Regression Analysis of Airbnb Ratings

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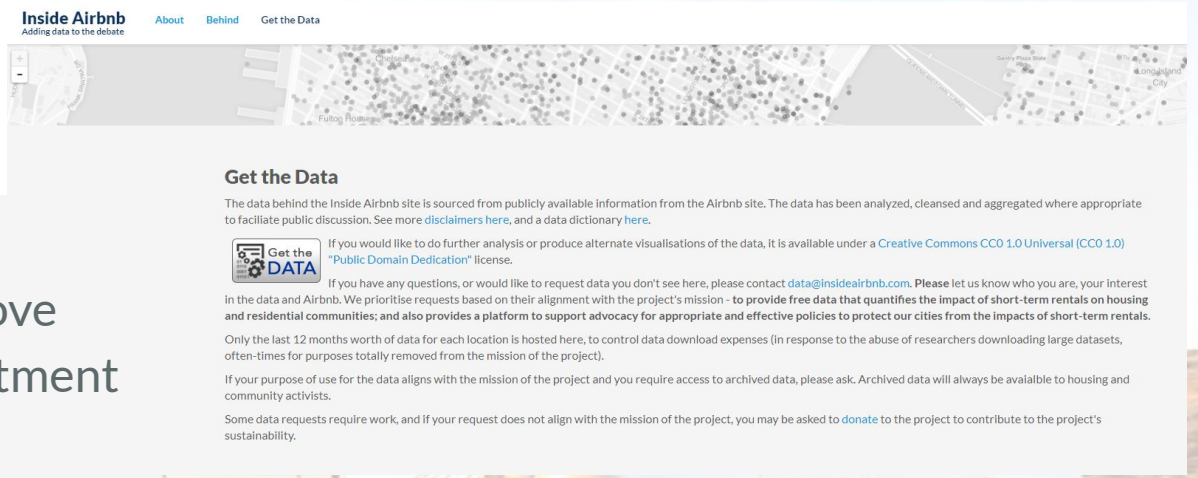
Problem

Goal: To be able to provide insight/advice on how to improve listings while minimizing investment

Analysis Method: Regression



Datasets

Website: http://insideairbnb.com/get-the-data.html

- Will use all listing from the 28 available cities in United States
- ~200k Samples, 74 Columns
- 509MB Total

Feature Examples:

- Flexible: Amenities, Price, Host Response, Min/Max Nights, Description
- Fixed: # Bed/Bath rooms, Location, Superhost, Host Since

Targets: Review Rate, Review Scores

	Files	File Size (MB)
0	listings_Asheville.csv	6.709891
1	listings_Austin.csv	25.272316
2	listings_Boston.csv	9.063423
3	listings_Broward County.csv	29.132234
4	listings_Cambridge.csv	2.240993
5	listings_Chicago.csv	18.179963
6	listings_Clark County.csv	24.450829
7	listings_Colombus.csv	3.586148
8	listings_Dallas.csv	10.462730
9	listings_Denver.csv	9.762857
10	listings_Hawaii.csv	68.024691
11	listings_Jersey City.csv	3.265589
12	listings_Los Angeles.csv	79.754568
13	listings_New Orleans.csv	17.421437
14	listings_New York City.csv	86.223243
15	listings_Oakland.csv	5.828382
16	listings_Pacific Grove.csv	0.551775
17	listings_Portland.csv	10.880926
18	listings_Rhode Island.csv	8.818789
19	listings_Salem.csv	0.455231
20	listings_San Diego.csv	26.274057
21	listings_San Franciso.csv	18.288557
22	listings_San Mateo.csv	7.369669
23	listings_Santa Clara.csv	14.114541
24	listings_Santa Cruz.csv	3.619012
25	listings_Seattle.csv	12.508978
26	listings_Twin Cities.csv	10.284313
27	listings_Washington.csv	21.438617

Potential Challenges

1. Discover most relevant features
2. Addressing categorical features
3. Text Analysis for description feature
4. Multiple datasets being combined - Ensure train and test data come from all datasets
5. Columns containing lists
    - Example: Amenities: ["Hot water", "Luggage dropoff allowed"....."Keypad", "Smoke alarm"]
6. Ambiguous Columns