```python
from PIL import Image
from statistics import *
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```python
import cse351_hw1_zhang_junhui_112895310
```

```python
airbnb_data = pd.read_csv("AB_NYC_2019.csv")
```

```python
# Question 1
removedAnomaly = cse351_hw1_zhang_junhui_112895310.removeAnomaly(airbnb_data);
```

```python
removedAnomaly
```

Out[5]:

|	id	name	host_id	host_name	neighbourhood_group	neighbourhood	latitude	longitude	room_type	price	minimu
0	2539	Clean & quiet apt home by the park	2787	John	Brooklyn	Kensington	40.64749	-73.97237	Private room	149	
1	2595	Skylit Midtown Castle	2845	Jennifer	Manhattan	Midtown	40.75362	-73.98377	Entire home/apt	225	
2	3647	THE VILLAGE OF HARLEM....NEW YORK !	4632	Elisabeth	Manhattan	Harlem	40.80902	-73.94190	Private room	150	
3	3831	Cozy Entire Floor of Brownstone	4869	LisaRoxanne	Brooklyn	Clinton Hill	40.68514	-73.95976	Entire home/apt	89	
5	5099	Large Cozy 1 BR Apartment In Midtown East	7322	Chris	Manhattan	Murray Hill	40.74767	-73.97500	Entire home/apt	200	
...	...	...	...	...	...	...	...	...	...	...	
48890	36484665	Charming one bedroom - newly renovated rowhouse	8232441	Sabrina	Brooklyn	Bedford-Stuyvesant	40.67853	-73.94995	Private room	70	
48891	36485057	Affordable room in Bushwick/East Williamsburg	6570630	Marisol	Brooklyn	Bushwick	40.70184	-73.93317	Private room	40	
48892	36485431	Sunny Studio at Historical Neighborhood	23492952	Ilgar & Aysel	Manhattan	Harlem	40.81475	-73.94867	Entire home/apt	115	
48893	36485609	43rd St. Time Square-cozy single bed	30985759	Taz	Manhattan	Hell's Kitchen	40.75751	-73.99112	Shared room	55	
48894	36487245	Trendy duplex in the very heart of Hell's Kitchen	68119814	Christophe	Manhattan	Hell's Kitchen	40.76404	-73.98933	Private room	90	

31103 rows × 16 columns

```python
# Question 2A
top5bot5List = cse351_hw1_zhang_junhui_112895310.getTop5Bot5Price(removedAnomaly)
```

```python
top5bot5List
```

```
Out[7]: {'Top5': ['Riverdale', 'Tribeca', 'Flatiron District', 'NoHo', 'SoHo'],
         'Bot5': ['Schuylerville',
          'Hunts Point',
          'New Brighton',
          'Soundview',
          'Far Rockaway']}
```

In [8]:
```python
# Question 2B
cse351_hw1_zhang_junhui_112895310.plotTop5Bot5(top5bot5List, removedAnomaly)
```


Top/Bottom 5 Neighbourhoods
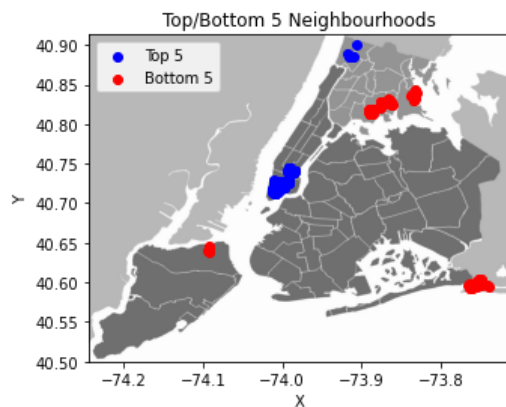
In [9]:
```python
# Question 3
cse351_hw1_zhang_junhui_112895310.createCorrelationHeatMap(removedAnomaly)
```


Correlations
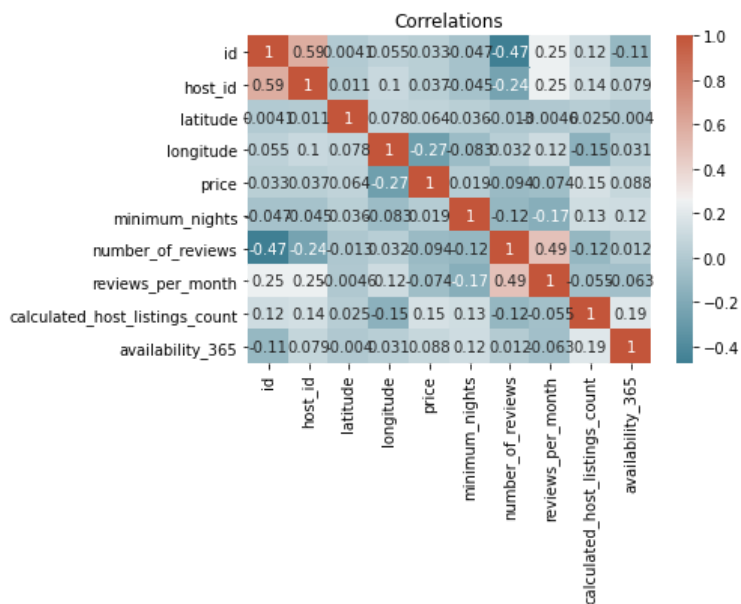
In [10]:
```python
# Question 4A
cse351_hw1_zhang_junhui_112895310.plotByBorough(removedAnomaly)
```

All AirBnb Locations
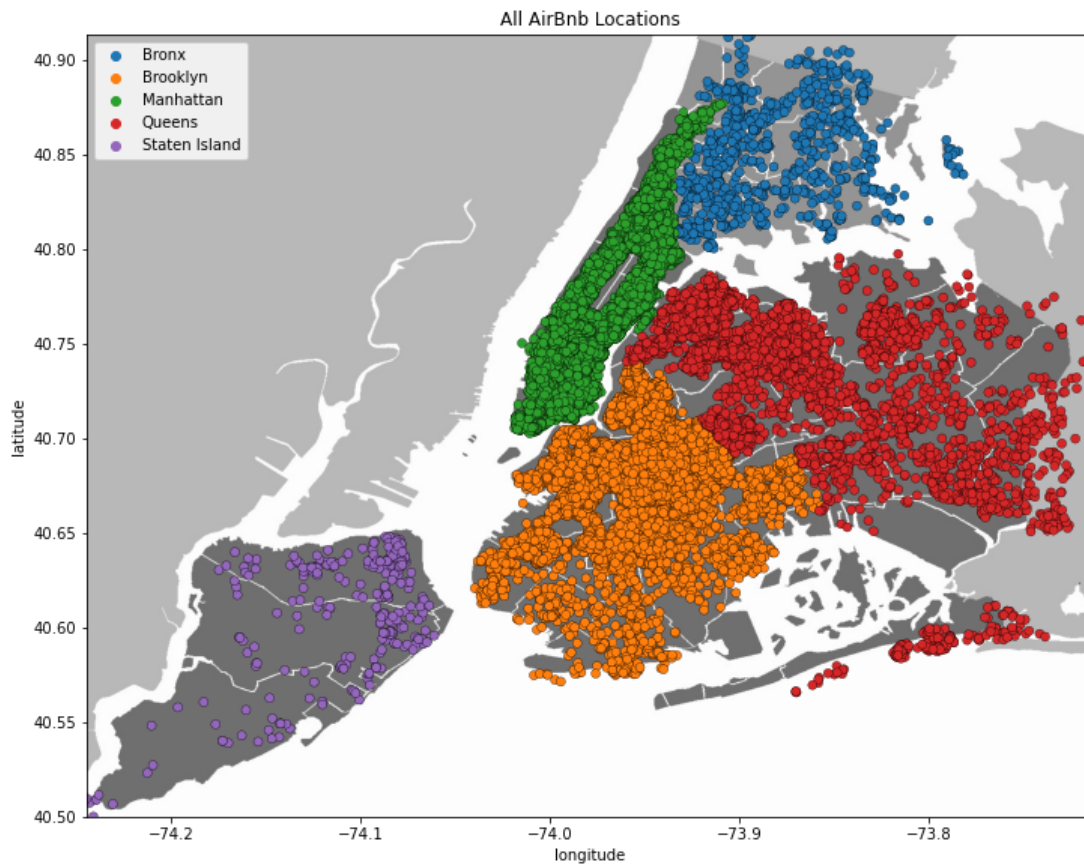
In [11]:
```python
# Question 4B
cse351_hw1_zhang_junhui_112895310.generatePlotByPrice(removedAnomaly)
```

AirBnb Locations By Price
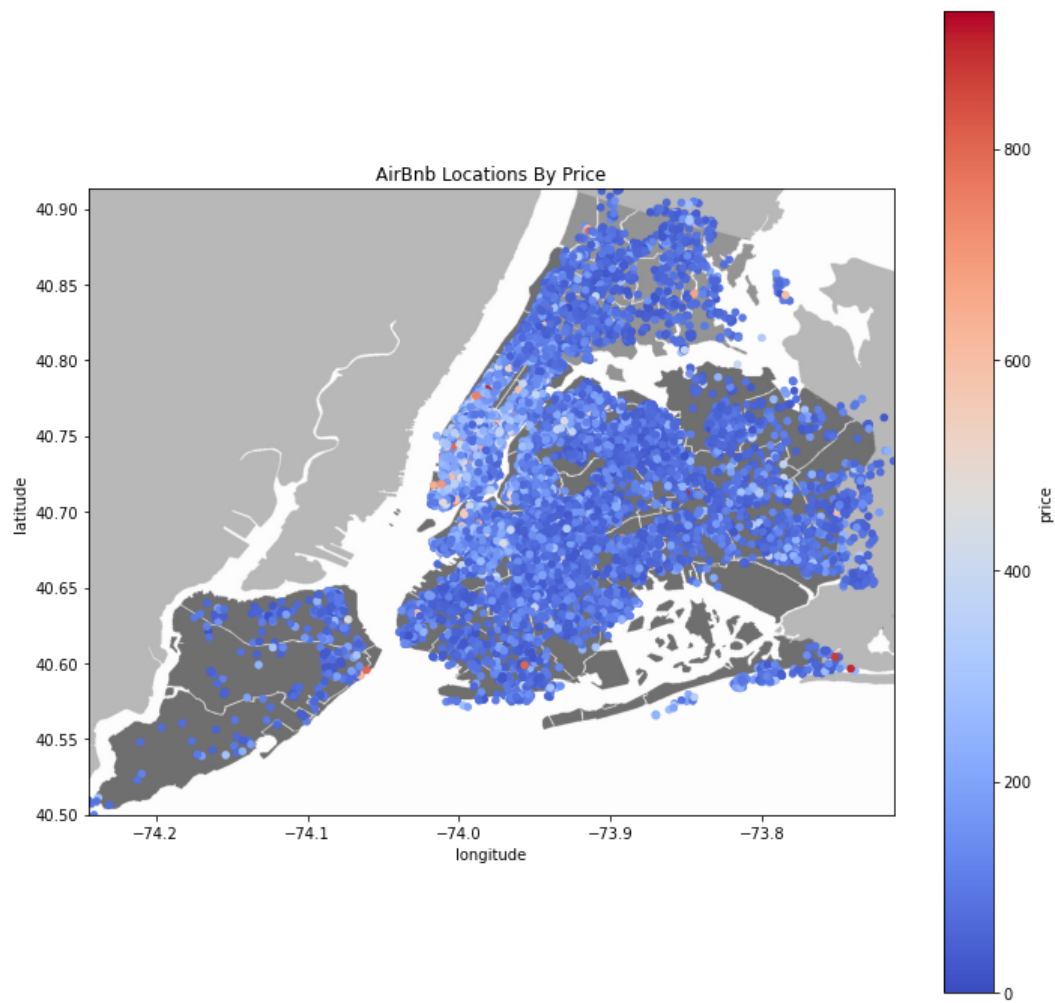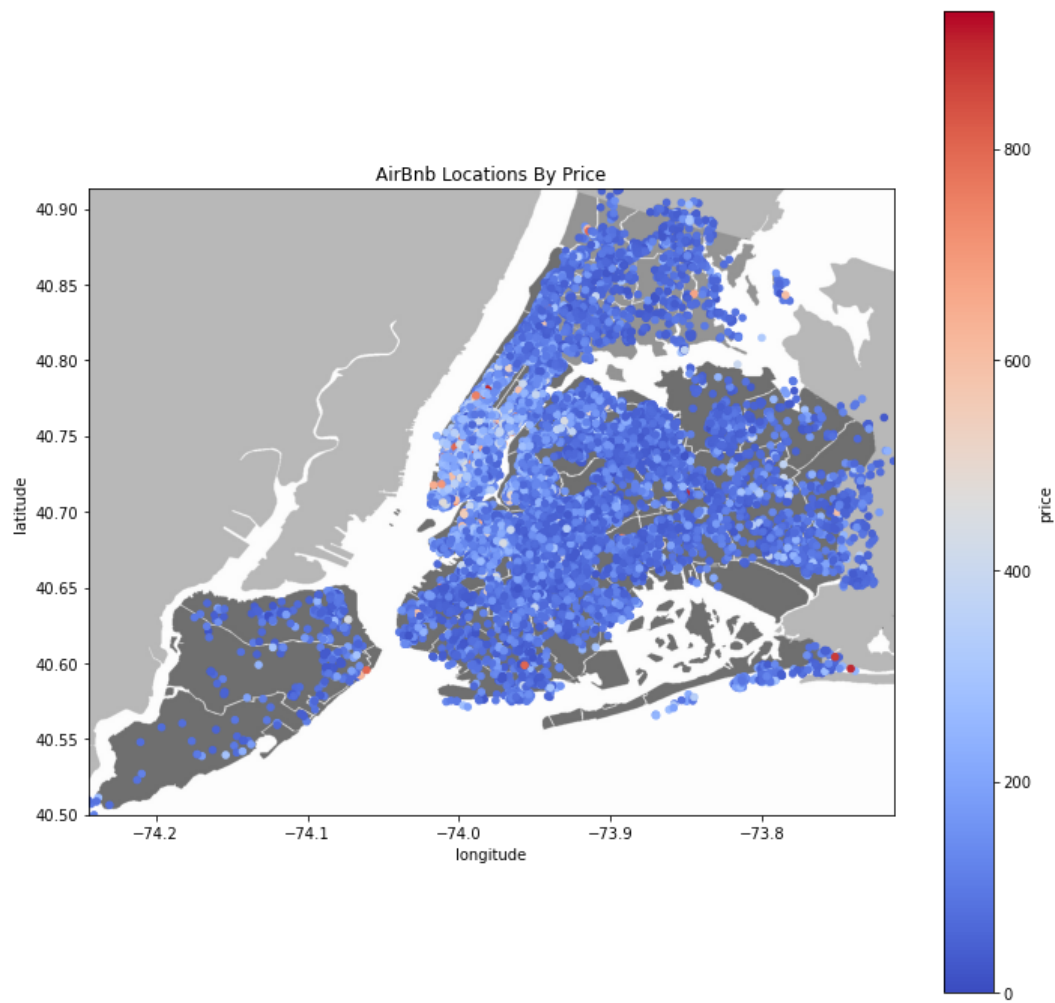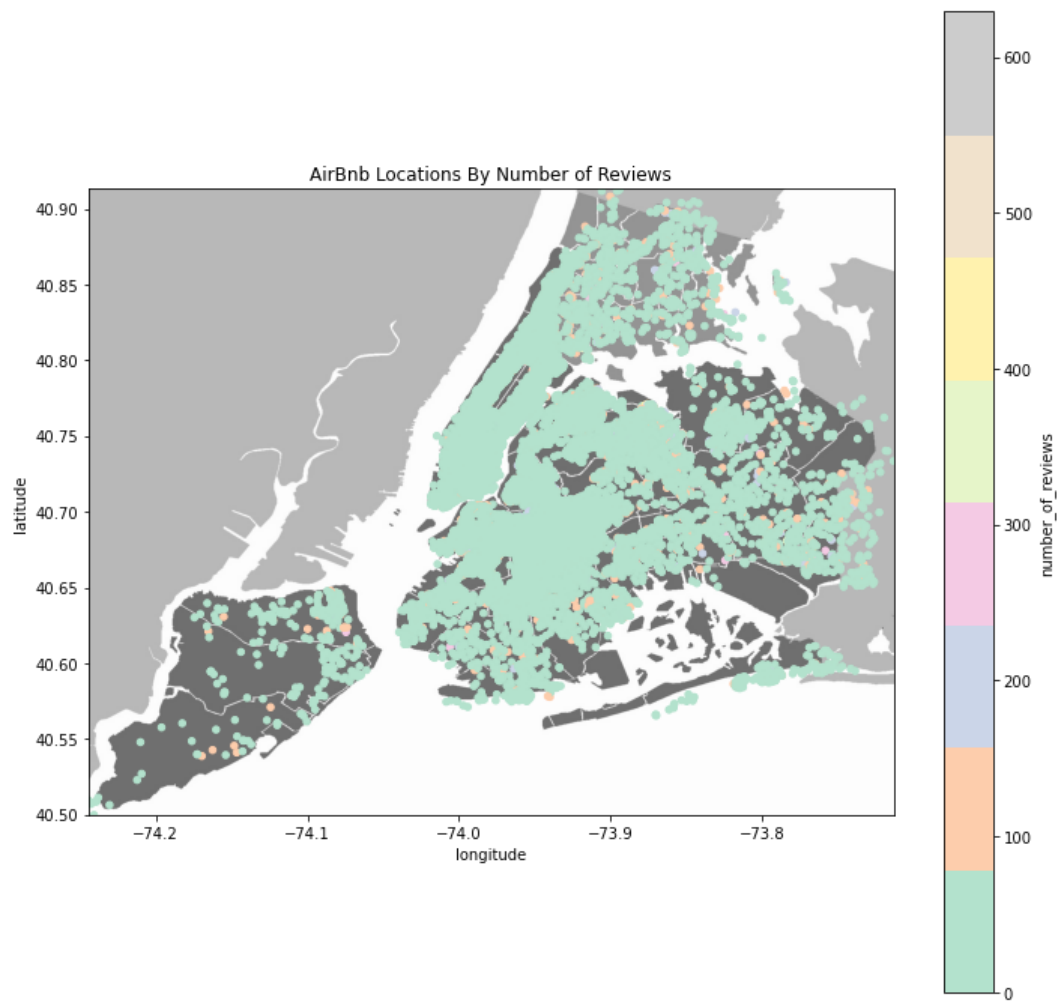
In [12]:
```
# Question 5
cse351_hw1_zhang_junhui_112895310.generateWordCloud(removedAnomaly)
```
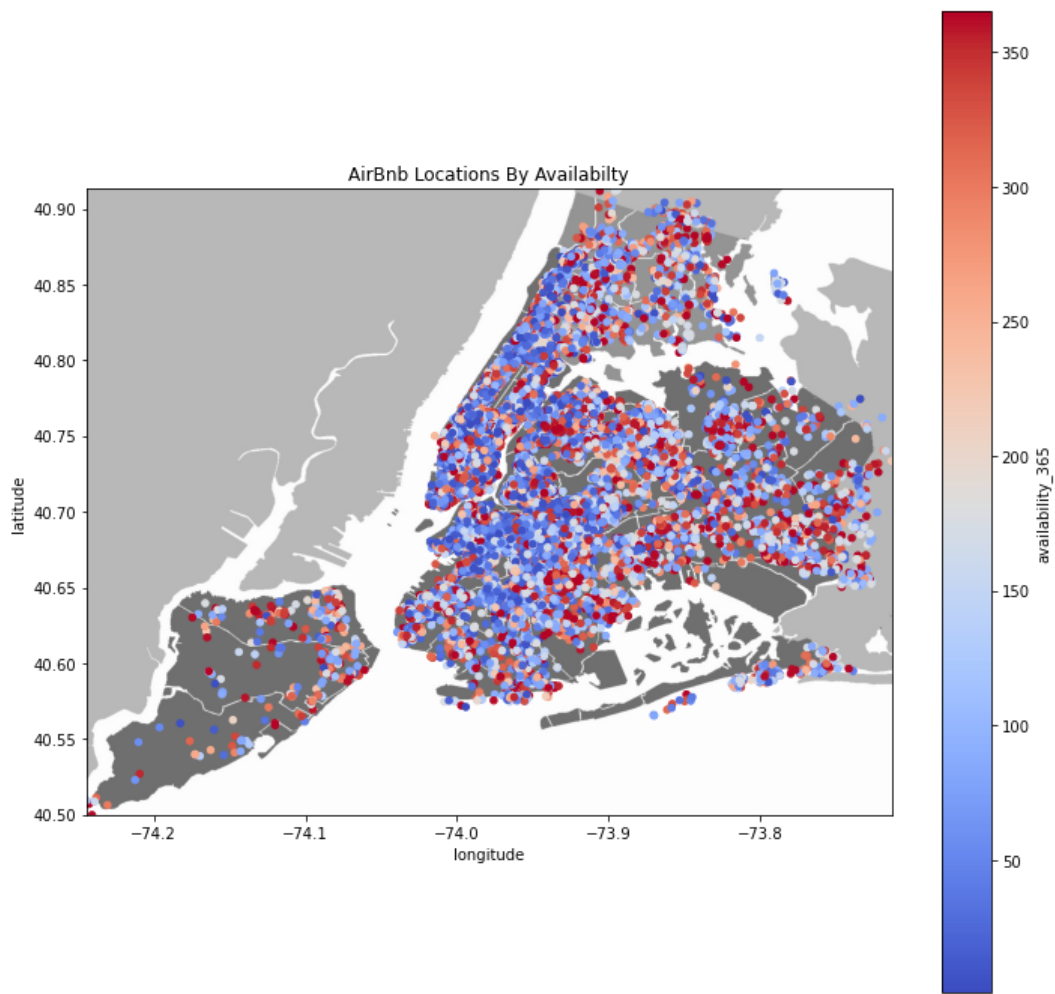
```
# Question 6
cse351_hw1_zhang_junhui_112895310.generatePlotByListings(removedAnomaly)
```

```
cse351_hw1_zhang_junhui_112895310.generatePlotByAvailability(removedAnomaly)
```
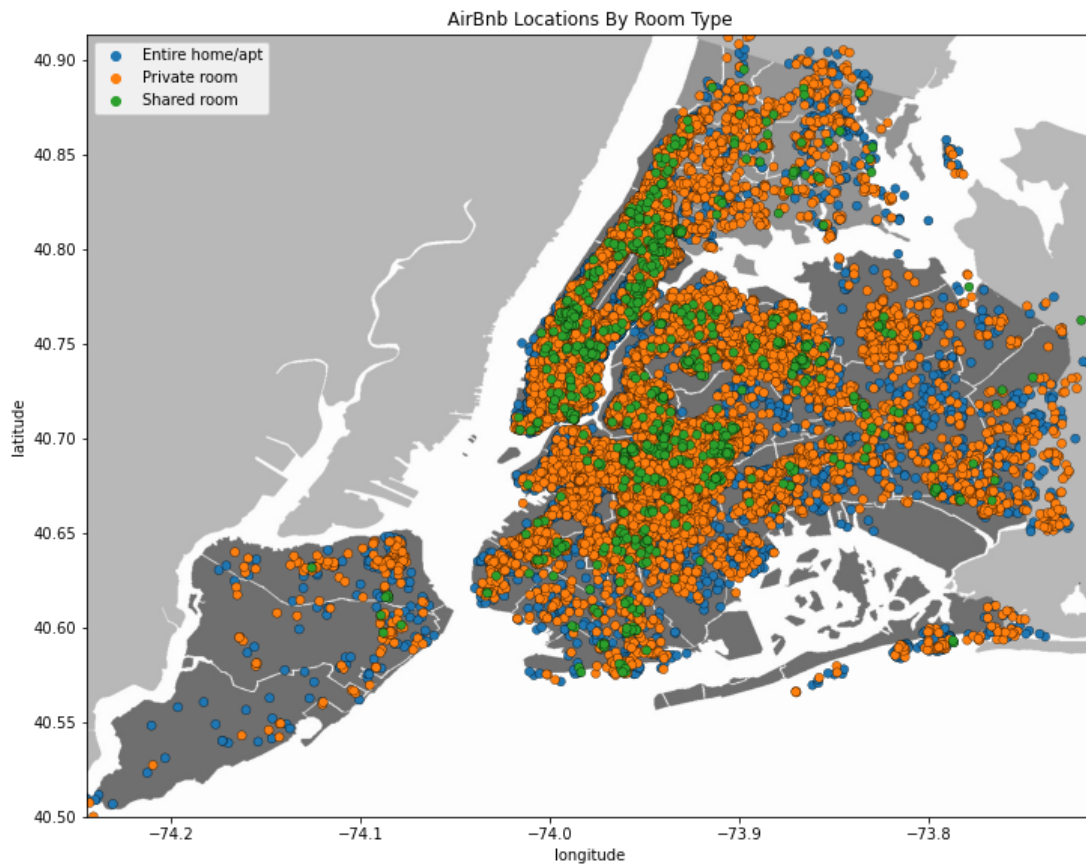
AirBnb Locations By Availabilty

In [15]: `cse351_hw1_zhang_junhui_112895310.generatePlotByPrice(removedAnomaly)`

AirBnb Locations By Price

In [16]: `cse351_hw1_zhang_junhui_112895310.generatePlotByReviews(removedAnomaly)`

AirBnb Locations By Number of Reviews

```
In [ ]:

In [ ]:

In [ ]:

In [17]:   # Question 7
           cse351_hw1_zhang_junhui_112895310.generatePlotByRoomType(airbnb_data)
```

AirBnb Locations By Room Type

In [18]: `cse351_hw1_zhang_junhui_112895310.generatePlotByPrice(removedAnomaly)`

AirBnb Locations By Price

In [19]: `# Explainations in py file`

In [ ]: