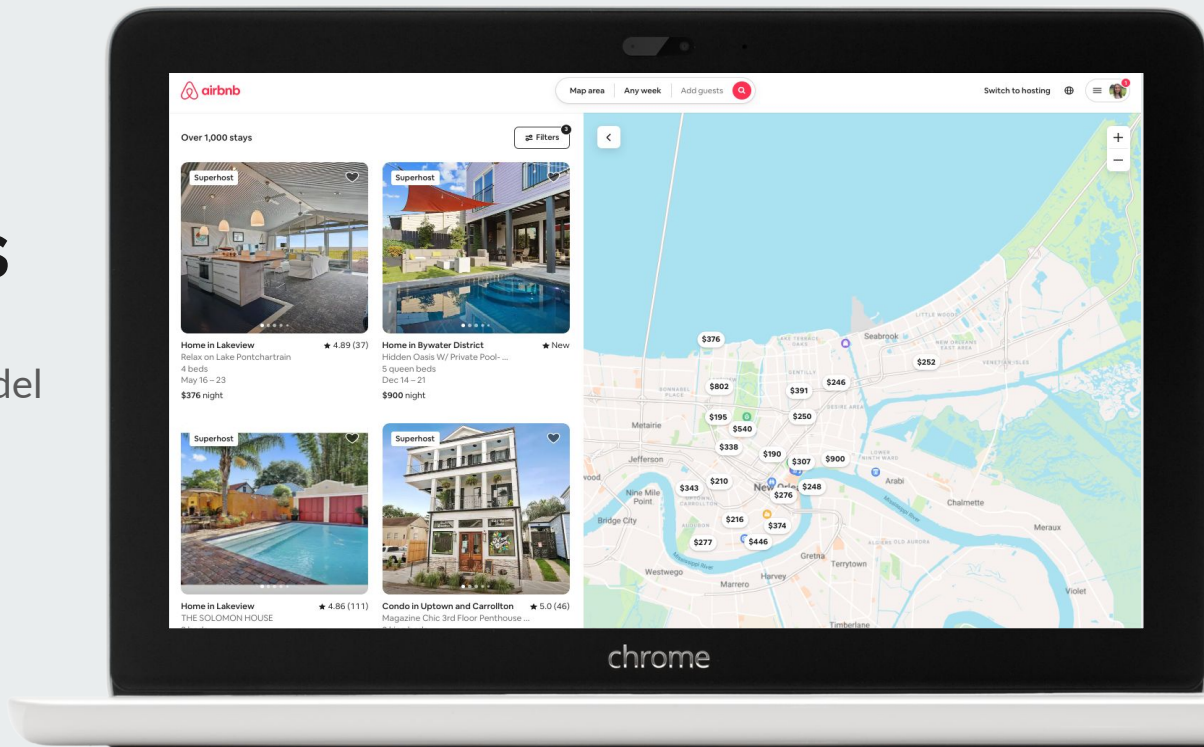


New Orleans Airbnb Analysis

Exploratory Data Analysis and
Machine Learning Predictive Model

Author: Rachel Fein



Summary

The goal of this analysis was to gain information and insight on the New Orleans short term rental market.



In summary this analysis showed:

- The final model was able to predict the nightly price with in \$2.02.
- The final model had an average error of 1.45.
- The Exploratory Data Analysis gives a general understanding of the New Orleans' Short term rental market by showing relationships between the target and features.

art by [Diane Millsap](#)

Outline

The Problem

Data

Methods

Results

Conclusion & Next Steps

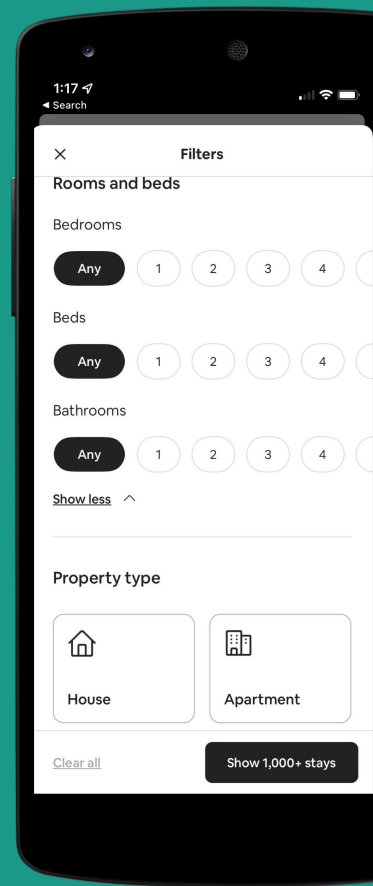


The Problem

This analysis was completed for Sarah Alter, a private investor, who is interested in expanding her vacation rental portfolio to New Orleans, LA.

In 2019 New orleans welcomed 19.75 million tourist, these visitors spent 10.9 billion dollars of which 2.9 billion was spent on lodging.

Not every investment is a good one. Without a good understanding of the market and nightly rates, the chances of buying a bad investment property can rise.

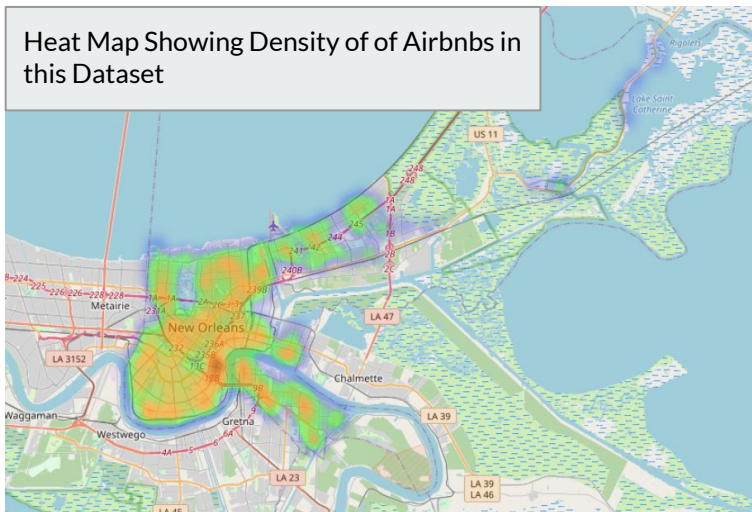


Data

The dataset in this analysis comes from [Kaggle](#), however it is noted the dataset was originally pulled from [Inside Airbnb](#). The dataset was compiled on November 7, 2021 and all time oriented variables in this dataset are based around that date.

Why this dataset is good for solving our problem?

- Contains 6,028 Airbnb Listings, all of which are in New Orleans
- Has features that relate to property features such as number of bedrooms and bathrooms
- Contains features that give insight on each Airbnb's success, such as nightly price and availability
- Limited missing data overall and no missing data for target feature price



Methods

Data Cleaning Methods

- Replace or remove missing or illogical data

Preprocessing Methods

- Take steps to prepare the data to help us get a well performing model

Modeling Methods

- Create and continuously improve upon models until we got the best performing model

Results

Results showed Alter could use this analysis as a guide as she starts her search.

Exploratory Data Analysis

Proved to find general relationships among the data to get a grasp on the New Orleans short term rental market. Some highlights from EDA are shown in the following slides.

Predictive Model

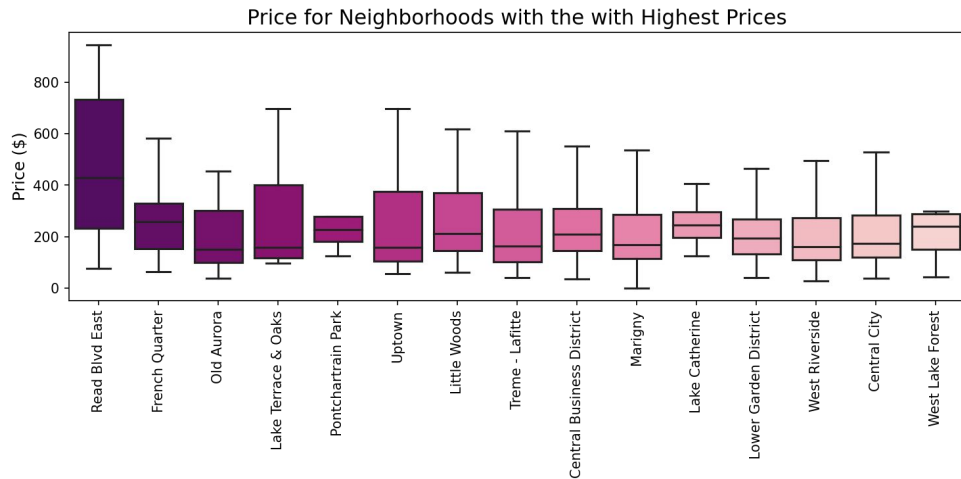
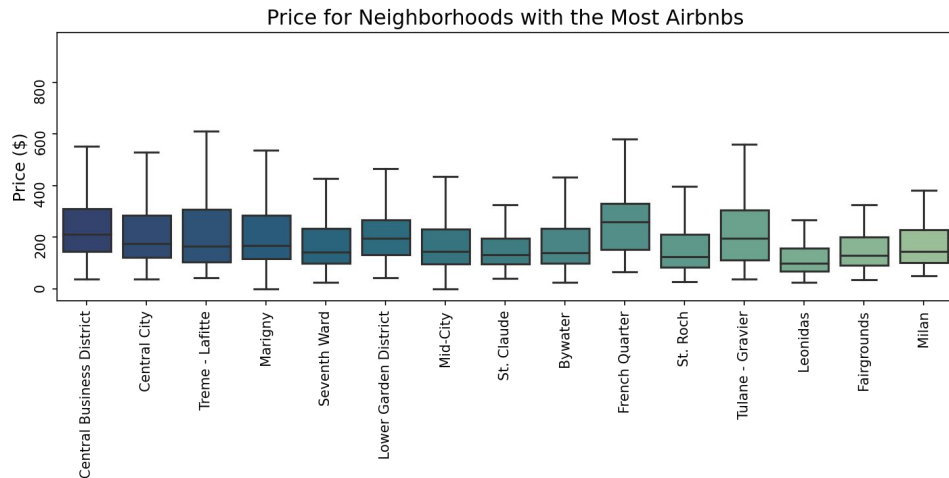
The final model in this analysis was able to predict the nightly price for a airbnb in New Orleans within \$2.02.

Having a well performing predictive model will prove helpful when comparing properties to buy and help you determine the price point you should expect to rent a property at.

Data Exploration

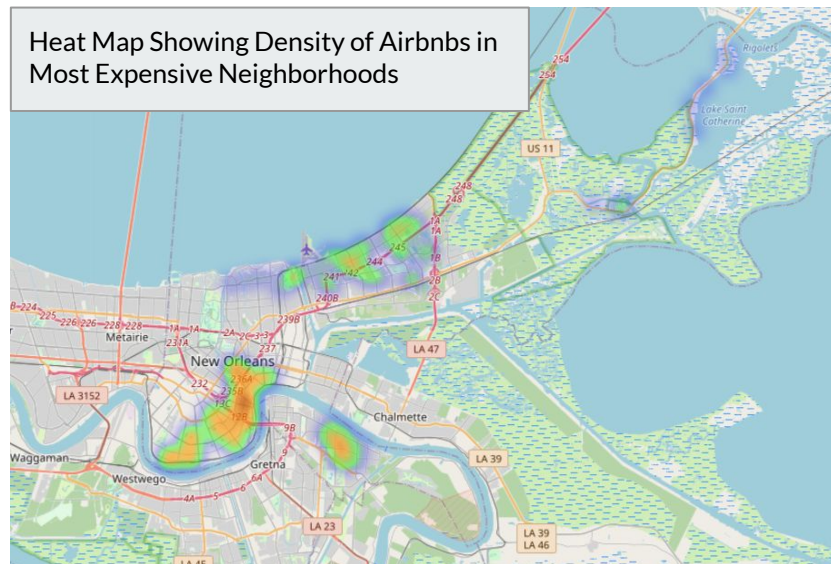
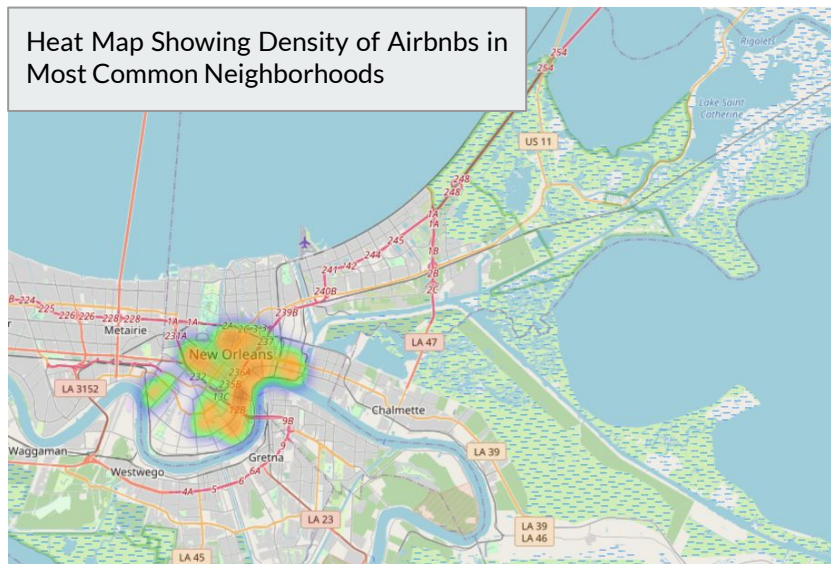
Knowing where the most densely populated areas are for airbnbs give a lead to the best neighborhoods to purchase an Airbnb.

Knowing where the highest priced Airbnbs is also important as higher prices can mean higher profits.



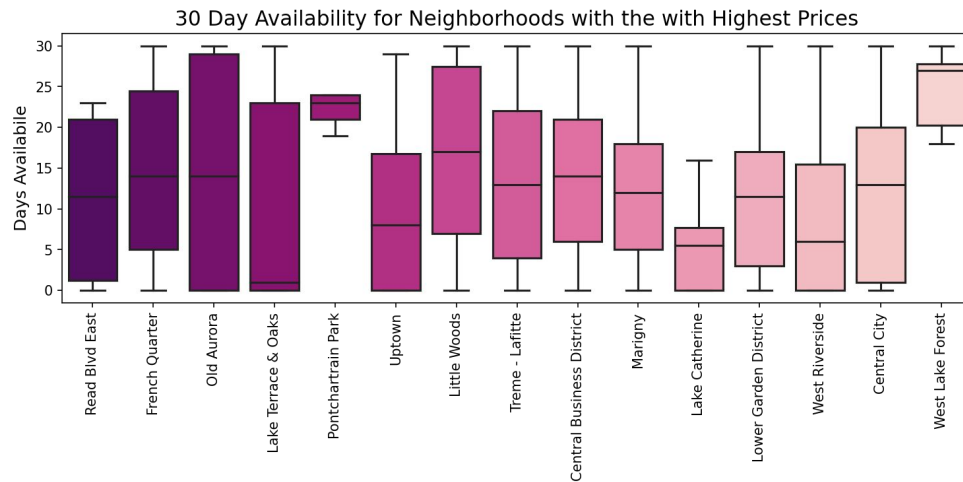
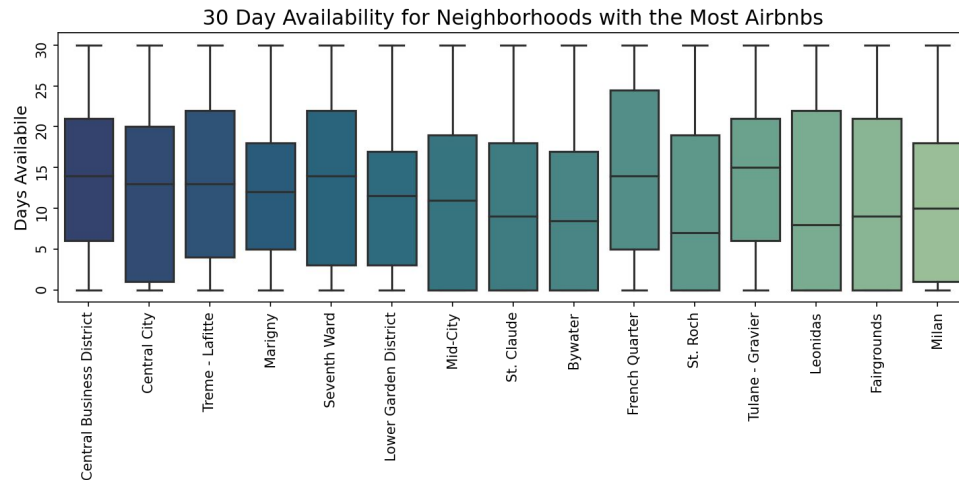
Data Exploration

Consider purchasing in a neighborhood that overlaps in both these maps.



Data Exploration

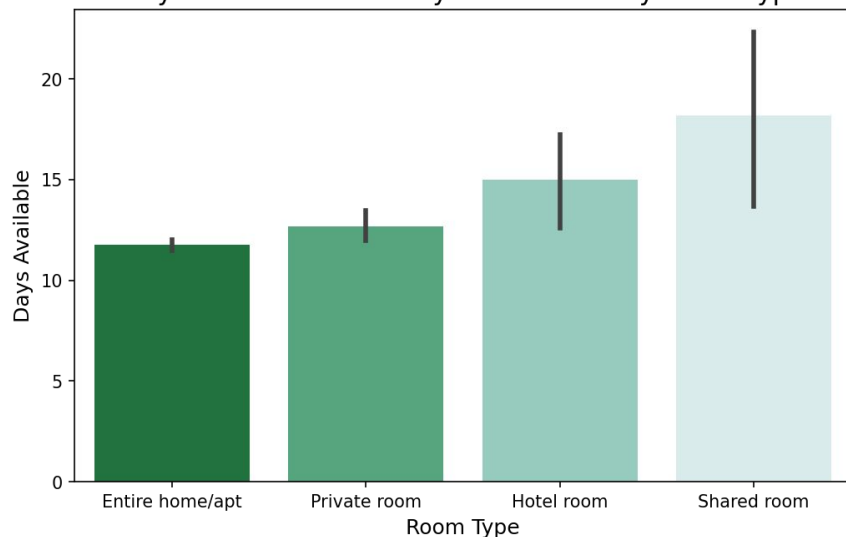
Having little availability at 30 days out is a good sign that the Neighbourhood is highly sought after by tourists and good business for the Airbnb owners.



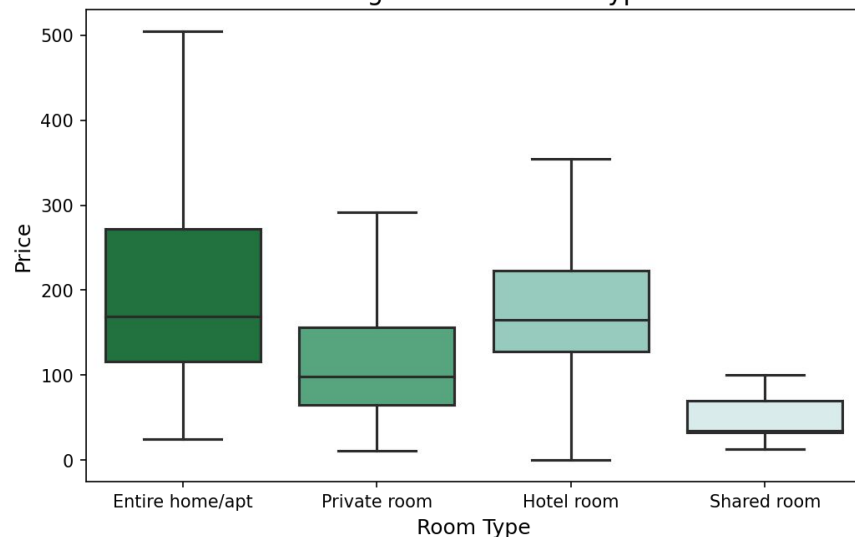
Data Exploration

To get a better understanding of what type of property is more valued by travelers we see which property type has the lowest availability and highest average price.

Days Available at 30 Days in Advance by Room Type



Average Price of Room Type



Conclusion

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Next Steps:

Adding more continuous & relevant variables.

Take into consideration seasonality.

Further investigate the specific neighborhoods that the analysis found to be most popular for Airbnbs.



Image from [Zebra.com](https://zebra.com)

Thank you!

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References

[D.K. Shifflet & Associates](#): New Orleans Tourism Report

[Airbnb Stats](#)

[Data downloaded from Kaggle](#): New Orleans Airbnb Listings and Reviews

[Data originally sourced from Inside Airbnb](#)