



AirBnB Hunters

On the Hunt for NYC Investment Rental Properties



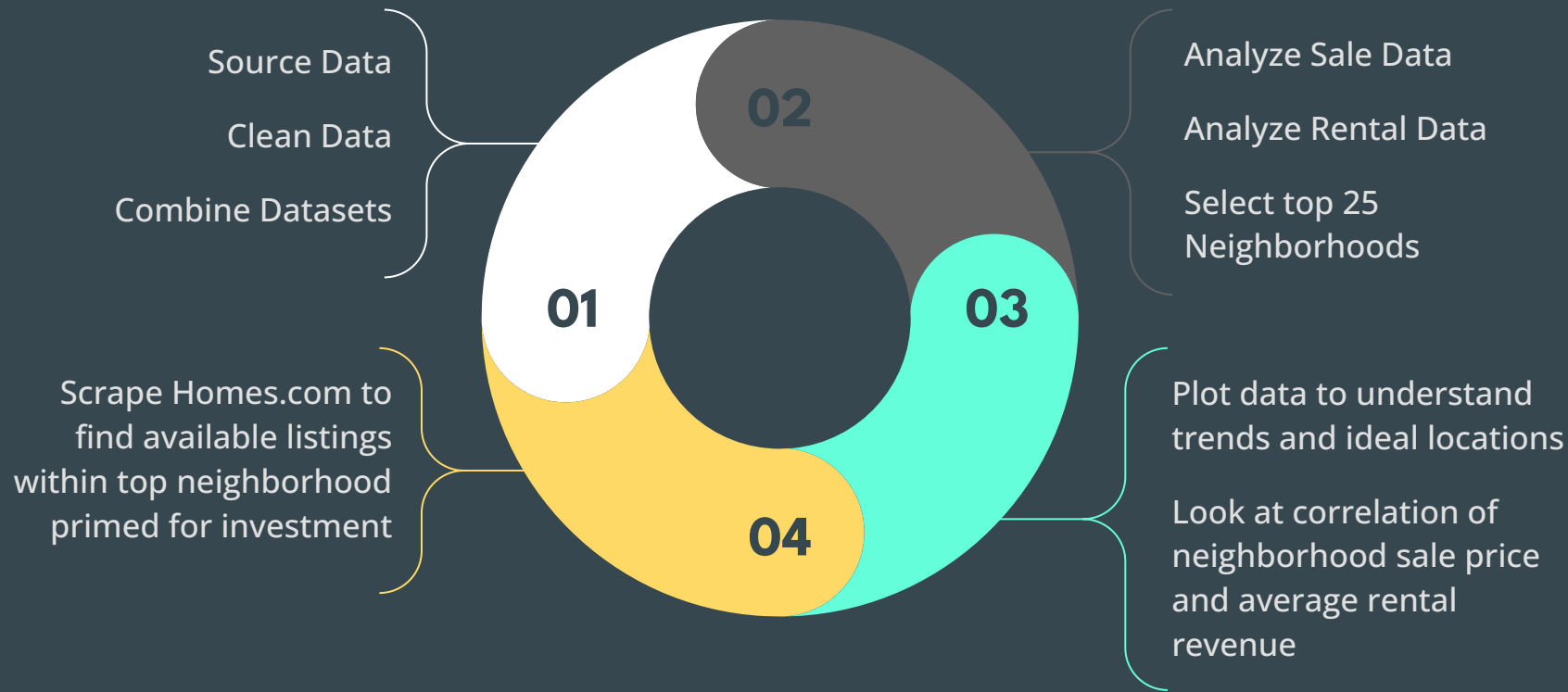
Dane, Todd, Sreya & Patricia

It's possible to **identify optimal locations for real estate investment in NYC** by analyzing **AirBnB nightly rental data** and **NYC sales prices**

Questions To Answer:

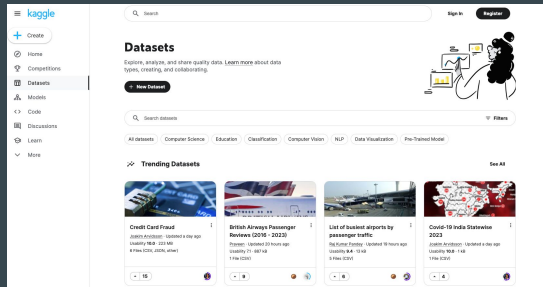
- Where is the optimal location to buy a rental property in NYC based on nightly revenue from an AirBnB?
 - Where are sale prices falling within NYC neighborhoods in order isolate attractive neighborhoods?
 - What are the top 25 neighborhoods to consider?
 - What are available housing units to buy within the ideal neighborhood?
-

Our Process

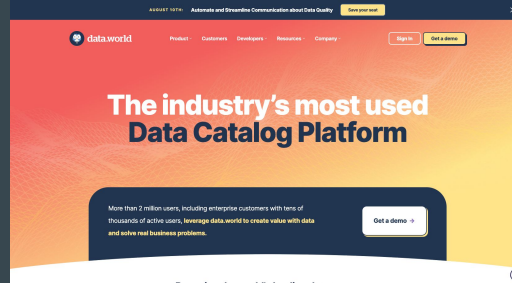


Data Sources Explored

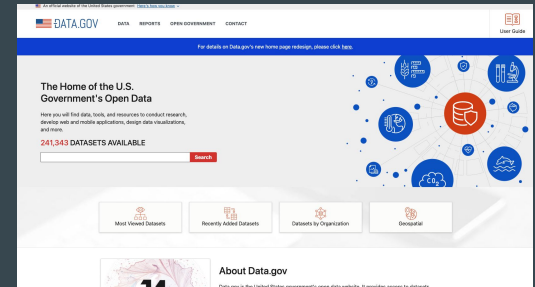
Kaggle



Data.world



Data.gov



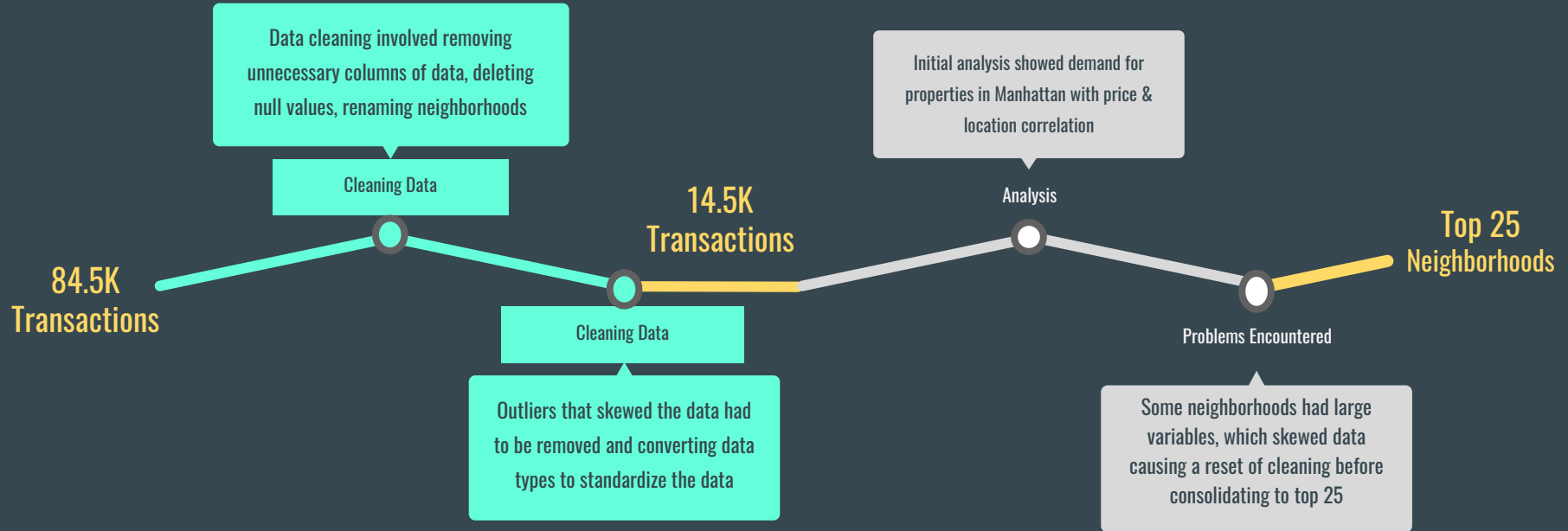
Sale Prices in NY:

- <https://www.kaggle.com/datasets/new-york-city/nyc-property-sales>

AirBnB New York:

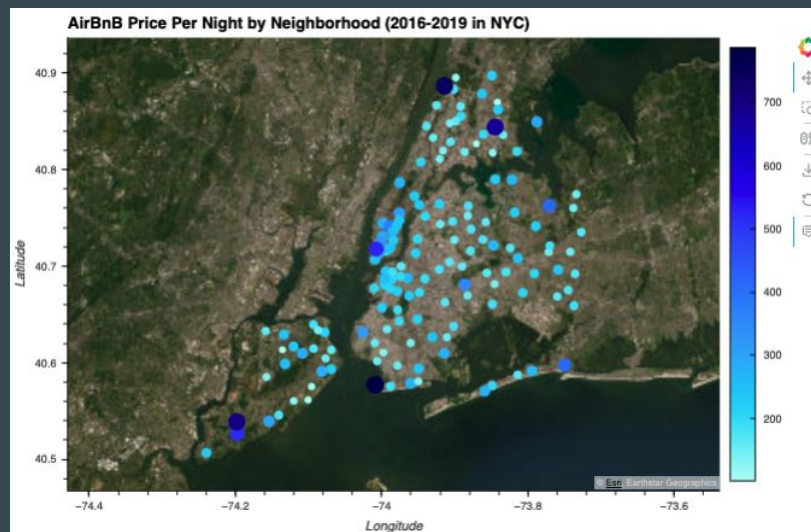
- <https://www.kaggle.com/datasets/dgomonov/new-york-city-airbnb-open-data>

Data cleanup and Exploration

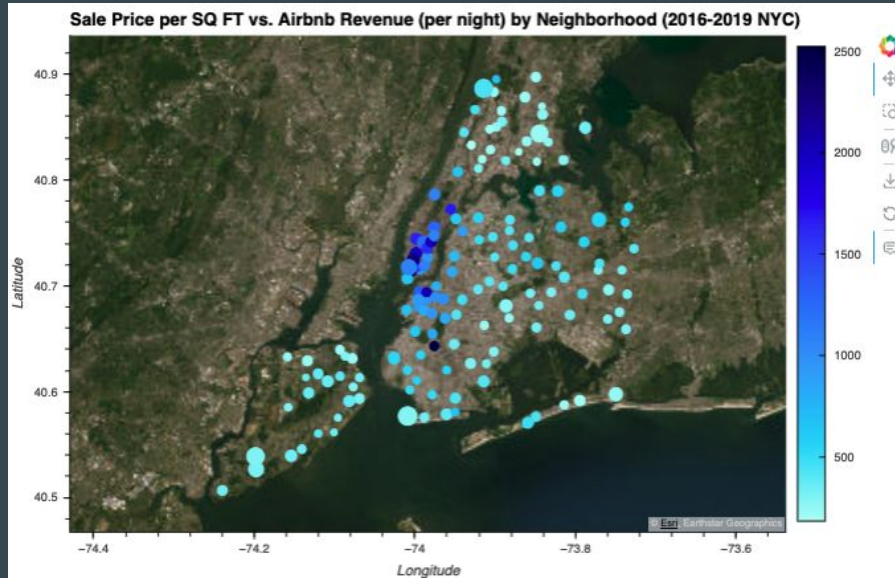


Understanding the Datasets: Price Segmentation

- **Grouped datasets by neighborhood** to identify key neighborhoods
- Helped categorize neighborhoods into different segments based on property prices and potential rental income

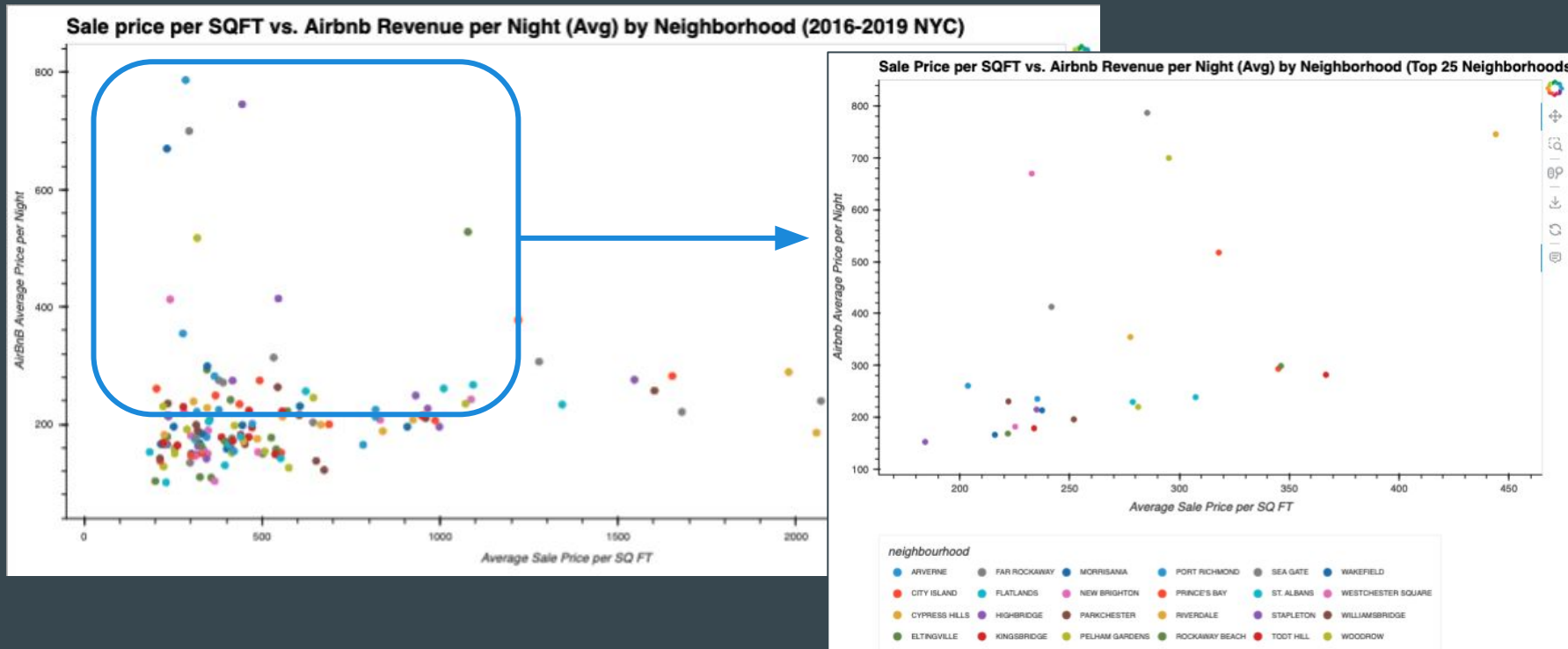


Understanding the Datasets: Price vs Rental Income Relationship



- Visualize how sale prices compare to potential revenue generated by an Airbnb rental
- Identified neighborhoods where sale prices were relatively low compared to revenue that could be generated from Airbnb rentals

Narrowing Down Our Dataset, Selecting Top 25 Locations



Insight into Top 25 Neighborhoods

By comparing Sale Price against Airbnb Price, we assessed the potential profitability of investing in property in a particular neighborhood

Westchester Square (2.88), Sea Gate (2.76), Woodrow (2.37), Far Rockaway (1.71), and Riverdale (1.68) showcase the most bang-for-your-buck

Average sale vs. Airbnb price Ratio	
neighbourhood	
WESTCHESTER SQUARE	2.879275
SEA GATE	2.758518
WOODROW	2.371646
FAR ROCKAWAY	1.708753
RIVERDALE	1.679544
PRINCE'S BAY	1.628437
ARVERNE	1.280669
CYPRESS HILLS	1.277929
WILLIAMSBRIDGE	1.038102
PORT RICHMOND	1.001092
STAPLETON	0.915179
WAKEFIELD	0.899009
ELTINGVILLE	0.863646
CITY ISLAND	0.850392
HIGHBRIDGE	0.828928
ST. ALBANS	0.823915
NEW BRIGHTON	0.808313
PELHAM GARDENS	0.782417
PARKCHESTER	0.778149
FLATLANDS	0.777232
MORRISANIA	0.770024
TODT HILL	0.769047
KINGSBRIDGE	0.765116
ROCKAWAY BEACH	0.760079

Understanding Sales Price Change YoY

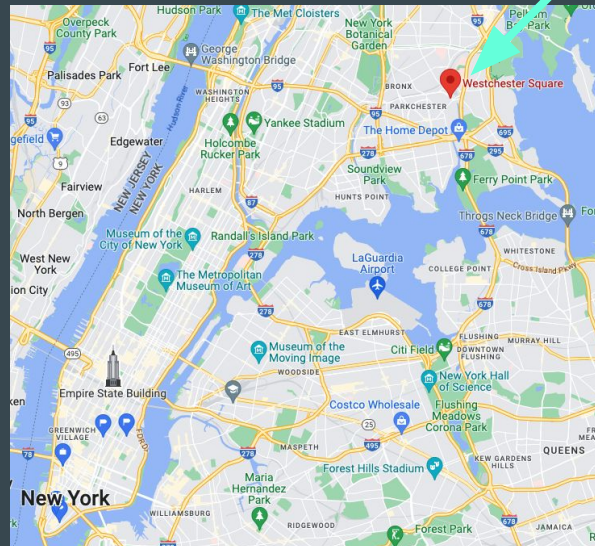
Where are sale prices dropping in New York City? City Island (-25%), Westchester Square (-15%), Flatlands (-9.5%), Riverdale (-7.8%), and St. Albans (-5.6%) exhibit the largest decrease in sale price per SQFT YoY from 2016 to 2017

neighbourhood	PRICE PER SQFT 2016	PRICE PER SQFT 2017	YoY Sale Price % Change
CITY ISLAND	406.326167	324.925203	-25.05
WESTCHESTER SQUARE	257.400752	223.639707	-15.10
FLATLANDS	322.620039	294.653005	-9.49
RIVERDALE	461.747690	428.555860	-7.75
ST. ALBANS	291.522390	275.854347	-5.68
ROCKAWAY BEACH	230.644515	222.032116	-3.88
SEA GATE	288.532893	279.488409	-3.24
PORT RICHMOND	239.827872	233.182807	-2.85
PARKCHESTER	253.699790	247.056018	-2.69
CYPRESS HILLS	279.969881	275.952177	-1.46
WAKEFIELD	241.272296	237.958902	-1.39
FAR ROCKAWAY	241.512481	246.347682	1.96
ELTINGVILLE	336.376726	353.309998	4.79
PELHAM GARDENS	271.516355	292.462684	7.16
ARVERNE	197.774182	213.971762	7.57
KINGSBRIDGE	232.048946	251.057176	7.57
WOODROW	274.743203	303.208437	9.39
NEW BRIGHTON	202.157170	228.960207	11.71
PRINCE'S BAY	299.303611	344.447151	13.11
MORRISANIA	184.407363	213.322234	13.55
HIGHBRIDGE	165.517758	192.313541	13.93
TODT HILL	330.432769	385.968380	14.39
WILLIAMSBRIDGE	202.786123	242.388627	16.34
STAPLETON	215.952712	261.950464	17.56



WESTCHESTER SQUARE

#1 Location to buy a Rental Property in NYC



Now... What should we buy?


Based on our analysis, **Westchester Square** is the optimal location to buy a home for AirBnB profitable rentals with a high nightly rental to purchase price ratio and decreasing trend for sale prices to buy a property. Using the Scrapy library, we were able to scrape Homes.com to find a list of properties to consider investing in.

```
1 import scrapy
2
3 #ALTER YOUR START URL WITH THE SEARCH LOCATION FROM YOUR ANALYSIS
4
5 class SinglePageSpider(scrapy.Spider):
6     name = "single_page_spider"
7     start_urls = ["https://www.homes.com/bronx-ny/westchester-square-academy-school/s-nx8q16jygcwk/"]
8
9     def parse(self, response):
10         placard_containers = response.css("article.search-placard")
11         for container in placard_containers:
12             description = container.css("p.property-name::text").get()
13             price = container.css("p.price-container::text").get()
14             url = container.css("a::attr(href)").get()
15
16             yield {
17                 "Property Address": description.strip() if description else None,
18                 "Asking Price": price.strip() if price else None,
19                 "Website URL": response.urljoin(url) if url else None,
20             }
```

```
1 [
2     {"Property Address": "2017 Givan Ave, Bronx, NY 10475", "Asking Price": "$829,000", "Website URL": "https://www.homes.com/property/2017-givan-ave-bronx-ny/xjhlftgjzpbwz/"},
3     {"Property Address": "3232 Seymour Ave, Bronx, NY 10469", "Asking Price": "$785,000", "Website URL": "https://www.homes.com/property/3232-seymour-ave-bronx-ny/npn1xchm139jv/"},
4     {"Property Address": "2012 Gleason Ave, Bronx, NY 10472", "Asking Price": "$779,000", "Website URL": "https://www.homes.com/property/2012-gleason-ave-bronx-ny/h2vN4yp49bgb1/"},
5     {"Property Address": "1903 Lacombe Ave, Bronx, NY 10473", "Asking Price": "$799,900", "Website URL": "https://www.homes.com/property/1903-lacombe-ave-bronx-ny/qd3k0begrnstt/"},
6     {"Property Address": "1352 College Ave, Bronx, NY 10456", "Asking Price": "$700,000", "Website URL": "https://www.homes.com/property/1352-college-ave-bronx-ny/7b43sy6n07wry/"},
7     {"Property Address": "922 Tinton Ave Unit TH, Bronx, NY 10456", "Asking Price": "$759,000", "Website URL": "https://www.homes.com/property/922-tinton-ave-bronx-ny-unit-th/l38cflm1ct9cw/"},
8     {"Property Address": "149-61 24th Rd, Whitestone, NY 11357", "Asking Price": "$839,000", "Website URL": "https://www.homes.com/property/149-61-24th-rd-whitestone-ny/vcyhzr53dcd7l/"},
9     {"Property Address": "3302 Fish Ave, Bronx, NY 10469", "Asking Price": "$749,000", "Website URL": "https://www.homes.com/property/3302-fish-ave-bronx-ny/f0vjdr90vshge/"},
10    {"Property Address": "1848 Unionport Rd, Bronx, NY 10462", "Asking Price": "$635,000", "Website URL": "https://www.homes.com/property/1848-unionport-rd-bronx-ny/c0hdcw4t2hh6k/"},
11    {"Property Address": "3935 Monticello Ave, Bronx, NY 10466", "Asking Price": "$719,000", "Website URL": "https://www.homes.com/property/3935-monticello-ave-bronx-ny/qzcrh20dbrf/"},
12    {"Property Address": "15-21 123rd St, College Point, NY 11356", "Asking Price": "$815,000", "Website URL": "https://www.homes.com/property/15-21-123rd-st-college-point-ny/mm819yxt1dqt0/"},
13    {"Property Address": "41 S 15th Ave, Mount Vernon, NY 10550", "Asking Price": "$839,000", "Website URL": "https://www.homes.com/property/41-s-15th-ave-mount-vernon-ny/dfs7v7ljdhshb/"},
14    {"Property Address": "833 Swinton Ave, Bronx, NY 10465", "Asking Price": "$799,000", "Website URL": "https://www.homes.com/property/833-swinton-ave-bronx-ny/sx872rw800j5n/"},
15    {"Property Address": "871 E 216th St, Bronx, NY 10467", "Asking Price": "$795,000", "Website URL": "https://www.homes.com/property/871-e-216th-st-bronx-ny/0rc285ms1pgzg/"},
16    {"Property Address": "167-23 Powells Cove Blv Unit 8, Beechhurst, NY 11357", "Asking Price": "$788,000", "Website URL": "https://www.homes.com/property/167-23-powells-cove-blv-beechhurst-ny-unit-8/nhckm5lbwmgzs/"},
17    {"Property Address": "1307 Vreeland Ave, Bronx, NY 10461", "Asking Price": "$1,100,000", "Website URL": "https://www.homes.com/property/1307-vreeland-ave-bronx-ny/k09getcf67r3/"},
18    {"Property Address": "2947 Middletown Rd, Bronx, NY 10461", "Asking Price": "$799,000", "Website URL": "https://www.homes.com/property/2947-middletown-rd-bronx-ny/f9ybtdd65zwy5/"},
19    {"Property Address": "835 Dean Ave, Bronx, NY 10465", "Asking Price": "$1,100,000", "Website URL": "https://www.homes.com/property/835-dean-ave-bronx-ny/bnzj6c0hdjvv8/"},
20    {"Property Address": "4353 Baychester Ave, Bronx, NY 10466", "Asking Price": "$899,000", "Website URL": "https://www.homes.com/property/4353-baychester-ave-bronx-ny/shs7ktqz57llp/"},
21    {"Property Address": "902 Harding, Bronx, NY 10473", "Asking Price": "$849,000", "Website URL": "https://www.homes.com/property/902-harding-bronx-ny/hgs3gk7hhdv0f/"},
22    {"Property Address": "2287 Johnson Ave Unit 3B, Bronx, NY 10463", "Asking Price": "$669,900", "Website URL": "https://www.homes.com/property/2287-johnson-ave-bronx-ny-unit-3b/gycbwexhswfek/"},
23    {"Property Address": "319 Endeavor Unit 43, Flushing, NY 11356", "Asking Price": "$639,000", "Website URL": "https://www.homes.com/property/319-endeavor-flushing-ny-unit-43/ls814ml3jq5pq/"},
24    {"Property Address": "2316 Lodovick Ave, Bronx, NY 10469", "Asking Price": "$899,000", "Website URL": "https://www.homes.com/property/2316-lodovick-ave-bronx-ny/wxse959w299ye/"},
25    {"Property Address": "2244 Bassford Ave, Bronx, NY 10457", "Asking Price": "$1,199,000", "Website URL": "https://www.homes.com/property/2244-bassford-ave-bronx-ny/yexc0y2vj5mn3/"},
26    {"Property Address": "121-26 7th Ave, College Point, NY 11356", "Asking Price": "$1,050,000", "Website URL": "https://www.homes.com/property/121-26-7th-ave-college-point-ny/fwvbjlkjxxb9/"},
27 ]
```

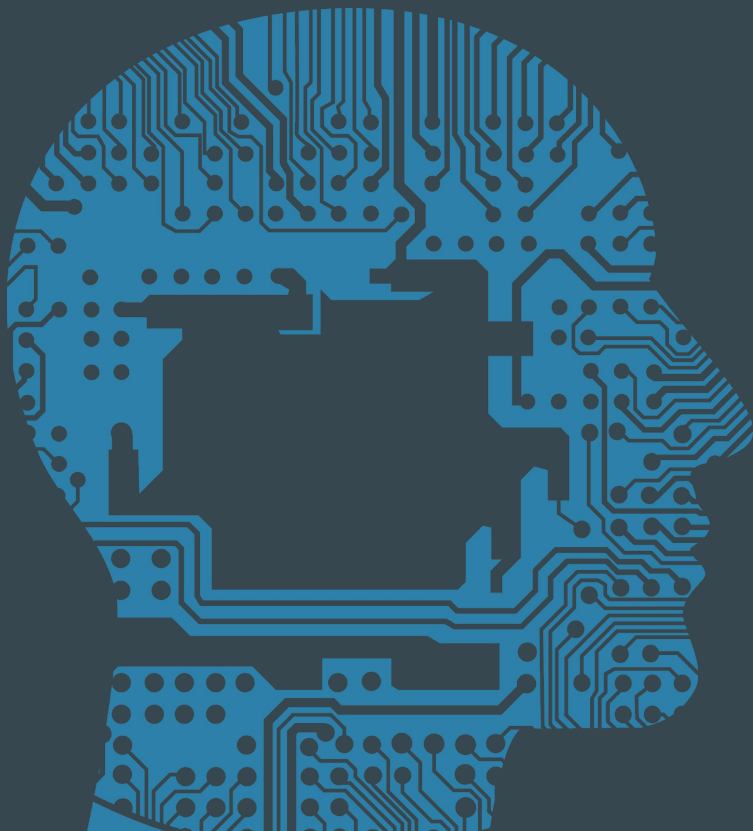
“What if we had more time...”

- 1 Application or dashboard to run analysis based on user input for city
- 2 Converting scrapy program to automated web search instead of manual entry
- 3 Calculator to recommend locations based on your price range

An aerial photograph of New York City at sunset. The Empire State Building is the central focus, its spire reaching towards a sky filled with soft, orange and grey clouds. The city's dense skyline of skyscrapers and buildings stretches out to the horizon, with the Hudson River and East River visible on the right side. The overall tone is warm and dramatic.

Thank You...
Now go buy your property!

Questions?



Appendix

Full Top 25 Neighborhood Data Set

	GROSS SQUARE FEET	SALE PRICE	PRICE PER SQFT	latitude	longitude	AirBnb price per night	Average sale vs. Airbnb price Ratio
neighbourhood							
WESTCHESTER SQUARE	3146.084337	7.039822e+05	232.697507	40.843780	-73.844690	670.000000	2.879275
SEA GATE	2722.170732	7.551646e+05	285.298160	40.577053	-74.008880	787.000000	2.758518
WOODROW	2651.788889	6.855613e+05	295.153651	40.538840	-74.198260	700.000000	2.371646
FAR ROCKAWAY	2665.209091	5.269487e+05	241.696745	40.597624	-73.749532	413.000000	1.708753
RIVERDALE	20295.947368	2.818965e+06	444.068956	40.886288	-73.914183	745.833333	1.679544
PRINCE'S BAY	2470.840000	7.019019e+05	317.891725	40.526623	-74.197547	517.666667	1.628437
ARVERNE	2035.346154	4.067329e+05	203.628364	40.591684	-73.794277	260.780488	1.280669
CYPRESS HILLS	2339.777293	5.849109e+05	277.646468	40.681232	-73.886373	354.812500	1.277929
WILLIAMSBRIDGE	2716.093960	5.503399e+05	222.093402	40.878002	-73.862740	230.555556	1.038102
PORT RICHMOND	1715.656805	3.747368e+05	235.243232	40.629345	-74.133660	235.500000	1.001092
STAPLETON	1925.535433	4.229758e+05	234.926608	40.631505	-74.077762	215.000000	0.915179
WAKEFIELD	2692.242236	5.135415e+05	237.421999	40.896937	-73.849131	213.444444	0.899009
ELTINGVILLE	1626.394068	5.339067e+05	346.206469	40.539390	-74.153890	299.000000	0.863646
CITY ISLAND	2316.690476	6.573671e+05	344.987901	40.849271	-73.787662	293.375000	0.850392
HIGHBRIDGE	17029.816667	2.628238e+06	184.173526	40.832893	-73.929527	152.666667	0.828928
ST. ALBANS	1573.715311	4.197871e+05	278.707856	40.696349	-73.758588	229.631579	0.823915
NEW BRIGHTON	2108.285714	4.504956e+05	225.160407	40.639555	-74.093200	182.000000	0.808313
PELHAM GARDENS	2251.988889	5.911756e+05	281.180071	40.861722	-73.840753	220.000000	0.782417
PARKCHESTER	4353.000000	9.121625e+05	251.879643	40.836433	-73.860613	196.000000	0.778149
FLATLANDS	2849.408333	5.249396e+05	307.330005	40.626714	-73.930520	238.866667	0.777232
MORRISANIA	6557.941799	1.224866e+06	215.902395	40.828460	-73.905732	166.250000	0.770024
TODT HILL	3822.375000	1.302154e+06	366.687710	40.609835	-74.108425	282.000000	0.769047
KINGSBRIDGE	11265.706422	2.738254e+06	233.788200	40.882879	-73.901401	178.875000	0.765116
ROCKAWAY BEACH	2591.000000	4.960510e+05	221.842261	40.587604	-73.813921	168.617647	0.760079