Communication And Visualization

Mid Term Project in Tableau

ALY6070, Spring 2022

Group 4

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Submitted by:

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Introduction

Background

The dataset contains information about the residential, condo, commercial, and exempt data for the financial year 2016 to 2022. The dataset contains 204k rows, and 63 columns and the raw contains information about a property. The dataset

Have some limitations to its data because it has Only information on the financial year of 2019 and the Financial Year of 2020 entries in this dataset containing Property Tax Amount values.

Among its many uses, a Tableau is a popular tool for Data Visualization, Business Intelligence, and Analytics such as Reporting, Analysis, and Dashboarding. To gain business insight and help make strategic decisions, this tool helps users create interactive graphs and dynamic charts in dashboards, worksheets, and stories.

As a first step, we cleaned the dataset and began to understand it so we could make sense of it, and then we began analyzing it to make sense of it. Although I have no experience with such data sets, working with Tableau gave me a great deal of confidence.

The given data set consists of the property database of multiple states across the United States. We have prepared two dashboards considering some strong variables that show the data for a period and another variable that are used to compare the data. Accordingly, the estates are evaluated depending on their conditions and their sale price.

We utilized numerous factors to assist us to mark the association in the dataset to extract the visualization and acquire the effective output in the form of graphs and maps when constructing the dashboard:

- Year Of Assessment
- Tax District
- Assessed Value
- Sale Price
- Previous Assessed Value
- Owner State
- Systems Heat Type
- Condition Overall Condition
- Condition Overall Grade
- Property Tax Amount

Research Questions:

Question 1: After examining the historical and present worth of the property, which state has the greatest sales price based on the condition of the house and the heating type?

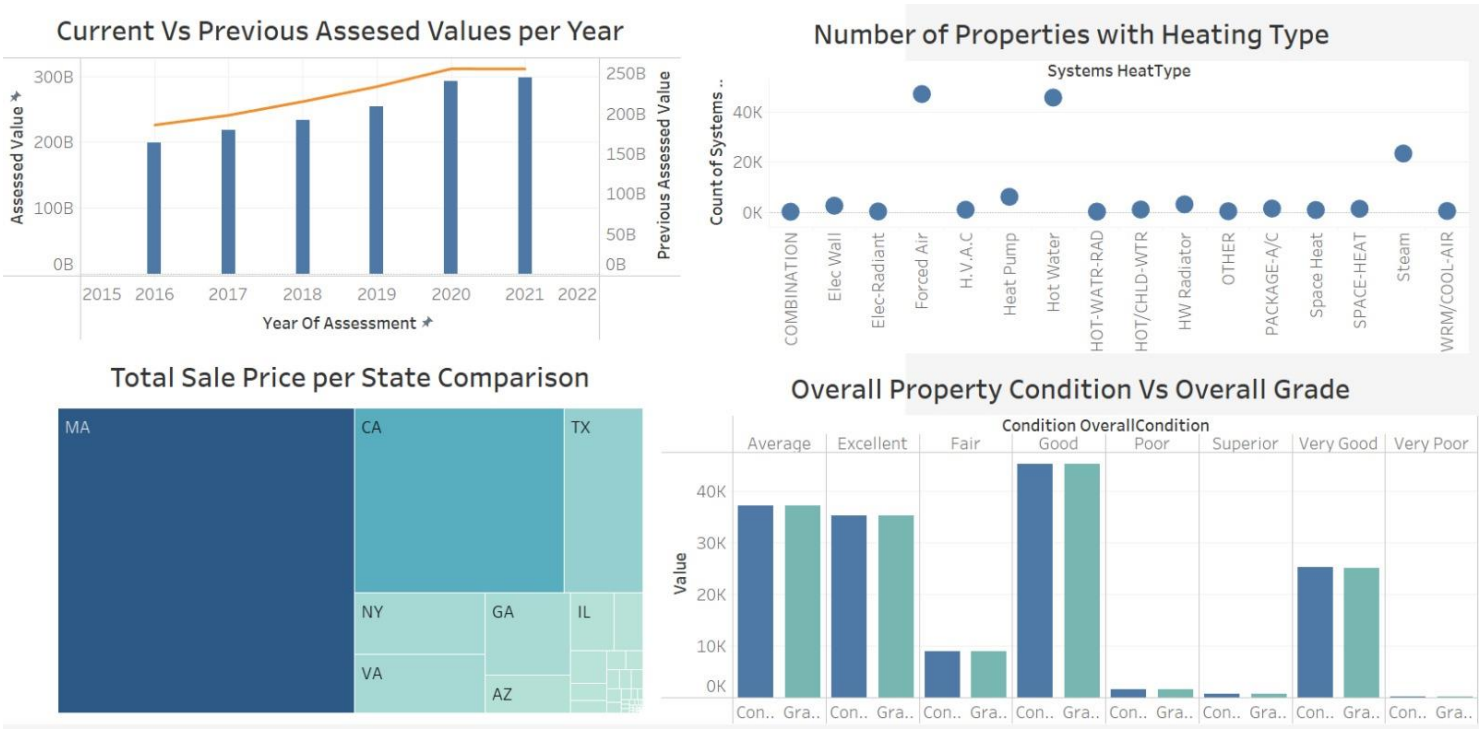
Question 2: How much tax does the property owner pay in each district based on the property class?

Implementation of the dataset in Tableau:

Question1: After examining the historical and present worth of the property, which state has the greatest sales price based on the condition of the house and the heating type?

We have integrated bar graph, dot graph, treemaps, and side by side bar graph in the dashboard 1 shown below:

Dashboard 1



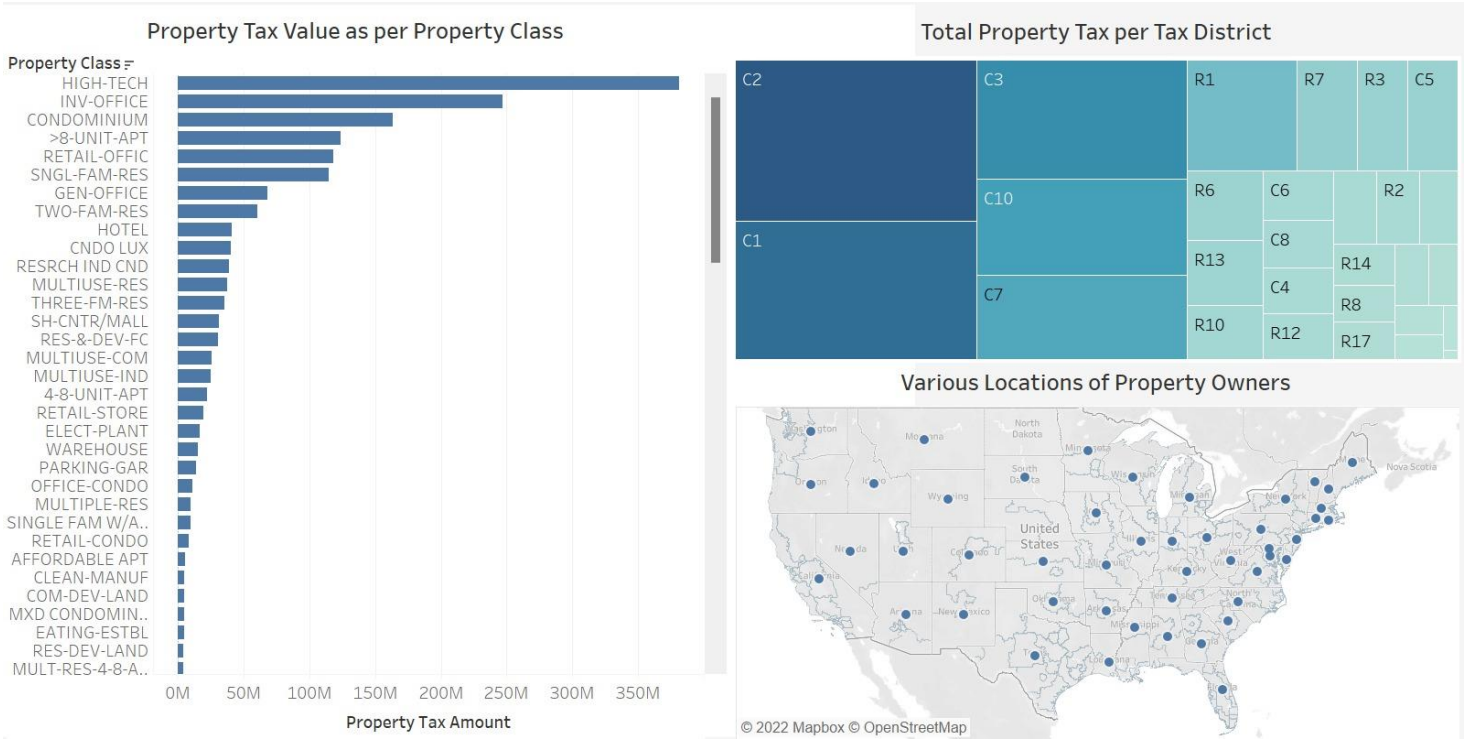
In the first bar graph, we can see current vs previous assessed values per year. in that graph, we can observe that the x-axis is the year of assessment and the y-axis as the assessed value, it shows the gradual hike from the year 2016 to 2021 and it got flattened in the year 2022. Secondly, in the treemaps, we can see that 50% of the total sales price per state is high in Massachusetts and followed by California.

Thirdly, in the Dot chart which has the x-axis, the variables and the y axis is the count of the system. In this dot chart, we can observe that Forced Air and Hot water are nearly at 40k and steam is between 20 to 30k and the rest are at 0k. Lastly, we are going to observe the overall property condition vs overall grade aside from the sidebar graph in which we can observe that most of the properties are in good, excellent, and average condition and very few of them are either in poor or very poor condition.

Question2: How much tax does the property owner pay in each district based on the property class?

We have integrated the horizontal bar graph, treemap, and symbol map for this dashboard

Dashboard2



In the first horizontal bar graph about the property tax value as per property class, the x-axis is the property tax amount, and the y-axis is the property of the class.

We can observe that high-tech shows high dominance more than 350 million followed by inv-office with 250 million and the least with res-dev-land with zero million and multi-res-4-8-a zero million.

Secondly, the treemap talks about the total property tax per tax district.

tax district is a government entity that collects or has collected regular property taxes on real property in a planned or authorized redevelopment area. In this graph, we can find that the C2 classified tax district has the highest property tax amount. As per the data, the states covered under C2 are MA, CA, IL, FL, CT, GA, VA, NH which means the property tax is highest in these states. Finally, the symbol map is about the various locations of property owners across all the states.

Conclusion and Impact Tableau Visualization:

We can draw many compelling insights about the Cambridge property dataset possible by applying appropriate visualizations to the data we are analyzing. Tableau allows for all kinds of graphs to be created, thus making it straightforward to create and interpret this type of visualization. The tables and colors in Tableau's dashboards allow non-technical personnel to analyze information easily. If the primary datasets used in a Tableau dashboard are regularly updated, then a dynamic dashboard can also be automatically updated going forward. The Cambridge property dataset may now be displayed to generate insightful information.

Reference:

[1] Intro to Maps for Data Visualization - YouTube

Tableau Map Data Visualizations are real easy. Get started with this quick introductory tutorial.

https://www.youtube.com/watch?v=fHe0jFgVPJU

[2] Tableau Tutorial 14: How to Create Slope Graph ... - YouTube

This video is going to show how to make a slope graph and highlight the decreasing and increasing trends with different colors. It can be useful to see the t...

https://www.youtube.com/watch?v=9oo-S3ZcK8U