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# HOUSING SALE PRICES & VENUES DATA ANALYSIS OF TORONTO AND NEW YORK

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# Introduction

Stockholders in Toronto would be very interested in locations in New York that are similar to Toronto in the top venues because they want to target similar location with similar approaches. Hence in this report we will help the stockholders in Toronto to find new locations to target in New York

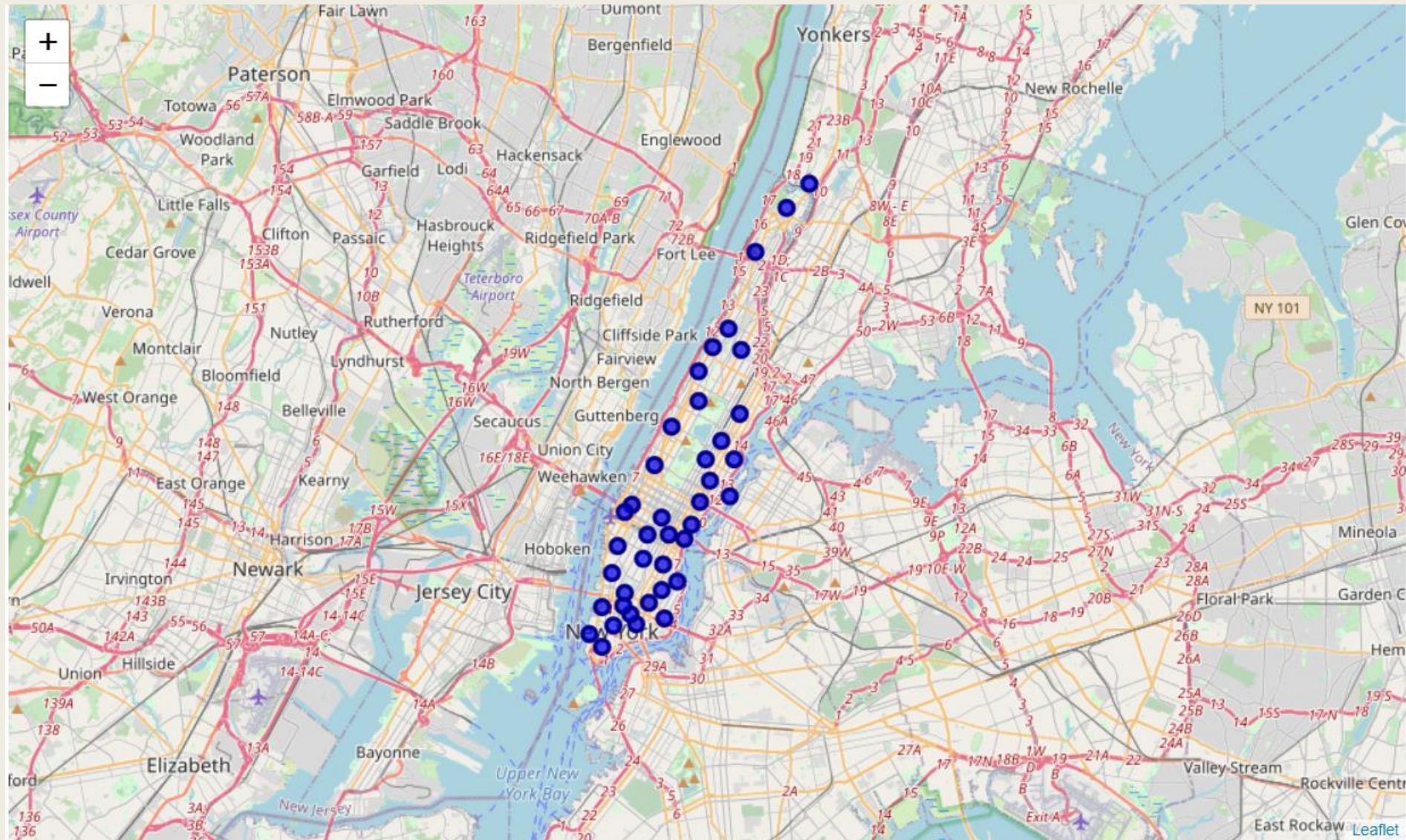
A map of the Greater Toronto Area (GTA) showing bus routes and stations. The map includes labels for Vaughan, Mississauga, and Toronto. Key locations marked include Downsview Airport and Billy Bishop Toronto City Airport. Numerous bus routes are indicated by red lines with route numbers (e.g., 427, 122, 139, 145, 149, 157, 158, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 95

# A glimpse of Toronto venues

	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	Berczy Park	Coffee Shop	Cocktail Bar	Bakery	Farmers Market	Pharmacy	Restaurant	Beer Bar	Cheese Shop	Seafood Restaurant	Belgian Restaurant
1	Brockton, Parkdale Village, Exhibition Place	Café	Coffee Shop	Breakfast Spot	Nightclub	Gym	Stadium	Burrito Place	Restaurant	Climbing Gym	Pet Store
2	CN Tower, King and Spadina, Railway Lands, Har...	Airport Service	Airport Lounge	Airport Terminal	Boat or Ferry	Harbor / Marina	Boutique	Rental Car Location	Bar	Plane	Sculpture Garden
3	Central Bay Street	Coffee Shop	Sandwich Place	Italian Restaurant	Café	Middle Eastern Restaurant	Salad Place	Bubble Tea Shop	Burger Joint	Yoga Studio	Ramen Restaurant
4	Christie	Grocery Store	Café	Park	Baby Store	Candy Store	Restaurant	Italian Restaurant	Athletics & Sports	Coffee Shop	Nightclub



# Manhattan data

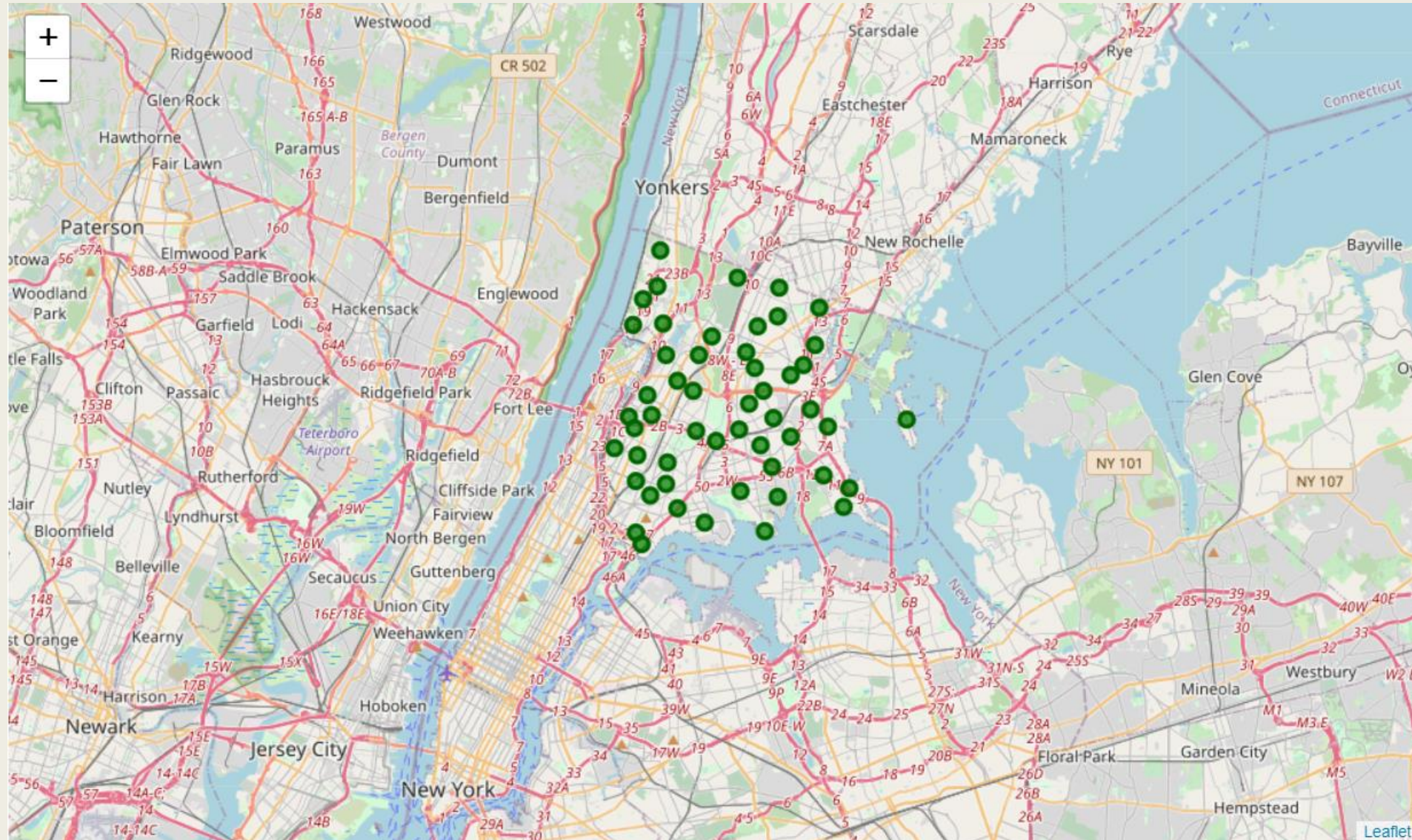


# A glimpse of Manhattan venues

	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	Battery Park City	Park	Coffee Shop	Hotel	Boat or Ferry	Gym	Memorial Site	Playground	Shopping Mall	Clothing Store	BBQ Joint
1	Carnegie Hill	Coffee Shop	Café	Yoga Studio	Grocery Store	Bookstore	French Restaurant	Pizza Place	Gym	Wine Shop	Bar
2	Central Harlem	Seafood Restaurant	Chinese Restaurant	Fried Chicken Joint	African Restaurant	American Restaurant	French Restaurant	Bar	Gym / Fitness Center	Public Art	Grocery Store
3	Chelsea	Coffee Shop	Art Gallery	Bakery	American Restaurant	French Restaurant	Italian Restaurant	Ice Cream Shop	Seafood Restaurant	Cycle Studio	Thai Restaurant
4	Chinatown	Chinese Restaurant	Bakery	Cocktail Bar	Hotpot Restaurant	American Restaurant	Dessert Shop	Optical Shop	Spa	Salon / Barbershop	Asian Restaurant



# Bronx data

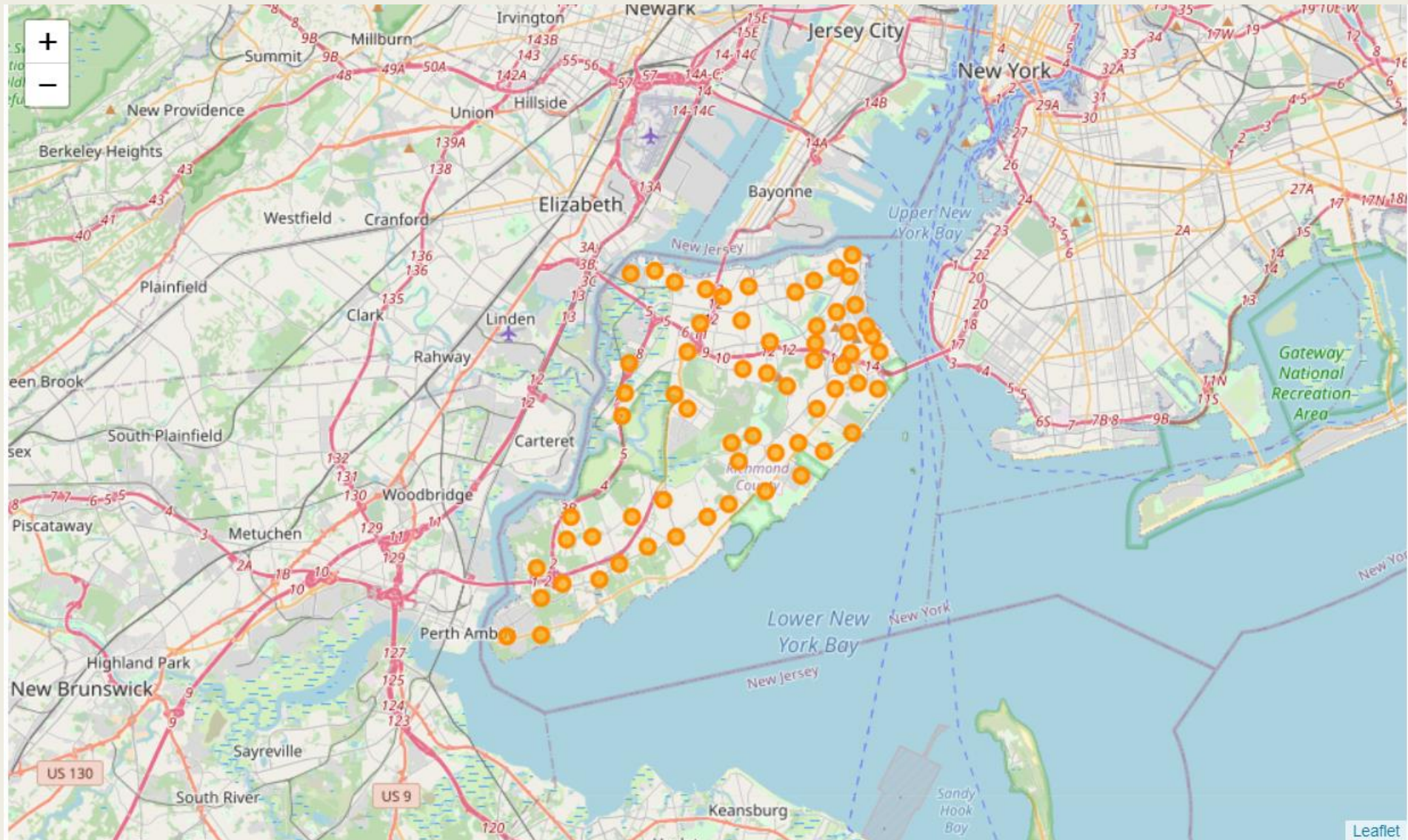


# A glimpse of Bronx venues

	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	Allerton	Pizza Place	Supermarket	Discount Store	Bus Station	Deli / Bodega	Spa	Check Cashing Service	Electronics Store	Pharmacy	Donut Shop
1	Baychester	Bank	Donut Shop	Mattress Store	Burger Joint	Mexican Restaurant	Bus Station	Spanish Restaurant	Supermarket	Electronics Store	Sandwich Place
2	Bedford Park	Chinese Restaurant	Pizza Place	Diner	Mexican Restaurant	Sandwich Place	Deli / Bodega	Food Truck	Donut Shop	Spanish Restaurant	Discount Store
3	Belmont	Italian Restaurant	Deli / Bodega	Pizza Place	Bakery	Dessert Shop	Bank	Grocery Store	Sandwich Place	Donut Shop	Fish Market
4	Bronxdale	Chinese Restaurant	Spanish Restaurant	Gym	Pizza Place	Mexican Restaurant	Eastern European Restaurant	Bank	Breakfast Spot	Italian Restaurant	Convenience Store



# Staten Island data



# A glimpse of Staten Island venues

	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	Annadale	Pizza Place	Restaurant	American Restaurant	Diner	Sushi Restaurant	Train Station	Liquor Store	Bar	Park	Farmers Market
1	Arden Heights	Deli / Bodega	Bus Stop	Coffee Shop	Pharmacy	Pizza Place	Yoga Studio	Farmers Market	Food & Drink Shop	Food	Flower Shop
2	Arlington	Bus Stop	Deli / Bodega	American Restaurant	Boat or Ferry	Liquor Store	Grocery Store	Fast Food Restaurant	Food Truck	Food & Drink Shop	Food
3	Arrochar	Pizza Place	Italian Restaurant	Bus Stop	Deli / Bodega	Pharmacy	Sandwich Place	Middle Eastern Restaurant	Outdoors & Recreation	Supermarket	Food Truck
4	Bay Terrace	Supermarket	Italian Restaurant	Sushi Restaurant	Home Service	Grocery Store	Playground	Donut Shop	Salon / Barbershop	Shipping Store	Insurance Office

# Analysis results

We will be using **K-Means** as a clustering method and cluster Toronto with each of New York boroughs

And we will show the cluster results for each borough in the view of number of Toronto's and the borough's neighborhoods in each cluster

	Manhattan	Toronto
Cluster		
0	40	33
1	0	1
2	0	5

	Bronx	Toronto
Cluster		
0	45	1
1	6	33
2	1	5

	Staten Island	Toronto
Cluster		
0	2	4
1	39	35
2	21	0



# Results and Discussion

- Our analysis shows that although the three boroughs we studied are very similar to Toronto but we found a borough that is the most similar to Toronto, so we focused our attention to Staten Island.
- After directing our attention to Staten Island, we provide more info of its neighborhoods and link the similar neighborhoods in Toronto and Staten Island to each other.
- Result of all this is a list of Toronto's neighborhoods and their similar ones in Staten Island. This, of course, does not imply that those neighborhoods are actually optimal locations for a business moved from Toronto to New York! Purpose of this analysis was to only provide info on.
- Recommended neighborhoods should be considered only as a starting point for more detailed analysis which could eventually result in location which has also other factors taken into account and all other relevant conditions met.

# Conclusions

Purpose of this project was to find an optimal location for a business moved from Toronto to New York in order to aid stakeholders in narrowing down the search for optimal location in New York boroughs to target.

By using Foursquare to gather data and clustering Toronto's data with each borough's data we have first identified the borough that is the most similar to Toronto (Staten Island), and then we list the similar neighborhoods to be used as starting points for final exploration by stakeholders.

# Future directions

Final decision on optimal neighborhood to be targeted will be made by stakeholders based on specific characteristics of neighborhoods and locations in every recommended neighborhood.



THANK YOU

