



# Airbnb Seattle – Host Rental Market – -- Forecast Analysis --

## Project Plan & Research Design

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# Airbnb – Seattle Project Plan & Research Design

## Assignment Questions:

- ☐ Does the popular opinion (sentiment) of customers' comments impact a host's price point? Does it have an affect on the number of days of the year that a property is booked? What are the positive and negative top 5 topics for each segment and how can this information be used to help hosts be more successful with their bookings?
- ☐ Determine the best property to purchase for use as a vacation rental.
- ☐ What are the attributes of a successful rental listing posting? An unsuccessful rental listing?
- ☐ Do property attributes or host rating affect the success of a listing more?

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Analysis:

□ Types of analysis that will be utilized are:

- Text Mining - Sentiment Analysis
- Text Mining - Topic Modeling
- Cluster Analysis
- Logistic Regression
- Perceptual Maps

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## Key Variables:

- ❑ Key variables that will be used are customer reviews of the rental properties along with attributes of the properties themselves.
- ❑ In addition we will pull outside data sources in to provide additional details about each property that are not included in the original data set through the use of API's.
  - Walk Score/Bike Score/Transit Score
  - MLS data from real estate sites such as Zillow or Redfin
  - Demographic data based on Zip Code of the rental property

### Key Variables

**reviews** [reviewer\_name, comments, date] (keys to link the datasets will also be included such as 'listing\_id', 'reviewer\_id')

**listings** [price, weekly\_price, monthly\_price, security\_deposit, cleaning\_fee, number\_of\_reviews, first\_review, last\_review, review\_scores\_rating, review\_scores\_accuracy, review\_scores\_cleanliness, review\_scores\_checkin, review\_scores\_communication, review\_scores\_location, review\_scores\_value, reviews\_per\_month, host\_since, host\_response\_time, host\_responase\_rate, host\_acceptance\_rate, host\_is\_superhost, host\_listing\_counts, host\_total\_listings\_count, property\_type, room\_type, accommodations, bathrooms, bedrooms, beds, bed\_type, amenities, square\_foot, availability\_30, availability\_60, availability\_90, avaiability\_365]

# About the Data

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- Airbnb Seattle: [Kaggle](#)
  - calendar.csv
  - listings.csv
  - reviews.csv
- [Zillow Housing Data](#)
  - Home values
  - Rentals
  - Inventory, listings and sales
- [Walkscore.com](#)
  - Walk Score API
  - Public Transit API
  - Travel Time API
- The primary data used for this analysis will be the Airbnb Seattle datasets. It will be used to profile Seattle Airbnb hosts and customers in efforts to understand the rental market in Seattle.
- Zillow datasets will provide median home sale values and rental forecasts by zip code. This data will be used to provide insights into the cost of purchasing properties as potential investments opportunities that could be used as short-term rentals.
- Walking score's, public transportation scores and travel time scores are all influential factors that influence how consumers of short-term rental housing choose where and what type of logging they prefer.

## MAR 653 Marketing Analytics Project

WSO NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE	PHASE ONE							PHASE TWO							PM							
							WEEK 1		WEEK 2		WEEK 3		WEEK 4		WEEK 5		WEEK 6		WEEK 7									
1	Project Conception and Initiation						M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T
1.1	Research Marketing Project Ideas	Ryan, Steve, Tim	1/13/20	1/21/20	8	100%																						
1.2	Milestone 1: Project Idea Deck	Steve	1/21/20	1/22/20	1	100%																						
1.3	Project Initiation	Ryan, Steve, Tim	1/23/20	1/24/20	1	100%																						
2	Project Definition and Planning																											
2.1	Scope and Goal Setting	Ryan, Steve, Tim	2/3/20	2/4/20	1	100%																						
2.2	Communication Plan - Weekly Live Touchpoint	Ryan, Steve, Tim	2/3/20	2/4/20	1	100%																						
2.3	Research Questions Definition	Ryan, Steve, Tim	1/22/20	2/3/20	11	100%																						
2.4	Create Project Plan Worksheet	Ryan	2/1/20	2/4/20	3	100%																						
2.5	Define Research Design Specifications	Ryan, Steve, Tim	2/3/20	2/4/20	1	100%																						
2.4	Milestone 2: Project Plan and Research Design Deck	Ryan	2/4/20	2/5/20	1	100%																						
3	Project Conception and Initiation																											
3.1	Status and Tracking	Ryan	2/5/20	3/13/20	38	5%																						
3.2	Obtain Research Datasets	Ryan	1/31/20	2/1/20	1	100%																						
3.2.1	Perform Initial Data Exploratory Analysis	Ryan, Steve, Tim	2/3/20	2/5/20	2	20%																						
3.2.2	Define Marketing Research Models	Ryan, Steve, Tim	2/3/20	2/7/20	4	0%																						
3.3	Milestone 3: Market Research Design Specification	Ryan, Steve, Tim	2/6/20	2/10/20	4	0%																						
4	Project Performance / Monitoring																											
4.1	Project Objectives	Ryan	2/10/20	3/13/20	33	0%																						
4.2.1	Project Plan Updates	Ryan	2/10/20	3/13/20	33	0%																						
4.3	Implementation - Research Question 1 - Marketing Technique: xxx	Ryan	2/10/20	3/2/20	22	0%																						
4.3.1	XXX Model Data EDA	Ryan	2/10/20	2/15/20	5	0%																						
4.3.2	XXX Model Experimentation & Results	Ryan	2/17/20	2/22/20	5	0%																						
4.3.3	XXX Model Interpretation	Ryan	2/24/20	2/26/20	2	0%																						
4.3.4	XXX Model Recommendations	Ryan	2/26/20	2/27/20	1	0%																						
4.3.5	Milestone 4.1: Business Model XXX Report	Ryan	2/26/20	3/2/20	6	0%																						
4.4	Implementation - Research Question 2: XXX	Steve	2/10/20	2/15/20	5	0%																						
4.4.1	XXX Model Data EDA	Steve	2/10/20	2/15/20	5	0%																						
4.4.2	XXX Model Experimentation & Results	Steve	2/17/20	2/22/20	5	0%																						
4.4.3	XXX Model Interpretation	Steve	2/24/20	2/26/20	2	0%																						
4.4.4	XXX Model Recommendations	Steve	2/26/20	2/27/20	1	0%																						
4.4.5	Milestone 4.2: Business Model XXX Report	Steve	2/26/20	3/2/20	6	0%																						
4.5	Implementation - Research Question 3: XXX	Tim	2/10/20	2/15/20	5	0%																						
4.5.1	XXX Model Data EDA	Tim	2/10/20	2/15/20	5	0%																						
4.5.2	XXX Model Experimentation & Results	Tim	2/17/20	2/22/20	5	0%																						
4.5.3	XXX Model Interpretation	Tim	2/24/20	2/26/20	2	0%																						
4.5.4	XXX Model Recommendations	Tim	2/26/20	2/27/20	1	0%																						
4.5.5	Milestone 4.3: Business Model XXX Report	Tim	2/26/20	3/2/20	6	0%																						
4.6	Milestone 4: Final Project Report Presentation Deck	Ryan, Steve, Tim	3/6/20	3/13/20	7	0%																						



# About the Data

## Context

Since 2008, guests and hosts have used Airbnb to travel in a more unique, personalized way. As part of the Airbnb Inside initiative, this dataset describes the listing activity of homestays in Seattle, WA.

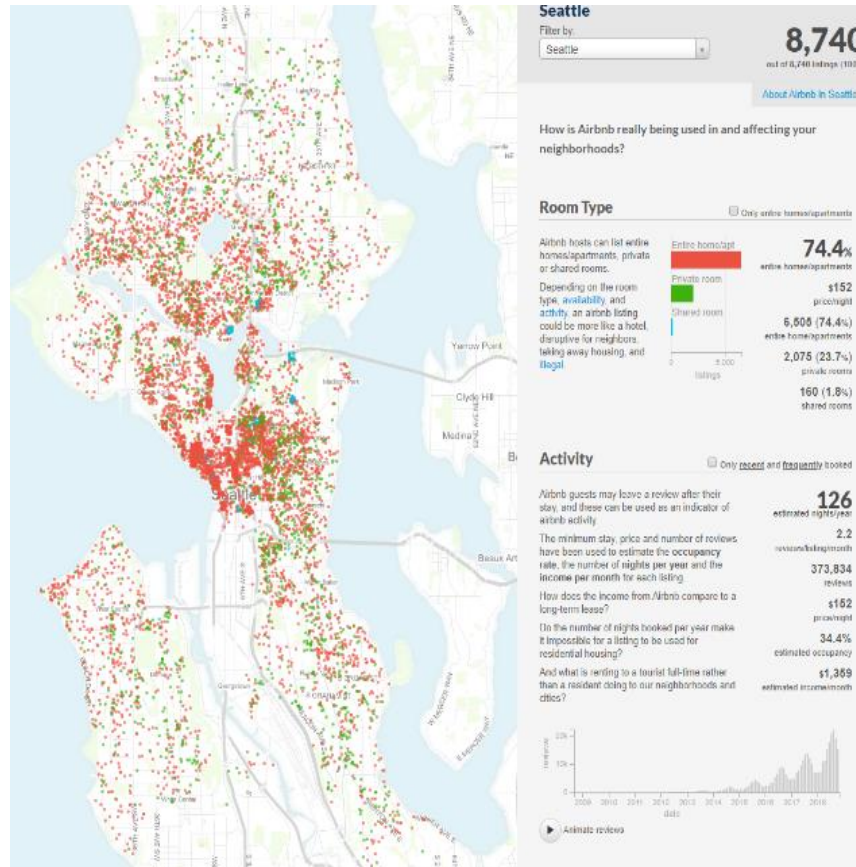
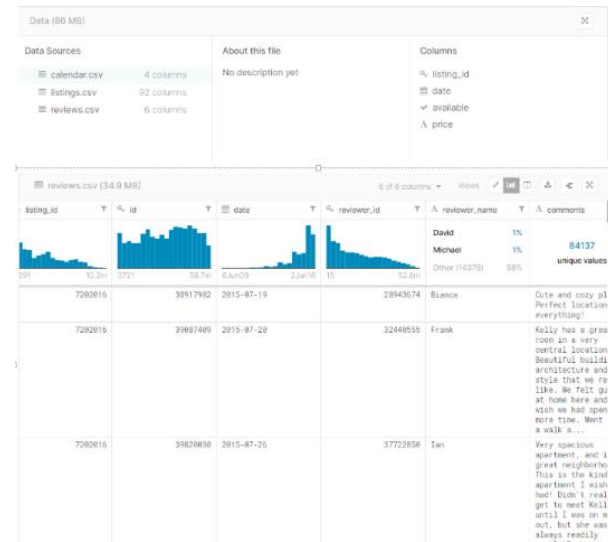
## Content

The following Airbnb activity is included in this Seattle dataset: \* Listings, including full descriptions and average review score \* Reviews, including unique id for each reviewer and detailed comments \* Calendar, including listing id and the price and availability for that day

## Inspiration

- Can you describe the vibe of each Seattle neighborhood using listing descriptions?
- What are the busiest times of the year to visit Seattle? By how much do prices spike?
- Is there a general upward trend of both new Airbnb listings and total Airbnb visitors to Seattle?

For more ideas, visualizations of all Seattle datasets can be found [here](#).



## Living in Seattle

