General Sir John Kothelawala Defence University

Faculty of Management, Social Science and Humanities

Department of Languages

BSc in Applied Data Science and Communication

SQL for Data Science (LB1224)

Year 1: Semester 2

Group Assignment

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The Report of Greater London Property Price Monitor

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Task 01

1. Introduction

This dashboard is for a research organization based in central London, UK, which is currently in the process of developing a Power BI-based reporting tool called Greater London Property Price Monitor for the analysis Greater London property market.

The purpose of this report is to provide a detailed overview of the current state of the London property market using insights derived from the Greater London Property Price Monitor, supported by recent transactional data. The dashboard data reveals how these factors affect prices across different property types and regions of the city.

As an overview this dashboard reveals the variation of average price paid according to the years, months and the property types etc. This report will provide a detailed analysis of London's property market trends using key metrics, such as average property prices, price per square foot, price changes over time, transaction volume, property types, and comparisons across boroughs.

2. Methodology

This data set contains both string and numeric data. Town city, price, and property type are some main columns included in data sets.

2.1 Import the Datasets

To create greater London property price monitor dashboard, we imported data from Dataset: https://www.gov.uk/government/statistical-data-sets/price-paid-data-downloads.

2.2 Create Data Base

After importing the datasets (pp-2020, pp-2021, pp-2022, pp-2023)
They were included into a new folder and rename the folder as SQLTASK1.

1. Database>New Database>Database Name>ok

After the database is crested in SQL databases,

2. Double click on SQL task 1> task>import flat files>next>browse>SQL task 1>pp-2020>next

2.3 Data Cleaning Part

Change the column names and change the data type accordingly.

Then insert primary key and insert allow nulls>next>finish
Do the same steps to the pp-2021, pp-2022, and pp-2023

2.4 Imported the Datasets into Power Bi

Next imported the datasets into Power Bi through the following steps.

1. Get data>SQL server>server name>ok

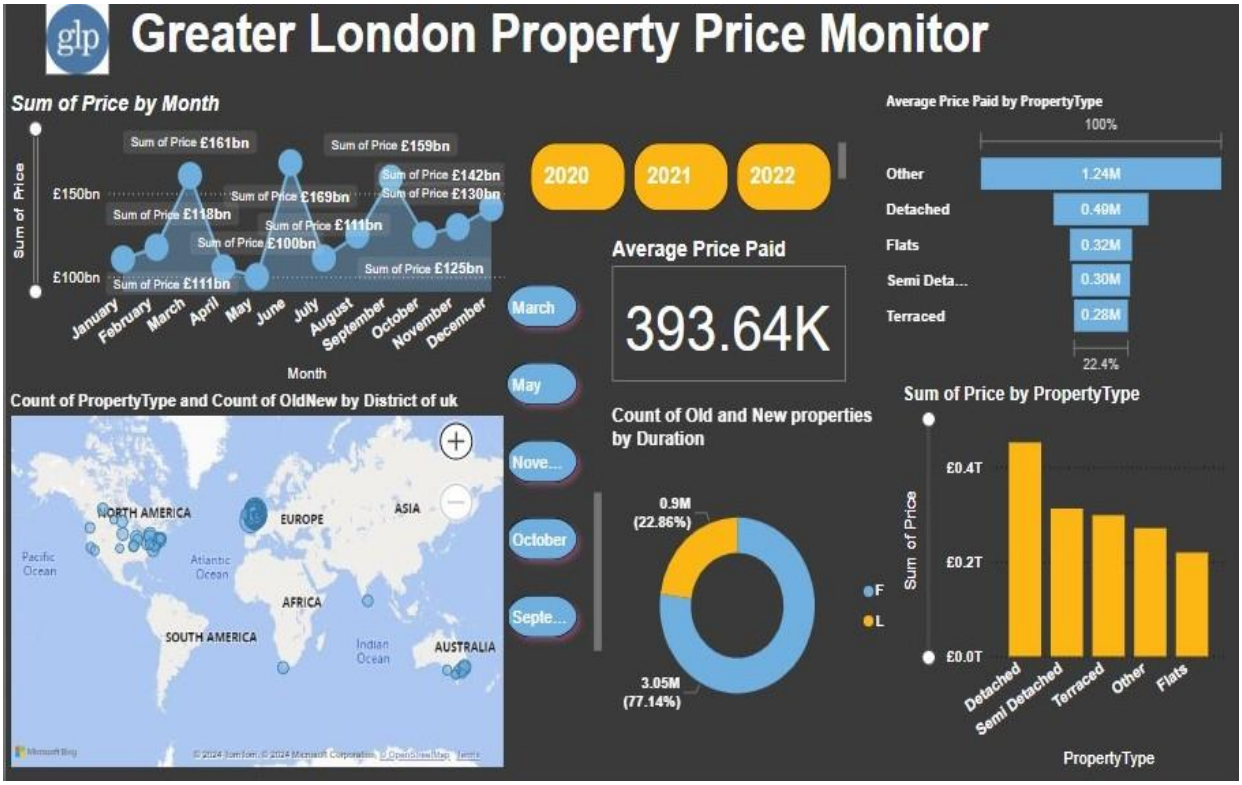
Then select the SQL task 1 datasets which we imported previously to The SQL.

2. Go to table view >table tool>new table

Then run the following g code to combine four data tables into one Data table.

Combined table= UNION (PP-2020, pp-2021, pp-2022, pp-2023)

3. Visualization



The dashboard is shown above, depicting the London real estate market data for the years 2020 2021, 2022, and 2023 in months. This dashboard applies a slicer that will filter the data with respect to year-over-year changes. On the same note, there is another slicer for filtering the fluctuation in information on a monthly basis. This example visualizes the data available from the greater London property price monitor dataset through bar, donut, Funnel, line charts, cards, and maps.

3.1 Average Price Paid For Properties

We used a card to represent the average amount paid. From the graph, we can see that the average paid in the year 2020 is 378.42k, in 2021 is 388.86k, in 2022 is 412.19k, and in 2023 is 393.83k.Based on these results, for the year 2022, the average amount paid is the highest.

3.2 Sum of Price Paid by Property Type

We use a bar chart to show the total amount paid by type of property. The total (sum) of the property prices for each type of property is shown on the y axis. The property types are shown on the x axis. This graph shows at once which type of property accounts most for the total value of the transaction. There are four different types of properties: apartments, terraced houses, semi-detached homes, and others. From the bar graph, can observed that the highest paid price over the period of four years falls to the detached property type. That means the most detached properties in that category are either selling quickly or have the highest total price points. This may result in detached houses having the highest total, even though they are more expensive than flats or terraced houses.

This chart can be used to determine

- What kind of properties are worth investment, based on the overall market value.
- Purchasers can use it to understand the price trends and the degree of affordability across the various property categories. It can also be useful in conducting a market segmentation analysis.

3.3 Count of Old and New Properties by Duration

A donut chart showing the number of new and old properties by duration. We can see that there are two main classes of property.

Old Properties: Properties that were built or transferred long ago. These could be second-hand homes or properties that have been resold multiple times.

New Properties: Newly built or recently developed properties, typically including newly constructed homes or recently registered freehold properties.

These categories can also permit the user to distinguish between more current projects, or inaugural sales and older, existing residences.

- In 2020 the count of newly built and established properties during the lease hold period is 17000 and as a percentage of 23.9%. The flats have taken a higher amount of newly built and established properties during the lease hold period in 2020.
- In 2020 the count of newly built and established properties during the free hold period is 54123 and as a percentage of 76.1%. The detached have taken a higher amount of newly built and established properties during the lease hold period in 2020.
- In 2021 the count of newly built and established properties during the lease hold period is 21 243 and as a percentage of 19.96%. The flats have taken a higher amount of newly built and established properties during the lease hold period in 2021.
- In 2021 the count of newly built and established properties during the f hold free period is 85 180 and as a percentage of 80.04%. The detached have taken a higher amount of newly built and established properties during the lease hold period in 2021.
- In 2022 the count of newly built and established properties during the lease hold period is 20 344 and as a percentage of 25.28%. The flats have taken a higher amount of newly built and established properties during the lease hold period in 2022.
- In 2022 the count of newly built and established properties during the free hold period is 60 124 and as a percentage of 74.72%. The detached have taken a higher amount of newly built and established properties during the lease hold period in 2022.
- In 2023 the count of newly built and established properties during the lease hold period is 15 146 and as a percentage of 25.13%. The flats have taken higher amount of newly built and established properties during the lease hold period in 2023.
- In 2023 the count of newly built and established properties during the free hold period is 45 117 and as a percentage of 74.87%. The detached have taken a higher amount of newly built and established properties during the lease hold period in 2023.

3.4 Sum of the Property Price Paid For Each Month

We used the line chart to depict the total amount of property price paid each month. That allows us to compare month-to-month changes in the price of property and transaction volume over time. This line graph is of real importance for the illustration of which months have had the total number of property sales increased or decreased overtime, and further comparison for the same month in other years might help in identifying trends such as seasonal variations.

These can be taken as a whole amount paid for each month of the relevant year and are represented by the line graph. The total amount paid for these was £24 billion in January 2023, £23 billion in February,£29 billion in March, £20 billion in April, £22 billion in May, £28 billion in June, £25 billion in July, £28 billion in August, £26 billion in September, £23 billion in October, and £21 billion in November.

3.5 Average Price Paid by Property Type

We used a funnel to show the average price paid based on the type of property. The funnel chart contains four kinds of properties: detached, semi-detached, terraced, and flats and others. These datasets show that the average price paid for the types of real estate consistently decreases. In our dashboard, it's possible to spot trends in the value of properties for particular real estate categories by visually showing a fluctuation in prices based on the type of property.

These funnel charts have been used to indicate the quantity or value decreased step by step from top to bottom ranking. In that regard, the top of the funnel would represent the property type with the highest average price paid, while the bottom would represent the one with the lowest average price, according to the dashboard. The size of each funnel section is proportional to the average price paid for that type of property.

Overall, the mean value that was paid for a building may determine the position of the luxury or high-value properties, such as detached houses, at the top of the funnel and reasonably priced buildings, apartments, or terraced houses, at the bottom, which types of property are more affordable for the average buyer can be viewed in the funnel chart. For instance, if there is a major drop in the funnel after semi- detached homes, this can suggest that detached homes are more out of grasp for the average buyer.

However, the price range is not very large between semi-detached houses and flats. It could be said that buyers might be considering the smaller type of properties, flats in this case, as a good substitute for the larger types due to constraints on affordability.

3.6 Map Visualization

The Map Visualization in the dashboard will enable a geographical visualization of the count of property types in various districts. The properties are divided into Old and new categories, depicting their distribution across districts in London. Each area, for example, a district in London, would have variously sized bubbles or dots representative of it. The larger the bubble, the greater the number of properties within that category for the location Different hues can be applied to each category so that color coding between old and new properties can be differentiated.

According to the map visualization in 2023 property buyers in London are trend to buy the properties as follows:

District	Old/New	Count
Hartlepool	old	150
	new	1458
Cornwall	old	305
	new	7761
City of London	old	9
	new	210
Rutland	old	10
	new	498

According to the map visualization in 2020 property buyers in London are trend to parches the properties as follows:

District	Old/New	Count
Hartlepool	old	116
	new	1524
Cornwall	old	1058
	new	10047
City of London	old	114
	new	164
Rutland	old	66
	new	577

According to the map visualization in 2021 property buyers in London are trend to parches the properties as follows:

District	Old/New	Count
Hartlepool	old	192
	new	2067
Cornwall	old	1207
	new	13912
City of London	old	237
	new	72
Rutland	old	69
	new	846

According to the map visualization in 2022 property buyers in London are trend to buy the properties as follows:

District	Old/New	Count
Hartlepool	old	269
	new	1799
Cornwall	old	1047
	new	10445
City of London	old	53
	new	228
Rutland	old	39
	new	698

Like this, map allows users to compare the old vs. new property markets across the different districts. According to these tables new properties have the highest market in 2020 to 2023. It means that districts with more new properties could at tract buyers looking for modern or contemporary housing options in newly developed areas.

4. Conclusion

The Greater London Property Price Monitor Dashboard represents a source of instructive insights in the context of change within London's real estate market. Transaction data, integrated with visual tools of bar charts, funnel charts, line graphs, and maps, supports users in spotting trends, making informed decisions, or investments. Some of the major takeaways from this analysis include continuous demand for new homes, fluctuating values of property across the types, seasonality of sales activity. This dashboard is of paramount importance to home owners and developers, as well as real estate investors who require critical insight into actionable decision-making. Stakeholders in the vibrant Greater London real estate market can optimize their strategy and grasp new opportunities by making sense of the trends in pricing, property types, and regional distribution.