Boston Airbnb Analysis

Overview of the Data

Two separate datasets used:

(1) Calendar → Trends in Listing Prices vs. Time (Sept. 2016 - Aug. 2017)

(2) Listings →
- Number of Listings vs. Neighborhood
- Listing Prices vs. Neighborhood
- Popularity (Reviews) vs. Neighborhood
- Distance from Boston vs. Price (vs. Type of Listings)

Calendar - *Trends in Listing Prices vs. Time*

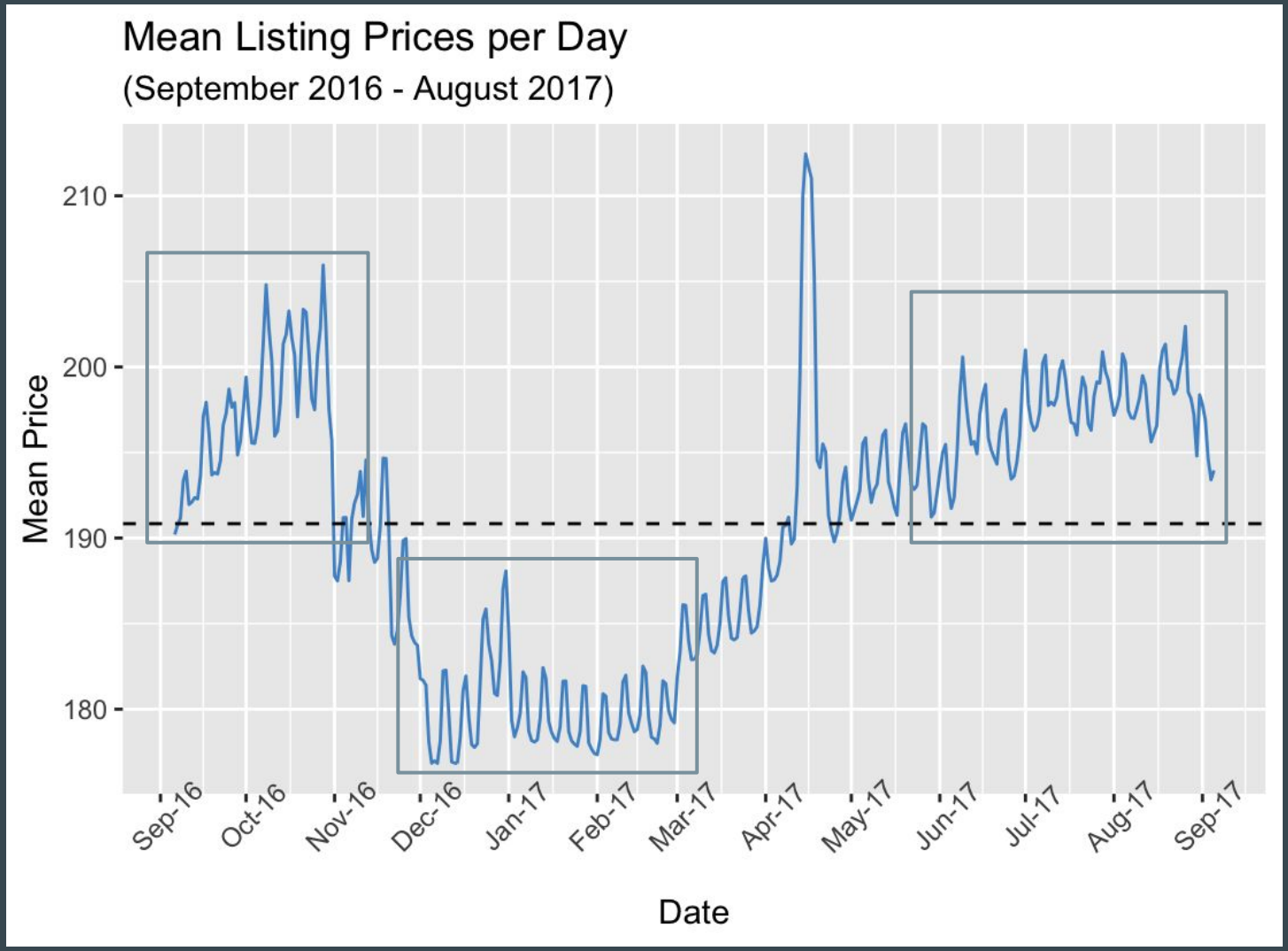
How do Airbnb listing prices fluctuate over the course of the year?

Sub-questions:

- What the peak/off seasons for listings in Boston?
- Do major events in the city influence listing prices?
- Correlation with rental market?

Seasonal Trends:

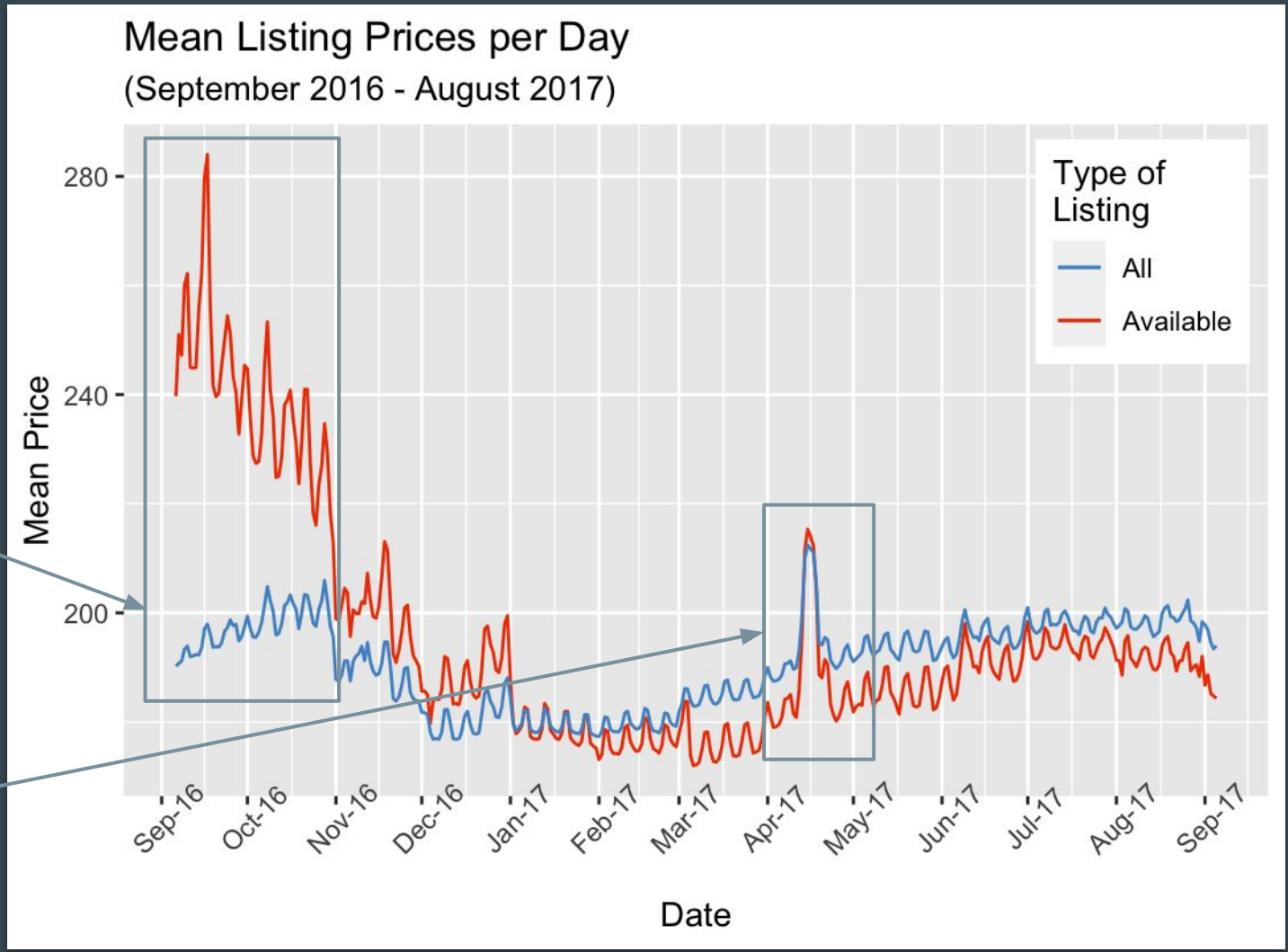
- Summer
- Fall
- Winter



Other Observations:

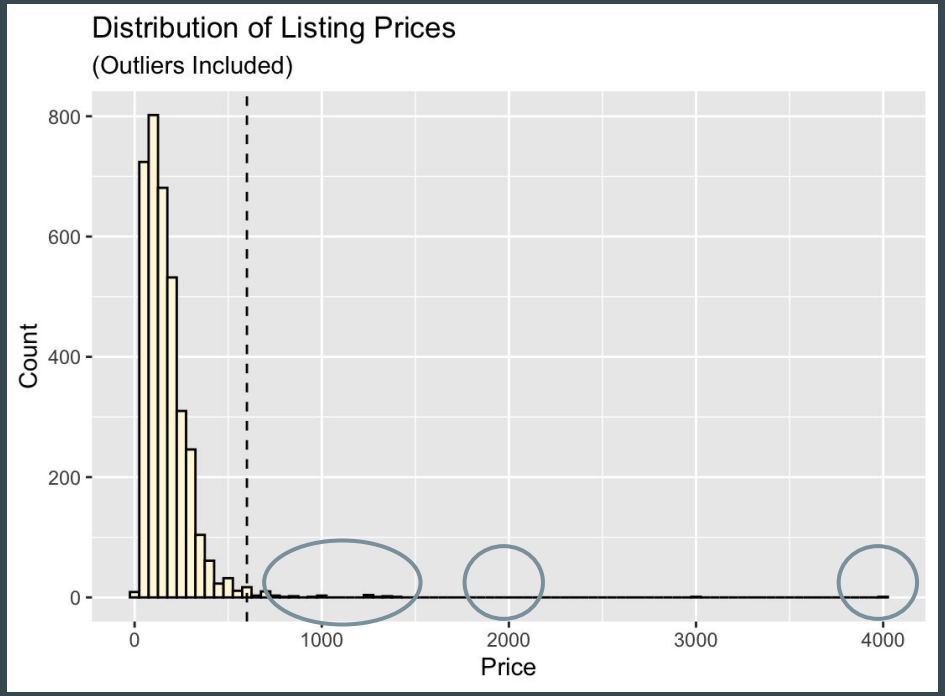
Start of long term (year-long) lease agreements

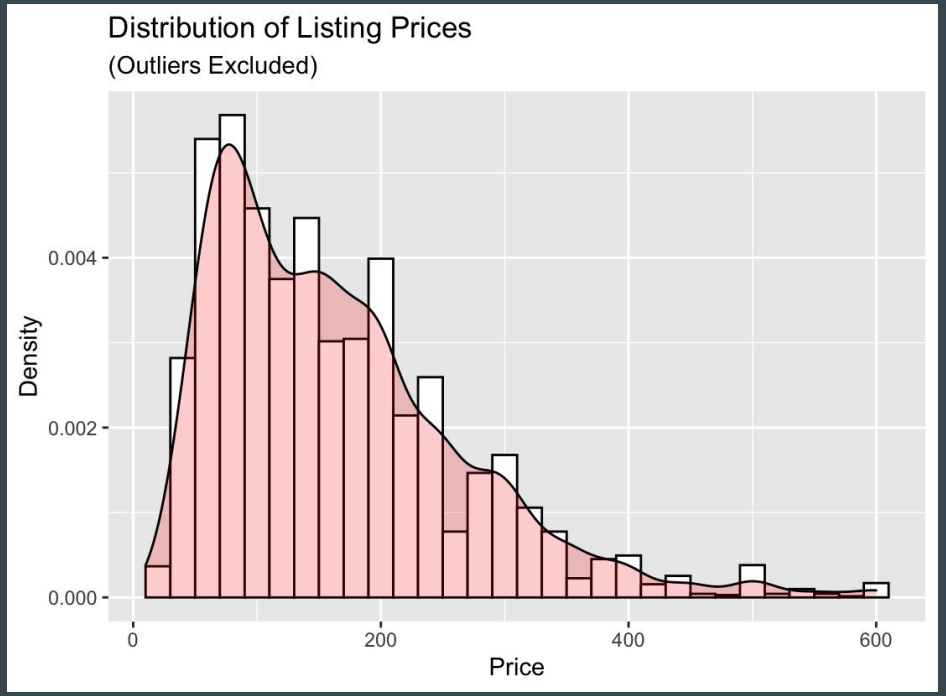
April break for schools and universities / 2017 Boston Marathon



Before discussing analysis of the Listings Dataset...

Data Management / Cleaning Process

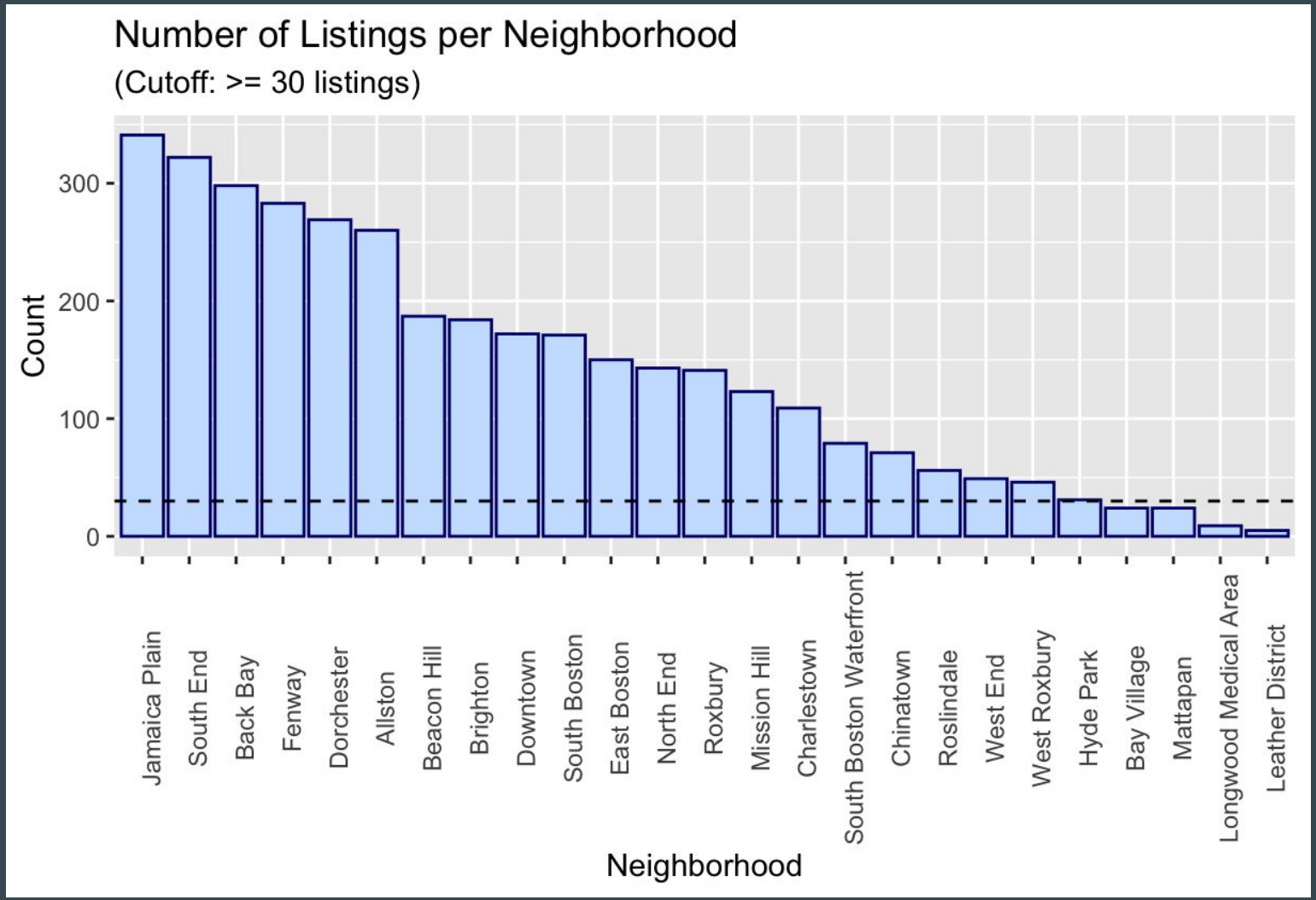




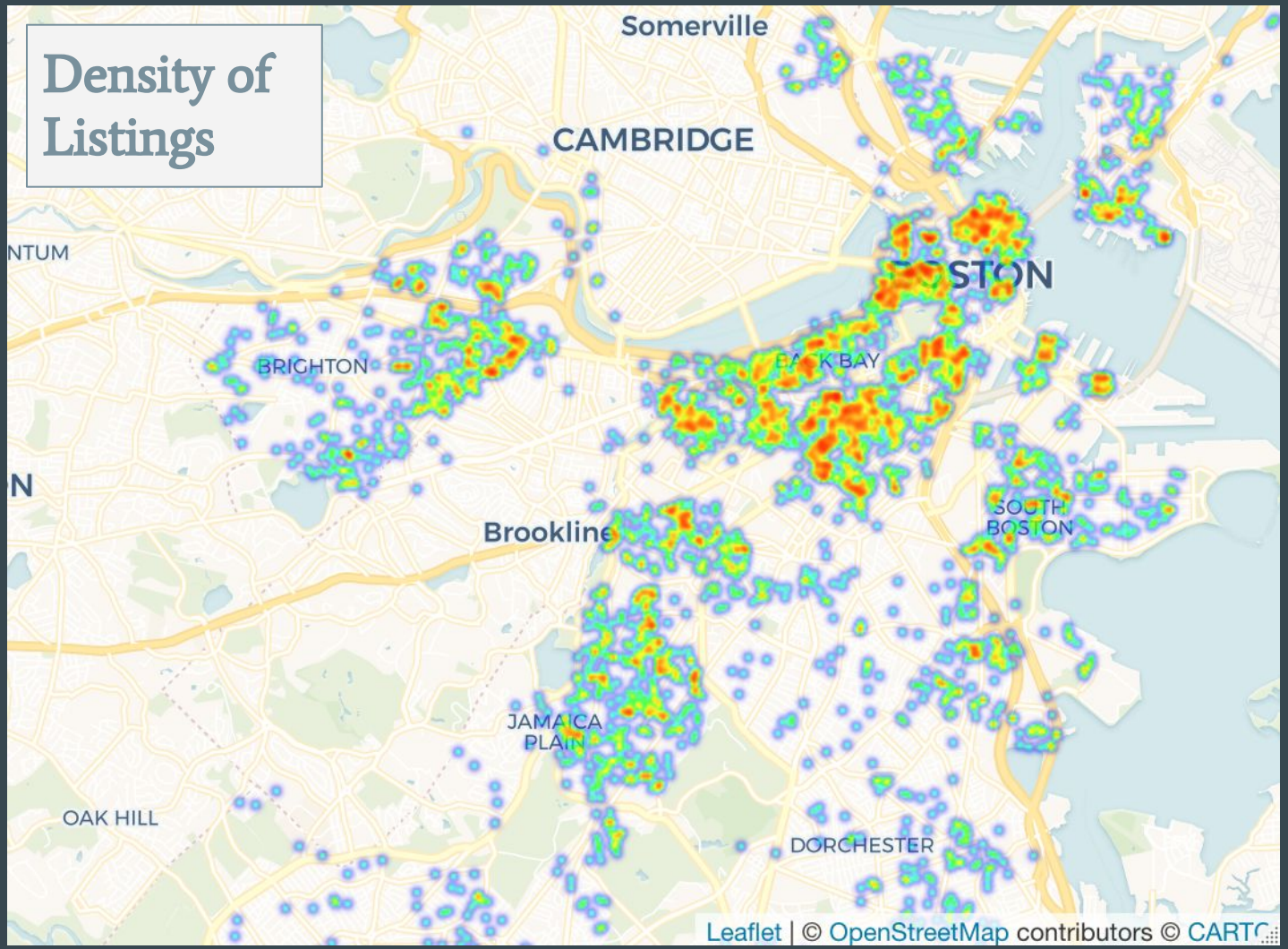
How does the number of listings vary within each of Boston's neighborhoods?

Sub-questions:

- Which neighborhoods in Boston have the most/least amount of listings?
- Which neighborhoods in Boston have the highest amount of listings/ per area?


Number of Listings per Neighborhood
(Cutoff: >= 30 listings)
Count
300
200
100
0
Jamaica Plain
South End
Back Bay
Fenway
Dorchester
Allston
Beacon Hill
Brighton
Downtown
South Boston
East Boston
North End
Roxbury
Mission Hill
Charlestown
South Boston Waterfront
Chinatown
Roslindale
West End
West Roxbury
Hyde Park
Bay Village
Mattapan
Longwood Medical Area
Leather District
Neighborhood

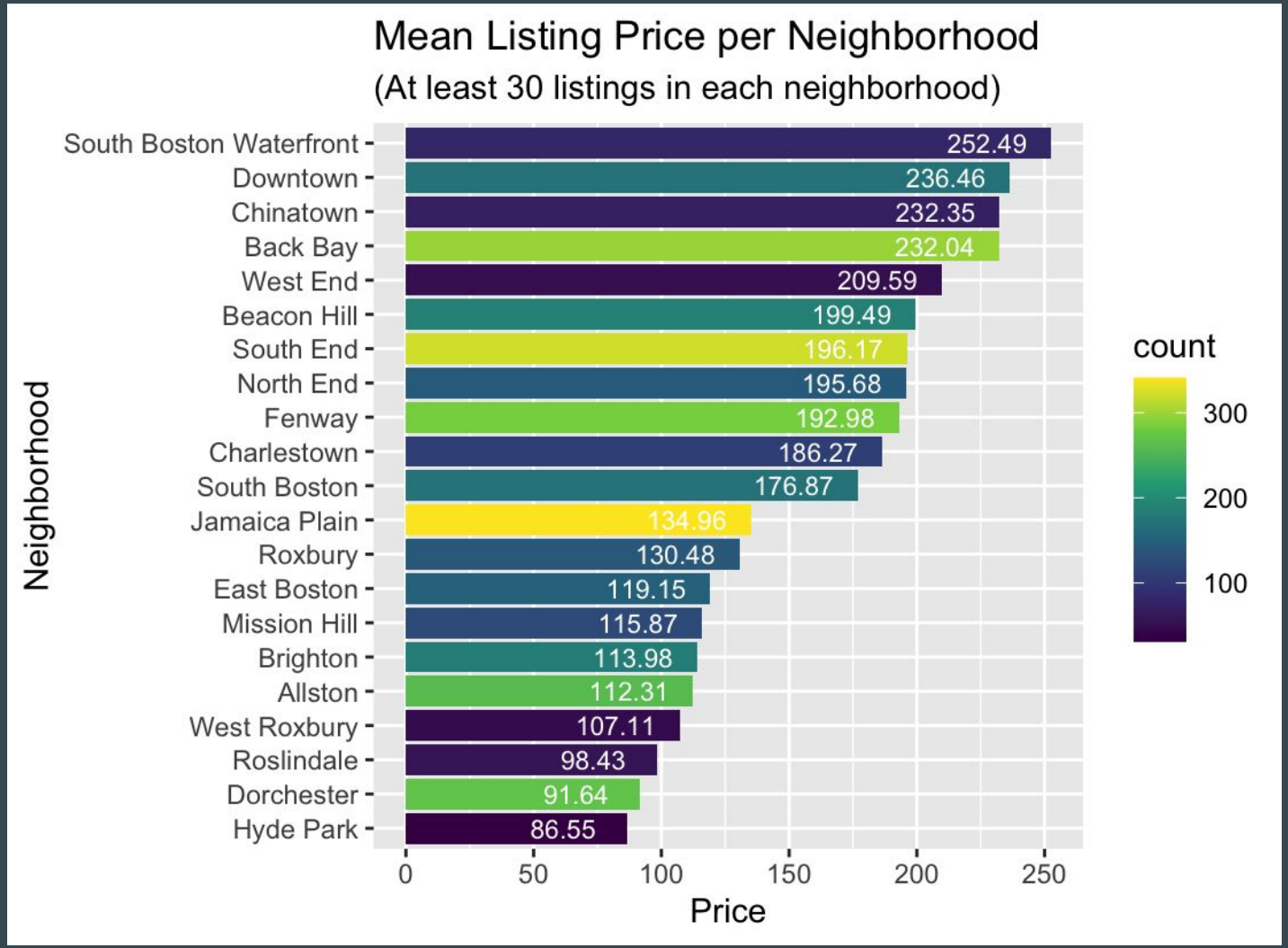
Density of Listings



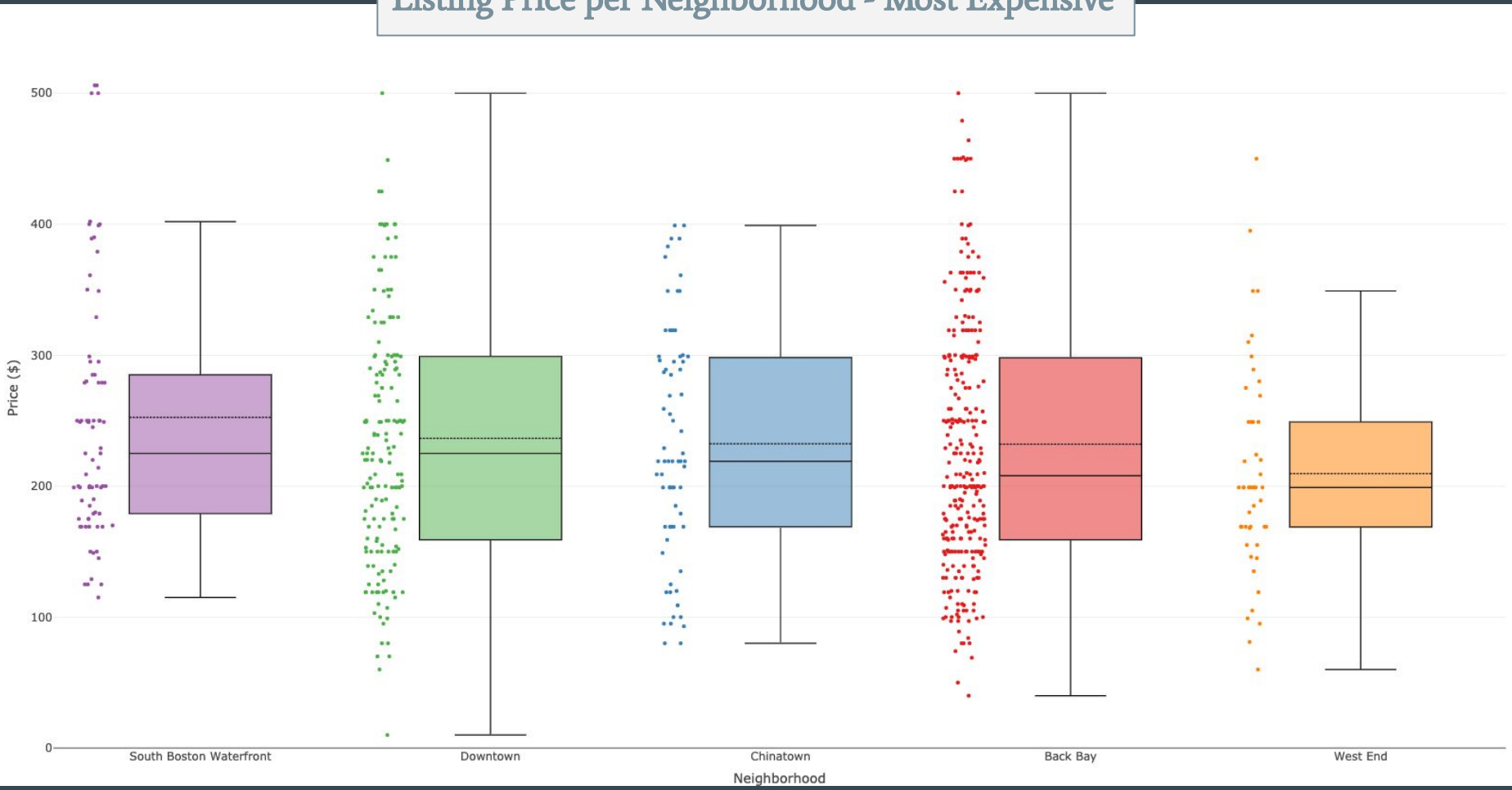
How do listing prices vary within each of Boston's neighborhoods?

Sub-questions:

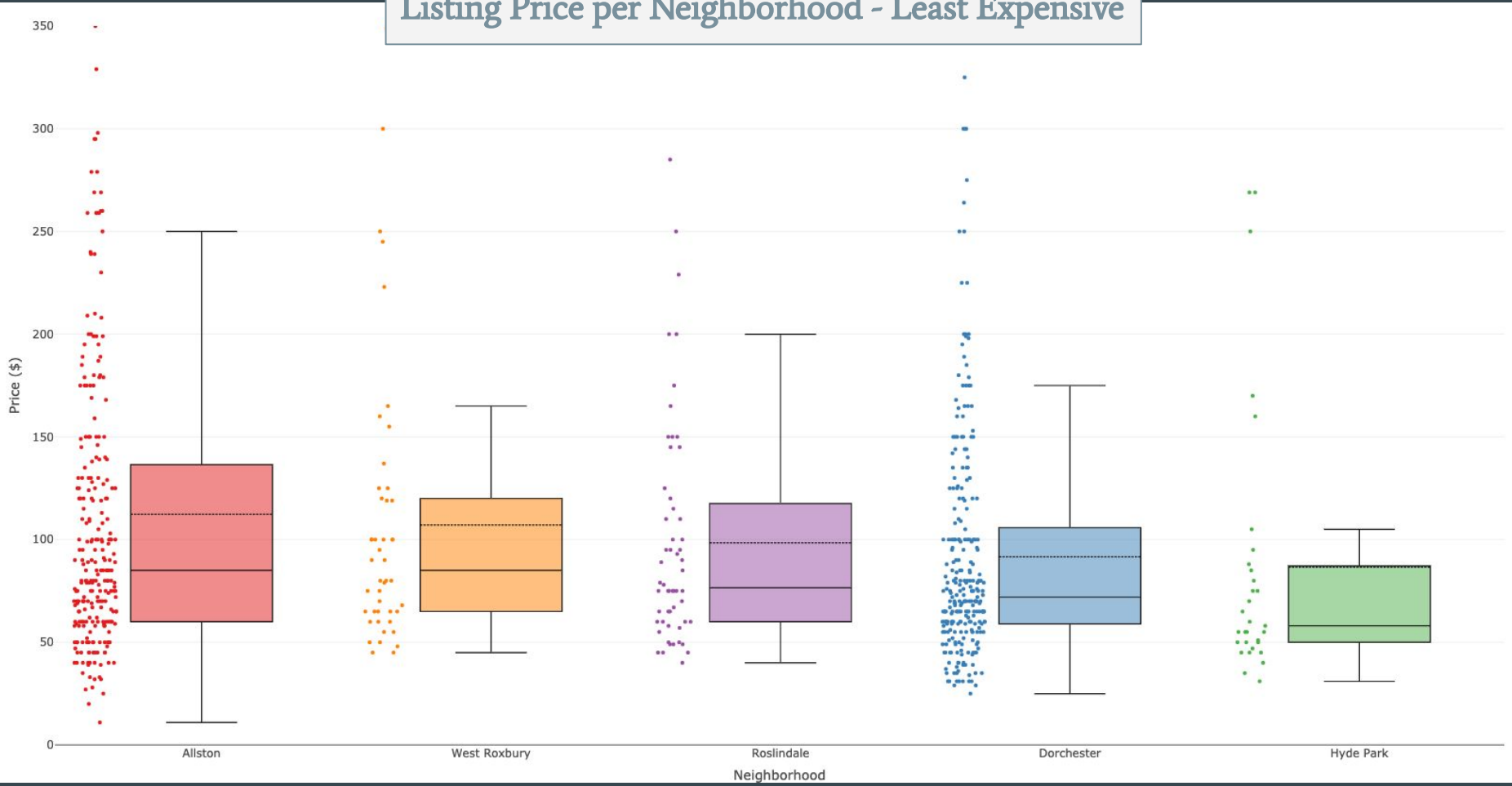
- Which neighborhoods in Boston have the most/least expensive listings?


Mean Listing Price per Neighborhood
(At least 30 listings in each neighborhood)
Neighborhood
South Boston Waterfront
Downtown
Chinatown
Back Bay
West End
Beacon Hill
South End
North End
Fenway
Charlestown
South Boston
Jamaica Plain
Roxbury
East Boston
Mission Hill
Brighton
Allston
West Roxbury
Roslindale
Dorchester
Hyde Park
252.49
236.46
232.35
232.04
209.59
199.49
196.17
195.68
192.98
186.27
176.87
134.96
130.48
119.15
115.87
113.98
112.31
107.11
98.43
91.64
86.55
0
50
100
150
200
250
Price
count
300
200
100

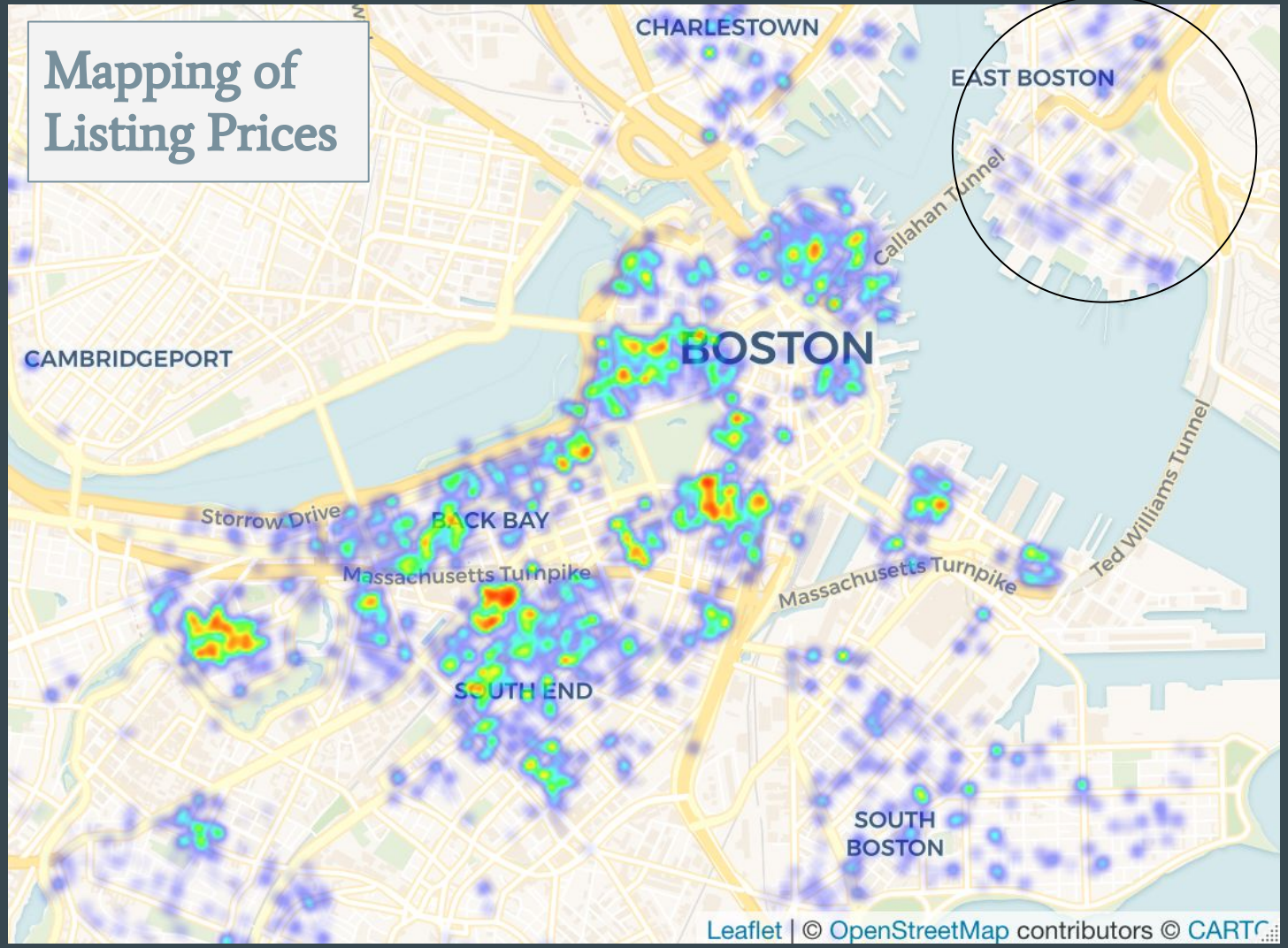
Listing Price per Neighborhood - Most Expensive



Listing Price per Neighborhood - Least Expensive



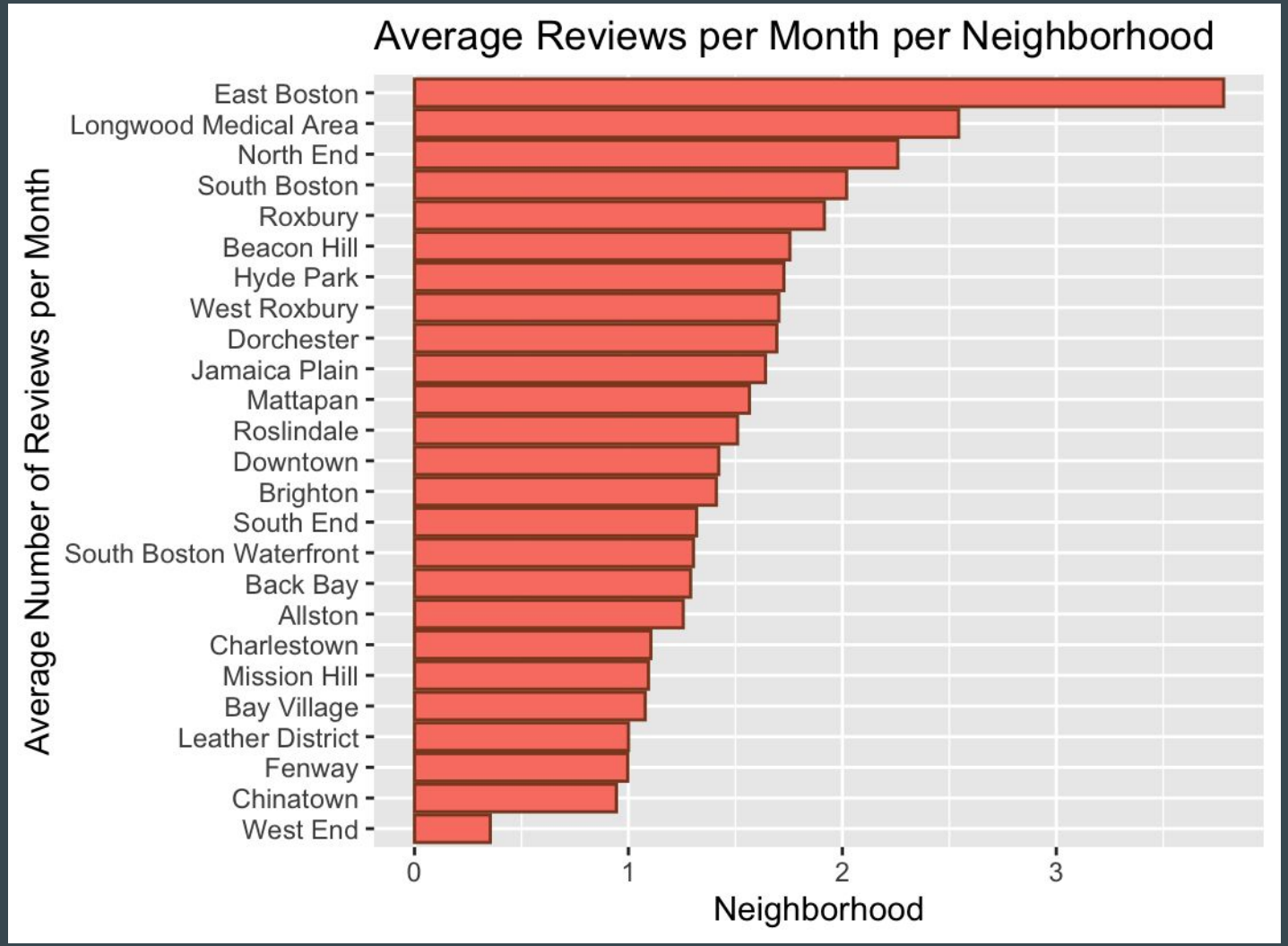
Mapping of Listing Prices

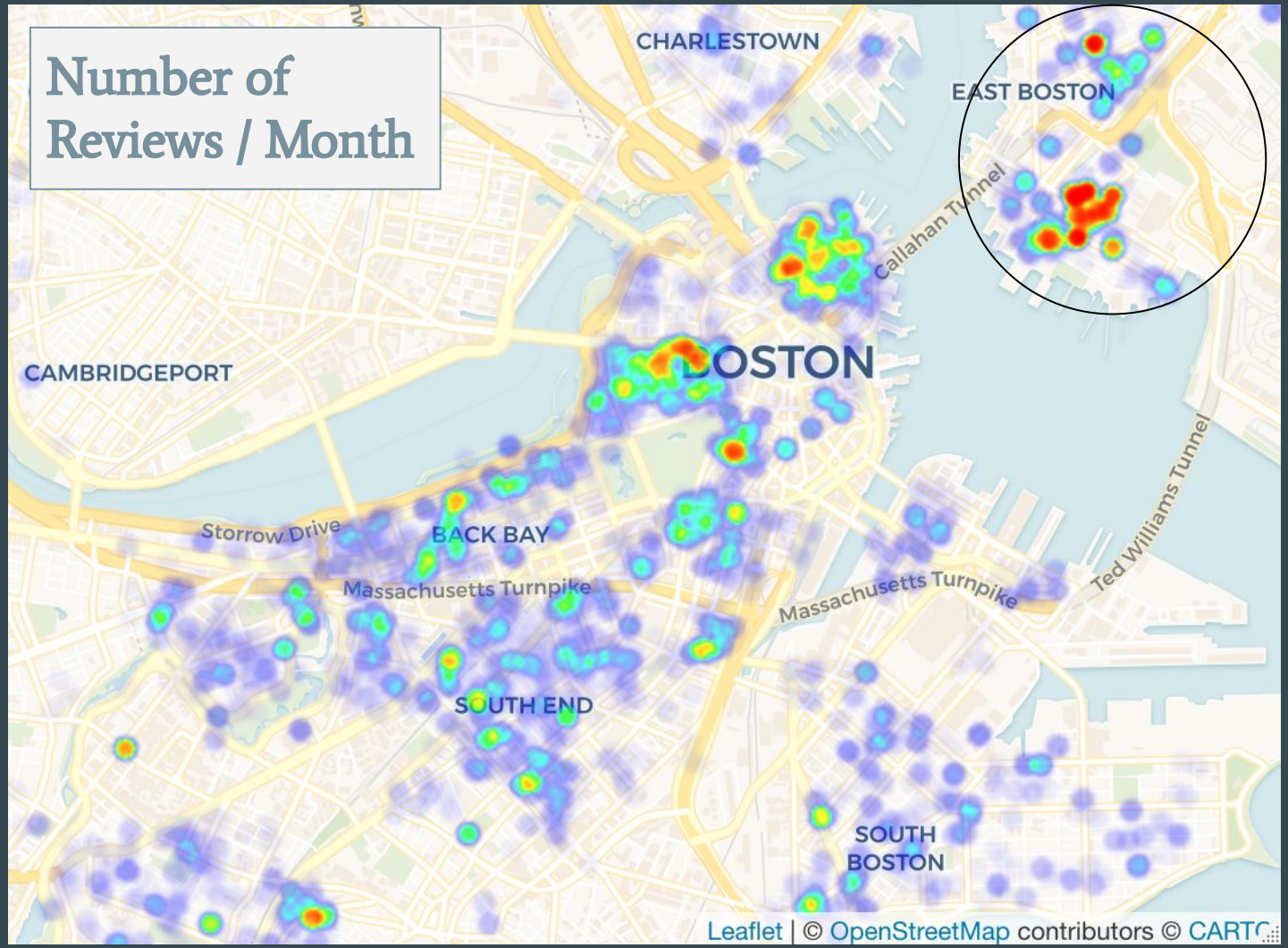


Popularity (Reviews) vs. Neighborhood

Which are the most widely booked areas of Boston?

- Using the reviews/month ratio as a metric of popularity, which areas are most commonly selected?


Average Reviews per Month per Neighborhood
East Boston
Longwood Medical Area
North End
South Boston
Roxbury
Beacon Hill
Hyde Park
West Roxbury
Dorchester
Jamaica Plain
Mattapan
Roslindale
Downtown
Brighton
South End
South Boston Waterfront
Back Bay
Allston
Charlestown
Mission Hill
Bay Village
Leather District
Fenway
Chinatown
West End
Average Number of Reviews per Month
0
1
2
3
Neighborhood


Number of Reviews / Month
CHARLESTOWN
EAST BOSTON
Callahan Tunnel
CAMBRIDGEPORT
BOSTON
Storrow Drive
BACK BAY
Massachusetts Turnpike
Massachusetts Turnpike
Ted Williams Tunnel
SOUTH END
SOUTH BOSTON
Leaflet | © OpenStreetMap contributors © CARTO

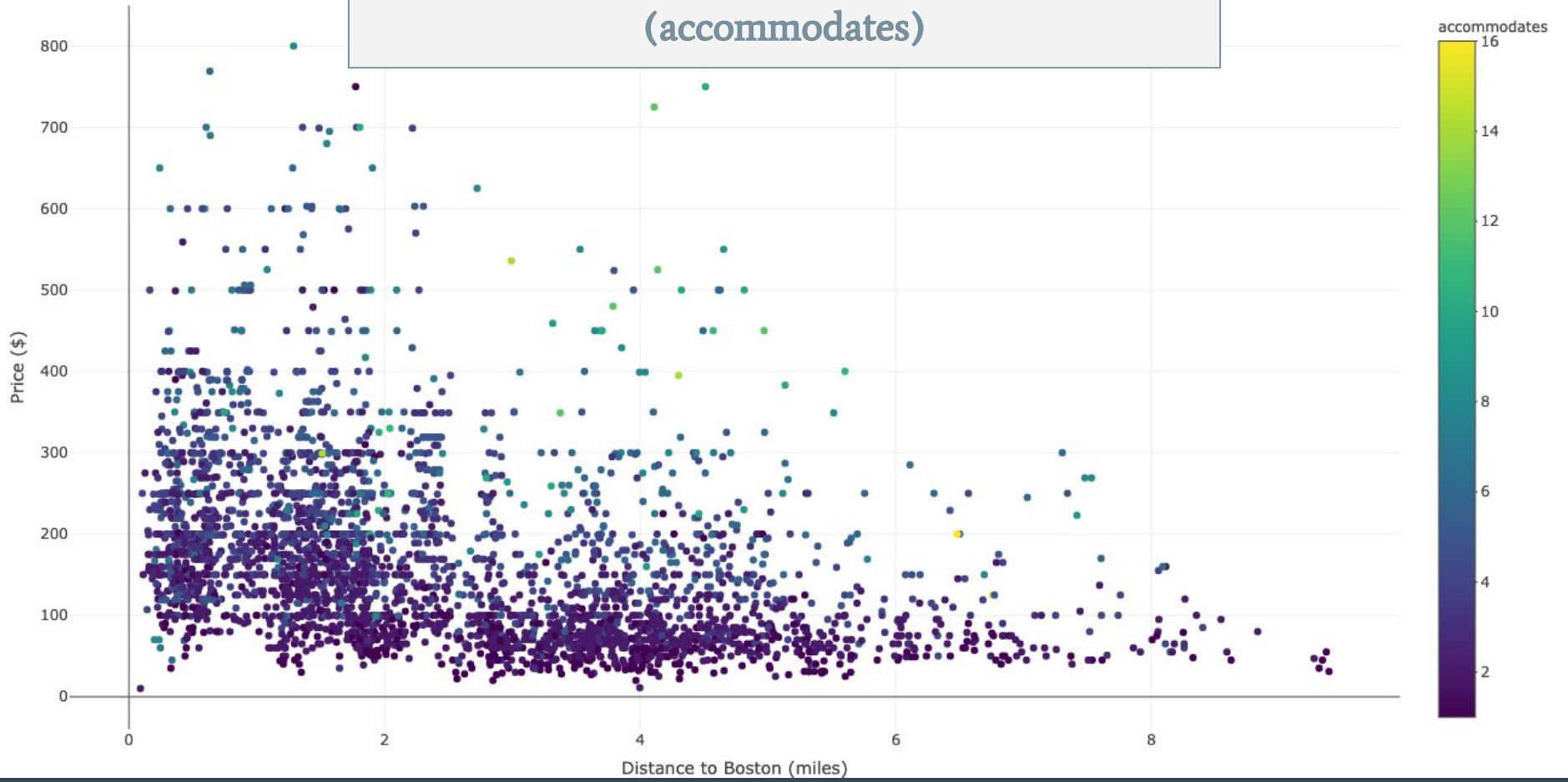
Distance from Boston vs. Price (vs. Type of Listings)

How does the distance from Boston effect price? Types of listings?

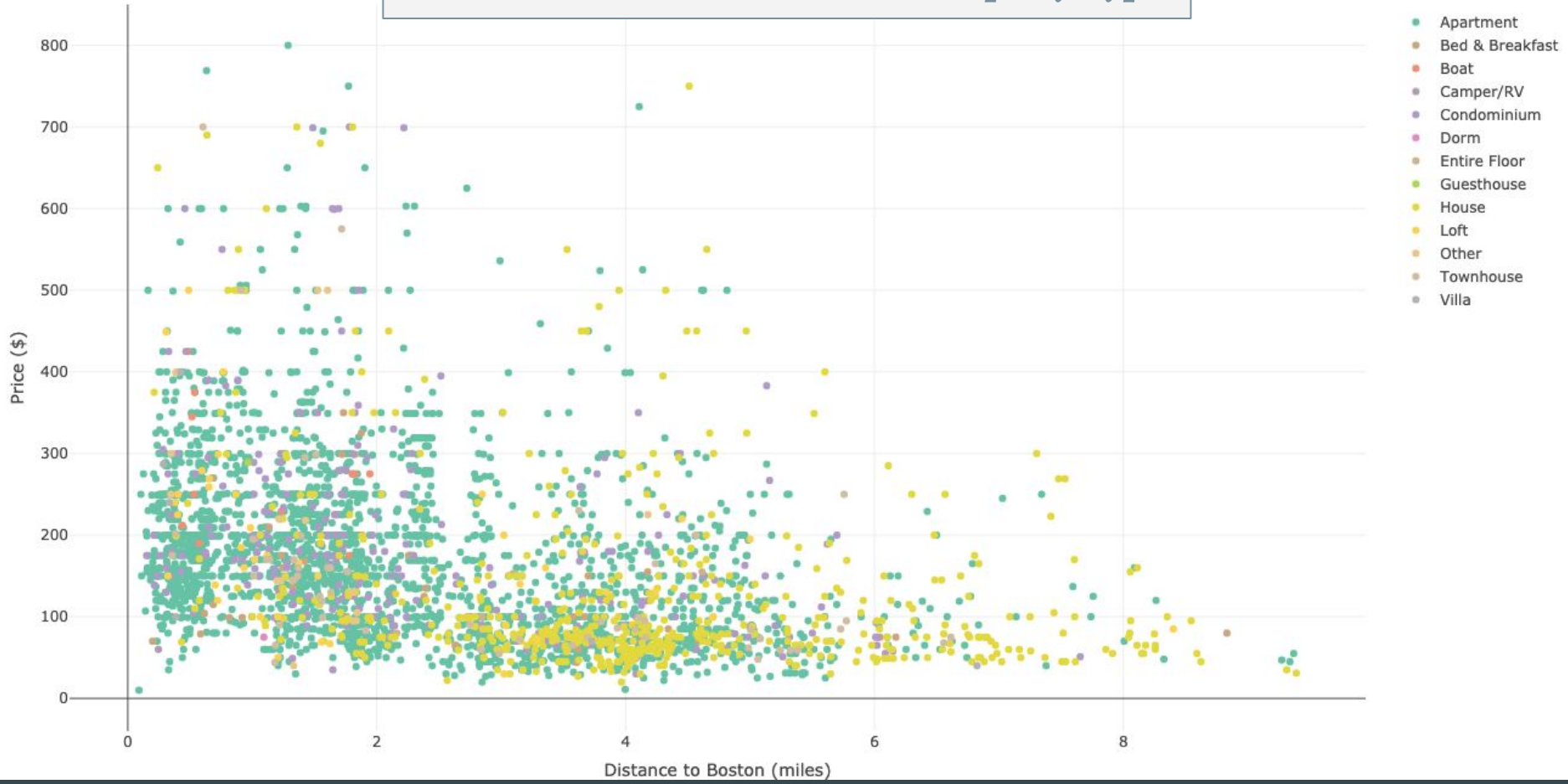
Sub-factors:

- Number of Guests (accommodates)
- Property Types
- Room Types

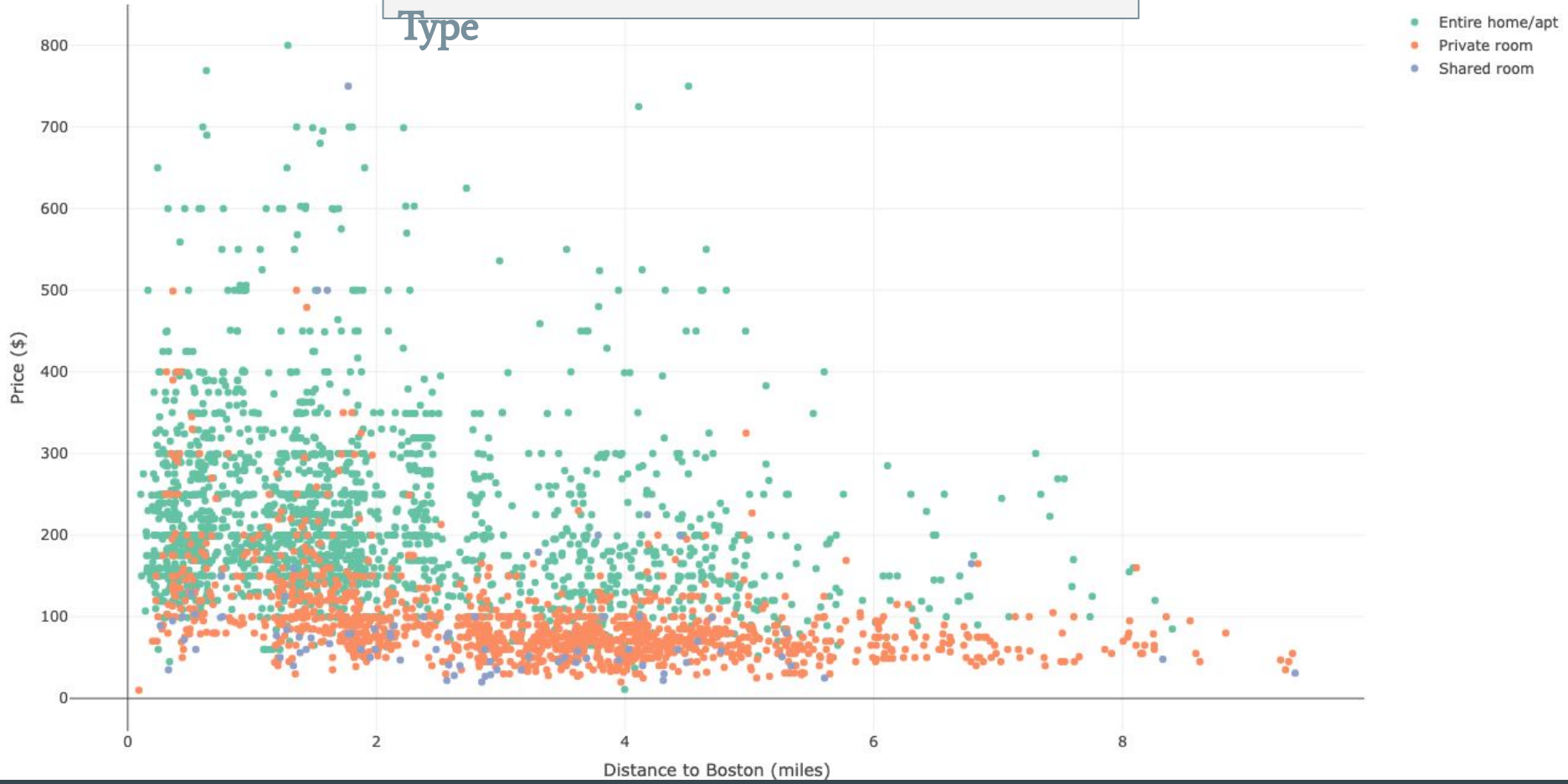
Distance to Boston vs. Price vs. Number of Guest (accommodates)



Distance to Boston vs. Price vs. Property Type



Distance to Boston vs. Price vs. Room Type



Concluding Thoughts

- East Boston
  - Relatively low listing prices
  - Moderate amount of listings
  - High traffic / popularity

    (Suburban pricing while being much closer to the heart of Boston - just over the bridge!)
- Long term commitments
  - Sync to traditional leasing pattern (Fall start date)

...and Next Steps

- Multi Linear Regression
  - Better understanding of listing prices and predictor variables

    (those covered & amenities, bed count, bath count, etc.)

Thank you!

Any questions?