

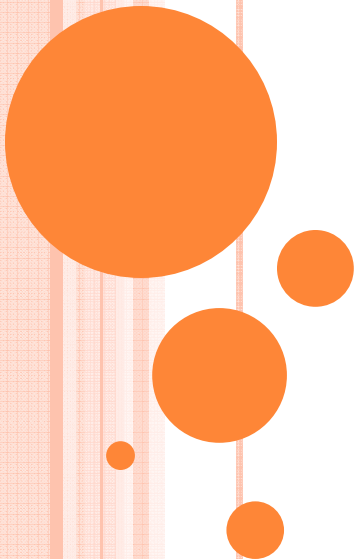
A Battle to Neighborhood - II

A Capstone Project

Finding the best place of 3 bedroom apartment in Manhattan on Rent

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Problem:

The challenge is to find a suitable apartment for rent in Manhattan that complies with the demands on location, price and venues. This project aims to predict the best location for the apartment with which fulfills the demands on price and venues.



Interest:

I believe this is a relevant challenge with valid questions for anyone moving to other large city in US or Asia The same methodology can be applied in accordance to demands as applicable. This case is also applicable for anyone interested in exploring starting or locating a new business in any city. Lastly, it can also serve as a good practical exercise to develop Data Science skills



The following data is required to answer the issues of the problem:

1. List of Boroughs and neighborhoods of Manhattan with their geodata (latitude and longitude)
2. List of Subway metro stations in Manhattan with their address location
3. List of apartments for rent in Manhattan area with their addresses and price
4. Preferably, a list of apartment for rent with additional information, such as price, address, Area, no. of beds, etc
5. Venues for each Manhattan neighborhood (than can be clustered)
6. Venues for subway metro stations, as needed



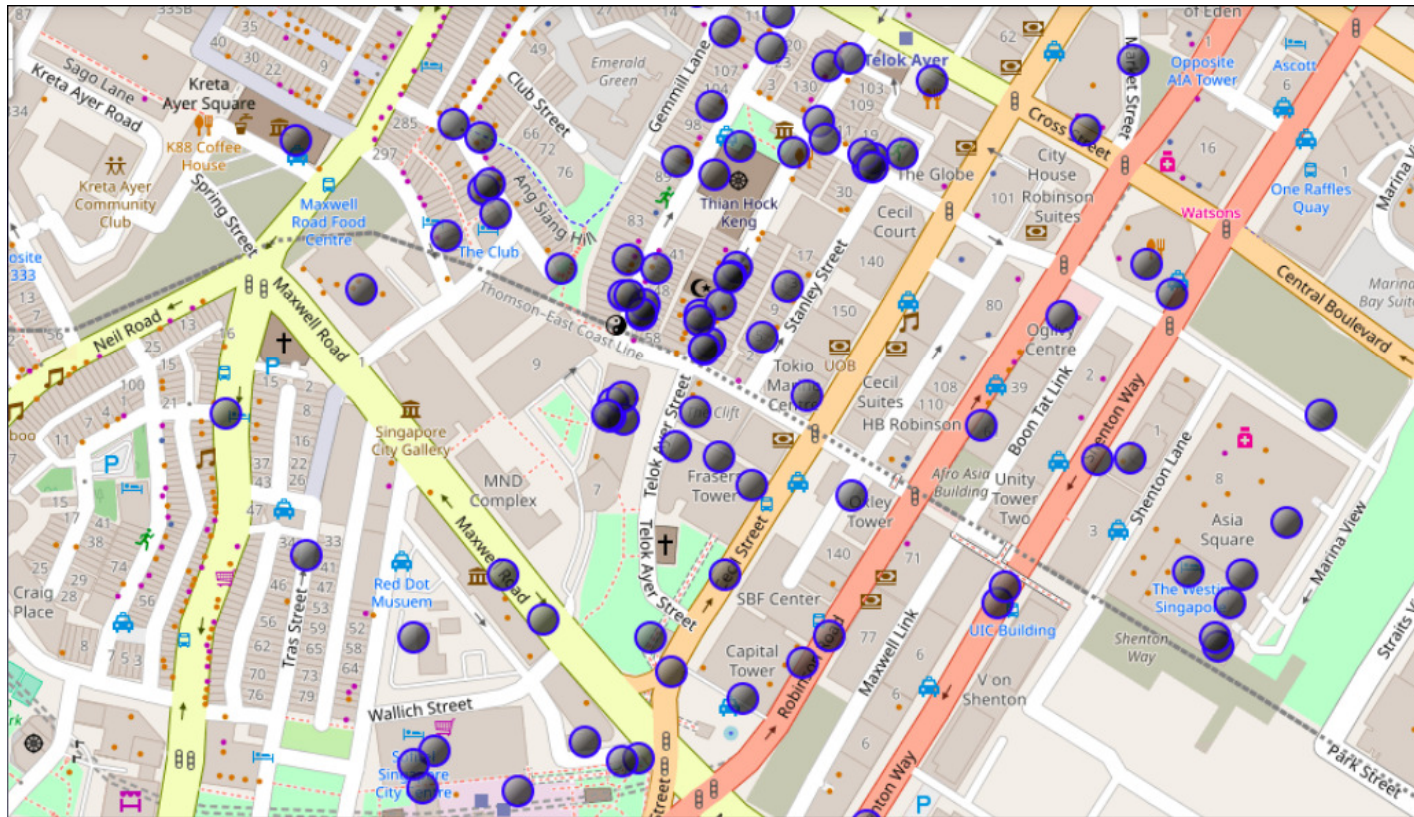
The analysis and the strategy

1. What is the cost of available rental places that meet the demands?
2. What is the cost of rent around a mile radius from each subway metro station?
3. What is the area of Manhattan with best rental pricing that meets criteria established?
4. What is the distance from work place (Park Ave and 53 rd St) and the tentative future rental home?
5. What are the venues of the two best places to live? How the prices compare?
6. How venues distribute among Manhattan neighborhoods and around metro stations?
7. Are there tradeoffs between size and price and location?



Execution and Result

Current Residence neighborhood in Singapore



Venues around neighborhood in:

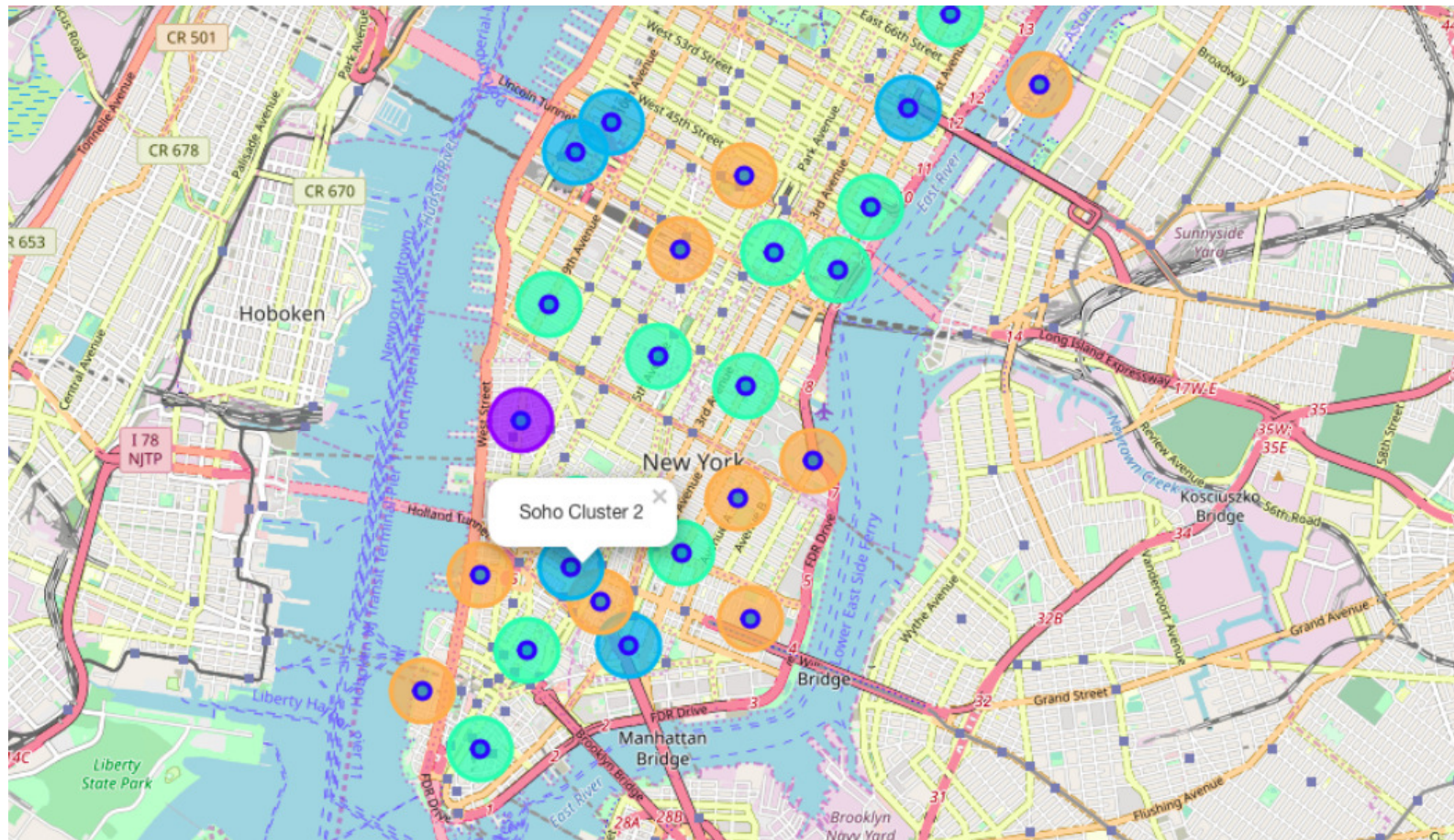
```
: # Venues near current Singapore residence place  
SGnearby_venues.head(10)
```

```
:
```

	name	categories	lat	lng
0	Napoleon Food & Wine Bar	Wine Bar	1.279925	103.847333
1	Park Bench Deli	Deli / Bodega	1.279872	103.847287
2	Native	Cocktail Bar	1.280135	103.846844
3	Muchachos	Burrito Place	1.279175	103.847082
4	Matt's The Chocolate Shop	Dessert Shop	1.280462	103.846950
5	Freehouse	Beer Garden	1.281254	103.848513
6	PS.Cafe	Café	1.280468	103.846264
7	왕대박 Wang Dae Bak Korean BBQ Restaurant	Korean Restaurant	1.281345	103.847551
8	Ancient Therapy	Massage Studio	1.280413	103.847481
9	Oven & Fried Chicken	Korean Restaurant	1.280479	103.847522



Manhattan Map – Neighborhoods and cluster of venues



Geodata: Manhattan Apartment for rent

```
] : mh_rent=pd.read_csv('MH_rent_latlong.csv')
    mh_rent.head()
```

```
] :
```

	Address	Area	Price_per_ft2	Rooms	Area-ft2	Rent_Price	Lat	Long
0	West 105th Street	Upper West Side	2.94	5.0	3400	10000	40.799771	-73.966213
1	East 97th Street	Upper East Side	3.57	3.0	2100	7500	40.788585	-73.955277
2	West 105th Street	Upper West Side	1.89	4.0	2800	5300	40.799771	-73.966213
3	CARMINE ST.	West Village	3.03	2.0	1650	5000	40.730523	-74.001873
4	171 W 23RD ST.	Chelsea	3.45	2.0	1450	5000	40.744118	-73.995299

```
] : mh_rent.tail()
```

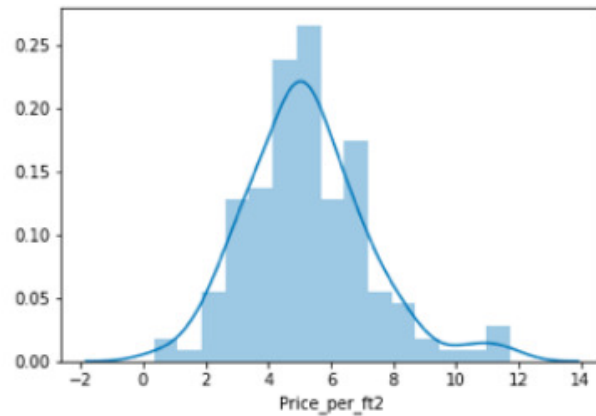
```
] :
```

	Address	Area	Price_per_ft2	Rooms	Area-ft2	Rent_Price	Lat	Long
139	200 East 72nd Street	Rental in Lenox Hill	5.15	3.0	1700	8750	40.769465	-73.960339
140	50 Murray Street	No fee rental in Tribeca	7.11	2.0	1223	8700	40.714051	-74.009608
141	300 East 56th Street	No fee rental in Midtown East	3.87	3.0	2100	8118	40.758216	-73.965190
142	1930 Broadway	No fee rental in Central Park West	5.06	2.0	1600	8095	40.772474	-73.981901
143	33 West 9th Street	Rental in Greenwich Village	6.67	2.0	1500	10000	40.733691	-73.997323

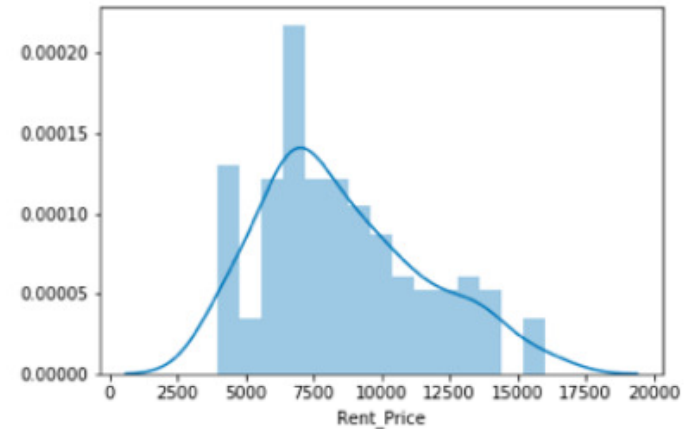


Rental Price Statistics Manhattan Apartments

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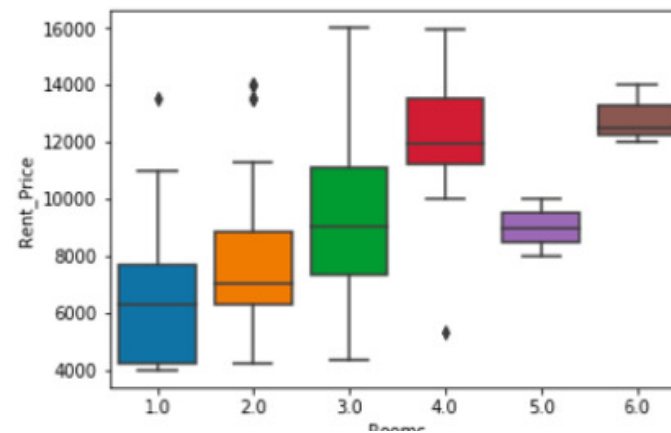


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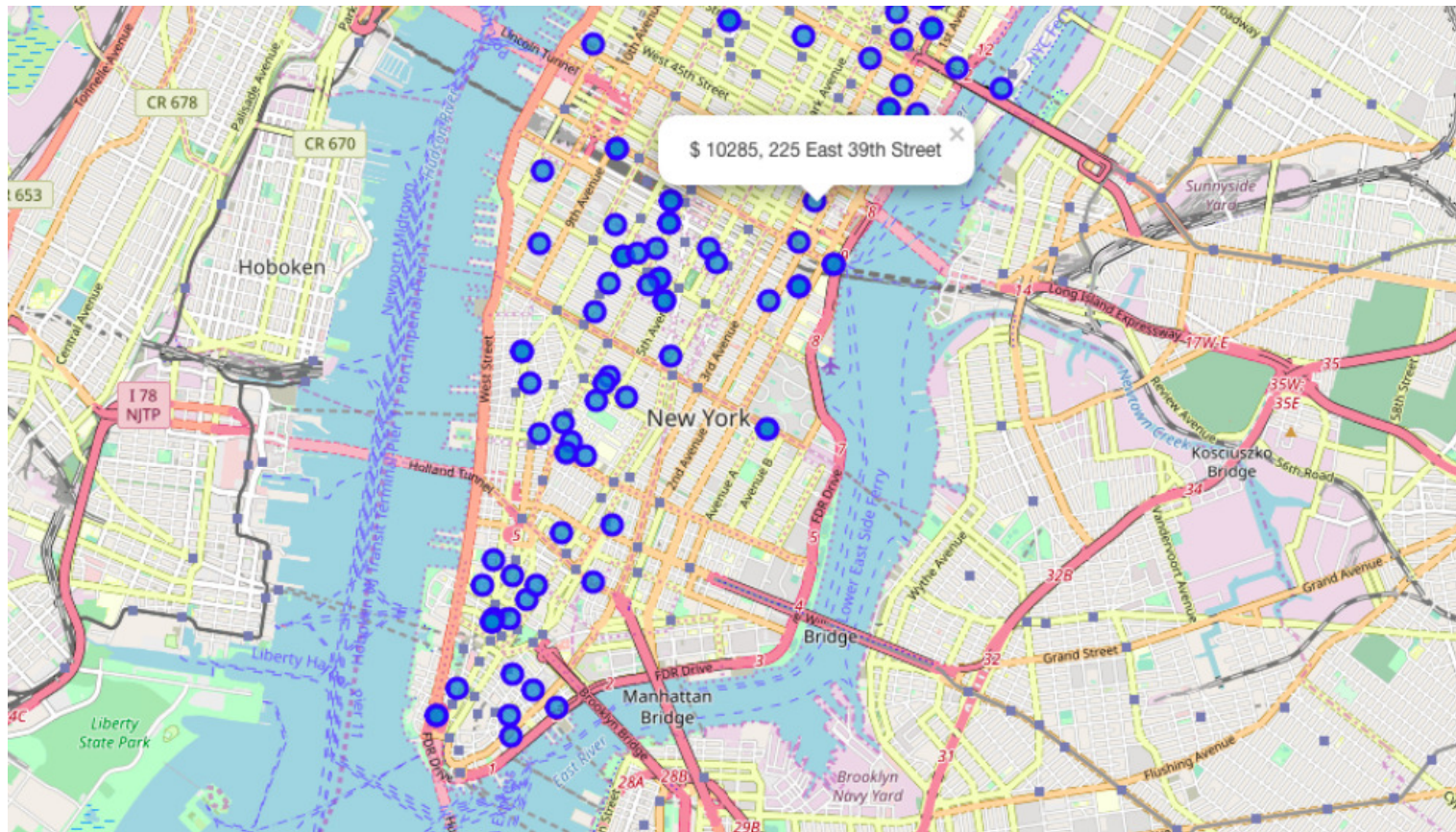


```
sns.boxplot(x='Rooms', y='Rent_Price', data=mh_rent)
```

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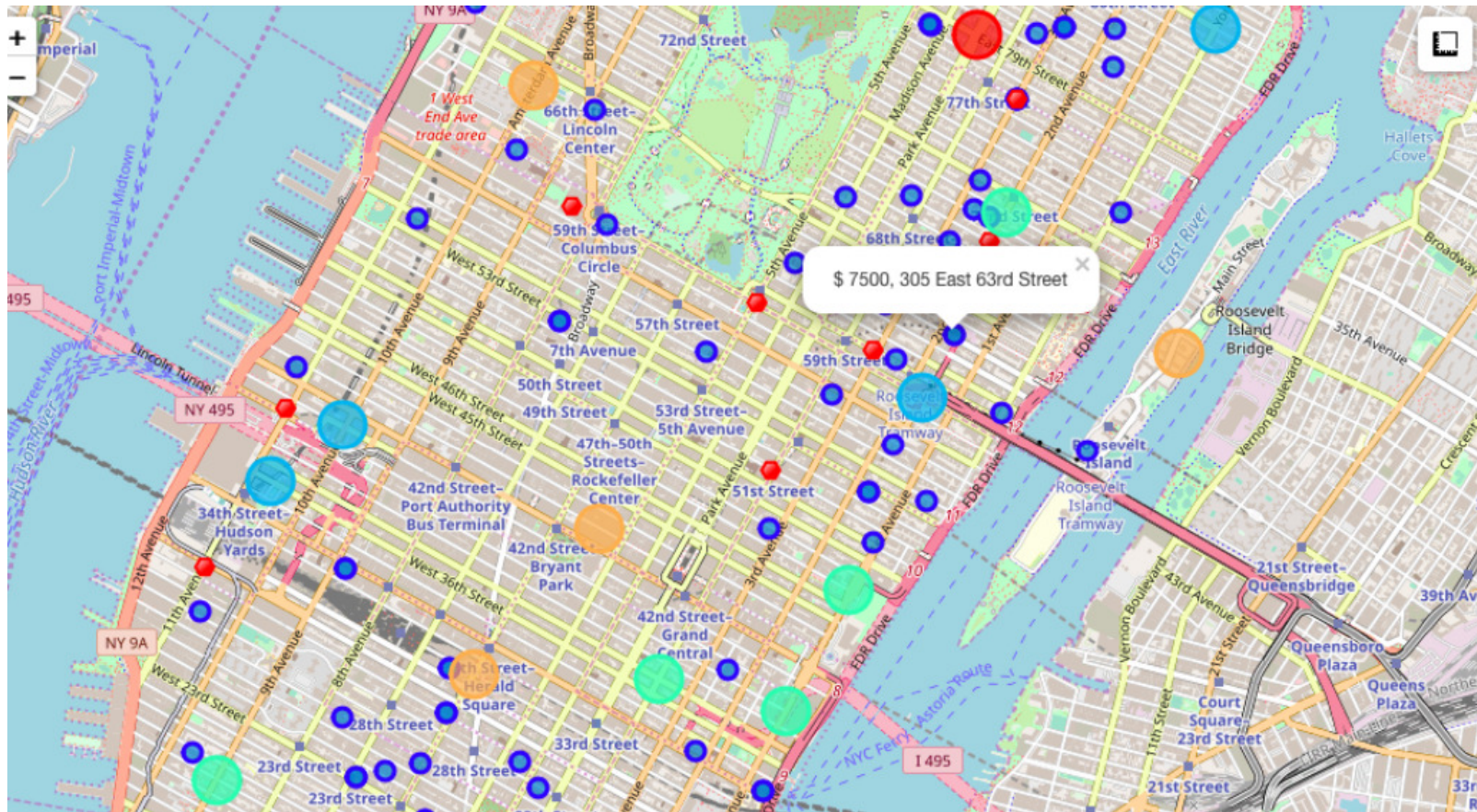


Apartments for rent in Manhattan:



Apartments for Rent Shown in Blue and Subway Stations are shown in Red





Conclusion:

Based on the given constraints, a apartment on rent in Manhattan can be taken in a place closer to Murray Hills , which will take your rent less than \$7000 and all the basic needs can be fulfilled due to near metro station.



Thank You

Yogesh Balkrishna Salve

