

### **Business Scenario: Real Estate and Rental Market**

For our database project, we intend to work in the real estate industry which involves analyzing and interpreting a vast amount of data, including market trends, property values, and rental rates. The website [Inside Airbnb: Seattle](#), for example, provides valuable data on Airbnb listings in Seattle, which can be useful for real estate professionals to understand the short-term rental market in the area. In addition, [US Home Price Prediction | Kaggle](#) and [Zillow Housing Data](#) can help real estate agents and investors make informed decisions about buying and selling properties. This data can provide insights into the overall state of the real estate market, including whether it's a buyer's or seller's market, and how much properties are expected to appreciate in value over time. By leveraging this information and datasets into our project, real estate professionals and homeowners can make informed decisions that can lead to more successful transactions and better returns on investments.

### **Typical Users**

Our typical users will consist of a couple of groups. Real estate agents and investors will be interested in using the data to make decisions about their investments. First-time buyers may use this data to make decisions surrounding their first home, while current homeowners may be curious about the state of their property. It will also include other researchers that specialize in planning or housing, and users of Airbnb. Additionally, our users will include everyone curious about trends surrounding the housing market as it continues to evolve over time.

### **Representative Questions**

- Which area in Seattle is the most popular to book an Airbnb?
- What is the average number of rooms/bathrooms per listing?
- How many nights do people stay on average? How does this vary among different types of properties?
- What is the average cost per listing? How does this vary among locations?
- What is the average price per square foot of homes sold in the last six months?
- What are the names and contact information for all real estate agents who have sold more than five properties in a particular area in the last year?

### **Anticipated Volume**

For real estate data in the US, there are thousands (maybe hundreds of thousands) of new listings each day that correspond to new queries. These new listings include new homes and apartments for sale, as well as rental properties. Each new listing is an entire new row. In addition, every day there are also queries to update homes that have been sold and are now off the market, or rental properties that are no longer available. If reviews are included, the review attribute will change each day for each home to account for the review average.

### **Query Efficiency**

Considering the queries from our representative questions, efficiency and performance matter to stakeholders in producing precise analyses; the selection of specific attributes and filtering of information will allow runtime of queries to be optimized for users. Consisting of 75 columns and 6166 rows in the Airbnb Seattle dataset, for example, filtering the dataset is integral for constructing optimal queries.