

# Study of House Sold Data

Upon gathering data from the CSV file, tables were established using PostgreSQL. These tables were then joined to produce a unified table, simplifying the subsequent analysis. The column "home\_fam\_type" was eliminated due to its null values exceeding 50%. The mode was employed to replace missing entries in the "home\_sub\_type" column.

We conducted an analysis using Tableau and have derived the following insights:

## Tableau workbook

### **Inference for Agents-**

1. The agents who have earned the highest commissions are Michael Taylor, Patricia Taylor, John Anderson, and Jennifer Lee.
2. Since they generate higher commissions, resulting in increased profits for the organization, it is advisable for them to mentor and train the lower-performing staff members. This can enhance the performance of those staff, thereby boosting the firm's revenue as well.
3. In terms of selling skills, James Wilson, Patricia Smith, Michael Taylor, Michael Smith, and Patricia Brown are the top-performing agents, consistently selling properties above the listed price. Therefore, they can also be utilized to train other staff members.
4. In terms of low-performing agents, Patricia Taylor, Mary Wilson, John Anderson, Linda Wilson, and Patricia Davis are the employees selling properties below the listing price. They require training to enhance their skills and better upsell the properties at higher sold prices.
5. Regarding the top-performing agents, it has been observed that Toledo is the city generating the highest commissions for employees, while Akron is the city where commissions are the lowest.

### **Inference for Brokerage Firm-**

1. The highest commission earnings come from Right Value LLC, followed by High Value LLC, then True Value LLC, and lastly M & M Brokerage.
2. In Akron city, True Value LLC generates the highest commissions. In Cincinnati, Right Value LLC is more dominant in earning commissions. In Columbus city, High Value LLC is more dominant in earning commissions. In Dayton City, Right Value LLC generates the highest commissions, and in Toledo city, Right Value LLC also generates the highest commissions. Overall, in most of the cities, Right Value LLC is the top-performing firm in terms of commission earnings.
3. When comparing the difference between the sold price and the listing price, High Value LLC and Right Value LLC are achieving the highest profit and the greatest difference between the sold and listing prices. Conversely, Willi Nilly Brokerage and Richa & Sons Brokerage are generating the lowest difference between the listing and sold prices.
4. Right Value LLC has filed the highest number of property cases. Almost all the firms have an equivalent status in terms of cancellation, expiry, pending, and sold properties. However, William Reality appears to have a higher rate of cancellations compared to sold properties, indicating that the firm may be in poor health. On the other hand, M & M Brokerage has a lower cancellation rate compared to its sold proportion, suggesting that it is in good health.

### **Inference for Home Type-**

1. In terms of home types, rental properties are the most numerous, while residential properties are the least common. Land and commercial properties fall in between. On an average day, the number of acres allotted, bathroom space, bedrooms, and house size are more or less similar across properties. Additionally, the availability of swimming pools and playgrounds is more or less the same proportion across different home types.

#### **Inference for Listing and Sold Price-**

1. In terms of revenue generated from the sale of properties, Toledo City leads the way, followed by Cincinnati. Conversely, Akron City generates the lowest revenue from property sales.
2. When comparing the date and time trend for sold and listing prices, the listing price has generally been less. However, at the beginning of 2020, the sold price dipped below the listing price. There was an increase in the sold price compared to the listing price in May 2020. Conversely, the listing price compared to the sold price was significantly higher in July 2020. Later in the year, a trend was observed where the sold price was comparatively lower than the listing price in October 2020.

#### **Recommendations:**

##### **1. Agents:**

- Encourage top agents to mentor lower-performing staff.
- Organize selling skills workshops led by top-selling agents.
- Provide targeted training for low-performing agents to improve upselling.

##### **2. Brokerage Firm:**

- Analyze and adopt successful strategies from Right Value LLC.
- Tailor strategies to city-specific performances.
- Monitor and enhance profit margins of High Value LLC and Right Value LLC.
- Address operational issues at William Realty and support M & M Brokerage.

##### **3. Home Types:**

- Adjust marketing strategies to capitalize on the popularity of rental properties.
- Standardize offerings and maintain balanced amenities across property types.

##### **4. Listing and Sold Prices:**

- Leverage revenue potential in Toledo City and Cincinnati.
- Maintain a flexible pricing strategy in response to market dynamics.