

An aerial photograph of a dense urban landscape, likely New York City, showing a vast expanse of skyscrapers and mid-rise buildings. Green spaces, including Central Park, are visible interspersed among the buildings. The text is overlaid on the center of the image.

The Search for Decent Housing in Brooklyn

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The Problem:

- Young couple
- Small children
- Limited budget
- Looking for home in Brooklyn, NY



Criteria

1. Parks and
outdoor
Spaces for family
outings
and fun



2. Variety of schools to provide options and ensure other young families



3. Variety of groceries, supermarkets and other food and drink shops for convenience



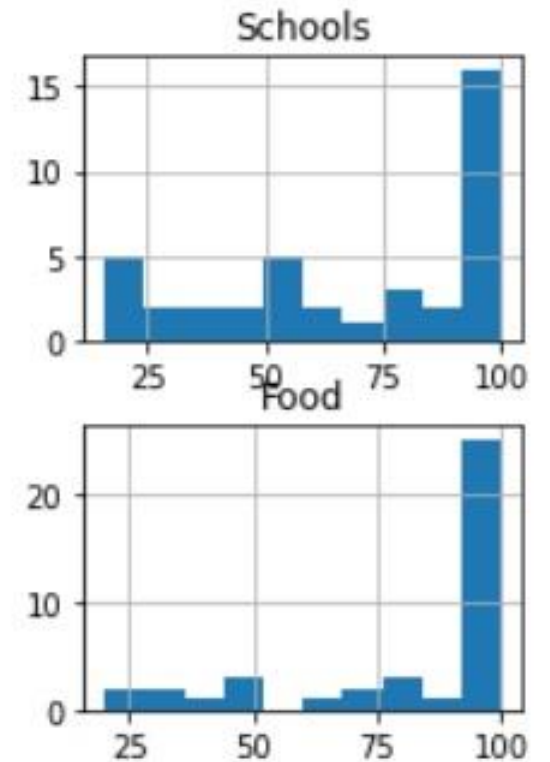
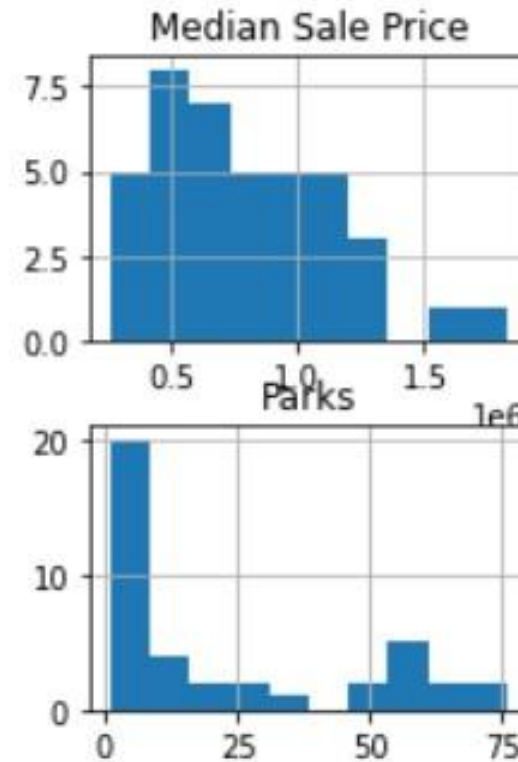
Data Sources

- Geographic data: https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork_data.json.
- A geojson of New York neighborhoods: <https://data.cityofnewyork.us/City-Government/Neighborhood-Tabulation-Areas-NTA-/cpf4-rkhq>
- Cost of housing in Brooklyn: <https://www.propertyshark.com/mason/market-trends/residential/nyc/brooklyn/brooklyn-heights>
- I got information about schools, parks and shops: **Foursquare API**

Methodology:

Histograms:

- Houses range from \$250,000 - \$1,800,000
- Most homes in \$500,000 range
- Most neighborhoods have lots of schools and food shops
- Outdoor spaces are harder to come by.

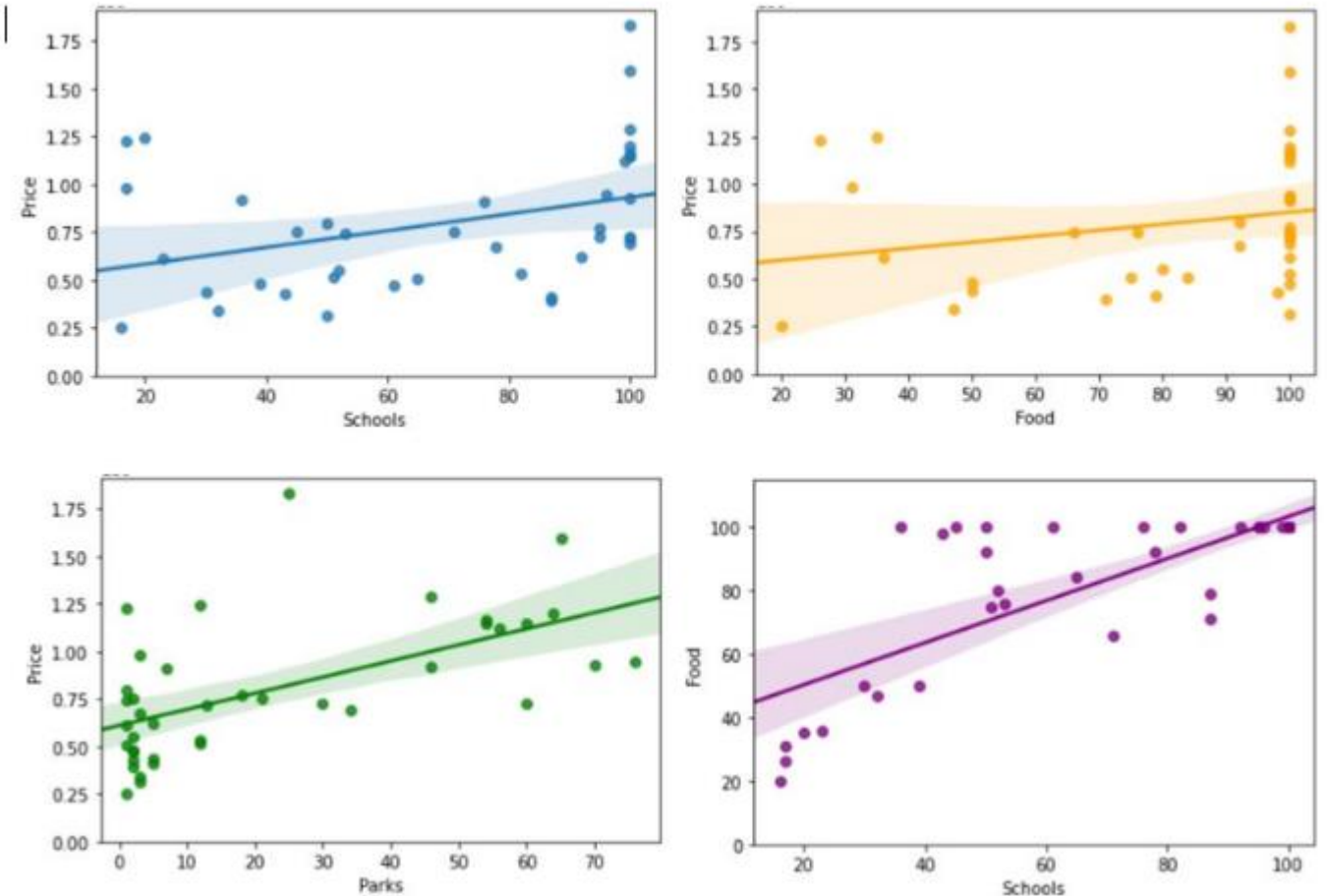


Prices in ascending order by neighborhood



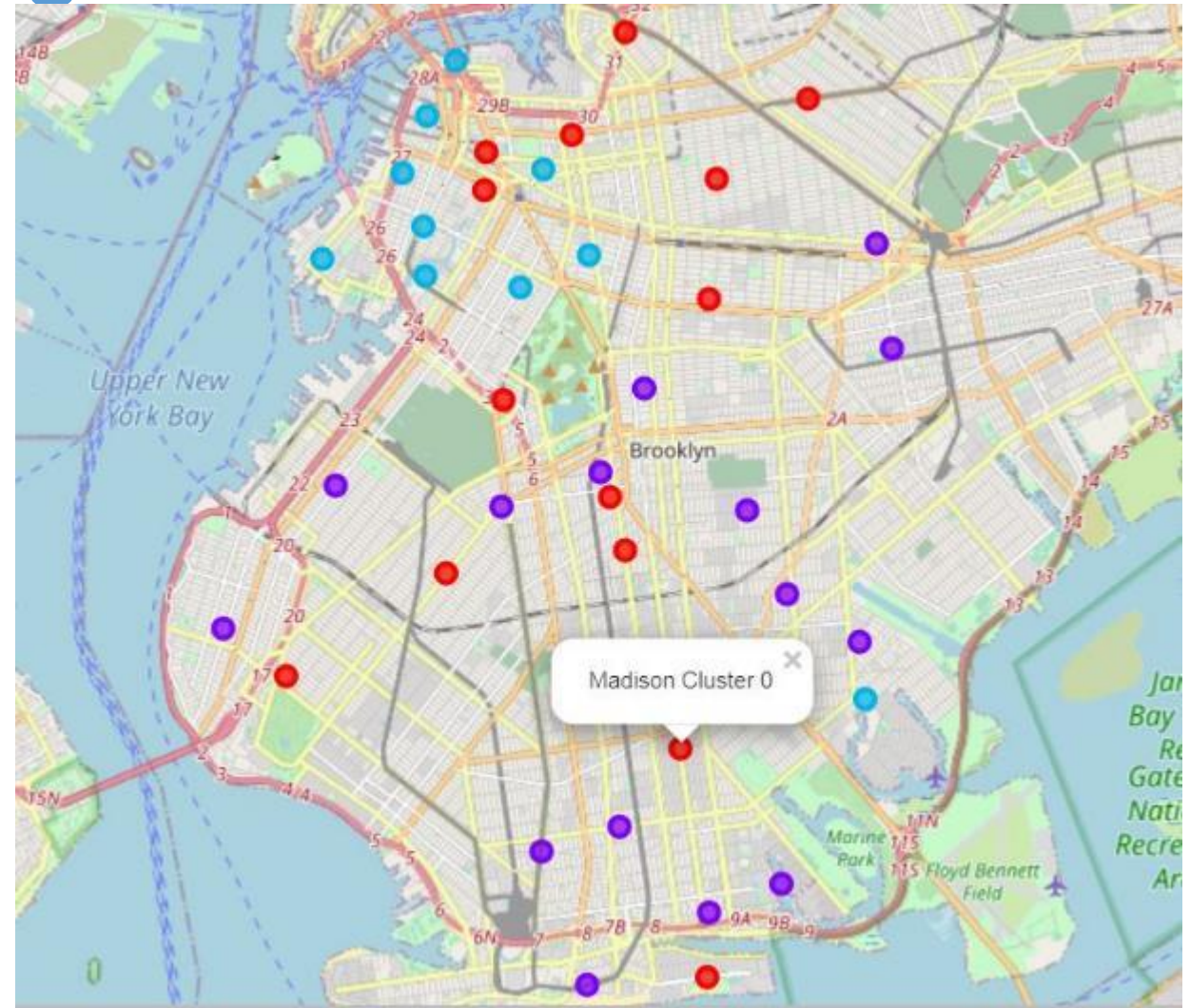
Regression Plots

- Small, if any, correlation between schools/food shops and prices.
- Variety of schools across all prices.
- Large variety of food shops mostly in expensive neighborhoods but also in others.
- Few parks in cheap areas. More in more expensive ones.



K-means Clustering

- Cluster 0 – Red: Mid-range prices, avg of 90 food places, 74 schools and 25 parks per neighborhood.
- Cluster 1 – Purple: Cheapest. But fewest schools, parks, and food.
- Cluster 2 – Lt blue: Most expensive, with many schools, parks and food shops.



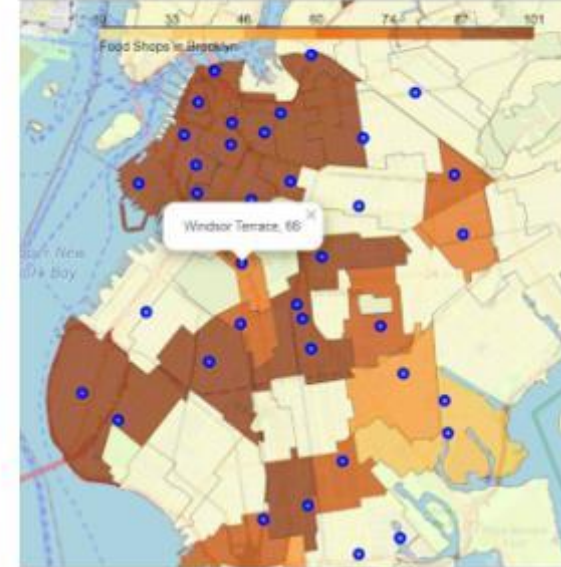
Choropleth maps

- Neighborhoods with highest concentrations of desired attributes are in the northern part of borough.
- Prices in norther section are midrange to expensive.

Average Cost of Homes



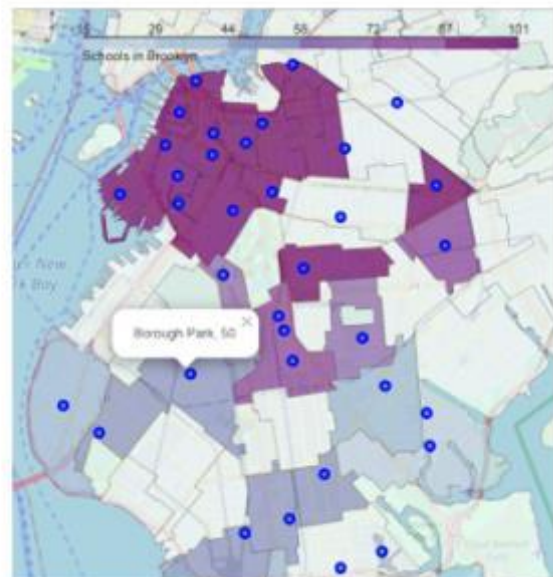
Food & Drink Shops



Parks & Outdoor Spaces



Schools



Final Search:

There are three neighborhoods that are:

- Under \$800,000
- More than 80 schools
- More than 80 Food shops
- More than 20 parks and recreational areas.

```
bk_options = PD[(PD['Price'] <= 800000) &  
                (PD['Schools'] > 80) &  
                (PD['Food'] > 80) &  
                (PD['Parks'] > 20)]  
bk_options
```

	Neighborhood	Price	Schools	Parks	Food
7	Bushwick	724000.0	95	30	100
9	Clinton Hill	689000.0	100	34	100
13	DUMBO-Vinegar Hill-Downtown Brooklyn-Boerum Hill	725000.0	100	60	100