

Manhattan Project



Problem Description

My friend consulted me on the optimal location of the restaurant in Manhattan. He would like to open a restaurant in the perfect place, who will be appreciate by every one. so I have to define the best emplacement and the favorite cuisine.

Business Problem

Business Problem: New Yorck is a big city with 19.5 million inhabitants in 2019. it's the favorite place and receive every year a lot of visitors.

Having such vast population and big geographical area, there also exists big competition between businesses. Therefore it became very difficile to decide which area is the better to devellop a new business to get higher revenue.

Target Audience: New Business who wants to open a restaurant in New York.

This project try to solve the above problem by suggesting the Target Audience which are the best locality to open new restaurants and gaining maximum profits in Paris.

Data

For this project, I'll use :

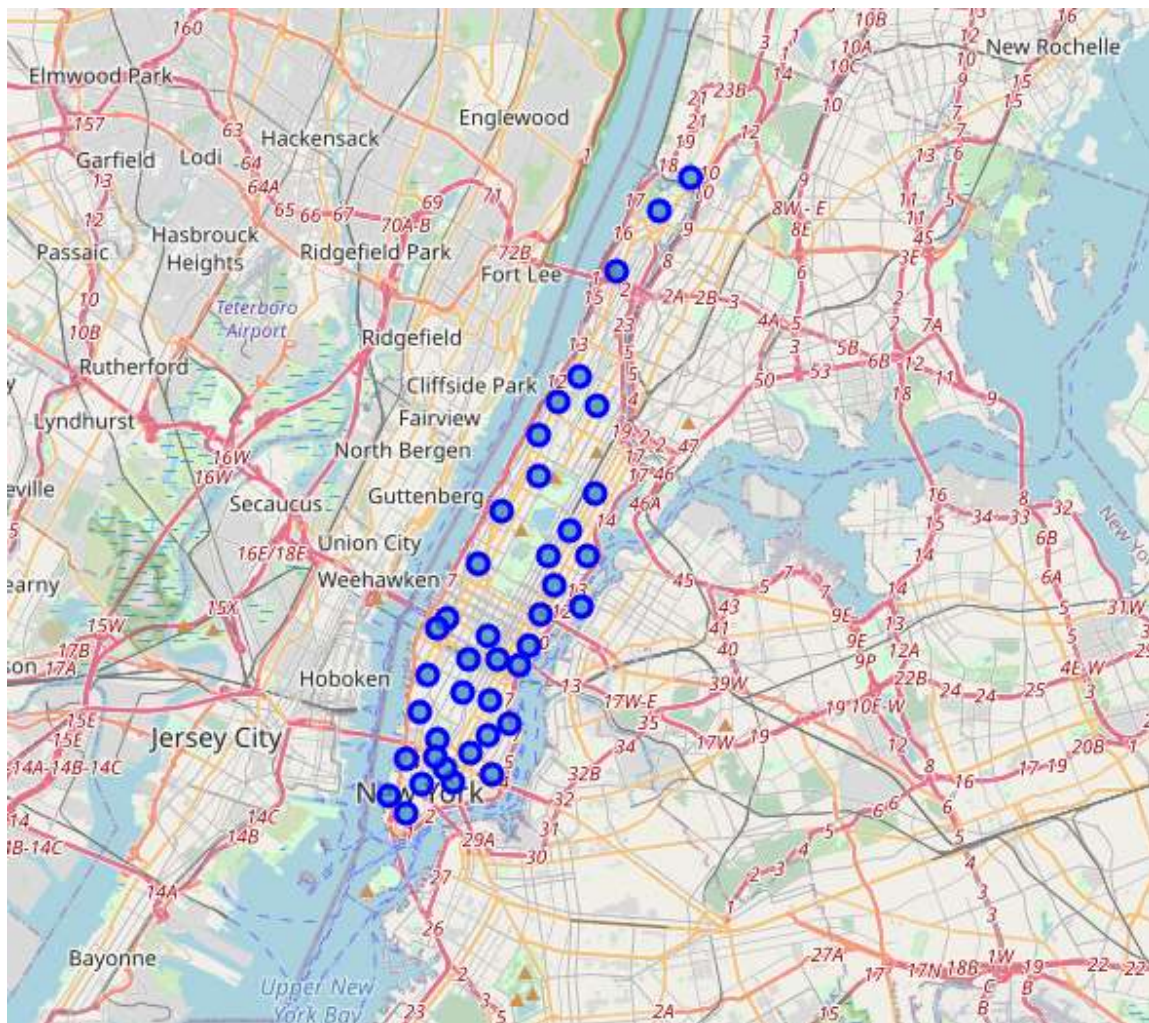
- Borough, Neighborhood, Longitude and Latitude of Paris (for localisation).
- Data about the favorite place in the city.
- Data about the favorit restaurant.

Resolution

- 1 Get the data

	Borough	Neighborhood	Latitude	Longitude
6	Manhattan	Marble Hill	40.876551	-73.910660
100	Manhattan	Chinatown	40.715618	-73.994279
101	Manhattan	Washington Heights	40.851903	-73.936900
102	Manhattan	Inwood	40.867684	-73.921210
103	Manhattan	Hamilton Heights	40.823604	-73.949688

- 2 Choose the Borough of Manhattan and then apply a filter on the neighborhood.
- 3 Get the data from the API



- 4 Define the frequency depending the venue


```

----Manhattan Valley----
      venue  freq
0      Coffee Shop  0.09
1           Bar  0.07
2 Mexican Restaurant  0.07
3      Yoga Studio  0.05
4      Pizza Place  0.05

```

```

----Manhattanville----
      venue  freq
0      Coffee Shop  0.10
1 Seafood Restaurant  0.05
2 Mexican Restaurant  0.05
3      Deli / Bodega  0.05
4 Italian Restaurant  0.05

```

- 5 Sort and get the top 10

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Manhattan Valley	Coffee Shop	Bar	Mexican Restaurant	Yoga Studio	Pizza Place	Ethiopian Restaurant	Hostel	Health Food Store	Hawaiian Restaurant	Wings Joint
1	Manhattanville	Coffee Shop	Italian Restaurant	Mexican Restaurant	Seafood Restaurant	Deli / Bodega	American Restaurant	Climbing Gym	Japanese Curry Restaurant	Indian Restaurant	Café

- 6 By Using K-means, define the popularity

	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Manhattan	Manhattanville	40.816934	-73.957385	1	Coffee Shop	Italian Restaurant	Mexican Restaurant	Seafood Restaurant	Deli / Bodega	American Restaurant	Climbing Gym	Japanese Curry Restaurant	Indian Restaurant	Café
1	Manhattan	Manhattan Valley	40.797307	-73.964286	0	Coffee Shop	Bar	Mexican Restaurant	Yoga Studio	Pizza Place	Ethiopian Restaurant	Hostel	Health Food Store	Hawaiian Restaurant	Wings Joint

- 7 Get the menu
- ```
{
 'menuId': 'm3bt0ar72az5v3osre7420g9u',
 'name': 'Main Menu',
 'description': '',
 'entries': {
 'count': 6,
 'items': [
 {
 'sectionId': 's2161454',
 'name': 'Antipasti',
 'entries': {
 'count': 8,
 'items': [
 {
 'entryId': '16555304',
 'name': 'Roasted Garlic Bread',
 'description': 'Whole cloves roasted until they are sweet, spread over rustic italian bread.',
 'prices': ['5.95'],
 'price': '5.95',
 'options': [],
 'additions': []
 },
 {
 'entryId': '16555307',
 'name': 'Grilled Portobello Mushroom',
 'description': 'Over sauteed spinach',
 'prices': ['8.95'],

```

- 'price': '8.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555308',
- 'name': 'Steamed Artichoke',
- 'description': 'Served with a velvety dip of lemon and e.v.
- oil',
- 'prices': ['8.95'],
- 'price': '8.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555310',
- 'name': 'Olive and Cheese Bowl',
- 'description': 'A sampling of gourmet olives & aged cheeses
- imported from southern italy',
- 'prices': ['8.95'],
- 'price': '8.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555312',
- 'name': 'Fresh Steaming Mussels',
- 'description': 'In tomato basil or white wine & parsley',
- 'prices': ['10.95'],
- 'price': '10.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555314',
- 'name': 'Grilled Eggplant',
- 'description': 'Topped with ricotta di bufala & homemade moz
- zarella, in our house tomato sauce',
- 'prices': ['9.95'],
- 'price': '9.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555316',
- 'name': 'Vegetable Ceci',
- 'description': 'Grilled squash medallions capped with mozzar
- ella di bufala and a warm chickpea puree. add grilled portobello and
- make it an entree portion for \$3.00',
- 'prices': ['9.95'],
- 'price': '9.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555319',
- 'name': 'Bresaola Valtellina',
- 'description': 'Served with mesclun, artichoke hearts, roast
- ed pepper, and parmiggiano reggiano',
- 'prices': ['11.95'],
- 'price': '11.95',

- 'options': [],
- 'additions': []]]]]},
- {'sectionId': 's2161458',
- 'name': 'Insalate',
- 'entries': {'count': 5,
- 'items': [{'entryId': '16555321',
- 'name': 'Insalata Mista',
- 'description': 'Share it family style',
- 'prices': ['6.00'],
- 'price': '6.00',
- 'options': [],
- 'additions': []},
- {'entryId': '16555324',
- 'name': 'Fresh Shaved Fennel and Greens',
- 'description': 'With aged parmiggiano and extra virgin oil',
- 'prices': ['7.95'],
- 'price': '7.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555328',
- 'name': 'Insalata Caprese',
- 'description': 'Ripe red tomatoes, basil and fresh mozzarell
- a di bufala with e.v. oil',
- 'prices': ['9.95'],
- 'price': '9.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555331',
- 'name': 'Insalata Tre Colori',
- 'description': 'Arugula, raddichio, endive & shaved grana pa
- dano, drizzled with 15 yr. balsamico',
- 'prices': ['9.95'],
- 'price': '9.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555336',
- 'name': 'Insalata Pisticci',
- 'description': 'A tall bed of baby spinach, with pancetta an
- d crisp roasted potatoes',
- 'prices': ['10.95'],
- 'price': '10.95',
- 'options': [],
- 'additions': []]]]]},
- {'sectionId': 's2161466',
- 'name': 'Zuppe',
- 'entries': {'count': 1,
- 'items': [{'entryId': '16555343',
- 'name': 'Minestrone',
- 'prices': ['2.00'],

- 'price': '2.00',
- 'options': [],
- 'additions': [ ] ] ] ] },
- { 'sectionId': 's2161468',
- 'name': 'Entrees',
- 'entries': { 'count': 5,
- 'items': [ { 'entryId': '16555354',
- 'name': 'House Meatballs',
- 'description': 'Over polenta served in steaming tomato sauce
- ,
- 'prices': [ '12.95' ],
- 'price': '12.95',
- 'options': [],
- 'additions': [ ] },
- { 'entryId': '16555360',
- 'name': 'Chicken Grilled in Sage',
- 'description': 'Beneath a bed of baby arugula and chopped pl
- um tomatoes',
- 'prices': [ '14.95' ],
- 'price': '14.95',
- 'options': [],
- 'additions': [ ] },
- { 'entryId': '16555366',
- 'name': 'Baked Tilapia',
- 'description': 'With oregano pesto, white wine, and slices o
- f baked tomato',
- 'prices': [ '15.95' ],
- 'price': '15.95',
- 'options': [],
- 'additions': [ ] },
- { 'entryId': '16555373',
- 'name': 'Grilled Salmon Filet',
- 'description': 'Served medium rare with satueed broccoli rab
- e & potatoes',
- 'prices': [ '16.95' ],
- 'price': '16.95',
- 'options': [],
- 'additions': [ ] },
- { 'entryId': '16555378',
- 'name': 'Grilled Skirt Steak',
- 'description': 'Over a bed of white beans and watercress',
- 'prices': [ '19.95' ],
- 'price': '19.95',
- 'options': [],
- 'additions': [ ] ] ] ] },
- { 'sectionId': 's2161471',
- 'name': 'Le Buone Paste',

- 'description': 'Share a Big Bowl of Spaghetti Pomodoro with Your Amici Single Portion \$7.95, Sharing \$7.00 Ea., with Meatballs Add \$4.00',
- 'entries': {'count': 8,
- 'items': [{ 'entryId': '16555385',
- 'name': 'Prosciutto E Spinaci',
- 'description': 'A light, rustic pasta tossed with prosciutto and fresh spinach in garlic and e.v. oil',
- 'prices': ['10.95'],
- 'price': '10.95',
- 'options': [],
- 'additions': []},
- { 'entryId': '16555391',
- 'name': 'Orecchiette Broccoli Rabe',
- 'description': 'Bitter greens and peperoncino in a rich, seductive broth with spicy sausage add \$4.00',
- 'prices': ['10.95'],
- 'price': '10.95',
- 'options': [],
- 'additions': []},
- { 'entryId': '16555396',
- 'name': 'Maltagliati with Ricotta',
- 'description': 'Spinach and lamb savor this delicious, juicy lamb ragu, with fresh spinach and a dollop of creamy ricotta',
- 'prices': ['13.95'],
- 'price': '13.95',
- 'options': [],
- 'additions': []},
- { 'entryId': '16555402',
- 'name': 'Penne Pisticci',
- 'description': 'In a yellow and red vine tomato sauce with chunks of melted homemade mozzarella',
- 'prices': ['12.95'],
- 'price': '12.95',
- 'options': [],
- 'additions': []},
- { 'entryId': '16555412',
- 'name': 'Whole Wheat Penne',
- 'description': 'Tossed with baked tomato, chopped green olives and ricotta salata',
- 'prices': ['12.95'],
- 'price': '12.95',
- 'options': [],
- 'additions': []},
- { 'entryId': '16555419',
- 'name': 'Fresh Ravioli',
- 'description': 'Stuffed with tuscan beans and served with spinach in a light tomato cream sauce',
- 'prices': ['14.95'],
- 'price': '14.95',



- 'options': [],
- 'additions': []},
- {'entryId': '16555425',
- 'name': 'Fettucine Ai Funghi',
- 'description': 'Homemade fresh fettucine with a trio of wild
- , earthy mushrooms',
- 'prices': ['14.95'],
- 'price': '14.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555434',
- 'name': "Michael's Pasta",
- 'description': 'A bowl of fresh cavatelli, baby squashes and
- fresh spinach tossed in light tomato and topped with aged caciotta c
- heese',
- 'prices': ['15.95'],
- 'price': '15.95',
- 'options': [],
- 'additions': []}}},
- {'sectionId': 's2161481',
- 'name': 'Sides',
- 'entries': {'count': 3,
- 'items': [{'entryId': '16555444',
- 'name': 'Creamy Polenta',
- 'description': 'With melted provolone cheese',
- 'prices': ['5.95'],
- 'price': '5.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555454',
- 'name': 'Sauteed Spinach Or Broccoli Rabe',
- 'description': 'In garlic and e.v. oil',
- 'prices': ['5.95'],
- 'price': '5.95',
- 'options': [],
- 'additions': []},
- {'entryId': '16555462',
- 'name': 'Roasted Rosemary Potatoes',
- 'prices': ['5.95'],
- 'price': '5.95',
- 'options': [],
- 'additions': []}}}}}}}]

## Discussion / recommendations

According to our result, we can only have access to the information in Manhattan. So, the optimal location is the Manhattan Valley. As our final result of the popularity, we can see the coffe shop are

more welcomed in Manhattan Valley. So, it also may be a good choice to choose to open a coffee shop