CITY OF BOSTON:
REMODELING AND UNIT LOSS
TEAM B

BOSTON UNIVERSITY

FINAL

PRESENTATION

SPARK!

TEAM BREAKDOWN
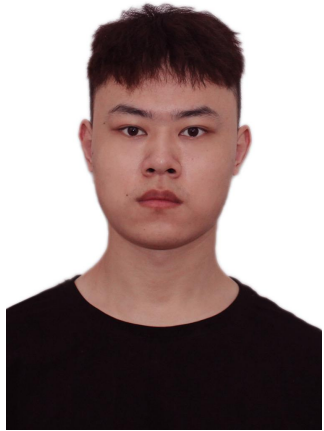
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PROJECT DESCRIPTION

- Our analysis and visualization focuses on improving the way the city operates, and looks at the role that retrofitting and zoning conversions play in Boston's housing market.

WHAT WE HAVE DONE

- **Question Answered in Early Insights:**

  - What communities are building more housing units?

  - Which ones are losing housing units?

  - Where are housing remodels and renovations happening?

WHAT WE HAVE DONE

- **Question Answered in Midterm:**

  - How accurate are the insights drawn from the available data, considering the missing units and disorganized city column information?

  - Can we quantify the impact of remodeling on the availability of housing units?

  - How can the analysis be improved with the current limitations of the data?

WHAT WE HAVE DONE

- **Data Preliminary Analysis:**

  - Analyzed the changes in total unit undering 2009 - 2024

  - Analyzed the trend of permits in different regions for each year.

 - Analyzed the changes of total living area from 2009 to 2024

HOW DOES THE LIVING AREA IN EACH REGION CHANGE EVERY YEAR?

# CHANGES IN LIVING AREA FROM 2009 TO 2024

Top 10 Zipcodes by Total Living Area Over Years
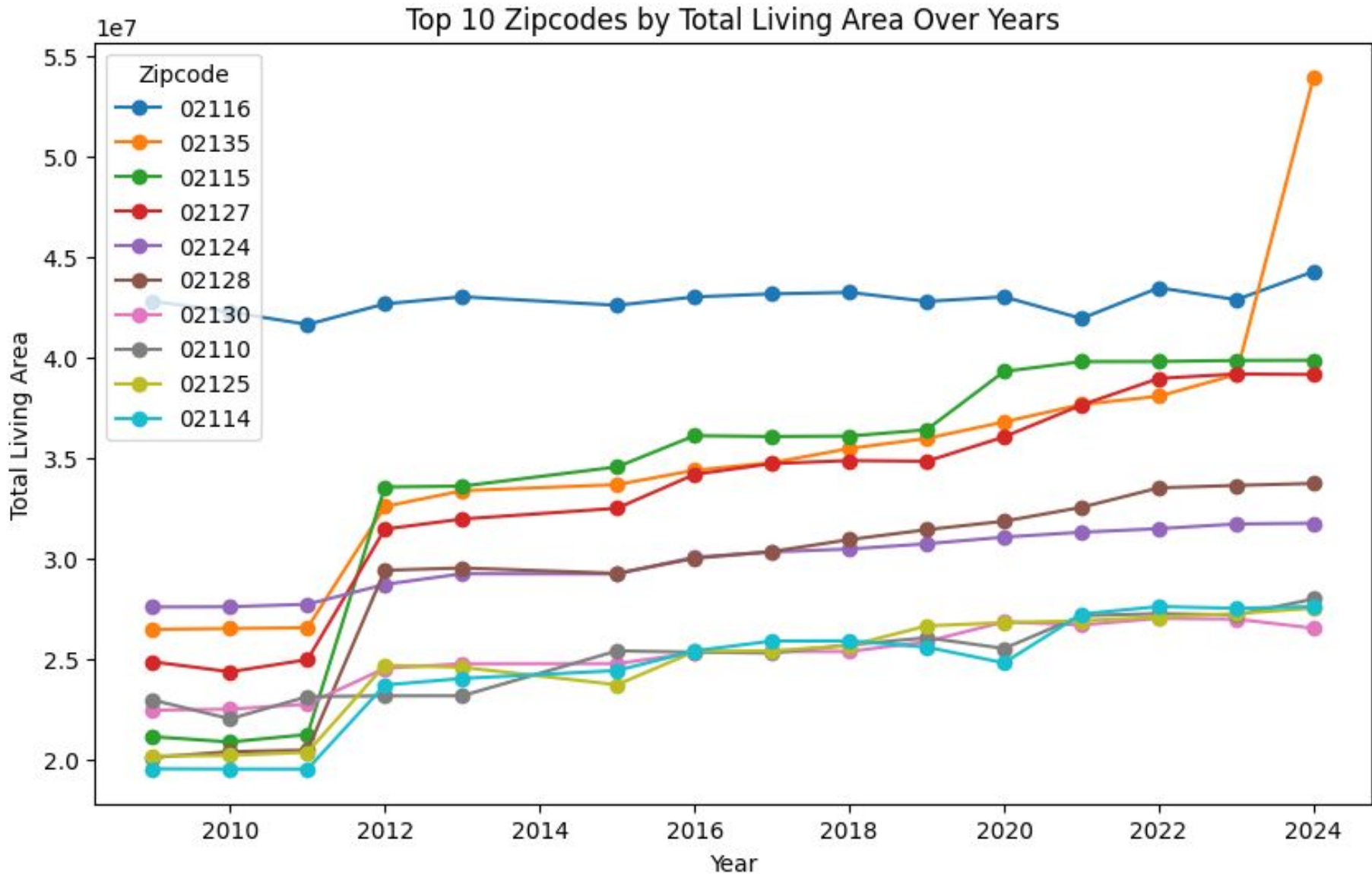
Data for the year 2014 is missing, but the remaining data can still be used for analysis.

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CHANGES IN LIVING AREA IN TOP 10 NEIGHBORHOODS FROM 2009 TO 2024

Top 10 Neighborhoods by Total Living Area Over Years
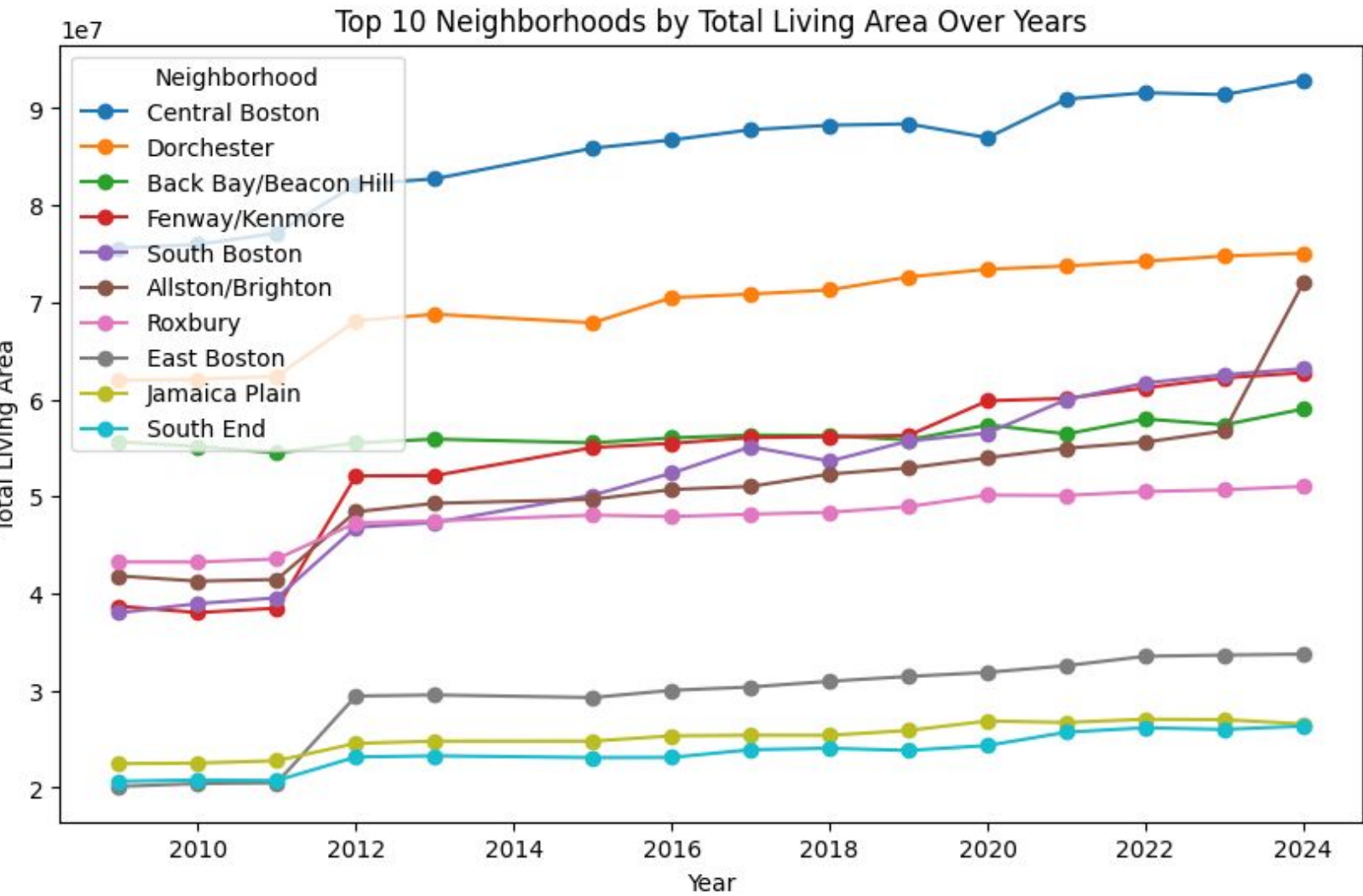
THE LIVING AREA PERCENTAGE OF EACH NEIGHBORHOOD EVERY YEAR

Total Living Area by Neighborhood in 2009

Total Living Area Over Years for Central Boston
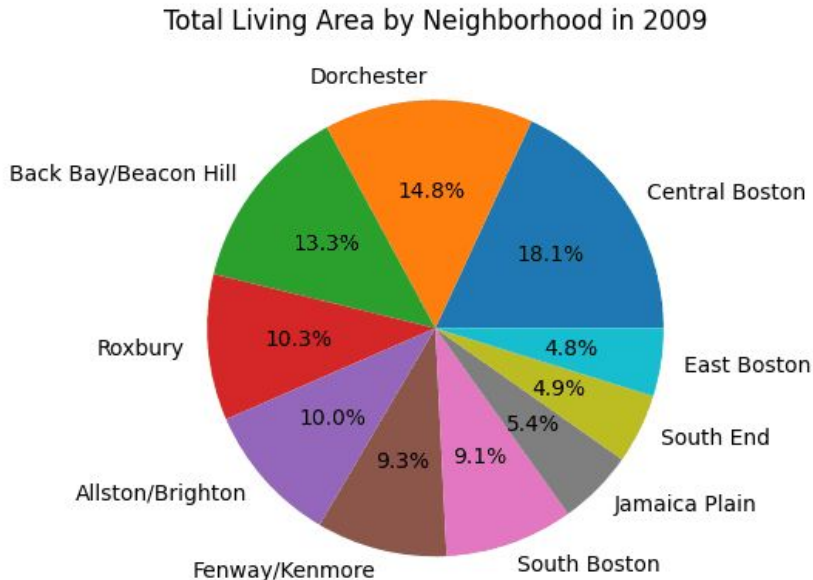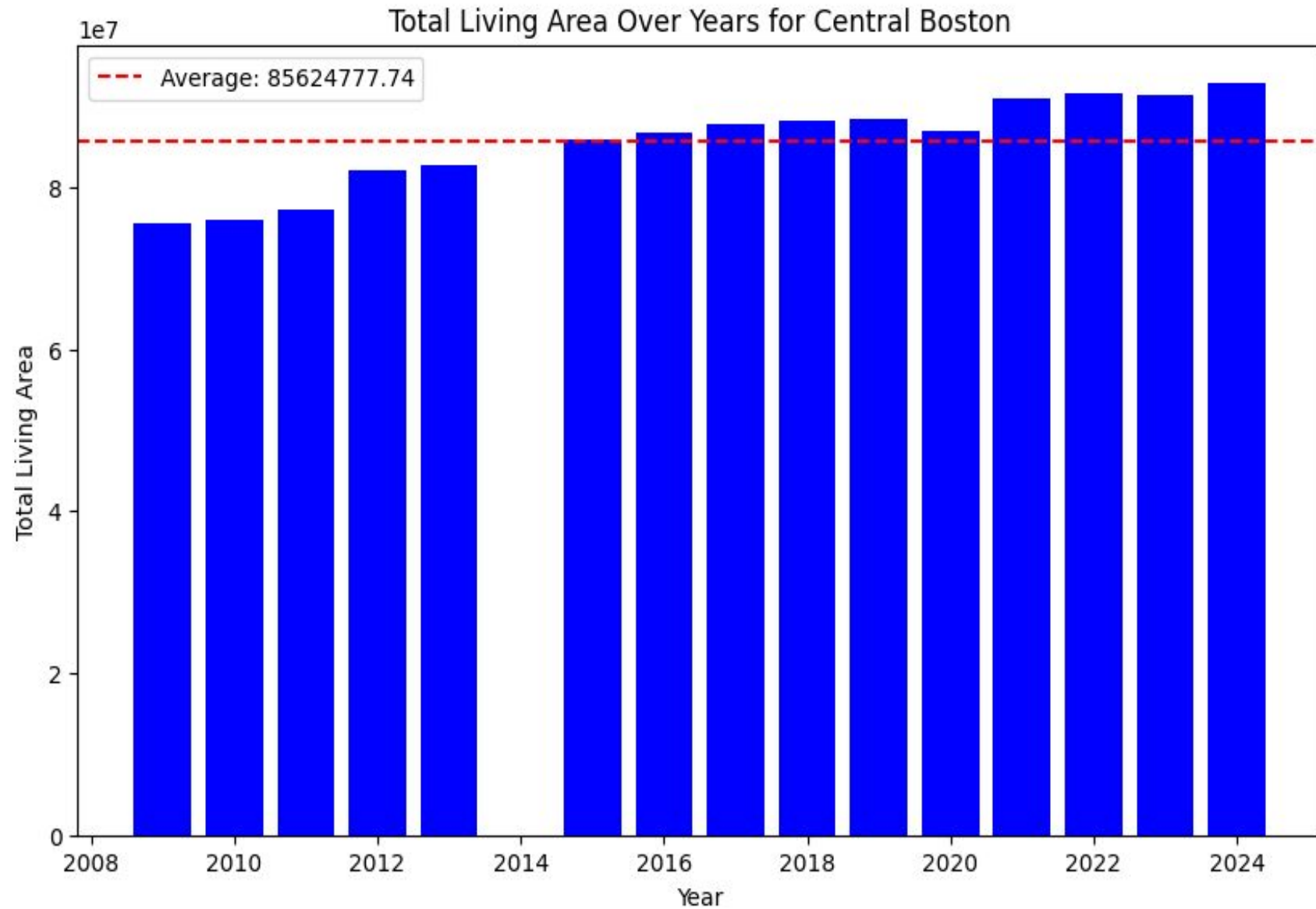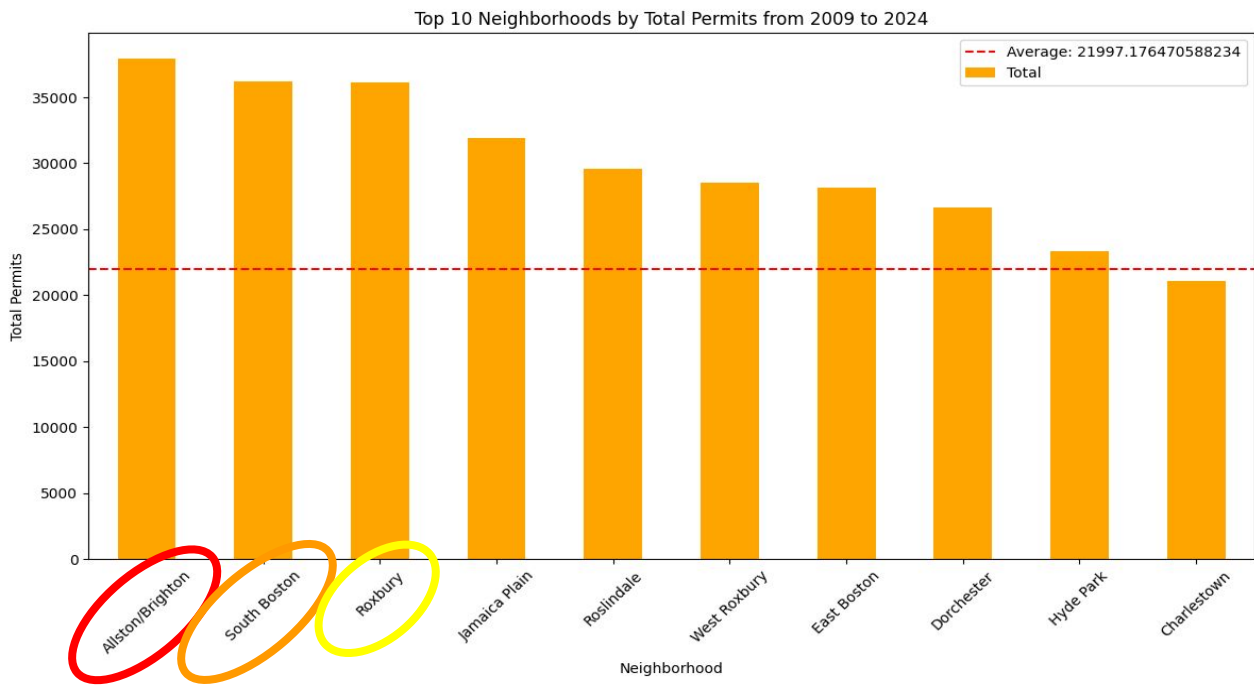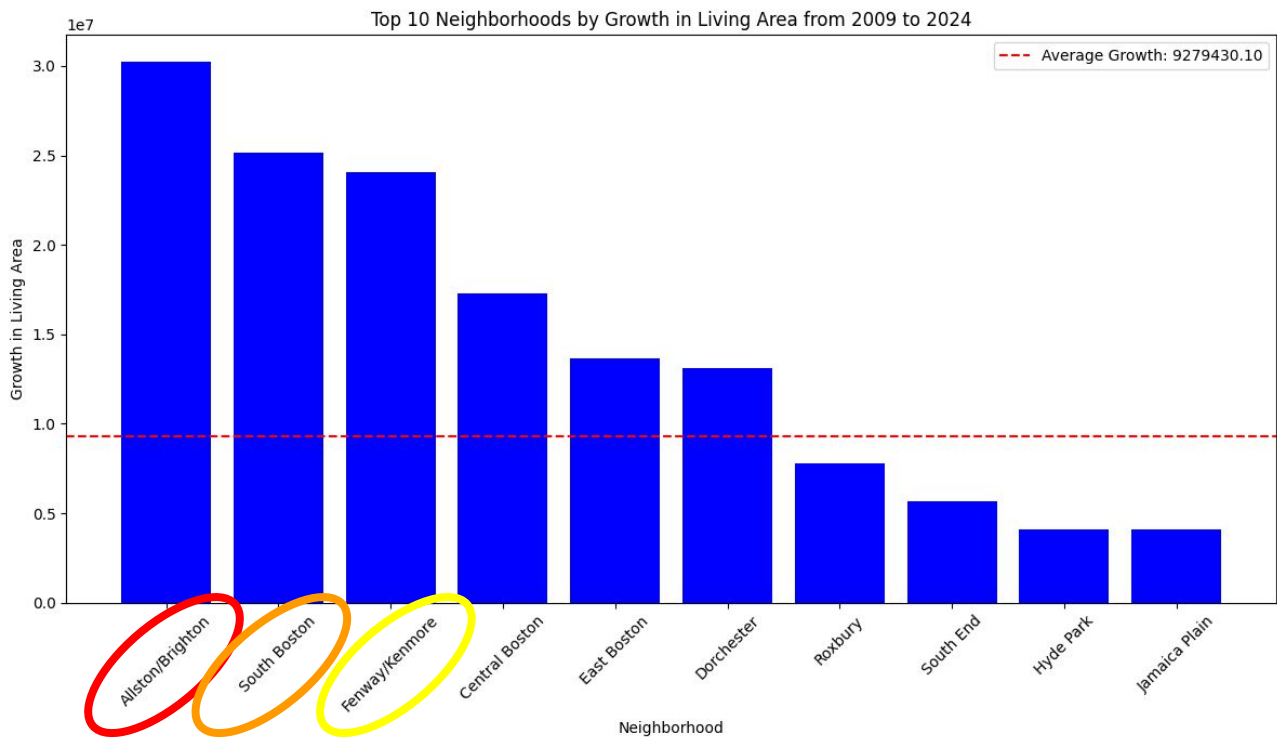
Living area is growing steadily in Central Boston.

IS THERE A RELATIONSHIP BETWEEN REMODELING AND THE CHANGE OF LIVING AREA?

Top 10 Neighborhoods by Growth in Living Area from 2009 to 2024

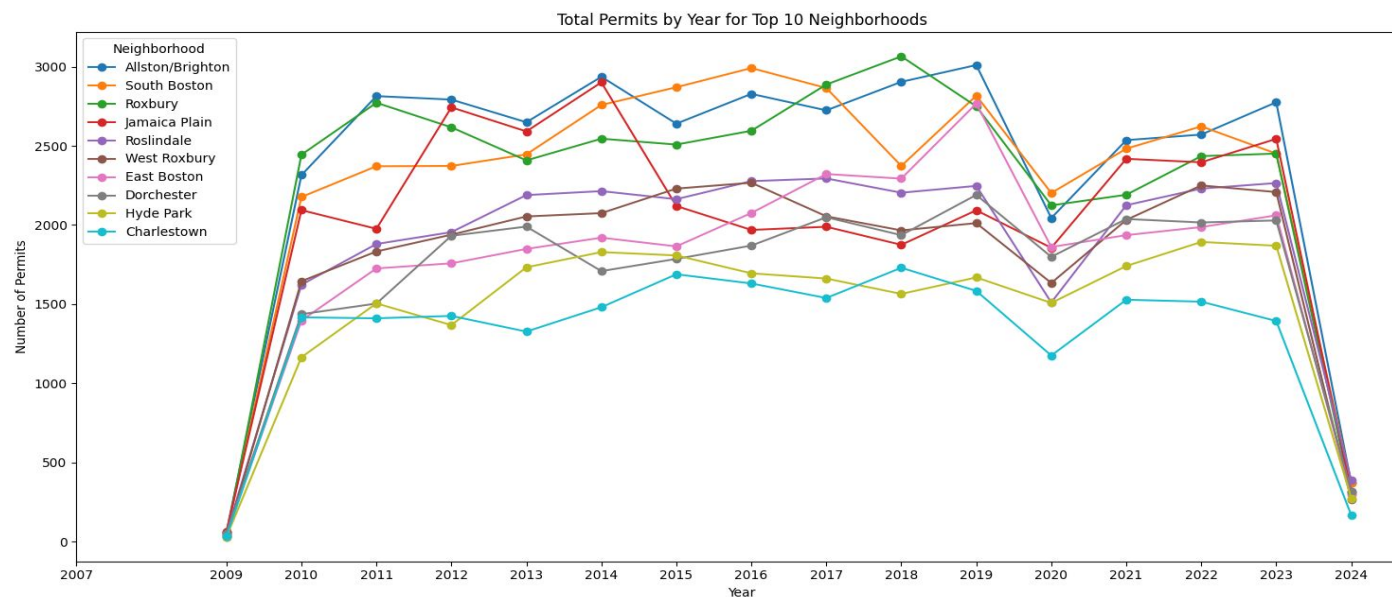Top 10 Neighborhoods by Total Permits from 2009 to 2024

Remodeling may indeed have a positive correlation with living area.
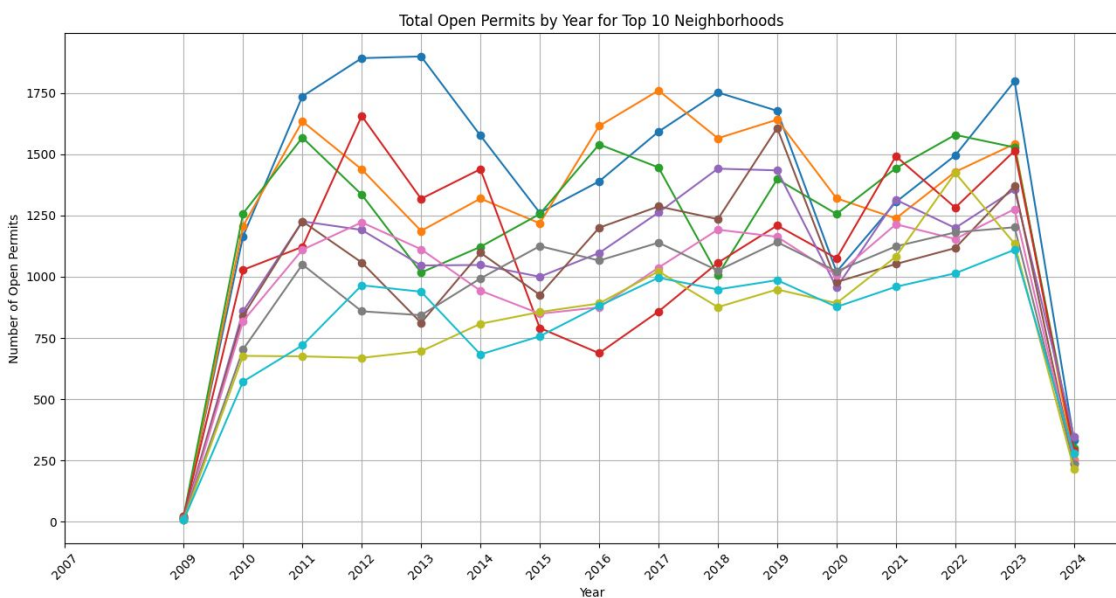
An increase in living area might indicate more remodeling activities in that area.

However, they are not determinative factors of each other. Other factors also contribute to their respective changes.

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TOTAL

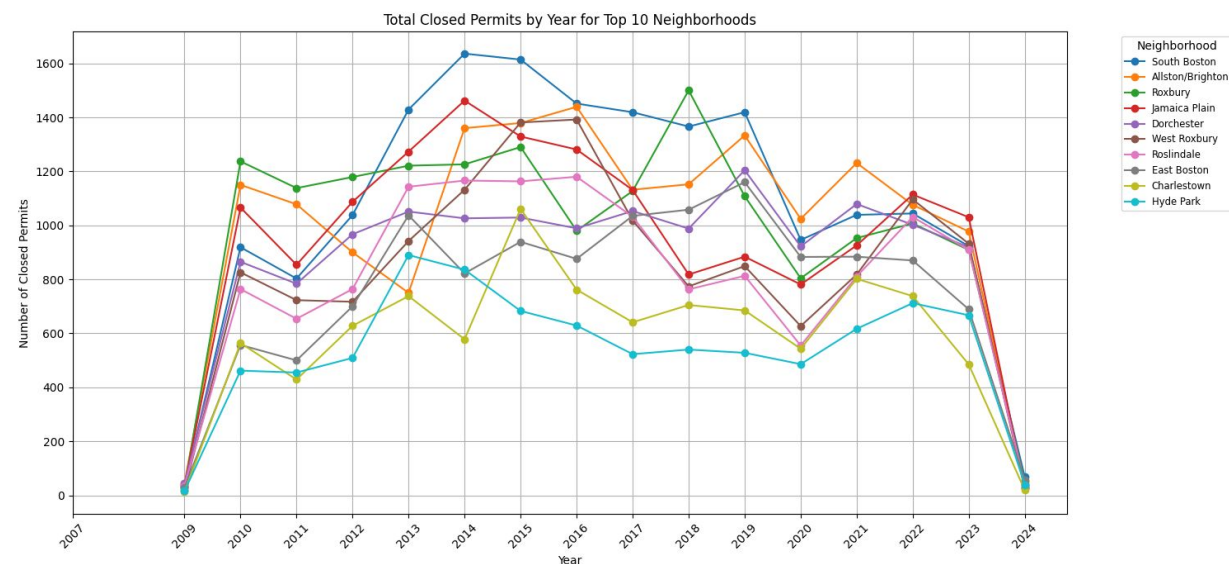Total Permits by Year for Top 10 Neighborhoods

OPEN

CLOSE

Total Open Permits by Year for Top 10 Neighborhoods

Total Closed Permits by Year for Top 10 Neighborhoods

IS THERE A RELATIONSHIP BETWEEN REMODELING AND THE CHANGE OF UNIT PER YEAR?

Total Number of Re-modeling Activities Per Year

Property Units Trend from 2009 to 2024
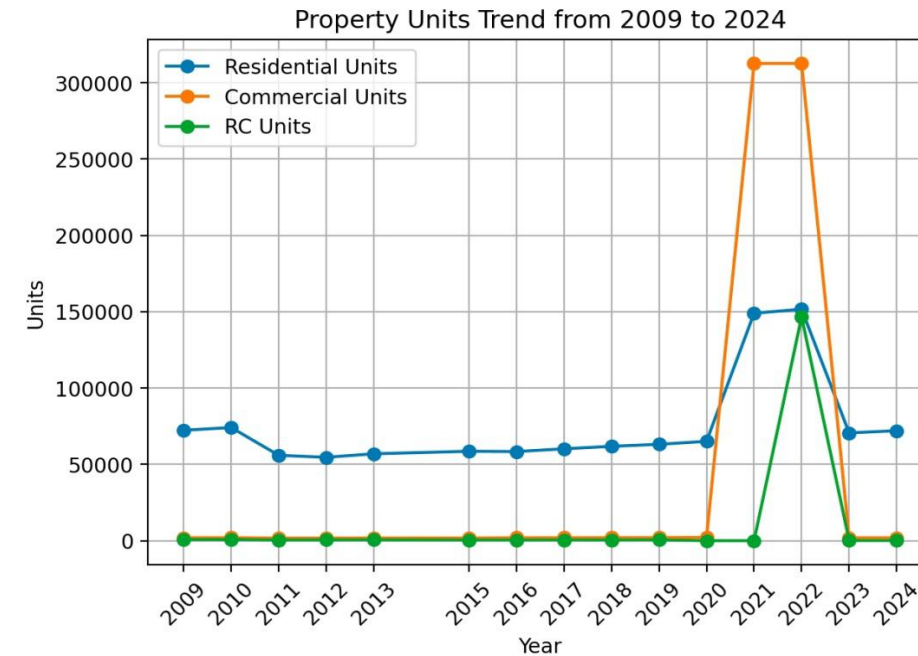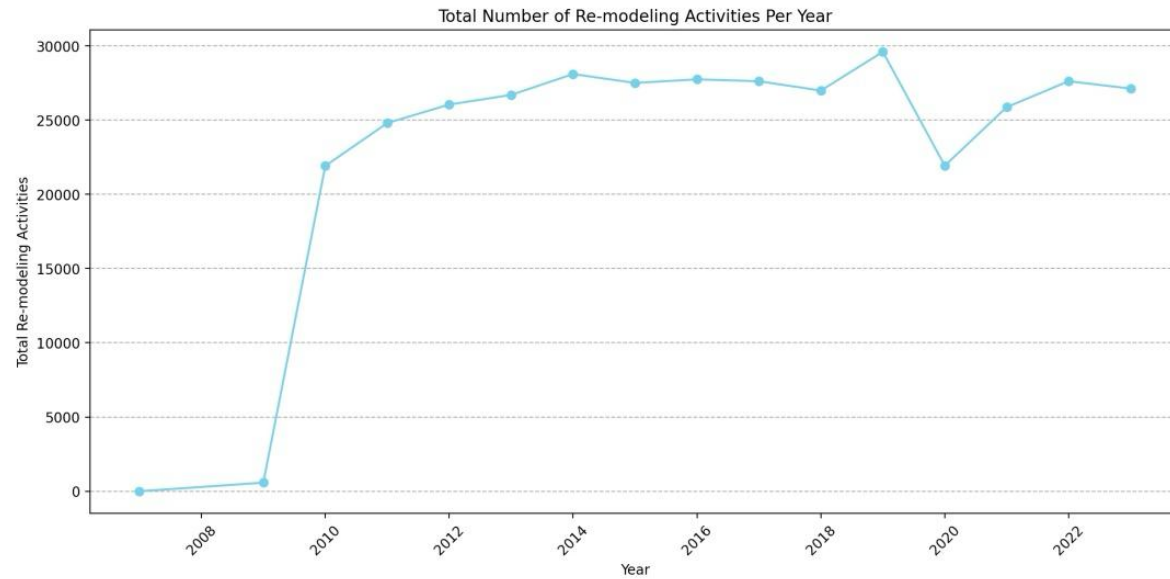
- Residential and commercial unit numbers remained stable, showing a certain positive correlation with remodeling activities, though not a decisive factor
- The surge in all units from 2020 onward may be related to the COVID-19 pandemic, as changes in living and working space needs due to the pandemic could have stimulated the transformation to all types of units
- The sharp decline in units after 2023, marking the end of the COVID-19 pandemic, likely reflects rapid market adjustments or shifts in response to the pandemic

TOTAL FINDINGS

- **Urban Growth**: Dorchester leads in new constructions, emphasizing its role in Boston's expansion.
- **Housing Reduction**: Significant losses in housing units occur through demolitions in key neighborhoods.
- **Renovation Demand**: High renovation activities in Boston, especially in Dorchester and Roxbury, show a strong interest in updating existing homes.
- **Stability of Unit Numbers**: The number of residential and commercial units remains stable.
- **Correlation with Living Area and Units**: Remodeling activities tend to increase in areas where living spaces and The number of residential and commercial units are expanding, suggesting a positive correlation.
- **Complex Influences**: The relationship of remodeling-living area and remodeling-units is not definitive; multiple factors contribute to changes in both.

PROCESS OF WORKING TOGETHER

- Meet for weekly client meetings
- Discuss progress during weekly lab sessions
- Team meet weekly every Friday to go over progress
- Keeping track of and engaging with Trello board & Slack
- Communicating with PM as needed

TOOLS AND DOCUMENTATION

- Github: https://github.com/BU-Spark/ds-boston-remodeling/tree/team-b

- Pandas Cheat Sheet: https://pandas.pydata.org/Pandas_Cheat_Sheet.pdf

- Datasets: Property Assessment - Dataset - Analyze Boston Approved Building Permits - Dataset - Analyze Boston Addresses (Sam database)

- Meeting Notes: Weekly Team Meeting Notes

- Project Description Doc: City of Boston: Remodeling and Unit Loss

Thank you!