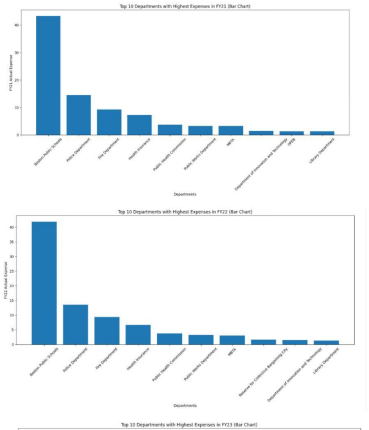
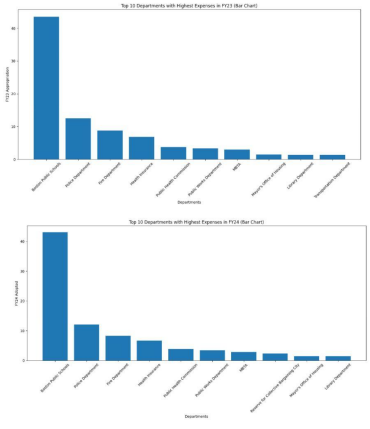
1. A brief introduction to your problem statement.

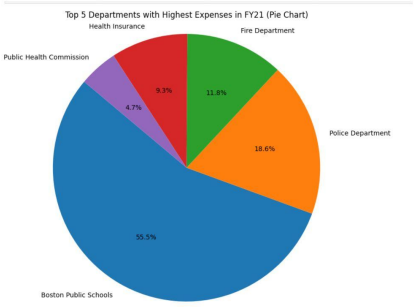
We are working on analyzing the City of Boston's budget. More specifically, we have access to public datasets that include Boston's operating and capital budget for 2021 and 2022, as well as their allocated budget for 2023 and expected budget for 2024. We seek to dig into this data and analyze how the budget is allocated (e.g. by department or by neighborhood) and look into trends over time.

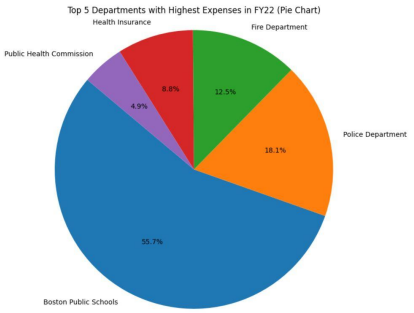
2. Details of the data collection or cleaning steps you've undertaken.
    - The data collection process was mainly downloading the FY24 RECOMMENDED OPERATING BUDGET PLAN and the FY24 RECOMMENDED CAPITAL BUDGET and the fy24 capital budget plan recommended datasets from the Analyze Boston website.
    - Cleaning steps mainly involved removing null values, if present. Then we converted the actual expenses of FY21-FY24 to numeric values. This was done to group by the operating budget expenses for each FY and perform EDA on it. Some invalid neighborhood names were also removed such as 'Multiple Neighborhoods' and 'Citywide'.
    - We even find the number of unique departments, programs and expense categories present in the dataset to get an understanding of the spread of the data across categories.

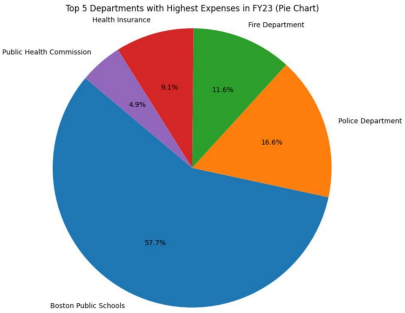
3. Exploratory Data Analysis (EDA).

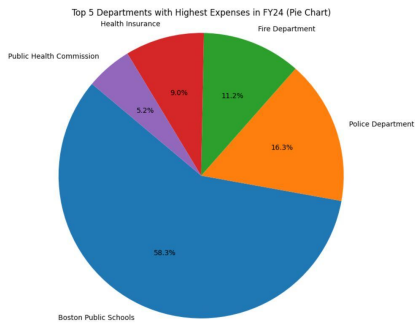


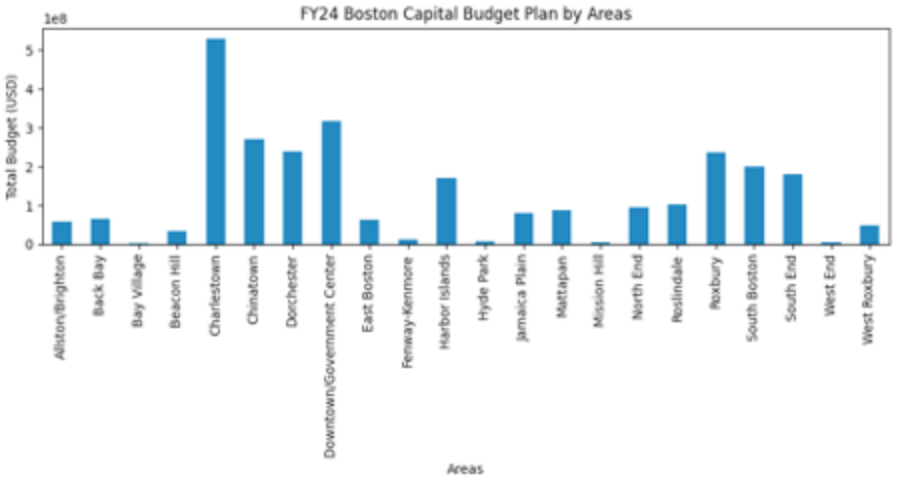












4. If your analysis has led to answers for any of the questions or if you've formulated hypotheses, especially for at least questions.

Our analysis of the operating budget enabled us to answer the main question: how the city of Boston allocated its annual budget and how this has changed from 2021 to the expected 2024, as well as which departments received the most funding over these 4 years.

Additionally, we calculated the percentage of the total budget allocated to the top 5 departments.

Our analysis of the budget allocation by neighborhood shows Charlestown gets the most funding by a significant margin, followed by neighborhoods such as Charlestown, Dorchester, and Downtown in fiscal year 2024.

5. Individual contributions of each team member. We recommend that each team member writes 3-4 lines about their contributions, which can then be compiled into the report.

- Shreyas :
    - Worked on downloading the datasets and cleaning the data.
    - Used group by and aggregate functions to find the total expense for all the departments for each Fiscal Year. Repeated the same process for programs as well.
    - Plotted bar graphs for the total expense spent by each department from FY21-24.

- Qicheng:
    - Used Python to clean the data and showed the total project budget for each neighborhood.
    - Grouped the data by neighborhood and calculated the sum of budgets for each area.
    - Created a bar plot to visualize the budget allocation across different neighborhoods in FY24.

Logan:

Went to labs to provide a point of contact between the team and TPM/TA. Helped coordinate team meetings. Provided assistance and clarification to the team regarding deliverable expectations and requirements. Assisted with data analysis and report. Put together PR and submission.

Priscilla:

My specific contributions included identifying the departments, programs, and expense categories that received funding during this period. Additionally, I consistently found that Boston Public Schools ranked as the department with the highest total expenses each year. I also compiled a comprehensive list of top 10 departments with the highest expenses across the 4 fiscal years. Finally, I calculated the fractions representing the budget dedicated to the top 5 departments with the highest expenses.

Ruoxi:

My contribution to the team is helping with collecting and analyzing data. Worked Helped with summarizing EDA. Finished key questions,