

# AIRBNB LISTING DATA FOR DENVER, COLORADO

## DATA SOURCE

Denver, CO Airbnb Listings, Reviews, and Bookings

Collected from [Inside Airbnb](#)

Updated as of June 30, 2023. The data was collected by scraping the official Airbnb website, gathering listing, review, geographic, and review information.

## SUMMARY

Since its inception in 2008, guests and hosts have used Airbnb to travel in a more unique and personalized way. The data set includes the following Airbnb activity for the city of Denver, CO:

- Unique property listings in Denver, including full descriptions and average review score
- Reviews, including unique id for each reviewer and detailed comments
- Calendar bookings, including the listing id, the price and availability for that day (at the time the data was gathered)

The objective of this project will be to get a better understanding of the short-term and long-term rental industry in Denver. Airbnb allows everyday people to list their properties as available to rent, but I want to get a better understanding of how that is actually taking place. I will also be looking into financial variables related to each listing to try and gather insight on profitable neighborhoods, types of rentals, and seasonality. With a better understanding of the rental space in Denver, the analysis should be able to provide trends that new investors can use when determining if this type of business is right for them and how best to get started.

## WHY THIS DATA SET

I chose this data set to work with for a couple of different reasons. The first is that it looks at rental information in the city that I currently live in (Denver, CO). I thought it would be really interesting to get a better understanding of the short-term rental market in my direct area as I can relate to each neighborhood discussed. Very cool to me! The second reason I chose this set was because I am interested in the real estate industry, specifically the rental industry. It is my 5-year goal to buy and rent out properties as either long-term rentals or as Airbnbs. Because I am passionate about the industry on my own time, I thought this project would be great practice to get more familiar with the data while being able to add to my portfolio!

## DATA PROFILING

**See attached Excel file for summary of data cleaning and consistency checks.**

**See same Excel file for descriptive and summary statistics of the data set.**

## LIMITATIONS AND ETHICS

Limitations for this data set could exist in a number of different ways. **Data Completeness:** The data may not cover the entire Airbnb market in Denver. It's possible that certain listings or hosts are missing from the dataset, leading to biased or incomplete results. **Sampling Bias:** The data might suffer from sampling bias, meaning certain types of properties or hosts are overrepresented or underrepresented in the dataset. For example, if the data collection method favored certain neighborhoods or property types, it could skew the analysis. **Data Quality:** The data could contain errors, inaccuracies, or missing values. Listings may have outdated or incorrect information about pricing, availability, or property attributes, which could affect the analysis. **Limited Attributes:** The dataset may lack some crucial features that influence pricing and availability, such as property size, amenities, proximity to public transportation, or neighborhood characteristics. The absence of such variables could limit the accuracy and depth of the analysis.

Ethical concerns could come about in relation to how the data was collected and how it is being used. We want to ensure that the data was obtained following proper regulations and with consent from the relevant parties. Since all of the data is coming from the official Airbnb website, we can assume that all the hosts have consented to Airbnb's terms and conditions and are ok with their data being publicly accessed.

## KEY QUESTIONS TO ANSWER

Below is a list of key questions that our analysis will look to address. Please note that while multiple questions are listed here, our final analysis will choose to address the most impactful and relevant based on our data set.

1. Are there significant seasonal fluctuations in Airbnb pricing and availability in Denver? Which months or seasons experience higher demand and higher prices?
2. What is the distribution of Airbnb listing prices in Denver? Are there any outliers or clusters of pricing?
3. How does the pricing vary across different neighborhoods in Denver? Which neighborhoods tend to have higher or lower prices?
4. Which neighborhoods see the highest number of bookings? Which see the least number of bookings?
5. Does the type of property (e.g., apartment, house, condo) significantly influence pricing and availability?
6. What property types or listings are the most popular or booked most often?
7. Of the top property-types, are they mostly short-term or long-term listings?
8. What are the typical booking patterns for Airbnb listings? Are certain times of the year more or less available?
9. Is there a correlation between listing prices and availability? Do higher prices correspond to higher or lower availability?
10. Is there a relationship between listing prices and the quality of reviews and ratings?
11. How do long-term rental listings compare to short-term ones in terms of pricing and availability?
12. Are certain neighborhoods or property types more price-sensitive than others? How do price changes affect booking rates?