Discussion

The data we deployed is the **Airbnb Activities for Seattle in 2016**.
Dataset URL: https://www.kaggle.com/airbnb/seattle?

Query 1:


```
month |   occupancy_rate   |      avgprice
------+--------------------+---------------------
    1 | 0.567057878204972  | 124.7965304764153982
    2 | 0.668534797612151  | 125.7856564248441121
    3 |  0.71779495275572  | 130.7401723430447271
    4 | 0.672790357925493  | 137.4980004704775347
    5 | 0.680824241853013  | 142.6538667866475159
    6 |  0.67845142439737  | 150.7168389319552110
    7 | 0.626510992247697  | 155.4834608947477293
    8 | 0.645679681425104  | 153.6413218013283702
    9 | 0.673005978108677  | 145.8341956726246472
   10 | 0.694296793051021  | 139.1497224532753909
   11 | 0.71241018146389   | 137.3819919310722101
   12 | 0.733508550685351  | 139.2375634680892088
(12 rows)
```

We found that the average price among summer months (i.e. June, July, August) is the highest, priced over $150 per night. Nonetheless, January and February seemed to be the off-seasoned months in Seattle, where they had the lowest average price (around $125 per night).

Looking at the occupancy rates for each month in 2016, we can observe that the occupancy rate hits a low of 56.7% in January. It reached the first small peak in March with a percentage of approx. 71.8% and December again witnesses the second highest point in this year with a rate of approx. 73.4%.

The statistics lead us to conclude that the months — June, July and August — are the peak tourist seasons in Seattle, whereas January and February are the off-seasoned months in Seattle in 2016. Therefore, the Airbnb hosts in Seattle might expect a low listing occupancy rate in January in the coming years if this pattern persists.

The results of this investigated question can help give price reference to both hosts (for potential price adjustment throughout the year) and tourists (for deciding on the best time to visit Seattle) in the Airbnb market.

Note: occupancy rate is the rate of occupancy in a given month among all listings in Seattle.

Query 2:

We found that the neighbourhoods — Capitol Hill, Fremont, Leschi, Minor — have the more super-hosts (>4) than others. Among them, Capitol Hill has the most.

For further application, we can use this query to inform users of the airbnb websites which area has more Superhosts and who are they, so that users can plan their travel accordingly.

Note: "Superhost"s are the experienced and extraordinary hosts, where the official grants this title as the host satisfies specific criteria.


```
   neighbourhood   | host_id  |     host_name
-------------------+----------+-------------------
Alki              | 38502645 | Ron
Arbor Heights     |  5407579 | Gina
Atlantic          | 13200167 | Kumail
Atlantic          | 32807985 | Ted
Ballard           |    53050 | Bob
Ballard           |  7466082 | Vera
Ballard           |  9330646 | Carol
Belltown          |  4160438 | Evan
Belltown          |  8534462 | Daniela
Belltown          | 31668017 | Andrew
Bitter Lake       | 19660299 | Daniel And Teresa
Brighton          |  2536735 | Akiko And Matt
Broadview         |  2907322 | Archana
Broadway          |  4729705 | Rob And Carol
Bryant            |  2409388 | Lisa
Capitol Hill      |    31509 | David
Capitol Hill      |   595610 | Elena
Capitol Hill      |   658155 | Joe
Capitol Hill      |  7673693 | Shawn
Capitol Hill      |  9195336 | Scooter
Capitol Hill      | 13309620 | Craig
```

Query 3:

By extracting the data, we found that the mainstream property type (with the number of such listings accounts for at least 2%) in Seattle are Townhouse, Condominium, House and Apartment. The Townhouse is more generally well-rated among the mainstream property types. Houses, Apartments, Dorm and Chalet sometimes get very low scores. We use this query to try to find the more well-rated property types in Seattle to investigate customer preferences.

property_type	avgscore	highest_score	lowest_score
Townhouse	96.625	100	80
Condominium	95.3188405797101	100	80
House	94.8335616438356	100	40
Apartment	93.9775910364146	100	20

(4 rows)

property_type	avgscore	highest_score	lowest_score
Yurt	100	100	100
Bungalow	97.6666666666667	100	94
Other	96.2631578947368	100	90
Cabin	96.2380952380952	100	84
Treehouse	96	100	92
Bed & Breakfast	95.7307692307692	100	85
Camper/RV	95.7	100	90
Boat	95.6	100	90
Loft	95.4545454545455	100	86
Tent	94.5	100	90
Dorm	90	93	87
Chalet	83.5	96	71

(13 rows)