Airbnb Statistics and Insights: Athens, Greece
Database & SQL Showcase Project

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Background:

Family has generational home just outside of Athens, Greece, that they have owned for nearly 80 years. The home is used by members of the family throughout the summer each year, generally peak season for travel to Greece. Increased maintenance cost and necessary repairs has caused home to become a large financial drain on family. They are looking into the possibility of turning the home into an Airbnb during the 9-month offseason to help offset the cost of owning the home.

The home is a three (3) bedroom, one and a half (1.5) bath, and can fit up to 8 beds. Home also has a private driveway, full kitchen, and overlooks the beach.

Goal of Project:

To find the viability of turning the family home into an Airbnb during travel off-season. Along with finding what repairs and or modifications need to be made to maximize income from renting out property.

Project Details:

For this project we will be creating a database from scratch. Using PostgreSQL, we will create and define the tables, upload our data via CSV files, and use a large magnitude of queries to answer our various questions and find answers to the viability of transforming the house into an Airbnb.

For our data we will be downloading our CSV files from Insideairbnb.com. The data we will be using was pulled September 08, 2022.

Question 1:
What is the Average Rate per night and Vacancy rate

Results & Query:

	beds numeric	airbnbs bigint	price numeric	30-day-availability numeric
1	1	3721	82.95	10.05
2	2	3159	88.70	10.20
3	3	1496	103.86	10.34
4	4	642	125.62	10.59
5	5	228	185.90	9.44
6	6	95	182.61	11.39
7	7	45	197.56	9.91
8	8	33	205.30	14.24
9	9	19	324.68	9.89
10	10	15	238.47	16.13

Query   Query History

```
1   SELECT beds, COUNT(*) AS airbnbs, ROUND(AVG(price),2) AS price,
2   ROUND(AVG(availability_30),2) AS "30-day-availability" FROM listings
3
4   INNER JOIN availability
5   ON listings.id = availability.id
6   WHERE beds <= 10
7   GROUP BY beds
8   ORDER BY beds
```

Stats Found:

- Of the 9478 Airbnb's in Athens, 9386 (99%) have 7 or fewer beds.
- Airbnb's with 8-10 beds have a slightly higher vacancy rate (13 nights/month), than 1-7 bed Airbnb's (10 nights/month).
- Average cost per night for an 8 bed Airbnb is $205.00

Question 2:

Would adding a second full bathroom be worth the construction cost?

Results & Query:

	beds numeric	avg-baths numeric
1	1	1.07
2	2	1.13
3	3	1.29
4	4	1.46
5	5	1.76
6	6	2.10
7	7	2.16
8	8	2.51
9	9	2.23
10	10	2.37

	bathrooms numeric	count bigint
1	1	7
2	1.5	1
3	2	10
4	2.5	4
5	3	6
6	3.5	4
7	4	5
8	5	1

```
Query    Query History

1   SELECT  beds, ROUND(AVG(bathrooms_text),2) AS "avg-baths" FROM listings
2   WHERE beds <=10 AND bathrooms_text<6
3   GROUP BY beds
4   ORDER BY beds
```

```
Query    Query History

1   SELECT bathrooms_text AS Bathrooms, COUNT(*) FROM listings
2   WHERE beds =8 AND bathrooms_text <6
3   GROUP BY bathrooms_text
4   ORDER BY bathrooms_text
```

Question 2:

Would adding a second full bathroom be worth the construction cost?

	bathrooms numeric	count bigint	30-day-availability numeric
1	1	6	19.67
2	1.5	1	18.00
3	2	8	10.50
4	2.5	4	17.75
5	3	5	8.40
6	3.5	3	7.00
7	4	4	19.00
8	5	1	24.00

Query   Query History

```
1  SELECT bathrooms_text AS Bathrooms, COUNT(*),
2  ROUND(AVG(availability_30),2) AS "30-day-availability" FROM listings
3  INNER JOIN availability
4  ON listings.id = availability.id
5  WHERE beds =8 AND bathrooms_text <6
6  GROUP BY bathrooms_text
7  ORDER BY bathrooms_text
```

Stats Found:
- Found that on average Airbnb's with 6 or more beds have at least 2 bathrooms
- Airbnb's with 8 beds on average had 2.51 bathrooms
- Only 21.05% of 8 bed Airbnb's had 1.5 bathrooms or less
- 8 bed Airbnb's with less than 2 bathrooms averaged 19 non-booked nights over the next 30 days, where 8 beds with 2 or more bathrooms averaged 13 non-booked

Notes:
- Queries search only include units with less than 6 bathrooms as they were outliers (most likely counting dorm style bathrooms) that were skewing numbers

RESULTS:

Question 1: What is the Average Rate per night and Vacancy rate

The family home currently has six beds but the space for two more. I would recommend adding the two beds as on average the family could charge an additonal $25/night, which would quickly cover the cost of the new bed equipment. Another benefit would be being listed as an 8 bed unit, which would put the home in the top decile in terms of beds.

This dataset was pulled Sept, 08 2022, when looking at average avaiable days over the following 30 days. I found that smaller units (those with 7 beds or less) had an average book rate of 66%, where larger units (those with 8-10 beds) had an average book rate of 57%, which is a difference of about 3 days over the course of the month. Most likely due to the increase in average price of 8 bed airbnbs, I would list the home as an 8 bed unit but closer to a 6 bed unit rate, which would increase the book rate of the home during the offseason.

Question 2: Would adding a second full bathroom be worth the construction cost?

The family home currently has only one full bathroom and then a second half bath. In order to find if it is worth it for the family to add a second full bathroom, I first looked at how many bathroom other Airbnbs had. I found that on average units with 6 beds or more had atleast 2 full bathrooms. When looking at 8 bed units, I found that nearly 80% had atleast 2 full bathrooms. I then found that on average Airbnbs with 2 full bathrooms or more had higher booking rates than those with fewer than 2 full bathrooms, although the data on this is limited.

Overall, I think it would be important for the family to add another full bathroom in order to compete with the other 8 bed Airbnbs. Otherwise they could potentially have a lower booking rate, making chanign the home to an airbnb a less viable option.

Other Queries Performed:

Query   Query History

```
1   SELECT ROUND(AVG(availability_30),2) FROM listings
2   INNER JOIN availability
3   ON listings.id = availability.id
4   WHERE beds=8 AND bathrooms_text>=2
```

*Query to find average available nights for 8 bed Airbnb's with 2 or more bathrooms

Query   Query History

```
1   UPDATE listings SET bathrooms_text = REPLACE(bathrooms_text,'','0')
2   WHERE bathrooms_text =''
3
4   ALTER TABLE listings
5   ALTER COLUMN bathrooms_text TYPE NUMERIC
6   USING bathrooms_text::NUMERIC;
```

*Query to clean data inside bathrooms_text column as well as then change column to a Numeric data type