New York Median Housing prices clustering

A. Introduction/ Problem

1- <u>A description of the Business problem</u>

Many of us were told that house prices are so high because there are too many people and not enough houses. While this is true, house prices have also been pushed up by the hundreds of billions of new money that banks created in the years before the financial crisis.
Housing prices important indicators of inflation and GDP and it important from who want to make new investments in real estates and from want to purchase a new property and also who want to sale his property all of them have the same problem and want to know the price of house in specific neighborhood

2- <u>A description of the data</u>

I used the median sales price of real estate of New York City Neighborhoods to try to solve this problem by clustering the prices to 3 levels
    1- High prices
    2-Medium Prices
    3-low Prices
 to help the target audience for a correct decision

B. The Data

3- <u>the data consist of 5 features</u>

(Borough-Neighborhood-Latitude-Longitude-Median Sale Price) Of New York City

5- Target Audience
1- Investors in Real estate in NY
2- Seller Housing in NY
3- Buyer Housing In NY

C. Methodology

6- Exploratory data analysis Using Histogram with 3 bins to show distributions of Median Housing Price and showing its skewed to right that's mean is the low prices is most in many neighborhoods then medium then high prices
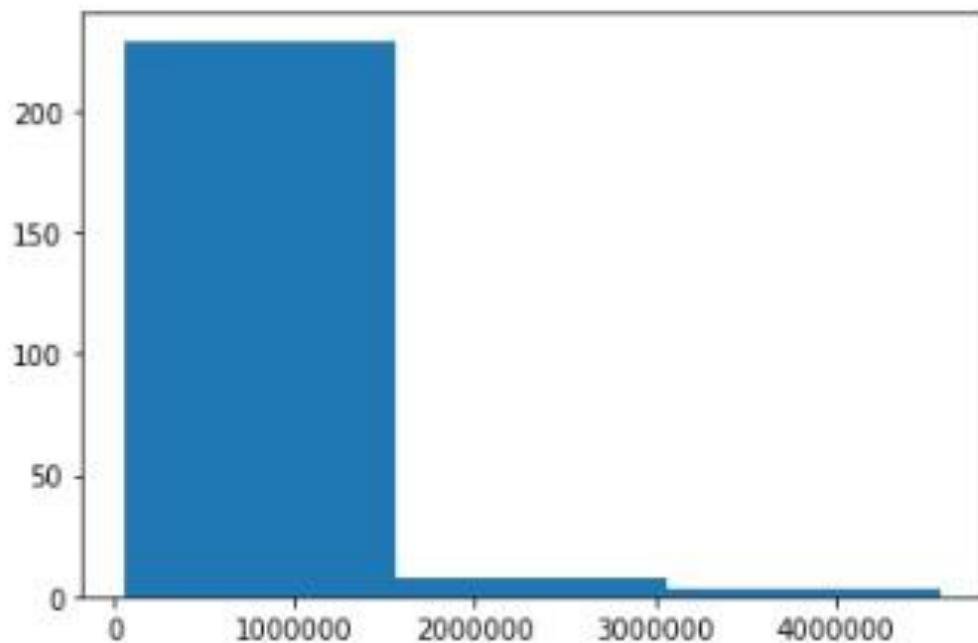
7- Machine Learnings Using Algorithm 'K-Mean' clustering to clusting the Median prices of neighborhood in 3 sections High – Medium – Low
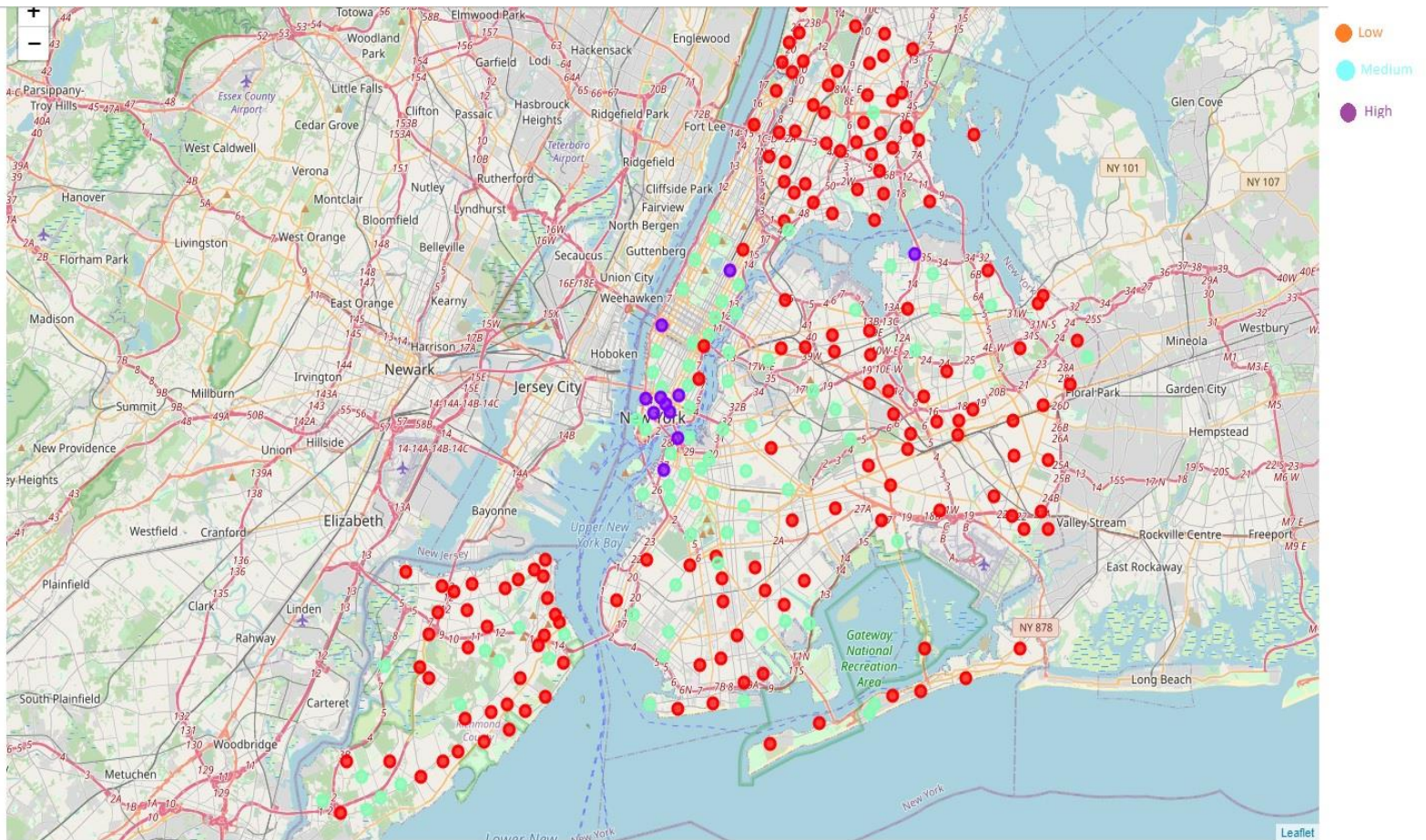
D. Results section

There are three sections of Median Prices

1- High prices: Consist of 11 Neighborhood

i	Neighborhood	Cluster Labels
1	Cobble Hill	High
2	Chinatown	High
3	Tribeca	High
4	Little Italy	High
5	Soho	High
6	Carnegie Hill	High
7	Noho	High
8	Civic Center	High
9	Dumbo	High
10	Malba	High
11	Hudson Yards	High

2-Medium Prices: Consist of 80 Neighborhood

i	Neighborhood	Cluster Labels
1	Pelham Parkway	Medium
2	Port Morris	Medium
3	Bensonhurst	Medium
4	Greenpoint	Medium
5	Crown Heights	Medium
6	Windsor Terrace	Medium
7	Prospect Heights	Medium
8	Williamsburg	Medium
9	Bedford Stuyvesant	Medium
10	Brooklyn Heights	Medium
11	Carroll Gardens	Medium
12	Red Hook	Medium
13	Gowanus	Medium
14	Fort Greene	Medium
15	Park Slope	Medium
16	Manhattan Beach	Medium
17	Bath Beach	Medium
18	Borough Park	Medium

19	Dyker Heights	Medium
20	Marine Park	Medium
21	Clinton Hill	Medium
22	Sea Gate	Medium
23	Boerum Hill	Medium
24	Prospect Lefferts Gardens	Medium
25	Ocean Hill	Medium
26	Bergen Beach	Medium
27	Williamsburg	Medium
28	Yorkville	Medium
29	Lenox Hill	Medium
30	Roosevelt Island	Medium
31	Upper West Side	Medium
32	Lincoln Square	Medium
33	Murray Hill	Medium
34	Chelsea	Medium
35	Greenwich Village	Medium
36	East Village	Medium
37	Lower East Side	Medium
38	West Village	Medium
39	Manhattan Valley	Medium
40	Morningside Heights	Medium
41	Gramercy	Medium
42	Battery Park City	Medium
43	Financial District	Medium
44	Howard Beach	Medium
45	Sunnyside	Medium
46	East Elmhurst	Medium
47	Maspeth	Medium
48	Ridgewood	Medium
49	Glendale	Medium
50	College Point	Medium
51	Whitestone	Medium
52	Bayside	Medium
53	Auburndale	Medium
54	Fresh Meadows	Medium
55	Neponsit	Medium
56	Murray Hill	Medium
57	Floral Park	Medium
58	Queensboro Hill	Medium
59	Belle Harbor	Medium

60	Todt Hill	Medium
61	Annadale	Medium
62	Woodrow	Medium
63	Tottenville	Medium
64	Sunnyside	Medium
65	Ditmas Park	Medium
66	Wingate	Medium
67	Grasmere	Medium
68	Huguenot	Medium
69	Charleston	Medium
70	Chelsea	Medium
71	Shore Acres	Medium
72	Mill Basin	Medium
73	Sutton Place	Medium
74	Hunters Point	Medium
75	Turtle Bay	Medium
76	Vinegar Hill	Medium
77	Manor Heights	Medium
78	Middle Village	Medium
79	Prince's Bay	Medium
80	Lighthouse Hill	Medium

3-low Prices: Consist of 149 Neighborhood

i	Neighborhood	Cluster Labels
1	Wakefield	Low
2	Eastchester	Low
3	Fieldston	Low
4	Riverdale	Low
5	Kingsbridge	Low
6	Marble Hill	Low
7	Woodlawn	Low
8	Norwood	Low
9	Williamsbridge	Low
10	Baychester	Low
11	City Island	Low
12	Bedford Park	Low
13	Morris Heights	Low

14	Fordham	Low
15	East Tremont	Low
16	West Farms	Low
17	High Bridge	Low
18	Melrose	Low
19	Mott Haven	Low
20	Longwood	Low
21	Hunts Point	Low
22	Morrisania	Low
23	Soundview	Low
24	Clason Point	Low
25	Throggs Neck	Low
26	Spencer Estates - Country Club	Low
27	Parkchester	Low
28	Westchester Village	Low
29	Van Nest	Low
30	Morris Park	Low
31	Belmont	Low
32	Spuyten Duyvil	Low
33	North Riverdale	Low
34	Pelham Bay	Low
35	Castle Hill	Low
36	Pelham Gardens	Low
37	Concourse	Low
38	Unionport	Low
39	Edenwald	Low
40	Bay Ridge	Low
41	Sunset Park	Low
42	Gravesend	Low
43	Brighton Beach	Low
44	Sheepshead Bay	Low
45	Flatbush	Low
46	East Flatbush	Low
47	Kensington	Low
48	Brownsville	Low
49	Bushwick	Low
50	East New York	Low
51	Canarsie	Low
52	Flatlands	Low
53	Coney Island	Low
54	Gerritsen Beach	Low

55	Midwood	Low
56	Prospect Park South	Low
57	Georgetown	Low
58	Washington Heights	Low
59	Inwood	Low
60	East Harlem	Low
61	Astoria	Low
62	Woodside	Low
63	Jackson Heights	Low
64	Elmhurst	Low
65	Corona	Low
66	Forest Hills	Low
67	Kew Gardens	Low
68	Richmond Hill	Low
69	Flushing	Low
70	Rego Park	Low
71	Woodhaven	Low
72	Ozone Park	Low
73	South Ozone Park	Low
74	Little Neck	Low
75	Douglaston	Low
76	Glen Oaks	Low
77	Bellerose	Low
78	Kew Gardens Hills	Low
79	Briarwood	Low
80	Jamaica Center	Low
81	Oakland Gardens	Low
82	Queens Village	Low
83	Hollis	Low
84	St. Albans	Low
85	Rochdale	Low
86	Springfield Gardens	Low
87	Cambria Heights	Low
88	Rosedale	Low
89	Far Rockaway	Low
90	Broad Channel	Low
91	Breezy Point	Low
92	Bay Terrace	Low
93	Arverne	Low
94	Rockaway Beach	Low
95	Jamaica Estates	Low

96	Lindenwood	Low
97	Laurelton	Low
98	Rockaway Park	Low
99	Brookville	Low
100	North Corona	Low
101	Forest Hills Gardens	Low
102	St. George	Low
103	New Brighton	Low
104	Stapleton	Low
105	Rosebank	Low
106	West Brighton	Low
107	South Beach	Low
108	Port Richmond	Low
109	Mariner's Harbor	Low
110	Port Ivory	Low
111	Castleton Corners	Low
112	New Springville	Low
113	New Dorp	Low
114	Oakwood	Low
115	Great Kills	Low
116	Eltingville	Low
117	Tompkinsville	Low
118	Park Hill	Low
119	Westerleigh	Low
120	Graniteville	Low
121	Arrochar	Low
122	Dongan Hills	Low
123	Midland Beach	Low
124	Grant City	Low
125	New Dorp Beach	Low
126	Bay Terrace	Low
127	Pleasant Plains	Low
128	Rossville	Low
129	Arden Heights	Low
130	Heartland Village	Low
131	Bulls Head	Low
132	Richmond Town	Low
133	Clifton	Low
134	Concord	Low
135	Randall Manor	Low
136	Elm Park	Low

137	Jamaica Hills	Low
138	Pomonok	Low
139	Concourse Village	Low
140	Mount Hope	Low
141	Tudor City	Low
142	Stuyvesant Town	Low
143	Sunnyside Gardens	Low
144	Willowbrook	Low
145	Roxbury	Low
146	Homecrest	Low
147	Madison	Low
148	Bronxdale	Low
149	Allerton	Low

E. Discussion section

There is one observation

Low prices: from 10000 to 1000000 approximately

Medium Prices: from 1000000 to 2000000 approximately

High Prices: from 2000000 to 4000000 approximately

F. Conclusion

The study distributes New York city Neighborhoods to 3 section Based on Median Housing Price to High – Medium – low

1-High prices: Consist of 11 Neighborhood

2-Medium Prices: Consist of 80 Neighborhood

3-low Prices: Consist of 149 Neighborhood

And this shape explain it

Low
Medium
High

This is end of this report

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