Introduction

Housing prices are very important to those that are young. Adults are always looking at house prices. We are testing the median sales price during 2024-2025 between all 5 boroughs of New York. We expect all sale prices to have increased from the start of 2024-2025.
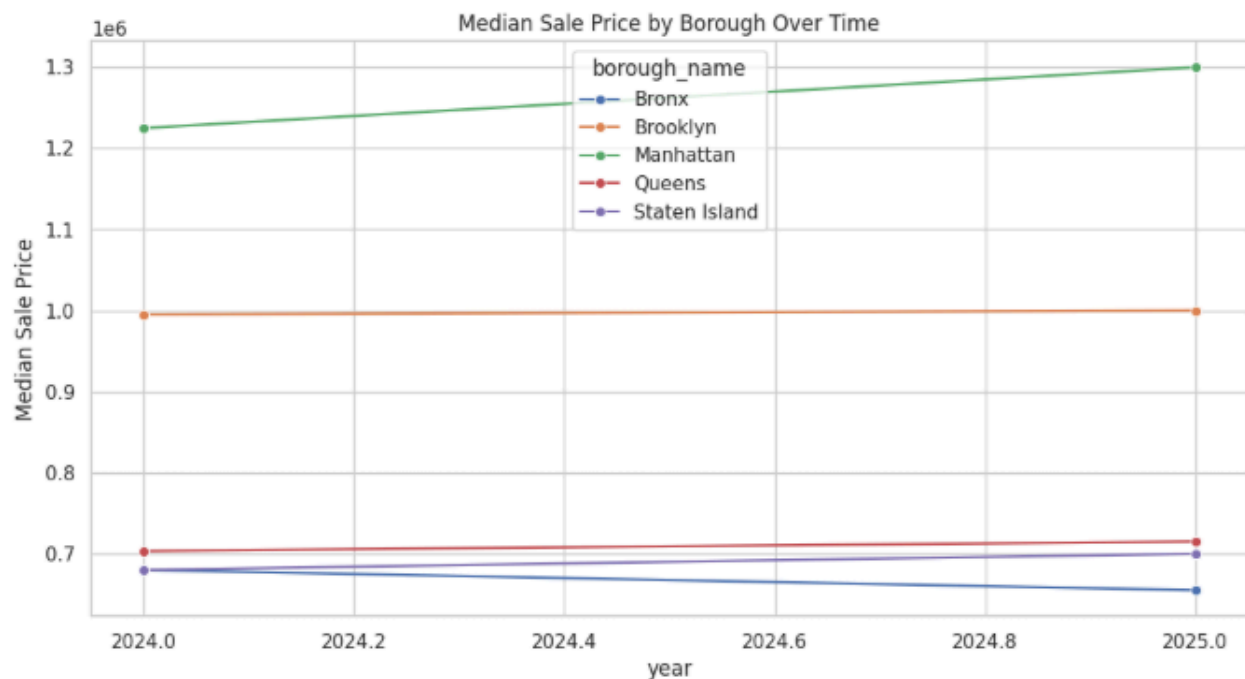
Data Methods

To answer this question, I have used housing sale prices from NYC Department of Finance rolling sales data. (https://www.nyc.gov/site/finance/property/property-rolling-sales-data.page) This page has excel downloadables from all 5 boroughs. I downloaded all the 5 data sets and combined them into one data set in Google Collab . I plan to create a visual chart to determine the median price for housing across all boroughs.

Statistical methods

To answer the main research question, I'm going to use a line chart. I will start by cleaning out the data from all 5 boroughs, keeping the date and sale price. I also used a Chi-Square test to find the P value to see if home sale prices between boroughs are related.

```
...     Contingency table:
        price_bin       low   medium   high
        borough_name
        Bronx           2015    1491    693
        Brooklyn        3556    4288   5882
        Manhattan       3319    3711   7769
        Queens          6943    6030   2979
        Staten Island   1910    2223    419

        Chi-square statistic: 6558.568101953512
        Degrees of freedom: 8
        p-value: 0.0
```

Results

From the NYC rolling sales data, we are able to determine that Manhattan has the greatest increase in median sale price, while Bronx actually had a decrease in sale price.

H0(Null Hypothesis): All New York neighborhoods have the same housing price growth rate.

This is false since we can see all of them are independent and have different growths.

Conclusion

	borough_name	year	sale_price
0	Bronx	2024	680000.0
1	Bronx	2025	655000.0
2	Brooklyn	2024	995000.0
3	Brooklyn	2025	1000000.0
4	Manhattan	2024	1225000.0
5	Manhattan	2025	1300000.0
6	Queens	2024	703286.5
7	Queens	2025	715000.0
8	Staten Island	2024	680000.0
9	Staten Island	2025	700000.0

We can see that Bronx decreased, Brooklyn increased, Manhattan increased, Queens increased, and Staten Island increased.

Sources

(https://www.nyc.gov/site/finance/property/property-rolling-sales-data.page)