

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

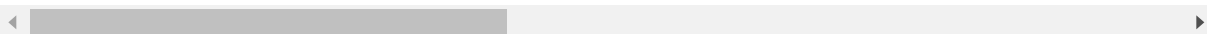
```
In [9]: data1 = pd.read_csv('311_Service_Requests.csv')
data1.head(5)
```

E:\New folder (2)\lib\site-packages\IPython\core\interactiveshell.py:3020: DtypeWarning: Columns (48,49) have mixed types. Specify dtype option on import or set low_memory=False.
interactivity=interactivity, compiler=compiler, result=result)

Out[9]:

	Unique Key	Created Date	Closed Date	Agency	Agency Name	Complaint Type	Descriptor	Location Type
0	32310363	12/31/2015 11:59:45 PM	01-01-16 0:55	NYPD	New York City Police Department	Noise - Street/Sidewalk	Loud Music/Party	Street/Sidewalk
1	32309934	12/31/2015 11:59:44 PM	01-01-16 1:26	NYPD	New York City Police Department	Blocked Driveway	No Access	Street/Sidewalk
2	32309159	12/31/2015 11:59:29 PM	01-01-16 4:51	NYPD	New York City Police Department	Blocked Driveway	No Access	Street/Sidewalk
3	32305098	12/31/2015 11:57:46 PM	01-01-16 7:43	NYPD	New York City Police Department	Illegal Parking	Commercial Overnight Parking	Street/Sidewalk
4	32306529	12/31/2015 11:56:58 PM	01-01-16 3:24	NYPD	New York City Police Department	Illegal Parking	Blocked Sidewalk	Street/Sidewalk

5 rows × 53 columns



In [10]: data1.info()

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 300698 entries, 0 to 300697
Data columns (total 53 columns):
Unique Key                300698 non-null int64
Created Date              300698 non-null object
Closed Date              298534 non-null object
Agency                  300698 non-null object
Agency Name             300698 non-null object
Complaint Type           300698 non-null object
Descriptor               294784 non-null object
Location Type            300567 non-null object
Incident Zip            298083 non-null float64
Incident Address         256288 non-null object
Street Name              256288 non-null object
Cross Street 1           251419 non-null object
Cross Street 2           250919 non-null object
Intersection Street 1    43858 non-null object
Intersection Street 2    43362 non-null object
Address Type             297883 non-null object
City                     298084 non-null object
Landmark                 349 non-null object
Facility Type            298527 non-null object
Status                   300698 non-null object
Due Date                 300695 non-null object
Resolution Description    300698 non-null object
Resolution Action Updated Date 298511 non-null object
Community Board          300698 non-null object
Borough                  300698 non-null object
X Coordinate (State Plane) 297158 non-null float64
Y Coordinate (State Plane) 297158 non-null float64
Park Facility Name       300698 non-null object
Park Borough             300698 non-null object
School Name              300698 non-null object
School Number            300698 non-null object
School Region            300697 non-null object
School Code              300697 non-null object
School Phone Number      300698 non-null object
School Address           300698 non-null object
School City              300698 non-null object
School State             300698 non-null object
School Zip               300697 non-null object
School Not Found         300698 non-null object
School or Citywide Complaint 0 non-null float64
Vehicle Type             0 non-null float64
Taxi Company Borough     0 non-null float64
Taxi Pick Up Location     0 non-null float64
Bridge Highway Name       243 non-null object
Bridge Highway Direction  243 non-null object
Road Ramp                213 non-null object
Bridge Highway Segment    213 non-null object
Garage Lot Name           0 non-null float64
Ferry Direction           1 non-null object
Ferry Terminal Name       2 non-null object
Latitude                  297158 non-null float64
Longitude                 297158 non-null float64
Location                  297158 non-null object

```

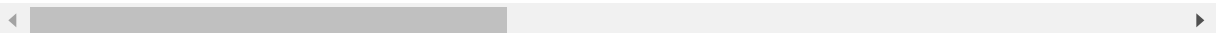
dtypes: float64(10), int64(1), object(42)
memory usage: 121.6+ MB

```
In [11]: data1=data1.drop(["Garage Lot Name","Taxi Pick Up Location","Taxi Company Borough","Vehicle Type","School or Citywide Complaint"],axis=1)
data1.head()
```

Out[11]:

	Unique Key	Created Date	Closed Date	Agency	Agency Name	Complaint Type	Descriptor	Location Type
0	32310363	12/31/2015 11:59:45 PM	01-01-16 0:55	NYPD	New York City Police Department	Noise - Street/Sidewalk	Loud Music/Party	Street/Sidewalk
1	32309934	12/31/2015 11:59:44 PM	01-01-16 1:26	NYPD	New York City Police Department	Blocked Driveway	No Access	Street/Sidewalk
2	32309159	12/31/2015 11:59:29 PM	01-01-16 4:51	NYPD	New York City Police Department	Blocked Driveway	No Access	Street/Sidewalk
3	32305098	12/31/2015 11:57:46 PM	01-01-16 7:43	NYPD	New York City Police Department	Illegal Parking	Commercial Overnight Parking	Street/Sidewalk
4	32306529	12/31/2015 11:56:58 PM	01-01-16 3:24	NYPD	New York City Police Department	Illegal Parking	Blocked Sidewalk	Street/Sidewalk

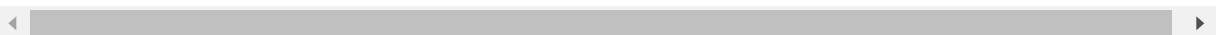
5 rows × 48 columns



```
In [12]: data1.describe()
```

Out[12]:

	Unique Key	Incident Zip	X Coordinate (State Plane)	Y Coordinate (State Plane)	Latitude	Longitude
count	3.006980e+05	298083.000000	2.971580e+05	297158.000000	297158.000000	297158.000000
mean	3.130054e+07	10848.888645	1.004854e+06	203754.534416	40.725885	-73.925630
std	5.738547e+05	583.182081	2.175338e+04	29880.183529	0.082012	0.078454
min	3.027948e+07	83.000000	9.133570e+05	121219.000000	40.499135	-74.254937
25%	3.080118e+07	10310.000000	9.919752e+05	183343.000000	40.669796	-73.972142
50%	3.130436e+07	11208.000000	1.003158e+06	201110.500000	40.718661	-73.931781
75%	3.178446e+07	11238.000000	1.018372e+06	224125.250000	40.781840	-73.876805
max	3.231065e+07	11697.000000	1.067173e+06	271876.000000	40.912869	-73.700760



```
In [13]: data1.index.values
```

Out[13]: array([0, 1, 2, ..., 300695, 300696, 300697], dtype=int64)

```
In [14]: data1.columns.values
```

```
Out[14]: array(['Unique Key', 'Created Date', 'Closed Date', 'Agency',  
               'Agency Name', 'Complaint Type', 'Descriptor', 'Location Type',  
               'Incident Zip', 'Incident Address', 'Street Name',  
               'Cross Street 1', 'Cross Street 2', 'Intersection Street 1',  
               'Intersection Street 2', 'Address Type', 'City', 'Landmark',  
               'Facility Type', 'Status', 'Due Date', 'Resolution Description',  
               'Resolution Action Updated Date', 'Community Board', 'Borough',  
               'X Coordinate (State Plane)', 'Y Coordinate (State Plane)',  
               'Park Facility Name', 'Park Borough', 'School Name',  
               'School Number', 'School Region', 'School Code',  
               'School Phone Number', 'School Address', 'School City',  
               'School State', 'School Zip', 'School Not Found',  
               'Bridge Highway Name', 'Bridge Highway Direction', 'Road Ramp',  
               'Bridge Highway Segment', 'Ferry Direction', 'Ferry Terminal Name',  
               'Latitude', 'Longitude', 'Location'], dtype=object)
```

In [15]: data1.info

```

Out[15]: <bound method DataFrame.info of          Unique Key          Created Date
Closed Date Agency \
0      32310363 12/31/2015 11:59:45 PM          01-01-16 0:55      NYPD
1      32309934 12/31/2015 11:59:44 PM          01-01-16 1:26      NYPD
2      32309159 12/31/2015 11:59:29 PM          01-01-16 4:51      NYPD
3      32305098 12/31/2015 11:57:46 PM          01-01-16 7:43      NYPD
4      32306529 12/31/2015 11:56:58 PM          01-01-16 3:24      NYPD
5      32306554 12/31/2015 11:56:30 PM          01-01-16 1:50      NYPD
6      32306559 12/31/2015 11:55:32 PM          01-01-16 1:53      NYPD
7      32307009 12/31/2015 11:54:05 PM          01-01-16 1:42      NYPD
8      32308581 12/31/2015 11:53:58 PM          01-01-16 8:27      NYPD
9      32308391 12/31/2015 11:53:58 PM          01-01-16 1:17      NYPD
10     32305071 12/31/2015 11:52:58 PM          01-01-16 7:41      NYPD
11     32306260 12/31/2015 11:50:57 PM          01-01-16 10:58     NYPD
12     32306612 12/31/2015 11:48:03 PM          01-01-16 2:17      NYPD
13     32305074 12/31/2015 11:47:58 PM          01-01-16 8:18      NYPD
14     32309424 12/31/2015 11:47:37 PM          01-01-16 10:17     NYPD
15     32309853 12/31/2015 11:47:30 PM          01-01-16 15:20     NYPD
16     32305538 12/31/2015 11:47:02 PM          01-01-16 4:39      NYPD
17     32310273 12/31/2015 11:44:52 PM          01-01-16 0:36      NYPD
18     32306617 12/31/2015 11:40:59 PM          01-01-16 2:37      NYPD
19     32308195 12/31/2015 11:40:55 PM          01-01-16 0:28      NYPD
20     32310127 12/31/2015 11:40:43 PM          01-01-16 4:12      NYPD
21     32307994 12/31/2015 11:38:51 PM          01-01-16 9:11      NYPD
22     32307233 12/31/2015 11:34:18 PM          01-01-16 0:50      NYPD
23     32308765 12/31/2015 11:32:46 PM          01-01-16 0:25      NYPD
24     32308423 12/31/2015 11:31:40 PM          01-03-16 16:22     NYPD
25     32308426 12/31/2015 11:30:28 PM          01-01-16 2:47      NYPD
26     32305916 12/31/2015 11:26:41 PM 12/31/2015 11:53:31 PM NYPD
27     32308379 12/31/2015 11:26:35 PM          01-01-16 5:07      NYPD
28     32309402 12/31/2015 11:25:56 PM          01-01-16 1:12      NYPD
29     32308850 12/31/2015 11:25:01 PM          01-01-16 1:55      NYPD
...
300668 30282107 03/29/2015 01:03:20 AM 03/29/2015 03:40:19 AM NYPD
300669 30283741 03/29/2015 01:02:05 AM 03/29/2015 05:26:38 AM NYPD
300670 30284125 03/29/2015 01:01:25 AM 03/29/2015 09:26:52 AM NYPD
300671 30283901 03/29/2015 12:58:08 AM 03/29/2015 04:44:02 AM NYPD
300672 30282374 03/29/2015 12:57:27 AM 03/29/2015 04:39:53 PM NYPD
300673 30280817 03/29/2015 12:57:25 AM 03/29/2015 02:25:31 AM NYPD
300674 30283364 03/29/2015 12:57:19 AM 03/29/2015 03:17:59 AM NYPD
300675 30280353 03/29/2015 12:56:22 AM 03/29/2015 01:57:52 AM NYPD
300676 30280974 03/29/2015 12:55:56 AM 03/29/2015 08:08:27 AM NYPD
300677 30280622 03/29/2015 12:55:33 AM 03/29/2015 07:12:39 AM NYPD
300678 30282979 03/29/2015 12:50:12 AM 03/29/2015 07:06:29 AM NYPD
300679 30281254 03/29/2015 12:49:51 AM 03/29/2015 02:02:21 AM NYPD
300680 30281090 03/29/2015 12:49:27 AM 03/29/2015 04:25:53 AM NYPD
300681 30283933 03/29/2015 12:48:23 AM 03/29/2015 03:42:33 AM NYPD
300682 30283186 03/29/2015 12:46:26 AM 03/29/2015 07:12:20 AM NYPD
300683 30284534 03/29/2015 12:44:36 AM 03/29/2015 03:40:20 AM NYPD
300684 30281081 03/29/2015 12:43:20 AM 03/29/2015 01:10:55 AM NYPD
300685 30280506 03/29/2015 12:43:16 AM 03/29/2015 04:25:50 AM NYPD
300686 30281145 03/29/2015 12:43:06 AM 03/29/2015 12:57:23 AM NYPD
300687 30282599 03/29/2015 12:42:48 AM 03/29/2015 02:57:41 AM NYPD
300688 30280732 03/29/2015 12:37:15 AM 03/29/2015 01:02:39 AM NYPD
300689 30283432 03/29/2015 12:35:28 AM 03/29/2015 04:14:27 AM NYPD
300690 30280538 03/29/2015 12:35:23 AM 03/29/2015 08:41:24 AM NYPD
300691 30279999 03/29/2015 12:35:04 AM 03/29/2015 02:52:28 AM NYPD

```

300692	30281370	03/29/2015	12:34:32 AM	03/29/2015	01:13:01 AM	NYPD
300693	30281872	03/29/2015	12:33:41 AM		NaN	NYPD
300694	30281230	03/29/2015	12:33:28 AM	03/29/2015	02:33:59 AM	NYPD
300695	30283424	03/29/2015	12:33:03 AM	03/29/2015	03:40:20 AM	NYPD
300696	30280004	03/29/2015	12:33:02 AM	03/29/2015	04:38:35 AM	NYPD
300697	30281825	03/29/2015	12:33:01 AM	03/29/2015	04:41:50 AM	NYPD

	Agency Name	Complaint Type \
0	New York City Police Department	Noise - Street/Sidewalk
1	New York City Police Department	Blocked Driveway
2	New York City Police Department	Blocked Driveway
3	New York City Police Department	Illegal Parking
4	New York City Police Department	Illegal Parking
5	New York City Police Department	Illegal Parking
6	New York City Police Department	Illegal Parking
7	New York City Police Department	Blocked Driveway
8	New York City Police Department	Illegal Parking
9	New York City Police Department	Blocked Driveway
10	New York City Police Department	Blocked Driveway
11	New York City Police Department	Blocked Driveway
12	New York City Police Department	Noise - Street/Sidewalk
13	New York City Police Department	Illegal Parking
14	New York City Police Department	Derelict Vehicle
15	New York City Police Department	Blocked Driveway
16	New York City Police Department	Blocked Driveway
17	New York City Police Department	Noise - Commercial
18	New York City Police Department	Noise - Commercial
19	New York City Police Department	Noise - Street/Sidewalk
20	New York City Police Department	Illegal Parking
21	New York City Police Department	Illegal Parking
22	New York City Police Department	Noise - Commercial
23	New York City Police Department	Illegal Parking
24	New York City Police Department	Blocked Driveway
25	New York City Police Department	Blocked Driveway
26	New York City Police Department	Noise - House of Worship
27	New York City Police Department	Blocked Driveway
28	New York City Police Department	Illegal Parking
29	New York City Police Department	Noise - Commercial
...
300668	New York City Police Department	Noise - Commercial
300669	New York City Police Department	Noise - Street/Sidewalk
300670	New York City Police Department	Illegal Parking
300671	New York City Police Department	Illegal Parking
300672	New York City Police Department	Blocked Driveway
300673	New York City Police Department	Noise - Commercial
300674	New York City Police Department	Noise - Street/Sidewalk
300675	New York City Police Department	Noise - Street/Sidewalk
300676	New York City Police Department	Noise - Commercial
300677	New York City Police Department	Noise - Commercial
300678	New York City Police Department	Noise - Vehicle
300679	New York City Police Department	Blocked Driveway
300680	New York City Police Department	Noise - Vehicle
300681	New York City Police Department	Noise - Street/Sidewalk
300682	New York City Police Department	Noise - Commercial
300683	New York City Police Department	Noise - Street/Sidewalk
300684	New York City Police Department	Noise - Commercial
300685	New York City Police Department	Noise - Vehicle

300686	New York City Police Department	Noise - Commercial
300687	New York City Police Department	Blocked Driveway
300688	New York City Police Department	Noise - Commercial
300689	New York City Police Department	Noise - Street/Sidewalk
300690	New York City Police Department	Illegal Parking
300691	New York City Police Department	Noise - Commercial
300692	New York City Police Department	Noise - Commercial
300693	New York City Police Department	Noise - Commercial
300694	New York City Police Department	Blocked Driveway
300695	New York City Police Department	Noise - Commercial
300696	New York City Police Department	Noise - Commercial
300697	New York City Police Department	Noise - Commercial

	Descriptor	Location Type	Incident Zip \
0	Loud Music/Party	Street/Sidewalk	10034.0
1	No Access	Street/Sidewalk	11105.0
2	No Access	Street/Sidewalk	10458.0
3	Commercial Overnight Parking	Street/Sidewalk	10461.0
4	Blocked Sidewalk	Street/Sidewalk	11373.0
5	Posted Parking Sign Violation	Street/Sidewalk	11215.0
6	Blocked Hydrant	Street/Sidewalk	10032.0
7	No Access	Street/Sidewalk	10457.0
8	Posted Parking Sign Violation	Street/Sidewalk	11415.0
9	No Access	Street/Sidewalk	11219.0
10	No Access	Street/Sidewalk	11372.0
11	No Access	Street/Sidewalk	10453.0
12	Loud Music/Party	Street/Sidewalk	10461.0
13	Posted Parking Sign Violation	Street/Sidewalk	11208.0
14	With License Plate	Street/Sidewalk	11379.0
15	Partial Access	Street/Sidewalk	11374.0
16	No Access	Street/Sidewalk	11412.0
17	Loud Music/Party	Club/Bar/Restaurant	11217.0
18	Loud Music/Party	Club/Bar/Restaurant	11234.0
19	Loud Music/Party	Street/Sidewalk	10026.0
20	Unauthorized Bus Layover	Street/Sidewalk	10456.0
21	Posted Parking Sign Violation	Street/Sidewalk	11379.0
22	Loud Music/Party	Store/Commercial	11234.0
23	Double Parked Blocking Vehicle	Street/Sidewalk	10030.0
24	No Access	Street/Sidewalk	10467.0
25	No Access	Street/Sidewalk	11432.0
26	Loud Music/Party	House of Worship	10031.0
27	No Access	Street/Sidewalk	11419.0
28	Posted Parking Sign Violation	Street/Sidewalk	10024.0
29	Loud Music/Party	Club/Bar/Restaurant	11201.0
...
300668	Loud Music/Party	Club/Bar/Restaurant	11216.0
300669	Loud Music/Party	Street/Sidewalk	10031.0
300670	Blocked Hydrant	Street/Sidewalk	11354.0
300671	Blocked Hydrant	Street/Sidewalk	10019.0
300672	No Access	Street/Sidewalk	11208.0
300673	Loud Music/Party	Club/Bar/Restaurant	11203.0
300674	Loud Music/Party	Street/Sidewalk	10025.0
300675	Loud Music/Party	Street/Sidewalk	10031.0
300676	Loud Music/Party	Store/Commercial	11377.0
300677	Loud Music/Party	Club/Bar/Restaurant	11237.0
300678	Car/Truck Music	Street/Sidewalk	11206.0
300679	No Access	Street/Sidewalk	11385.0

300680	Car/Truck Music	Street/Sidewalk	10028.0
300681	Loud Music/Party	Street/Sidewalk	11238.0
300682	Loud Music/Party	Club/Bar/Restaurant	11249.0
300683	Loud Talking	Street/Sidewalk	11238.0
300684	Loud Music/Party	Store/Commercial	10002.0
300685	Car/Truck Music	Street/Sidewalk	10028.0
300686	Loud Music/Party	Store/Commercial	10014.0
300687	No Access	Street/Sidewalk	11385.0
300688	Loud Music/Party	Club/Bar/Restaurant	10014.0
300689	Loud Music/Party	Street/Sidewalk	11233.0
300690	Commercial Overnight Parking	Street/Sidewalk	10466.0
300691	Loud Music/Party	Store/Commercial	10034.0
300692	Loud Music/Party	Store/Commercial	10002.0
300693	Loud Music/Party	Club/Bar/Restaurant	NaN
300694	Partial Access	Street/Sidewalk	11418.0
300695	Loud Music/Party	Club/Bar/Restaurant	11206.0
300696	Loud Music/Party	Club/Bar/Restaurant	10461.0
300697	Loud Music/Party	Store/Commercial	10036.0

Incident Address

...

\		
0	71 VERMILYEA AVENUE	...
1	27-07 23 AVENUE	...
2	2897 VALENTINE AVENUE	...
3	2940 BAISLEY AVENUE	...
4	87-14 57 ROAD	...
5	260 21 STREET	...
6	524 WEST 169 STREET	...
7	501 EAST 171 STREET	...
8	83-44 LEFFERTS BOULEVARD	...
9	1408 66 STREET	...
10	34-06 73 STREET	...
11	1770 UNDERCLIFF AVENUE	...
12	1701 PILGRIM AVENUE	...
13	38 COX PLACE	...
14	62-13 62 AVENUE	...
15	61-34 AUSTIN STREET	...
16	192-05 LINDEN BOULEVARD	...
17	622 DEGRAW STREET	...
18	2192 FLATBUSH AVENUE	...
19	264 WEST 118 STREET	...
20	1417 WEBSTER AVENUE	...
21	78-42 METROPOLITAN AVENUE	...
22	3622 QUENTIN ROAD	...
23	133 WEST 134 STREET	...
24	3025 WALLACE AVENUE	...
25	175-18 90 AVENUE	...
26	452 WEST 147 STREET	...
27	103-28 118 STREET	...
28	131 WEST 86 STREET	...
29	216 DUFFIELD STREET	...
...
300668	305 HALSEY STREET	...
300669	NaN	...
300670	33-16 143 STREET	...
300671	446 WEST 49 STREET	...
300672	326 MCKINLEY AVENUE	...

300673	196 EAST 51 STREET	...
300674	220 WEST 107 STREET	...
300675	501 WEST 139 STREET	...
300676	50 STREET	...
300677	302 IRVING AVENUE	...
300678	29 LOCUST STREET	...
300679	1912 GROVE STREET	...
300680	420 EAST 86 STREET	...
300681	799 DEAN STREET	...
300682	98A SOUTH 4 STREET	...
300683	801 DEAN STREET	...
300684	9 STANTON STREET	...
300685	415 EAST 86 STREET	...
300686	185 CHRISTOPHER STREET	...
300687	77-03 79 PLACE	...
300688	22 9 AVENUE	...
300689	120 CHAUNCEY STREET	...
300690	NaN	...
300691	97 SHERMAN AVENUE	...
300692	81 HESTER STREET	...
300693	CRESCENT AVENUE	...
300694	100-17 87 AVENUE	...
300695	162 THROOP AVENUE	...
300696	3151 EAST TREMONT AVENUE	...
300697	251 WEST 48 STREET	...

	School	Not Found	Bridge Highway	Name	Bridge Highway	Direction	\
0			N	NaN		NaN	
1			N	NaN		NaN	
2			N	NaN		NaN	
3			N	NaN		NaN	
4			N	NaN		NaN	
5			N	NaN		NaN	
6			N	NaN		NaN	
7			N	NaN		NaN	
8			N	NaN		NaN	
9			N	NaN		NaN	
10			N	NaN		NaN	
11			N	NaN		NaN	
12			N	NaN		NaN	
13			N	NaN		NaN	
14			N	NaN		NaN	
15			N	NaN		NaN	
16			N	NaN		NaN	
17			N	NaN		NaN	
18			N	NaN		NaN	
19			N	NaN		NaN	
20			N	NaN		NaN	
21			N	NaN		NaN	
22			N	NaN		NaN	
23			N	NaN		NaN	
24			N	NaN		NaN	
25			N	NaN		NaN	
26			N	NaN		NaN	
27			N	NaN		NaN	
28			N	NaN		NaN	
29			N	NaN		NaN	

...
300668	N	NaN	NaN
300669	N	NaN	NaN
300670	N	NaN	NaN
300671	N	NaN	NaN
300672	N	NaN	NaN
300673	N	NaN	NaN
300674	N	NaN	NaN
300675	N	NaN	NaN
300676	N	NaN	NaN
300677	N	NaN	NaN
300678	N	NaN	NaN
300679	N	NaN	NaN
300680	N	NaN	NaN
300681	N	NaN	NaN
300682	N	NaN	NaN
300683	N	NaN	NaN
300684	N	NaN	NaN
300685	N	NaN	NaN
300686	N	NaN	NaN
300687	N	NaN	NaN
300688	N	NaN	NaN
300689	N	NaN	NaN
300690	N	NaN	NaN
300691	N	NaN	NaN
300692	N	NaN	NaN
300693	N	NaN	NaN
300694	N	NaN	NaN
300695	N	NaN	NaN
300696	N	NaN	NaN
300697	N	NaN	NaN

	Road	Ramp	Bridge	Highway	Segment	Ferry	Direction	Ferry	Terminal	Name
\										
0		NaN				NaN		NaN		NaN
1		NaN				NaN		NaN		NaN
2		NaN				NaN		NaN		NaN
3		NaN				NaN		NaN		NaN
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18		NaN				NaN		NaN		NaN
19		NaN				NaN		NaN		NaN
20		NaN				NaN		NaN		NaN
21		NaN				NaN		NaN		NaN
22		NaN				NaN		NaN		NaN

23	NaN	NaN	NaN	NaN
24	NaN	NaN	NaN	NaN
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26	NaN	NaN	NaN	NaN
27	NaN	NaN	NaN	NaN
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29	NaN	NaN	NaN	NaN
...
300668	NaN	NaN	NaN	NaN
300669	NaN	NaN	NaN	NaN
300670	NaN	NaN	NaN	NaN
300671	NaN	NaN	NaN	NaN
300672	NaN	NaN	NaN	NaN
300673	NaN	NaN	NaN	NaN
300674	NaN	NaN	NaN	NaN
300675	NaN	NaN	NaN	NaN
300676	NaN	NaN	NaN	NaN
300677	NaN	NaN	NaN	NaN
300678	NaN	NaN	NaN	NaN
300679	NaN	NaN	NaN	NaN
300680	NaN	NaN	NaN	NaN
300681	NaN	NaN	NaN	NaN
300682	NaN	NaN	NaN	NaN
300683	NaN	NaN	NaN	NaN
300684	NaN	NaN	NaN	NaN
300685	NaN	NaN	NaN	NaN
300686	NaN	NaN	NaN	NaN
300687	NaN	NaN	NaN	NaN
300688	NaN	NaN	NaN	NaN
300689	NaN	NaN	NaN	NaN
300690	NaN	NaN	NaN	NaN
300691	NaN	NaN	NaN	NaN
300692	NaN	NaN	NaN	NaN
300693	NaN	NaN	NaN	NaN
300694	NaN	NaN	NaN	NaN
300695	NaN	NaN	NaN	NaN
300696	NaN	NaN	NaN	NaN
300697	NaN	NaN	NaN	NaN

	Latitude	Longitude	Location
0	40.865682	-73.923501	(40.86568153633767, -73.92350095571744)
1	40.775945	-73.915094	(40.775945312321085, -73.91509393898605)
2	40.870325	-73.888525	(40.870324522111424, -73.88852464418646)
3	40.835994	-73.828379	(40.83599404683083, -73.82837939584206)
4	40.733060	-73.874170	(40.733059618956815, -73.87416975810375)
5	40.660823	-73.992568	(40.66082272389114, -73.99256786342693)
6	40.840848	-73.937375	(40.840847591440415, -73.9373750864581)
7	40.837503	-73.902905	(40.83750262540012, -73.90290517326568)
8	40.704977	-73.832605	(40.704977164399935, -73.8326047502584)
9	40.623793	-73.999539	(40.623793065806524, -73.99953890121567)
10	40.752600	-73.893363	(40.752599671969676, -73.8933632141368)
11	40.851555	-73.919997	(40.85155492779258, -73.91999651358469)
12	40.845545	-73.833585	(40.845545043640215, -73.83358471831198)
13	40.687511	-73.874505	(40.68751060232221, -73.87450451131276)
14	40.714093	-73.899384	(40.71409341858147, -73.89938394187791)
15	40.729679	-73.870417	(40.72967940444622, -73.87041654016662)
16	40.692520	-73.759264	(40.69252034680599, -73.75926357603389)

17	40.679154	-73.983430	(40.679154133157326, -73.98342992763081)
18	40.616550	-73.930202	(40.61655032892211, -73.93020153359745)
19	40.805267	-73.953353	(40.80526715877265, -73.9533526205901)
20	40.836727	-73.907106	(40.83672658684552, -73.90710561784778)
21	40.713198	-73.874139	(40.713198496024376, -73.87413871579652)
22	40.614784	-73.936568	(40.61478362623815, -73.93656784825214)
23	40.814002	-73.942664	(40.814001537165495, -73.94266395083876)
24	40.870063	-73.864322	(40.87006255915965, -73.86432172842636)
25	40.709827	-73.786257	(40.70982729683097, -73.78625714739626)
26	40.826102	-73.945663	(40.826101709196, -73.94566339279595)
27	40.687117	-73.825597	(40.68711749970851, -73.8255967145633)
28	40.786930	-73.973202	(40.78693045941381, -73.9732015755585)
29	40.691599	-73.984379	(40.691599059545375, -73.98437881826075)
...
300668	40.682906	-73.940357	(40.68290569745191, -73.94035735919954)
300669	40.821446	-73.950379	(40.82144605015569, -73.95037859121894)
300670	40.767869	-73.826216	(40.767869319511156, -73.82621558171721)
300671	40.763425	-73.990766	(40.76342452850363, -73.99076591082245)
300672	40.681068	-73.863917	(40.68106756068015, -73.8639166657132)
300673	40.657327	-73.929979	(40.65732675940293, -73.92997866259482)
300674	40.801410	-73.965947	(40.80140973782622, -73.96594656979163)
300675	40.821561	-73.950631	(40.82156143682672, -73.95063141802162)
300676	40.743181	-73.914894	(40.74318114209432, -73.91489390486979)
300677	40.698976	-73.914319	(40.698976356744375, -73.91431921502723)
300678	40.699334	-73.937486	(40.699334367421585, -73.93748637968389)
300679	40.706475	-73.907504	(40.70647527382003, -73.90750353701854)
300680	40.776591	-73.948719	(40.776590982604596, -73.94871864443712)
300681	40.679237	-73.963355	(40.679237323783724, -73.96335543308066)
300682	40.712285	-73.964001	(40.712284534374824, -73.96400097454304)
300683	40.679226	-73.963309	(40.67922632975442, -73.96330856984594)
300684	40.722621	-73.992435	(40.722621191327846, -73.99243470311887)
300685	40.776646	-73.948805	(40.77664591586459, -73.94880525662063)
300686	40.732486	-74.009688	(40.73248568650513, -74.00968804444769)
300687	40.706353	-73.871245	(40.70635259429073, -73.8712445609601)
300688	40.740361	-74.005781	(40.74036064515079, -74.00578103597579)
300689	40.680399	-73.929417	(40.6803990181202, -73.92941723335176)
300690	40.900403	-73.840809	(40.90040252667784, -73.84080863767632)
300691	40.863805	-73.925358	(40.863805379005, -73.92535778152539)
300692	40.716053	-73.991378	(40.71605290789855, -73.99137850370803)
300693	NaN	NaN	NaN
300694	40.694077	-73.846087	(40.69407728322387, -73.8460866160573)
300695	40.699590	-73.944234	(40.69959035300927, -73.94423377144169)
300696	40.837708	-73.834587	(40.8377075854206, -73.83458731019586)
300697	40.760583	-73.985922	(40.76058322950115, -73.98592204392392)

[300698 rows x 48 columns]>

```
In [16]: data1.loc[:,['Complaint Type','City']]
```

Out[16]:

	Complaint Type	City
0	Noise - Street/Sidewalk	NEW YORK
1	Blocked Driveway	ASTORIA
2	Blocked Driveway	BRONX
3	Illegal Parking	BRONX
4	Illegal Parking	ELMHURST
5	Illegal Parking	BROOKLYN
6	Illegal Parking	NEW YORK
7	Blocked Driveway	BRONX
8	Illegal Parking	KEW GARDENS
9	Blocked Driveway	BROOKLYN
10	Blocked Driveway	JACKSON HEIGHTS
11	Blocked Driveway	BRONX
12	Noise - Street/Sidewalk	BRONX
13	Illegal Parking	BROOKLYN
14	Derelict Vehicle	MIDDLE VILLAGE
15	Blocked Driveway	REGO PARK
16	Blocked Driveway	SAINT ALBANS
17	Noise - Commercial	BROOKLYN
18	Noise - Commercial	BROOKLYN
19	Noise - Street/Sidewalk	NEW YORK
20	Illegal Parking	BRONX
21	Illegal Parking	MIDDLE VILLAGE
22	Noise - Commercial	BROOKLYN
23	Illegal Parking	NEW YORK
24	Blocked Driveway	BRONX
25	Blocked Driveway	JAMAICA
26	Noise - House of Worship	NEW YORK
27	Blocked Driveway	SOUTH RICHMOND HILL
28	Illegal Parking	NEW YORK
29	Noise - Commercial	BROOKLYN
...
300668	Noise - Commercial	BROOKLYN
300669	Noise - Street/Sidewalk	NEW YORK
300670	Illegal Parking	FLUSHING
300671	Illegal Parking	NEW YORK

	Complaint Type	City
300672	Blocked Driveway	BROOKLYN
300673	Noise - Commercial	BROOKLYN
300674	Noise - Street/Sidewalk	NEW YORK
300675	Noise - Street/Sidewalk	NEW YORK
300676	Noise - Commercial	WOODSIDE
300677	Noise - Commercial	BROOKLYN
300678	Noise - Vehicle	BROOKLYN
300679	Blocked Driveway	RIDGEWOOD
300680	Noise - Vehicle	NEW YORK
300681	Noise - Street/Sidewalk	BROOKLYN
300682	Noise - Commercial	BROOKLYN
300683	Noise - Street/Sidewalk	BROOKLYN
300684	Noise - Commercial	NEW YORK
300685	Noise - Vehicle	NEW YORK
300686	Noise - Commercial	NEW YORK
300687	Blocked Driveway	RIDGEWOOD
300688	Noise - Commercial	NEW YORK
300689	Noise - Street/Sidewalk	BROOKLYN
300690	Illegal Parking	BRONX
300691	Noise - Commercial	NEW YORK
300692	Noise - Commercial	NEW YORK
300693	Noise - Commercial	NaN
300694	Blocked Driveway	RICHMOND HILL
300695	Noise - Commercial	BROOKLYN
300696	Noise - Commercial	BRONX
300697	Noise - Commercial	NEW YORK

300698 rows × 2 columns

```
In [17]: major=data1.loc[:, "Complaint Type"]  
major
```

```

Out[17]: 0      Noise - Street/Sidewalk
        1      Blocked Driveway
        2      Blocked Driveway
        3      Illegal Parking
        4      Illegal Parking
        5      Illegal Parking
        6      Illegal Parking
        7      Blocked Driveway
        8      Illegal Parking
        9      Blocked Driveway
       10      Blocked Driveway
       11      Blocked Driveway
       12      Noise - Street/Sidewalk
       13      Illegal Parking
       14      Derelict Vehicle
       15      Blocked Driveway
       16      Blocked Driveway
       17      Noise - Commercial
       18      Noise - Commercial
       19      Noise - Street/Sidewalk
       20      Illegal Parking
       21      Illegal Parking
       22      Noise - Commercial
       23      Illegal Parking
       24      Blocked Driveway
       25      Blocked Driveway
       26      Noise - House of Worship
       27      Blocked Driveway
       28      Illegal Parking
       29      Noise - Commercial
           ...
    300668      Noise - Commercial
    300669      Noise - Street/Sidewalk
    300670      Illegal Parking
    300671      Illegal Parking
    300672      Blocked Driveway
    300673      Noise - Commercial
    300674      Noise - Street/Sidewalk
    300675      Noise - Street/Sidewalk
    300676      Noise - Commercial
    300677      Noise - Commercial
    300678      Noise - Vehicle
    300679      Blocked Driveway
    300680      Noise - Vehicle
    300681      Noise - Street/Sidewalk
    300682      Noise - Commercial
    300683      Noise - Street/Sidewalk
    300684      Noise - Commercial
    300685      Noise - Vehicle
    300686      Noise - Commercial
    300687      Blocked Driveway
    300688      Noise - Commercial
    300689      Noise - Street/Sidewalk
    300690      Illegal Parking
    300691      Noise - Commercial
    300692      Noise - Commercial
    300693      Noise - Commercial

```

```

300694          Blocked Driveway
300695          Noise - Commercial
300696          Noise - Commercial
300697          Noise - Commercial
Name: Complaint Type, Length: 300698, dtype: object

```

```
In [18]: major.unique()
```

```

Out[18]: array(['Noise - Street/Sidewalk', 'Blocked Driveway', 'Illegal Parking',
               'Derelict Vehicle', 'Noise - Commercial',
               'Noise - House of Worship', 'Posting Advertisement',
               'Noise - Vehicle', 'Animal Abuse', 'Vending', 'Traffic',
               'Drinking', 'Bike/Roller/Skate Chronic', 'Panhandling',
               'Noise - Park', 'Homeless Encampment', 'Urinating in Public',
               'Graffiti', 'Disorderly Youth', 'Illegal Fireworks',
               'Ferry Complaint', 'Agency Issues', 'Squeegee', 'Animal in a Park'],
              dtype=object)

```

```
In [19]: major.nunique()
```

```
Out[19]: 24
```

```
In [20]: roof=major.value_counts()
         roof
```

```

Out[20]: Blocked Driveway          77044
         Illegal Parking           75361
         Noise - Street/Sidewalk    48612
         Noise - Commercial         35577
         Derelict Vehicle           17718
         Noise - Vehicle            17083
         Animal Abuse               7778
         Traffic                    4498
         Homeless Encampment        4416
         Noise - Park               4042
         Vending                    3802
         Drinking                   1280
         Noise - House of Worship    931
         Posting Advertisement       650
         Urinating in Public         592
         Bike/Roller/Skate Chronic   427
         Panhandling                 307
         Disorderly Youth            286
         Illegal Fireworks           168
         Graffiti                   113
         Agency Issues                6
         Squeegee                    4
         Ferry Complaint              2
         Animal in a Park            1
         Name: Complaint Type, dtype: int64

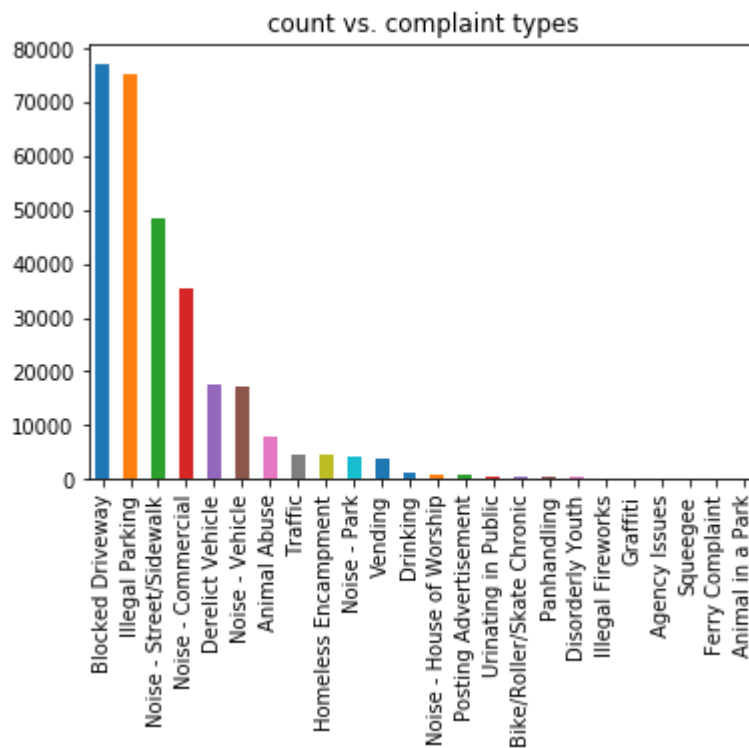
```

In [21]: `roof.head(10)`

```
Out[21]: Blocked Driveway      77044
Illegal Parking      75361
Noise - Street/Sidewalk  48612
Noise - Commercial   35577
Derelict Vehicle     17718
Noise - Vehicle      17083
Animal Abuse         7778
Traffic              4498
Homeless Encampment  4416
Noise - Park         4042
Name: Complaint Type, dtype: int64
```

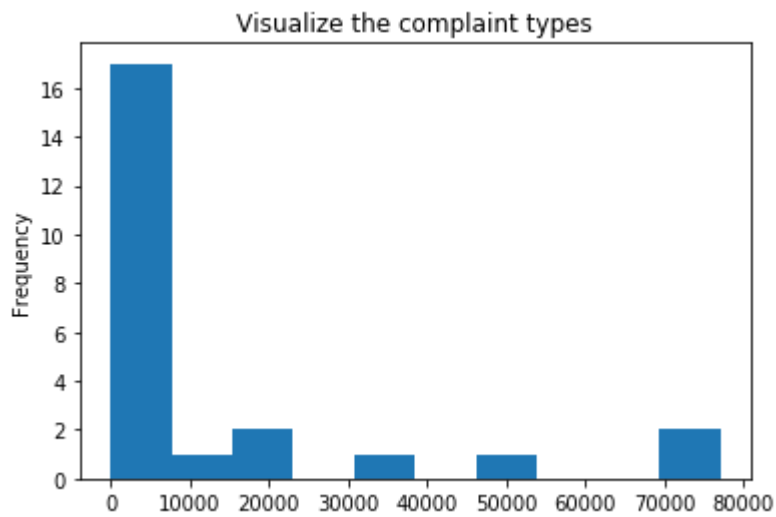
In [22]: `major.value_counts().plot(kind='bar',title='count vs. complaint types')`

Out[22]: `<matplotlib.axes._subplots.AxesSubplot at 0x29bedfdd4a8>`



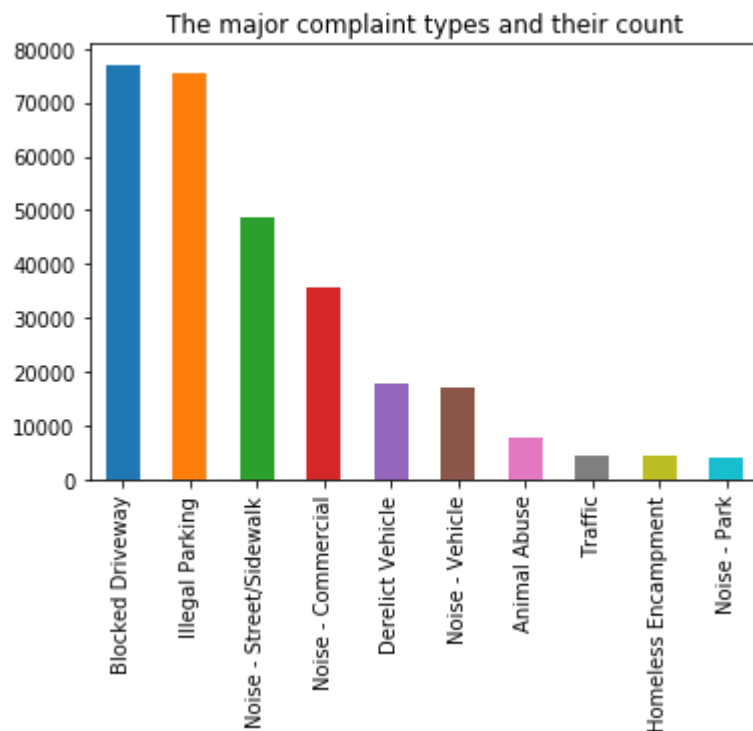
```
In [23]: roof.plot(kind='hist',title='Visualize the complaint types')
```

```
Out[23]: <matplotlib.axes._subplots.AxesSubplot at 0x29bc783d7b8>
```



```
In [24]: roof.head(10).plot(kind='bar',title='The major complaint types and their count')
```

```
Out[24]: <matplotlib.axes._subplots.AxesSubplot at 0x29bc78d44a8>
```



```
In [ ]: #####Thank You####
```