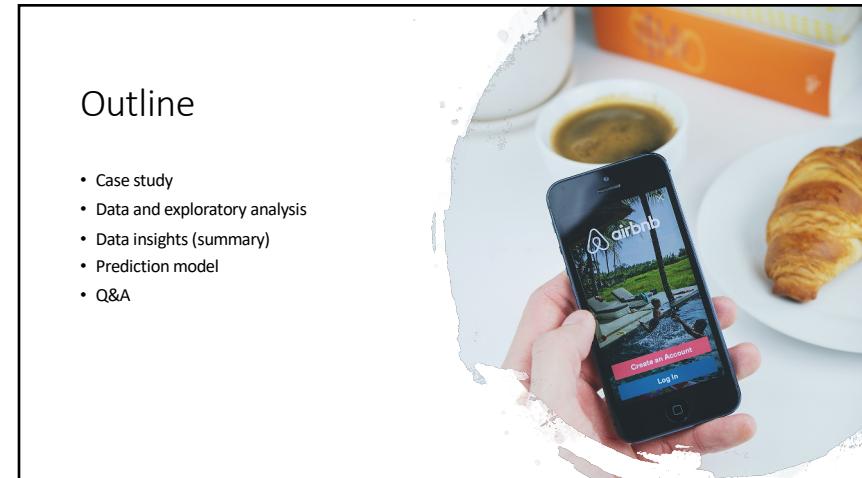




1



2

Case study

The client is thinking of becoming an Airbnb host in Seattle. He did a little research, and he notices that some hosts charge additional fees like a cleaning fee. He is curious to know if he adds this fee, will this impact that booking availability?

He wants to know more about the Airbnb market, like does the booking price stay the same throughout the year? Which area most people book? Have more insight to maximize the earning.

3

Case study

 Airbnb host  Seattle  Jan – Dec 2016

 Question

Customer's question:

- Does the cleaning fee affect the monthly availability?
- Do the booking prices change per location?
- Do the booking prices change throughout the year?

4

Data



- Booking price
- Cleaning fee



- Availability
- Property type
- Accommodates
- Room type
- Number of bathrooms
- Number of bedrooms



- Latitude
- Longitude
- Zip code



- Date

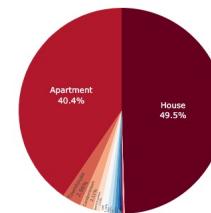


- Review score rating
- Review score cleanliness



5

Exploratory analysis



Property Type	Percentage
House	49.5%
Apartment	40.4%
Condominium	0.5%
Bed & Breakfast	0.5%
Loft	0.5%
Other	0.5%
Cabin	0.5%
Camper/RV	0.5%
Bungalow	0.5%
Boat	0.5%
Tent	0.5%
Treehouse	0.5%
Chalet	0.5%
Dorm	0.5%
Yurt	0.5%

Houses and Apartments were the selections most demanded in 2016.

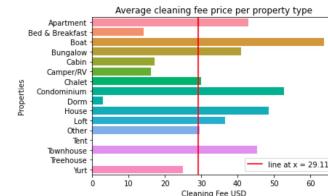


6

Exploratory analysis



Property Type	Average Price per Booking (USD)
Apartment	~107.47
Bed & Breakfast	~110
Bungalow	~110
Cabin	~110
Camper/RV	~110
Chalet	~100
Condominium	~100
Dorm	~40
House	~130
Loft	~130
Other	~90
Rent	~50
Townhouse	~110
Treehouse	~110
Yurt	~110



Property Type	Average Cleaning Fee (USD)
Apartment	~15
Bed & Breakfast	~15
Boat	~55
Bungalow	~40
Cabin	~40
Camper/RV	~40
Chalet	~20
Condominium	~50
Dorm	~35
House	~50
Loft	~35
Other	~30
Rent	~30
Townhouse	~50
Treehouse	~50
Yurt	~25

- The average booking price per day is **\$107.47**
- The average cleaning fee per day is **\$29.11**

7

Exploratory analysis

Property	Average Price	Average Cleaning fee
House	\$132	\$42
Apartment	\$123	\$39
Condominium	\$151	\$55
Loft	\$136	\$37

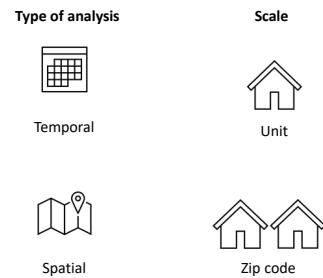


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2

Exploratory analysis

→ BOOKING PRICE + AVAILABILITY



9

Exploratory analysis

→ BOOKING PRICE

Average Booking Price in 2016



- The red lines are holidays
- The average price per booking starts rising in March 2016
- The summer has the highest average price per booking

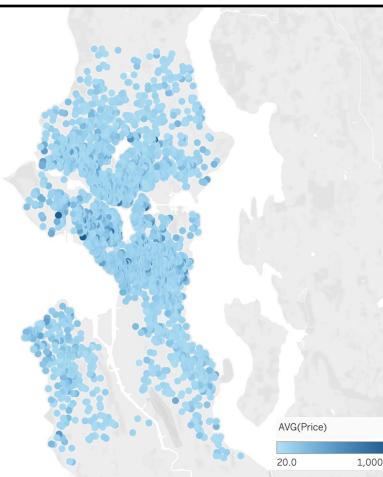
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Exploratory analysis

→ BOOKING PRICE



- Booking prices range from \$20 - \$1000 per day
- Prices seem relatively even across the area

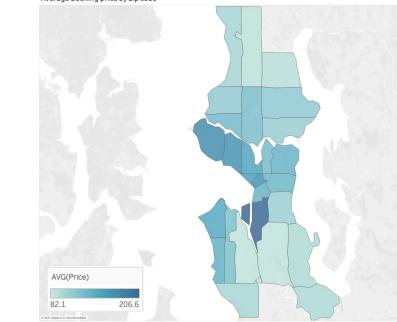


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Exploratory analysis

→ BOOKING PRICE

Average Booking price by zip code



Distance vs Booking price per day



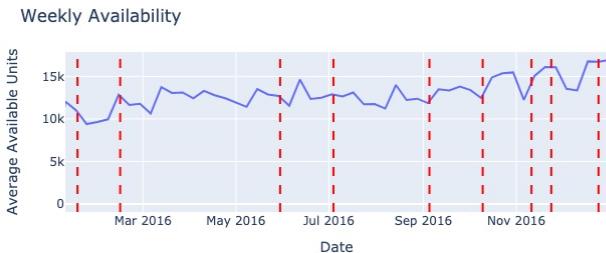
- Highest average booking price was \$207
- Zip code: 98134

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Exploratory analysis

→ AVAILABILITY

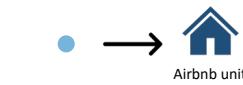
- Number of available units remains relatively constant over the year



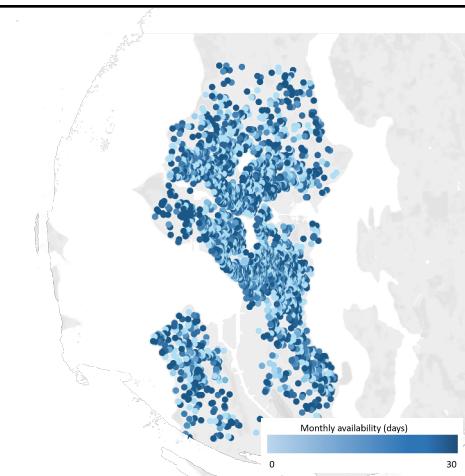
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Exploratory analysis

→ AVAILABILITY



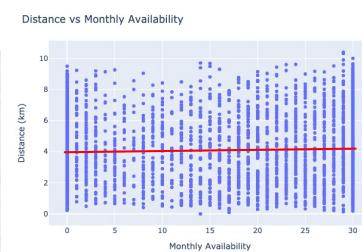
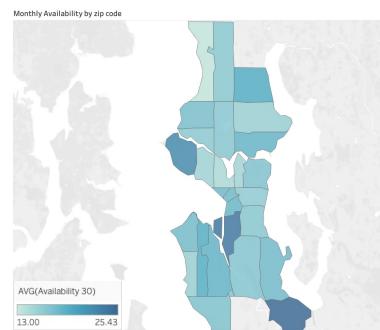
- Availability = not booked (available for booking)
- No significant spatial pattern



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Exploratory analysis

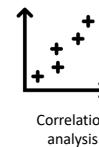
→ Availability



- Availability = not booked (available for booking)
- Zip code: 98134

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Exploratory analysis



16

Exploratory analysis



Insights:

- No correlation between cleaning fee classification and the monthly availability
- Cleaning fee classification doesn't have a strong relationship with any other features

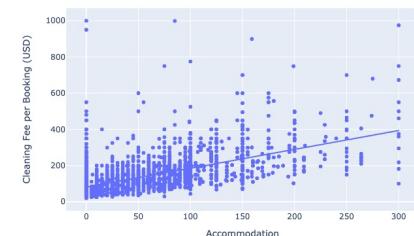
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Exploratory analysis

Price vs Accommodation



Cleaning fee vs Accommodation



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Summary

- Most of the Airbnb units in Seattle are houses and apartments
- The booking price per day doesn't depend on the location.
- Adding a cleaning fee to the booking does not affect the customer's decision to book an Airbnb.



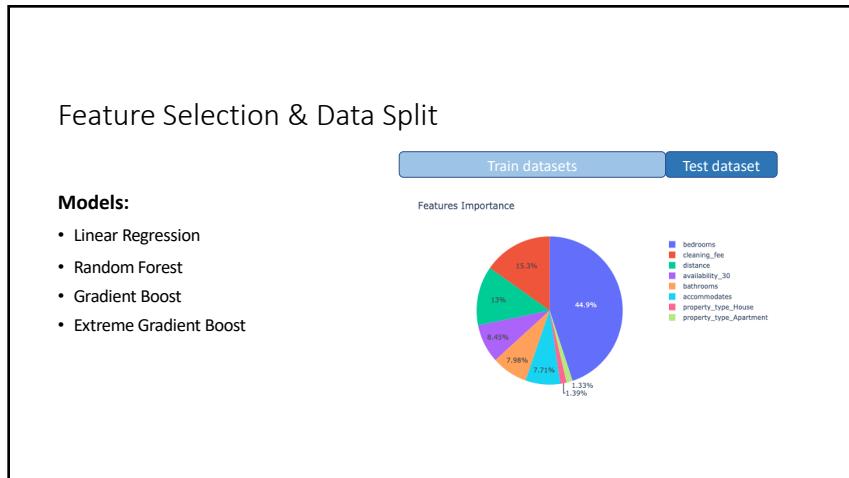
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Prediction model

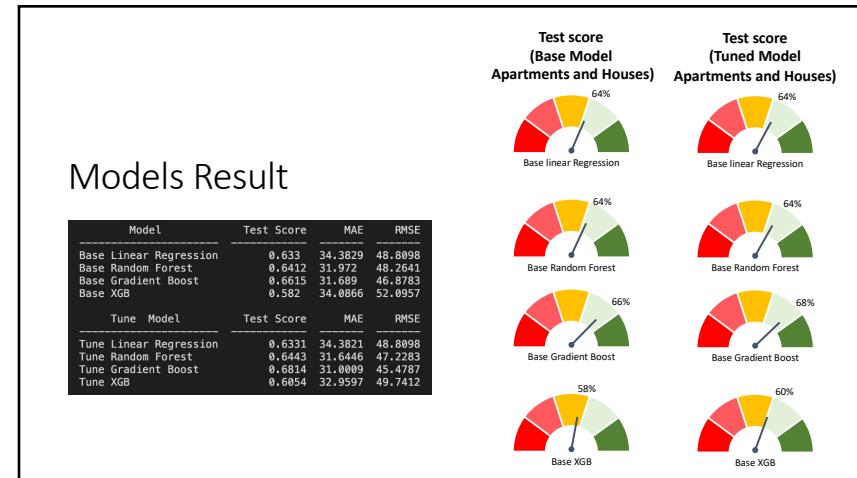
- Build and train five different models.
- The accuracy score will be the evaluation method for the models.
- The score should not below 0.60.
- The model will predict Airbnb prices.



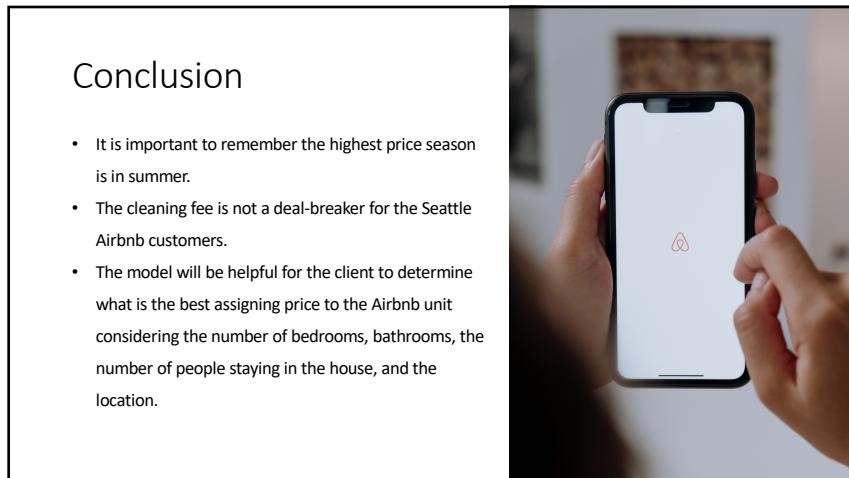
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