

Predicting the Nightly Price of Colorado's Airbnb from Data [Sepehr Hajibikloo]

How can we predict the price from the number of bathrooms, the number of bedrooms, and locations in 2023 in Colorado? And also, how can we predict the price from the reviews per month, the review scores of ratings, accuracy, cleanliness, check-in, communication, location, and value in 2023 in Colorado?

1-Context

Travel is one of the world's largest industries, and its approach has become commoditized. The travel industry has scaled by offering standardized accommodations in crowded hotel districts and frequently-visited landmarks and attractions. This one-size-fits-all approach has limited how much of the world a person can access, and as a result, guests are often left feeling like outsiders in the places they visit. Airbnb can help you with them.

2-Criteria for success

In Colorado, we are going to find a good way to predict the final price from our data like review scores, the number of bedrooms, and bathrooms. We should know how they affect to the final price.

3-Scope of solution space

We don't have access to all the information that exists. We should manage data to find the best results. Some data may be missed.

4-Constraints within solution space

- Your property is never going to be expensive enough to satisfy your wishes, but it is never going to be cheap enough to satisfy a guest's wishes. The most common issue we hear is *'If I charge any more than \$XX per night I won't get any bookings.'*
- How can that data affect to the price? Or do they affect to the price at all?

5-Stakeholders to provide key insight

- Airbnb company

6-Key data sources

- A CSV file that comes from Airbnb websites, and other related websites.

Predicting the Nightly Price of Colorado's Airbnb Listings:

Project Summary:

- **The purpose of the analysis:** understanding the factors that influence Airbnb prices in Colorado, or identifying patterns of all variables and Our analysis provides useful information for travelers and hosts in the city and also provides some best insights for Airbnb business.
- This project involved exploring and cleaning a dataset to prepare it for analysis. The data exploration process involved identifying and understanding the characteristics of the data, such as the data types, missing values, and distributions of values. The data cleaning process involved identifying and addressing any issues or inconsistencies in the data, such as errors, missing values, or duplicate records and removing outliers.
- Through this process, we were able to identify and fix any issues with the data, and ensure that it was ready for further analysis. This is an important step in any data analysis project, as it allows us to work with high-quality data and avoid any potential biases or errors that could affect the results. The clean and prepared data can now be used to answer specific research.
- Once the data has been cleaned and prepared, now begin exploring and summarizing it with describing the data and creating visualizations, and identifying patterns and trends in the data. in exploring the data, may develop the relationships between different variables or the underlying causes of certain patterns or trends and other methods.
- using data visualization to explore and understand patterns in Airbnb data. We created various graphs and charts to visualize the data, and wrote observations and insights below each one to help us better understand the data and identify useful insights and patterns.
- Through this process, we were able to uncover trends and relationships in the data that would have been difficult to identify through raw data alone, for example factors affecting prices and availability. We found that minimum nights, number of reviews, and host listing count are important for determining prices, and that availability varies significantly across neighborhoods. Our analysis provides useful information for travelers and hosts in the city.
- The observations and insights we identified through this process will be useful for future analysis and decision-making related to Airbnb. And also, our analysis provides useful information for travelers and hosts in the city.

I need these items to work on them:

id
name
host_id
host_name
host_since
host_location

host_response_rate
host_acceptance_rate
host_neighbourhood
neighbourhood_cleansed

latitude
longitude
property_type
room_type
accommodates
bathrooms_text
beds

price

minimum_minimum_nights
maximum_maximum_nights
calendar_last_scraped

number_of_reviews
first_review
last_review
last_scraped

review_scores_rating
review_scores_accuracy
review_scores_cleanliness
review_scores_checkin
review_scores_communication
review_scores_location
review_scores_value

calculated_host_listings_count
calculated_host_listings_count_entire_homes
calculated_host_listings_count_private_rooms
calculated_host_listings_count_shared_rooms
reviews_per_month

https://docs.google.com/document/d/1srHsxEe_3WYNGT9juW6vwkNopqdRT6Y-/edit?usp=sharing&oid=115694121386118581220&rtpof=true&sd=true