REAL_ESTATE -REPORT

Introduction

This report analyzes real estate data, focusing on factors that influence the price per unit area of residential properties. The dataset includes various attributes such as transaction date, house age, proximity to MRT stations, the number of nearby convenience stores, and geographical coordinates. Understanding the relationship between these factors and property prices can provide valuable insights for potential buyers, sellers, and investors in the real estate market.

Key Findings -

1. **Transaction Patterns**: The data spans various transaction dates, indicating a temporal dimension to the real estate market.

2. **Age of Properties**: Properties in the dataset range in age, which could correlate with price variations.

3.**Proximity to Public Transport**: The distance to the nearest MRT station is a critical factor, as properties closer to public transport tend to have higher demand and potentially higher prices.

4. **Amenities**: The number of nearby convenience stores serves as an indicator of neighborhood amenities, possibly impacting property values.

5. **Geographical Location**: Latitude and longitude provide spatial context, enabling the analysis of location-based trends in property prices

Problem Statement –

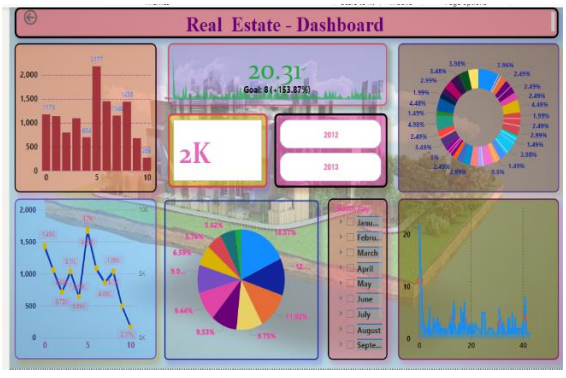
The primary objective is to understand the factors that significantly influence the house price of unit area in the given dataset. Specifically, the goal is to determine:

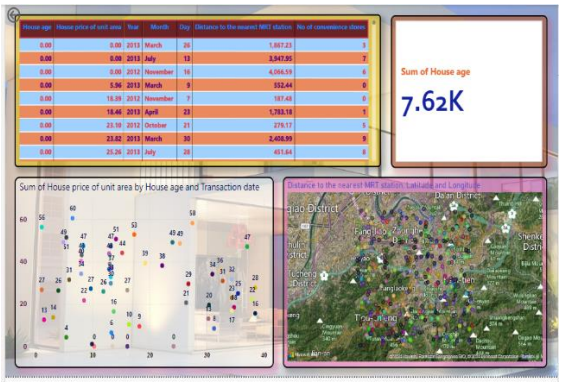
1. How does the age of a property affect its price?

2. What is the relationship between the distance to the nearest MRT station and property prices?

3. To what extent do the number of convenience stores in the vicinity impact property values?

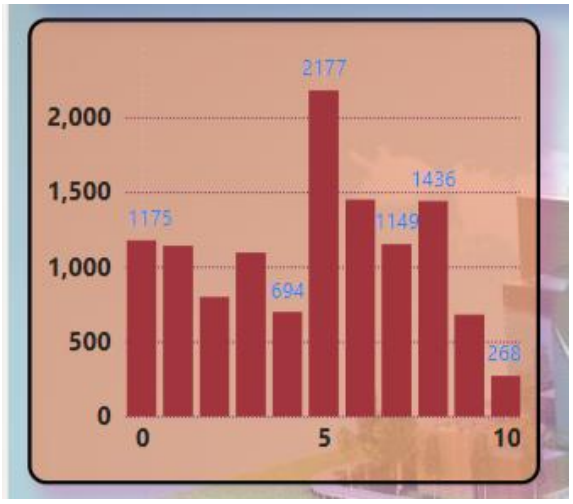
4. How do geographical factors (latitude and longitude) correlate with property prices?





Graphs -

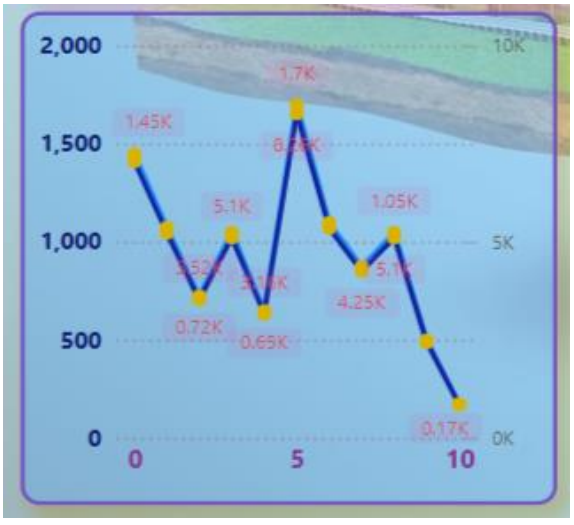
Clustered column chart :



Clusterd clustered Bar graph :

- Displays a bar chart showing the distribution of a specific metric across different categories or intervals.
- Useful for identifying the most frequent or significant values in the dataset.

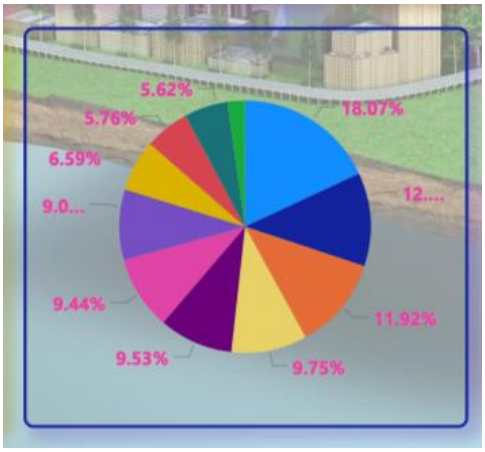
Line Chart :



Line Chart :

- The line chart shows trends over time or across a continuous variable, with accompanying data points.

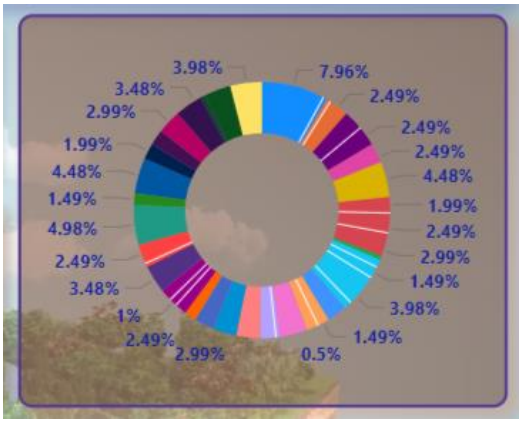
PIE Chart :



Pie chart :

The pie chart provides a breakdown of different categories, offering a visual comparison of their proportions.

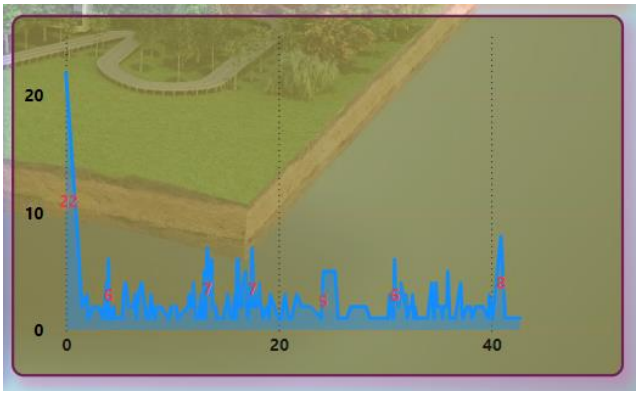
Donut Chart :



Donut Chart (Categorical Distribution):

- Illustrates the proportional distribution of categories, possibly related to property features or transactions.
- Useful for visualizing the share of each category in the overall dataset, helping to identify the most common attributes

Stacked Area Chart :



For a stacked area chart here are two key points:

1. Cumulative Trends:
A stacked area chart displays cumulative totals over time or another continuous variable. It shows how different categories contribute to the overall trend, allowing for easy comparison of their contributions at any point.

2. **Category Proportions**:
- The chart provides a visual representation of the proportion of each category within the total, showing how these proportions change over time. This helps in identifying dominant categories and understanding how their share evolves.

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Table :

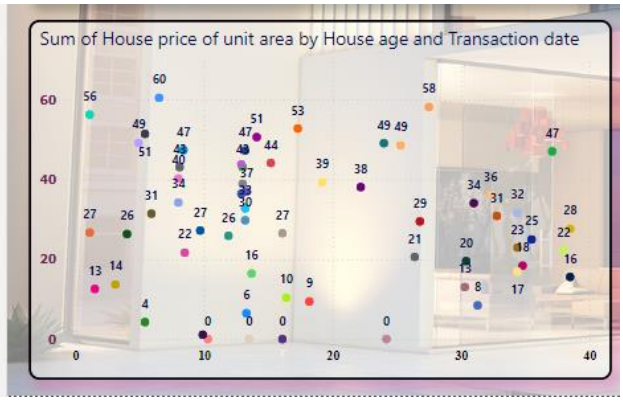
House age	House price of unit area	Year	Month	Day	Distance to the nearest MRT station	No of convenience stores
0.00	0.00	2013	March	26	1,867.23	3
0.00	0.00	2013	July	13	3,947.95	7
0.00	0.00	2012	November	16	4,066.59	6
0.00	5.96	2013	March	9	552.44	0
0.00	18.39	2012	November	7	187.48	0
0.00	18.46	2013	April	23	1,783.18	1
0.00	23.10	2012	October	21	279.17	5
0.00	23.82	2013	March	30	2,408.99	9
0.00	25.26	2013	July	28	451.64	8

For a table visualization, here are two key points:

1. Detailed Data Presentation: Tables provide a comprehensive view of raw data, presenting information in a structured and organized format. This allows for easy access to specific data points, making it ideal for detailed analysis and reference.

2.Comparison and Sorting:Tables enable users to compare multiple metrics side by side and can often be sorted by any column. This feature helps in identifying trends, outliers, and key statistics within the dataset, facilitating deeper insights and informed decision-making.

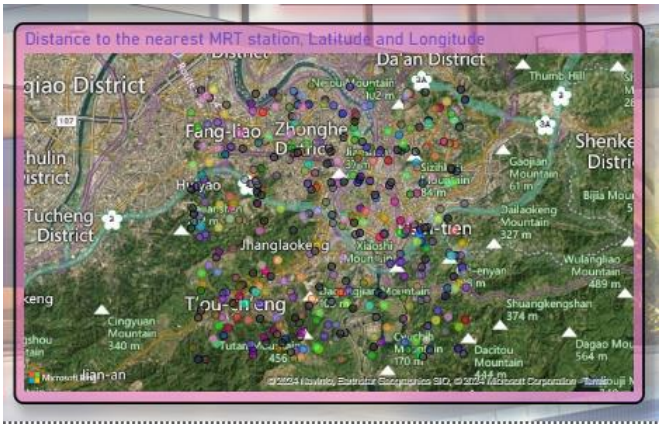
Scatter plot –



Scatter Plot (House Price by House Age and Transaction Date):

- Illustrates the distribution of house prices by unit area based on house age and transaction date.
- Highlights clusters and outliers, indicating how age and purchase timing might correlate with price.

Map –



Map Visualization (Distance to MRT Station):

- Shows the geographic distribution of properties and their distances to the nearest MRT stations.
- Allows for spatial analysis, potentially identifying regions with better access to public transportation.

Other Elements –

Slicer –

Slicers are interactive controls that allow users to filter data in a report. They are typically used to narrow down data by specific dimensions, such as date, category, or any other attribute in the dataset. Slicers make it easy to focus on particular aspects of the data without altering the underlying dataset.

Card -

Cards are used to display a single data point, such as a total or average. They are straightforward and prominently display key figures, making them ideal for highlighting important metrics or KPIs (Key Performance Indicators). Cards are usually simple and provide a quick snapshot of data.

KPI (Key Performance Indicator) –

KPI visuals in Power BI are used to measure and visualize the performance of a particular metric against a target. They typically include a value, target, and status indicator. KPIs help in quickly assessing whether performance objectives are being met and provide a visual cue (like arrows or color codes) to indicate whether the trend is positive, negative, or neutral.

Recommendations :-

1. Target Areas with Older Houses: Investors and developers may consider targeting areas with older houses, as they tend to be more expensive and may have higher renovationpotential.

2. Prioritize Proximity to MRT Stations: Developers and homebuyers may prioritize areas with closer proximity to MRT stations, as they tend to be more expensive and have better connectivity.

3. Develop Areas with Limited Convenience Stores: Developers may consider developing areas with limited convenience stores, as these areas tend to have lower house prices and may benefit from increased armenities.

Conclusion:-

The analysis of the real estate data for the years 2012 and 2013 reveals several key insights into the housing market. The data shows a diverse range of house prices and ages, with a notable concentration of newer houses (0-5 years old) and their associated prices. The scatter plot indicates that there is a variation in house prices across different transaction dates and house ages, suggesting a dynamic market influenced by various factors.

The correlation between the distance to the nearest MRT station and house prices suggests that proximity to public transportation is a significant factor in determining property value. The data also highlights the distribution of convenience stores, indicating their potential impact on local real estate dynamics.