SUSPICIOUS CIRCUMSTANCES
985	TRESPASS	TRESPASS
992	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1007	DISTURBANCES	DISTURBANCES
1019	TRAFFIC RELATED CALLS	PARKING VIOLATIONS
1025	MOTOR VEHICLE COLLISION INVESTIGATION	TRAFFIC RELATED CALLS

Officers at Scene

17	4
18	1
60	3
137	2
346	2
377	3
386	1
432	3
451	3
476	1
505	4
638	1
679	3
713	3
718	1
733	3
785	1
786	2
788	2
802	2
806	1
867	1
887	2
900	1
902	1
908	3
941	1

946	1
962	3
985	3
992	3
1007	4
1019	1
1025	1

```
In [42]: #This code keeps the first Latitude entry and drops the duplicate
df_copy.drop_duplicates(subset='Latitude', keep='first', inplace=True)
```

```
In [43]: #Test the code
df_copy[df_copy['Latitude'].duplicated()]
```

```
Out[43]: Empty DataFrame
Columns: [CAD CDW ID, CAD Event Number, General Offense Number, Event Clearance Code,
Index: []
```

```
In [61]: #save the cleaned document to csv
df_copy.to_csv('Clean Data.csv', index=False)
```

2.2 III. Create Data Sheets

2.2.1 1.) Table: date and number of events

```
In [44]: df_copy['Event Clearance Date'].value_counts()
```

```
Out[44]: 2016-03-26 20:50:00    4
2016-03-26 20:09:00    4
2016-03-26 19:33:00    4
2016-03-27 01:01:00    4
2016-03-27 00:39:00    3
2016-03-26 18:14:00    3
2016-03-26 22:53:00    3
2016-03-27 11:59:00    3
2016-03-26 20:25:00    3
2016-03-26 18:57:00    3
2016-03-27 15:41:00    3
2016-03-27 15:57:00    3
2016-03-26 23:20:00    3
2016-03-27 00:49:00    3
2016-03-26 19:56:00    3
2016-03-26 22:33:00    3
2016-03-27 17:50:00    2
2016-03-27 02:35:00    2
2016-03-27 03:43:00    2
2016-03-26 19:16:00    2
2016-03-28 05:51:00    2
2016-03-27 10:05:00    2
```

```

2016-03-27 19:14:00    2
2016-03-27 22:43:00    2
2016-03-28 08:29:00    2
2016-03-26 22:55:00    2
2016-03-26 17:30:00    2
2016-03-27 11:54:00    2
2016-03-27 13:00:00    2
2016-03-27 00:43:00    2
..
2016-03-27 10:33:00    1
2016-03-27 00:47:00    1
2016-03-28 10:10:00    1
2016-03-28 11:00:00    1
2016-03-26 22:21:00    1
2016-03-26 17:28:00    1
2016-03-26 19:55:00    1
2016-03-26 17:29:00    1
2016-03-27 07:33:00    1
2016-03-27 16:02:00    1
2016-03-27 20:23:00    1
2016-03-28 11:03:00    1
2016-03-27 22:41:00    1
2016-03-27 23:29:00    1
2016-03-27 22:25:00    1
2016-03-27 03:18:00    1
2016-03-26 22:25:00    1
2016-03-26 17:32:00    1
2016-03-27 00:52:00    1
2016-03-26 19:59:00    1
2016-03-27 17:37:00    1
2016-03-28 02:54:00    1
2016-03-26 17:33:00    1
2016-03-27 00:53:00    1
2016-03-27 03:20:00    1
2016-03-27 22:53:00    1
2016-03-27 18:00:00    1
2016-03-27 00:54:00    1
2016-03-27 08:14:00    1
2016-03-26 23:19:00    1
Name: Event Clearance Date, Length: 592, dtype: int64

```

2.2.2 2.) Bar graph: date and number of events

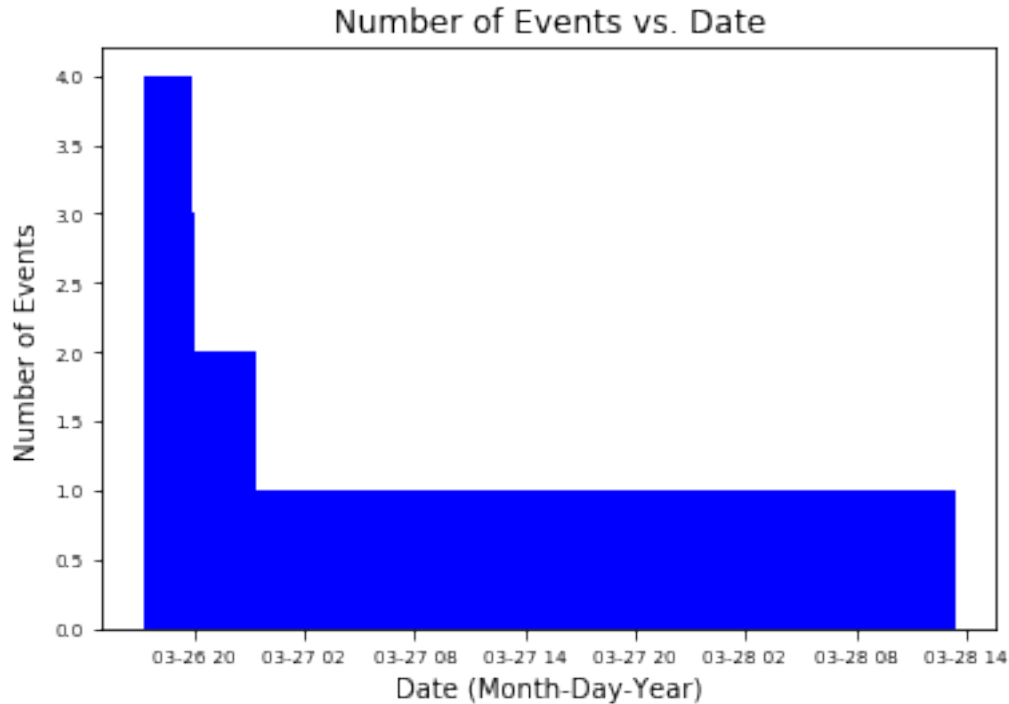
```

In [45]: xvalues = df_copy['Event Clearance Date'].unique()
         yvaluecounts = df_copy['Event Clearance Date'].value_counts()

In [46]: plt.bar(xvalues, yvaluecounts, color='blue', align='edge', width=0.1)
         plt.tick_params(labelsize = 7)

```

```
plt.ylabel('Number of Events')
plt.xlabel('Date (Month-Day-Year)')
plt.title('Number of Events vs. Date')
plt.show()
```



2.2.3 Observation

- What is clear both from the table and the bar chart is that there is a sharp uptick in crime on 3-26, followed by a marked leveling. This can be useful when the police are attempting to increase staff on certain days to prepare for the incoming volume of calls and incidents.

2.2.4 3.) Table: number of incident occurrences by event type

```
In [47]: df_copy['Event Clearance Group'].value_counts()
```

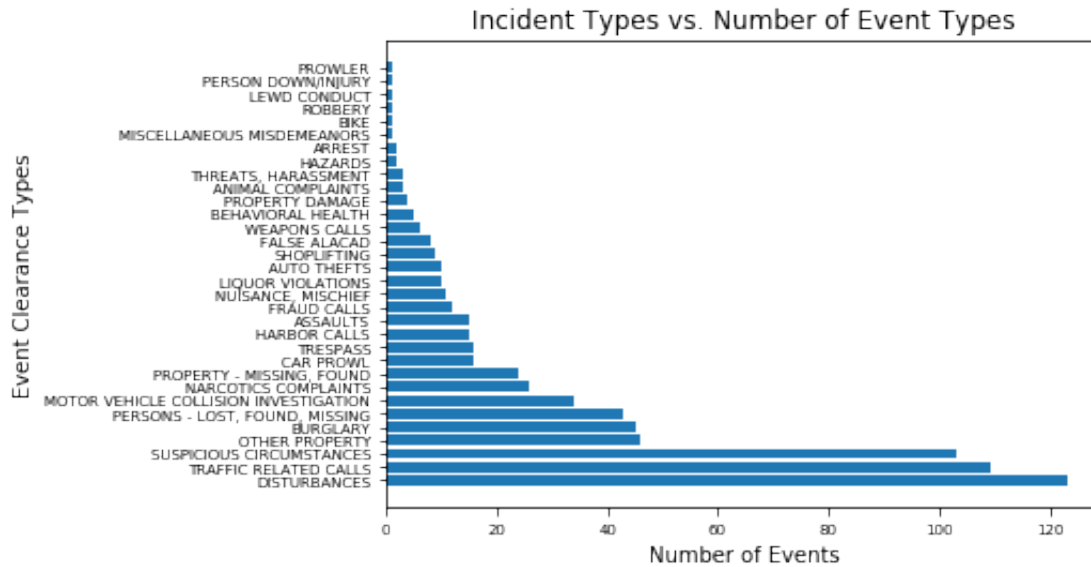
```
Out[47]: TRAFFIC RELATED CALLS          123
          SUSPICIOUS CIRCUMSTANCES      109
          DISTURBANCES                  103
          MOTOR VEHICLE COLLISION INVESTIGATION  46
          FALSE ALACAD                   45
          CAR PROWL                      43
          TRESPASS                       34
          NUISANCE, MISCHIEF              26
          LIQUOR VIOLATIONS               24
```

PROPERTY DAMAGE	16
BEHAVIORAL HEALTH	16
BURGLARY	15
AUTO THEFTS	15
SHOPLIFTING	12
ASSAULTS	11
OTHER PROPERTY	10
HAZARDS	10
PROPERTY - MISSING, FOUND	9
NARCOTICS COMPLAINTS	8
ROBBERY	6
FRAUD CALLS	5
THREATS, HARASSMENT	4
ANIMAL COMPLAINTS	3
PERSONS - LOST, FOUND, MISSING	3
PERSON DOWN/INJURY	2
BIKE	2
ARREST	1
WEAPONS CALLS	1
HARBOR CALLS	1
LEWD CONDUCT	1
PROWLER	1
MISCELLANEOUS MISDEMEANORS	1

Name: Event Clearance Group, dtype: int64

2.2.5 4.) Bar graph: number of incident occurrences by event type

```
In [48]: xvalues = df_copy['Event Clearance Group'].unique()
yvaluecounts = df_copy['Event Clearance Group'].value_counts()
plt.barh(xvalues, yvaluecounts)
plt.tick_params(labelsize = 7)
plt.ylabel('Event Clearance Types')
plt.xlabel('Number of Events')
plt.title('Incident Types vs. Number of Event Types')
plt.show()
```



2.2.6 Observation

- What is clear from both the table and the bar chart is that there are many more Disturbances, Traffic Related Calls, and Suspicious Circumstances. This can be useful when training the police department and selecting special areas of emphasis.

2.2.7 5.) Table: sectors and number of events

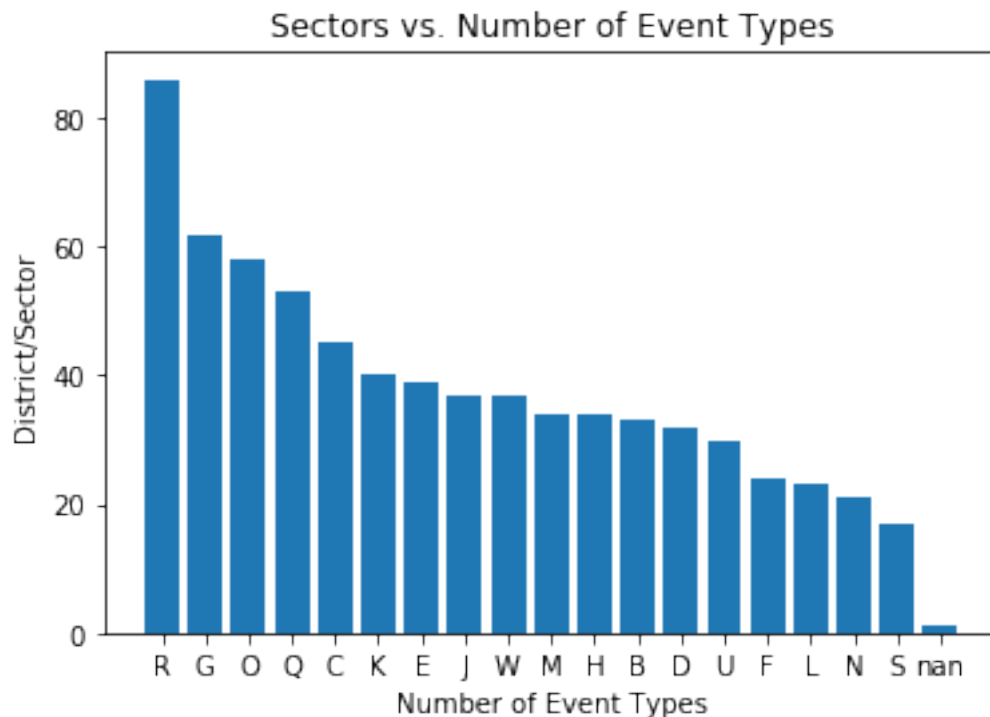
In [57]: `df_copy['District/Sector'].value_counts()`

```
Out[57]: H    86
         B    62
         E    58
         Q    53
         M    45
         D    40
         R    39
         C    37
         U    37
         N    34
         W    34
         K    33
         J    32
         F    30
         S    24
         G    23
         L    21
         O    17
         Name: District/Sector, dtype: int64
```

2.2.8 6.) Bar graph: sectors and number of events

```
In [59]: #Changing the datatype to string will insure the bar chart categorizes the Districts  
df_copy['District/Sector'] = df_copy['District/Sector'].astype('str')
```

```
In [60]: xvalues = df_copy['District/Sector'].unique()  
yvaluecounts = df_copy['District/Sector'].value_counts()  
plt.bar(xvalues, yvaluecounts)  
plt.ylabel('District/Sector')  
plt.xlabel('Number of Event Types')  
plt.title('Sectors vs. Number of Event Types')  
plt.show()
```



2.2.9 Observation

- Evidently, there is quite a lot more crime in District R than there is in District S. This could pose a clear picture of where to locate more police officers.

3 Summary

There is quite a lot of useful data that can be utilized to assist the police department in training personnel, anticipating high volume crime times, and determining locations to place officers. The data needed to be thoroughly cleaned before this information could be accurately assessed. However, once that was complete, there were many relationships to explore.