

**DATABASE FOUNDATIONS FOR BUSINESS ANALYTICS  
PROJECT**

**BUAN 6320-002**

**AIRBNB LISTINGS**



**UNDER THE ESTEEMED GUIDANCE OF  
PROF. DAWN OWENS**

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## **PROJECT DESCRIPTION**

Airbnb is a vacation rental company based out in North America. It operates as an online marketplace, comprising of two parties- guests and hosts, and focuses on short stays and experiences.

The business model followed by them is peer to peer platform, they gain service fee from the customers who book the homestays and gain commission from the hosts. The service fee ranges from 5-15% for guests and 3% for hosts. Their platform makes booking easier across the world and expands the industry making it viable to book accommodation all over the globe. The revenue Airbnb generated in 2021 is USD 5.99 Billion a 77% increase from 2021.

This dataset from Airbnb sourced from Kaggle.com has 250000 listings across 10 major cities and includes information on hosts, pricing of the stay, property details, and reviews on multiple criteria.

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## **DATA DESCRIPTION**

### **Dataset link**

<https://www.kaggle.com/datasets/mysarahmadbhat/airbnb-listings-reviews>

This dataset has 29 columns and 271792 rows and exists in 2NF form.

### **Objective**

Goal is to derive insights from the data model that has been loaded on MySQL Workbench using queries

### **Explanation of the Attributes**

The dataset includes information on –

1. Unique ID's – Listing ID
2. Host – Host Since, Host Location, Host/ Superhost, Total Listing by Host, Host Profile Picture, Verified Host Identity
3. Property Location – Name, Neighbourhood, City, Latitude, Longitude
4. Property – Type, Room Type, Accommodates, Bedrooms, Amenities, Price, Maximum and Minimum Nights, Instant Booking Option
5. Reviews – Rating, Accuracy, Cleanliness, Check-In, Communication, Location, Value

### **Data Sample Characterization:**

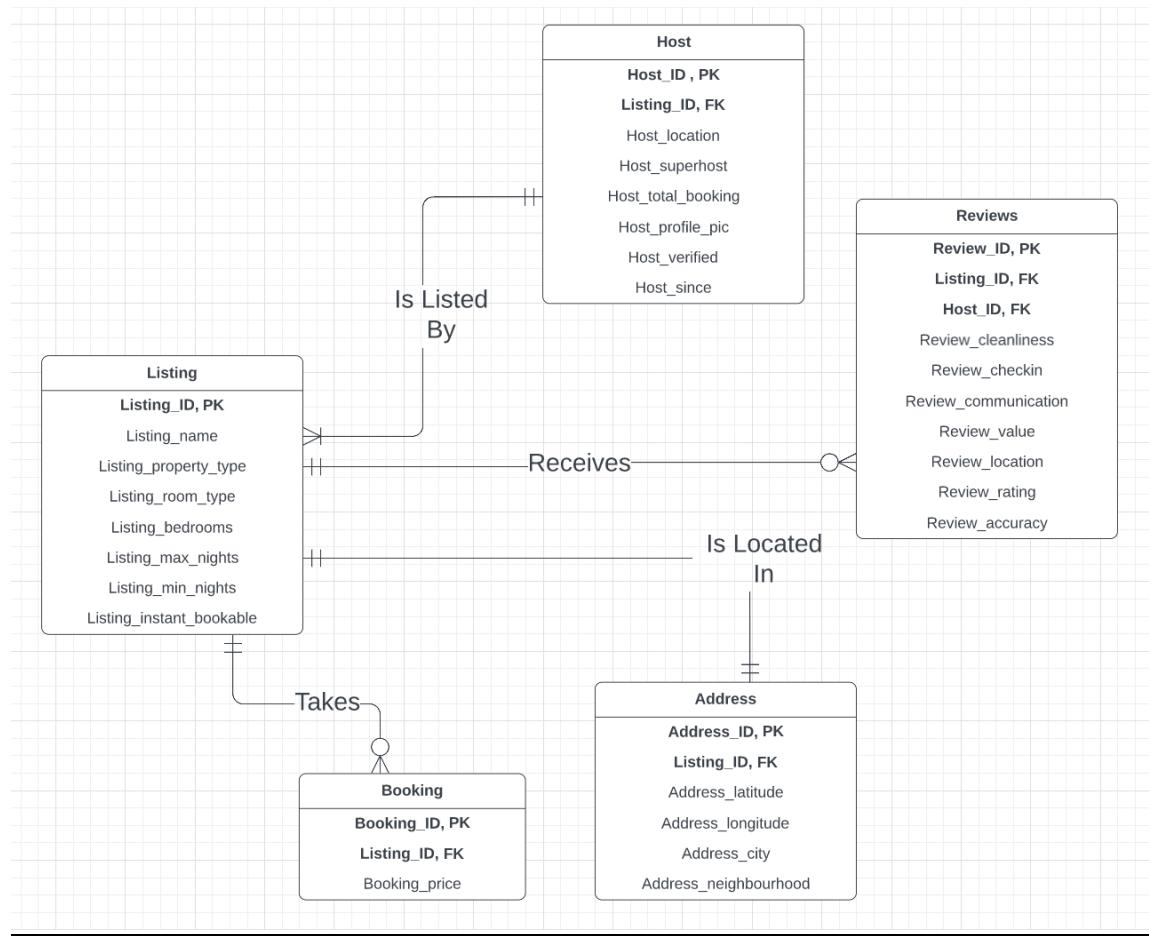
1. Listing ID
2. Name
3. Host ID
4. Host Location
5. Host/ Superhost
6. Total Listing by Host
7. Host has Profile Picture
8. Verified Host Identity
9. Neighbourhood
10. City
11. Latitude
12. Longitude
13. Property Type
14. Room Type
15. Bedroom
16. Price
17. Minimum Nights

- 18. Maximum Nights
  - 19. Review Scores Rating
  - 20. Review Score Accuracy
  - 21. Review Score Cleanliness
  - 22. Review Score Check-In
  - 23. Review Score Communication
  - 24. Review Score Location
  - 25. Review Score Value
  - 26. Instant Booking Option
-

## LOGICAL AND PHYSICAL DATA MODEL

Our ERD model has 5 entities- the host, listing, reviews, address, and booking tables. The booking entity includes the booking ID, listing ID, and booking price. It is separate from the listing table as there may be multiple bookings of a single listing throughout the given time period, which can be identified through the booking ID.

All the tables in this ERD have only one primary key, which eliminates the possibility of any partial dependencies. The address table has been separated from the listing table as well, due to the table not being in 3<sup>rd</sup> normal form. Once done, all our tables are in second normal form.



## **CODE:**

### **Address table:**

```
CREATE TABLE `address` (
  `Address_id` varchar(50) NOT NULL,
  `Address_Latitude` varchar(50) DEFAULT NULL,
  `Address_Longitude` varchar(50) DEFAULT NULL,
  `Address_City` varchar(45) DEFAULT NULL,
  `Address_Neighbourhood` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Address_id`),
  CONSTRAINT `Address_Listing_id` FOREIGN KEY (`Address_id`) REFERENCES `listing`(`Listing_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

### **Booking Table:**

```
CREATE TABLE `booking` (
  `Booking_id` varchar(50) NOT NULL,
  `Booking_Price` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Booking_id`),
  CONSTRAINT `Booking_Listing_id` FOREIGN KEY (`Booking_id`) REFERENCES `listing`(`Listing_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

### **Listing Table:**

```
CREATE TABLE `listing` (
  `Listing_id` varchar(100) NOT NULL,
  `Listing_Name` varchar(2000) DEFAULT NULL,
  `Listing_Property_Type` varchar(45) DEFAULT NULL,
  `Listing_Room_Type` varchar(45) DEFAULT NULL,
  `Listing_Bedrooms` varchar(45) DEFAULT NULL,
  `Listing_Max_Nights` varchar(45) DEFAULT NULL,
  `Listing_Instant_Bookable` varchar(45) DEFAULT NULL,
  `Listing_Min_Nights` varchar(45) DEFAULT NULL, PRIMARY KEY (`Listing_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

### **Review Table:**

```
CREATE TABLE `review` (
  `Review_id` varchar(100) NOT NULL,
  `Review_Cleanliness` varchar(45) DEFAULT NULL,
  `Review_Communication` varchar(45) DEFAULT NULL,
  `Review_Checkin` varchar(45) DEFAULT NULL,
  `Review_Value` varchar(45) DEFAULT NULL,
  `Review_Location` varchar(45) DEFAULT NULL,
  `Review_Rating` varchar(45) DEFAULT NULL,
  `Review_Accuracy` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Review_id`),
  CONSTRAINT `Review_Listing_id` FOREIGN KEY (`Review_id`) REFERENCES `listing`(`Listing_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

### **Host Table:**

```
CREATE TABLE `host` (
  `Host_id` varchar(50) NOT NULL,
  `Host_Location` varchar(100) DEFAULT NULL,
  `Host_Superhost` varchar(45) DEFAULT NULL,
  `Host_Total_Booking` varchar(45) DEFAULT NULL,
  `Host_Has_Profile_Pic` varchar(45) DEFAULT NULL,
  `Host_Verified` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Host_id`),
  CONSTRAINT `Host_Listing_id` FOREIGN KEY (`Host_id`) REFERENCES `listing`(`Listing_id`)
  ON DELETE RESTRICT ON UPDATE RESTRICT
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

## DATA LOADING CONCEPT

- Tool used is **MySQL Workbench**
- **Data Loading Command:**  
load data infile 'C:\\ProgramData\\MySQL\\MySQL Server 8.0\\Uploads\\Host\_fin.csv' into table host  
fields terminated by ',' enclosed by "" lines terminated by '\\n' ignore 1 rows;  
(\*This particular command represents the data loading for Host table and the similar command was used to load data for the rest of the four tables)

The screenshot shows the MySQL Workbench interface. The query editor window contains the following SQL code:

```
4
5   select count(*) from address;
6
7 • truncate table host;
8 • select * from review;
9
10 • load data infile 'C:\\ProgramData\\MySQL\\MySQL Server 8.0\\Uploads\\Host_fin.cs';
11 • show variables like "secure_file_priv";
12
13 • select count(l.listing_name) as `Total Listings`, a.address_city as City
14   from listing l join review r
15     on l.listing_id = r.review_id;
```

The 'host' table details are displayed in the bottom-left pane:

**Table: host**

**Columns:**

Host_Id	varchar(50) PK
Host_Location	varchar(10)
Host_Superhost	varchar(45)
Host_Total_Listing	varchar(45)
Host_Has_Profile_Pic	varchar(45)
Host_Verified	varchar(45)

**Related Tables:**

Target: listing	Host_Id → Listing_Id
On Update	RESTRICT
On Delete	RESTRICT

## Host Table:

```
8 • select * from host;
9
10 • load data infile 'C:\\\\ProgramData\\\\MySQL\\\\MySQL Server 8.0\\\\Uploads\\\\Host_fin.cs'
11 • show variables like "secure_file_priv";
12
```

Result Grid | Filter Rows: | Edit | Export/Import: | Wrap Cell Content: | Fetch rows: |

Host_id	Host_Location	Host_Superhost	Host_Total_Listing	Host_Has_Profile_Pic	Host_Verified
1000370	United States	f	1	t	f
1000322		f	1	t	f
1000358	Turkey	t	1	t	t
1000314	Italy	f	1	t	t
1000362	France	f	1	t	f
1000368		f	1	t	f
1000362	France	f	1	t	t
1000365	Ital	f	1	t	t
1000370		t	1	t	t
10003780	France	f	1	t	t
10006270	South Africa	f	1	t	t
10006375	Turkey	f	1	t	f
10007224	France	f	1	t	t
10007317	France	f	1	t	t
10007653	Brazil	f	20	t	t
1000788	United States	f	2	t	t
10008627	Brazi	f	1	t	t
10009121	France	f	1	t	t
10009999	Rival	f	1	t	f

host 102 X

Object Info Session Output

## Review Table:

```
8 • select * from review;
9
10 • load data infile 'C:\\\\ProgramData\\\\MySQL\\\\MySQL Server 8.0\\\\Uploads\\\\Host_fin.cs'
11 • show variables like "secure_file_priv";
12
```

Result Grid | Filter Rows: | Edit | Export/Import: | Wrap Cell Content: | Fetch rows: |

Review_id	Review_Cleanliness	Review_Communication	Review_Checkin	Review_Value	Review_Location	Review_Rating	Review_Accuracy
22705737	10	10	10	10	98	10	
2270625							
22709839	10	10	9	9	100	10	
22710069	10	10	10	8	100	10	
2271028	9	10	9	9	93	10	
22711350	10	10	10	10	99	10	
22713093	9	10	10	9	98	10	
22713544	10	10	10	10	93	10	
22714041	10	10	10	10	97	10	
22715056	10	10	10	10	98	10	
22715359	9	10	10	10	100	10	
2271792	8	10	9	9	87	9	
22718435	10	10	10	10	100	10	
22719008	10	10	10	10	99	10	
22720047							
2272120	9	9	9	9	93	9	
22771196	9	9	9	9	88	10	

review 105 X

Object Info Session Output

## Listing Table:

```
8 • select * from listing;
9
10 • load data infile 'C:\\\\ProgramData\\\\MySQL\\\\MySQL Server 8.0\\\\Uploads\\\\Host_fin.cs'
11 • show variables like "secure_file_priv";
12
```

Result Grid | Filter Rows: | Edit | Export/Import: | Wrap Cell Content: | Fetch rows: |

name	Listing_Property_Type	Listing_Room_Type	Listing_Bedrooms	Listing_Max_Nights	Listing_Instant_Bookable	Listing_Min_Nights
pups/central/bondi	Entire apartment	Entire place	2	1125	f	3
pm Apartment In Astoria	Entire apartment	Entire place	1	1125	t	30
Close to Taxim Square	Entire apartment	Entire place	1	1125	t	6
ment in the green	Entire apartment	Entire place	2	1125	f	1
Appartement 1se - trÃ¢s proche ...	Entire apartment	Entire place	2	1125	f	4
Ã¢ s de Montmartre	Entire apartment	Entire place		1125	f	1
et Paris Place	Entire apartment	Entire place	1	1125	f	1
ime - Uptown Trastevere	Entire apartment	Entire place	1	1125	t	3
at closed to Montmartre	Entire apartment	Entire place	1	1125	f	4
exquisite sea views, discount long...	Entire apartment	Entire place		1125	t	3
ice house by the channel and sea	Entire apartment	Entire place	2	1125	t	1
urious Parisian apartment	Entire apartment	Entire place	4	1125	f	1
LUXURY APT - PARC MONCEAU	Entire apartment	Entire place	3	1125	f	3
Apex Penthouse 4 BDRS	Entire apartment	Entire place	4	1125	f	3
x 1 br near 2/3/4 Trans	Entire apartment	Entire place	1	1125	f	30
to moderno e funcional. Silencioso	Entire apartment	Entire place	3	1125	f	3
huit mÃ¢tre de Nation	Entire apartment	Entire place		1175	f	1

listing 105 X

Object Info Session Output

## Booking Table:

```
8 • select * from booking;
9
10 • load data infile 'C:\\ProgramData\\MySQL\\MySQL Server 8.0\\Uploads\\Host_fin.cs'
11 • show variables like "secure_file_priv";
12
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows: |

Booking_Id	Booking_Price
10000070	45
10000102	49
10000370	180
1000039	200
10000527	210
10000720	200
10000742	930
10001022	105
10001231	145
10001394	207
10001507	181
1000224	200
10002233	600
10002502	132
10002575	190
10003609	90
10002834	60
10002858	215

Object Info Session Output

Administration Schemas Information

Table: host

Columns:

- Host\_id varchar(50) PK
- Host\_Location varchar(100)
- Host\_Superhost varchar(45)
- Host\_Total\_Listing varchar(45)
- Host\_Has\_Profile\_Pic varchar(45)
- Host\_Verified varchar(45)

Related Tables:

- Target listing (Host\_id → Listing\_id)
- On Update RESTRICT
- On Delete RESTRICT

Execution Plan Context Help Snippets

## Address Table:

```
8 • select * from address;
9
10 • load data infile 'C:\\ProgramData\\MySQL\\MySQL Server 8.0\\Uploads\\Host_fin.cs'
11 • show variables like "secure_file_priv";
12
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows: |

Address_Id	Address_Latitude	Address_Longitude	Address_City	Address_Neighbourhood
10000070	-40.65048	-73.96752	New York	Flatbush
1000002	-40.85295	-73.93361	New York	Washington Heights
10000370	-33.8862	151.24245	Sydney	Woolahra
1000039	-41.90461	12.48283	Rome	I Centro Storico
10000557	19.4063	-99.16222	Mexico City	Cuauhtemoc
10000720	13.75534	100.49778	Bangkok	Phra Nakhon
10000742	10.52742	100.52742	Bangkok	Ratchathewi
10001022	-40.76047	-73.92288	New York	Astoria
10001231	-33.80275	151.2887	Sydney	Manly
10001394	19.39954	-99.17655	Mexico City	Miguel Hidalgo
10001507	22.28752	114.14206	Hong Kong	Central & Western
1000224	48.8571	2.33684	Paris	Luxembourg
1000233	-33.7124	151.27116	Sydney	Warringah
1000302	22.30087	114.17571	Hong Kong	Yau Tsim Mong
10002575	-33.8842	151.26512	Sydney	Waverley
10003609	-33.87995	151.21301	Sydney	Sydney
10002834	41.90681	12.46152	Rome	I Centro Storico
10002858	41.04604	78.98487	Tel Aviv	Ged

Object Info Session Output

Administration Schemas Information

Table: host

Columns:

- Host\_id varchar(50) PK
- Host\_Location varchar(100)
- Host\_Superhost varchar(45)
- Host\_Total\_Listing varchar(45)
- Host\_Has\_Profile\_Pic varchar(45)
- Host\_Verified varchar(45)

Related Tables:

- Target listing (Host\_id → Listing\_id)
- On Update RESTRICT
- On Delete RESTRICT

Execution Plan Context Help Snippets

## INSIGHTS

### **Insight #1: How many listings are there in each city?**

Code:

```
select count(l.listing_name) as `Total Listings`, a.address_city as City
from listing l join review r
on l.listing_id = r.review_id
join address a on a.address_id = l.Listing_id
group by a.address_city
order by count(l.listing_name) desc;
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface. In the top-left, the Navigator pane displays the database schema with tables like host, address, listing, review, and host\_fin. The central Query Editor pane contains the SQL query provided above. The bottom Results Grid pane shows the output of the query, which lists cities and their total listing counts. The output table is as follows:

Total Listings	City
29907	Paris
6321	New York
4013	Rio de Janeiro
4000	Sydney
2474	Rome
1438	London
1355	Mexico City
1260	Cape Town
884	Bangkok
414	Hong Kong

Conclusion:

As seen in the output, the city with the highest number of listings is Paris, with more than 19k listings. This is followed by New York, Rio de Janeiro, Sydney, and more. With this insight, Airbnb can collaborate with brands or tourism destinations or airlines that frequently land in Paris, and make sure that the listings are booked throughout the year by giving collaborative deals. It can also do a lot in other cities to promote more hosts to offer their properties as listings.

## Insight #2: What is the frequency table of the number of bedrooms in the properties?

Code:

```
select count(*) as `Total Count`, Listing_Bedrooms as Bedrooms
from listing
group by Listing_Bedrooms
order by `Total Count` desc;
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface with a query editor and a results grid.

**Query Editor:**

```
16 join address a on a.address_id = l.Listing_id
17 group by a.address_city
18 order by count(l.listing_name) desc;
19
20 • select count(*) as `Total Count`, Listing_Bedrooms as Bedrooms
21 from listing
22 group by Listing_Bedrooms
23 order by `Total Count` desc;
24
25 • select count(host_id) as `Total Unverified Hosts`
26 from host h join listing l on h.host_id = l.listing_id
    left join review r on r.Listing_id = l.Listing_id
```

**Results Grid:**

Total Count	Bedrooms
21310	1
10385	2
7500	3
2971	4
542	5
71	6
36	8
4	9
3	7
2	10
1	11
1	12

Conclusion:

As seen in the output, it is concluded that more than 21k of the properties have only 1 bedroom, followed by 10k properties having 2 bedrooms. This signifies that Airbnb has a lot of options for singles or couples travelling together, and can advertise to these parties, while also working towards expanding their options for accommodations with more rooms for larger parties.

## **Insight #3: How many unverified hosts are there who have overall ratings more than 90%?**

Code:

```
select count(host_id) as `Total Unverified Hosts`  
from host h join listing l on h.host_id = l.listing_id  
join review r on r.Review_id = l.Listing_id  
where Host_Verified like 'f%' and Review_Rating > 90 and Review_Rating is not null;
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface. In the top-left corner, the title bar reads "MySQL Workbench Local instance MySQL". The main area is the "Query Editor" tab, which contains the SQL query provided above. The result grid below shows a single row with the value "4953" under the column "Total Unverified Hosts". On the left side, the "Navigator" pane shows the database schema, including tables like "host", "listing", and "review". The bottom-left pane displays the "Table: host" details, including columns such as Host\_id, Host\_Location, Host\_Verified, Host\_Total\_Listing, Host\_Has\_Profile\_Pic, and Host\_Verified.

Total Unverified Hosts
4953

Conclusion:

There are almost 5k unverified hosts that have an overall rating of more than 90%. Airbnb should reach out to them and urge them to get verified, so their profile can be more attractive and their bookings can increase, generating more commission for the company.

## Insight #4: How many verified hosts are there?

Code:

```
select count(host_id) as `Total Verified Host`  
from host  
where host_verified like 't%';
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
22 group by Listing_Bedrooms  
23 order by `Total Count` desc;  
24  
25 • select count(host_id) as `Total Unverified Host`  
26 from host h join listing l on h.host_id = l.listing_id  
27 join review r on r.Review_id = l.Listing_id  
28 where Host_Verified like 'f%' and Review_Rating > 90 and Review_Rating is not null.  
29  
30 • select count(host_id) as `Total Verified Host`  
31 from host  
32 where host_verified like 't%';  
33
```

The results grid shows a single row:

Total Verified Host
29962

Conclusion:

There are almost 30k verified hosts on Airbnb. To improve this number, Airbnb should give hosts an incentive to get verified, add a profile picture, and do other things that make their listings and profiles more appealing.

## Insight #5: What is the maximum booking price in the data?

Code:

```
select listing_name as 'Name', address_city as 'City', max(booking_price) as `Maximum Price`  
from listing l join booking b on l.listing_id = b.booking_id  
join address a on a.address_id = l.listing_id;
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface. In the top-left pane, the 'Schemas' tree is visible, showing a database named 'database\_project' containing tables like 'listing', 'address', 'host', 'listing', 'review', 'Views', 'Stored Procedures', and 'Functions'. In the center, the 'Query Editor' pane displays the following SQL code:

```
31  from host  
32  where host_verified like 't%';  
33  
34 • select listing_name as 'Name', address_city as 'City', max(booking_price) as `Maximum Price`  
35  from listing l join booking b on l.listing_id = b.booking_id  
36  join address a on a.address_id = l.listing_id;  
37  
38  
39 • select count(listing_id) as `No. of Listings`  
40  from listing  
41  where Listing_Max_Nights > 180;  
42
```

The 'Result Grid' pane below shows the output of the query:

Name	City	Maximum Price
Eastern suburbs/central/bond	Sydney	9999

Conclusion:

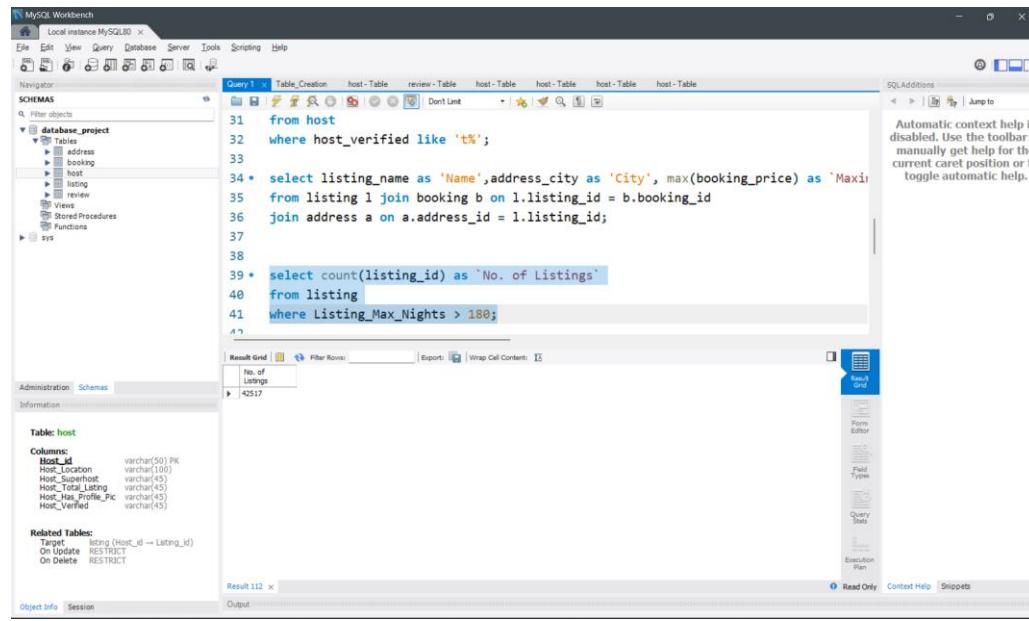
The maximum booking price in the data is \$9999. This information can be used to study the location and guests of this booking price's listing, and use it to increase the number of such listings and guests, respectively.

## **Insight #6: How many listings allow guests to stay for a long duration (more than 180 nights?)**

### Code:

```
select count(listing_id) as `No. of Listings`  
from listing  
where Listing_Max_Nights > 180;
```

### MySQL Workbench:



The screenshot shows the MySQL Workbench interface with a query editor containing the following SQL code:

```
31  from host  
32  where host_verified like 't%';  
33  
34 • select listing_name as 'Name', address_city as 'City', max(booking_price) as 'Maxi  
35  from listing l join booking b on l.listing_id = b.booking_id  
36  join address a on a.address_id = l.listing_id;  
37  
38  
39 • select count(listing_id) as 'No. of Listings'  
40  from listing  
41  where Listing_Max_Nights > 180;  
^~
```

The results pane shows a single row with the value 43517 under the column 'No. of Listings'.

### Conclusion:

Almost 43k listings allow guests to stay for longer than 6 months. Airbnb should see that hosts are open to longer stays, and hence incentive guests into booking for longer durations.

## Insight #7: How many listings in each city are instantly bookable?

Code:

```
select count(listing_id) as `No. of Listings`, address_city as 'City'  
from listing l join address a  
on l.listing_id = a.address_id  
where Listing_Instant_Bookable like 't%'  
group by address_city;
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface. The SQL editor window contains the following query:

```
37 • Execute the selected portion of the script or everything, if there is no selection.  
38  
39 • select count(listing_id) as `No. of Listings`  
40   from listing  
41   where Listing_Max_Nights > 180;  
42  
43 • select count(listing_id) as `No. of Listings`, address_city as 'City'  
44   from listing l join address a  
45   on l.listing_id = a.address_id  
46   where Listing_Instant_Bookable like 't%'  
47   group by address_city;  
^o
```

The results grid displays the output of the query:

No. of Listings	City
679	Istanbul
1259	Rome
231	Cape Town
1401	New York
4543	Paris
1193	Sydney
1061	Rio de Janeiro
159	Moscow City
415	Bangkok
112	Hong Kong

Conclusion:

The output shows the number of listings that are instantly bookable in each city. We can see that this number is not very high for cities like Paris, New York etc. Airbnb should incentivize the hosts to provide this feature so that the booking process is quicker and more convenient.

## Insight #8: What is the range of the booking prices of listings in Paris?

Code:

```
select min(booking_price) as `Minimum Price`, max(Booking_Price) as `Maximum Price`  
from booking b join listing l on b.booking_id = l.Listing_id  
join address a on l.Listing_id = a.Address_id  
where address_city = 'Paris';
```

MySQL Workbench:

The screenshot shows the MySQL Workbench interface with a query editor window. The query is as follows:

```
45  on l.listing_id = a.address_id  
46  where Listing_Instant_Bookable like 't%'  
47  group by address_city;  
48  
49 • select min(booking_price) as `Minimum Price`, max(Booking_Price) as `Maximum Price`  
50  from booking b join listing l on b.booking_id = l.Listing_id  
51  join address a on l.Listing_id = a.Address_id  
52  where address_city = 'Paris';  
53  
54 • select listing_Name as "Name", Listing_Property_Type as "Property Type", Listing.  
55  from listing  
56  where listing_Property_Type = 'Entire Apartment' and listing_Bedrooms > 2
```

The results grid shows:

Minimum Price	Maximum Price
10	999

Conclusion:

In Paris, a city with a very high number of listings, and a popular tourist destination- the booking price ranges from \$10-\$999. This shows that the city is open to all people within that range and offers a wide variety of experiences to the guests. This should be encouraged at all popular travel destinations.

## **Insight #9: How many listings are there where the entire place is available and has more than 3 bedrooms? How appealing is Airbnb to larger groups?**

### Code:

```
select listing_Name as "Name", Listing_Property_Type as "Property Type", Listing_Bedrooms  
as `No. pf Bedrooms`  
from listing  
where Listing_Property_Type= 'Entire Apartment' and Listing_Bedrooms > 3  
order by Listing_Bedrooms desc;
```

### MySQL Workbench:

The screenshot shows the MySQL Workbench interface with a query editor and a result grid.

**Query Editor (Query 1):**

```
52 where address_city = 'Paris';
53
54 • select listing_Name as "Name", Listing_Property_Type as "Property Type", Listing_
55     from listing
56     where Listing_Property_Type = 'Entire Apartment' and Listing_Bedrooms > 3
57     order by Listing_Bedrooms desc];
58
59 • select count(*) as 'Total'
60     from review
61     where Review_Accuracy <= 4;
62
```

**Result Grid:**

Name	Property Type	No. of Bedrooms
MASIVE TRIPLEX 9 BR/MATH w/ELEVATOR!	Entire apartment	9
BEST LOCATION! Bed/Bath (2BRm to NYC w/...	Entire apartment	9
AZ/AD/AB or Group 4/5/6/7/8/9 Bed rm to 5 Bed...	Entire apartment	9
Riviera Apartments	Entire apartment	8
Beautiful sea view apartments 80m from the be...	Entire apartment	8
8 bedroom apartment in front of metro station	Entire apartment	8
Trastevere Exclusive 8 Bedroom twin Aptme...	Entire apartment	8
Trastevere Exclusive 8 Bedroom twin Aptme...	Entire apartment	7
Bella vista appartamento con 4 camere da letto	Entire apartment	7
Casa & Suite Duplex 2RM in Ribeirão Preto	Entire apartment	7
Duplex Copacabana Piscina Sea View	Entire apartment	6
Gorgeous Penthouse 3 floors Ipanema beach	Entire apartment	6
Package 4 Apartments at 2nd flr/2BA	Entire apartment	6
Centrally located studio with your stay	Entire apartment	6
Torre sem Building A/B -afins 6 bedrooms Bed...	Entire apartment	6
Res009 - Luxury 6 bedroom penthouse in Copac...	Entire apartment	6
Appartamento per gruppi Colosse - Terme...	Entire apartment	6
5 star Penthouse with 180° ocean view (pa...	Entire apartment	6

### Conclusion:

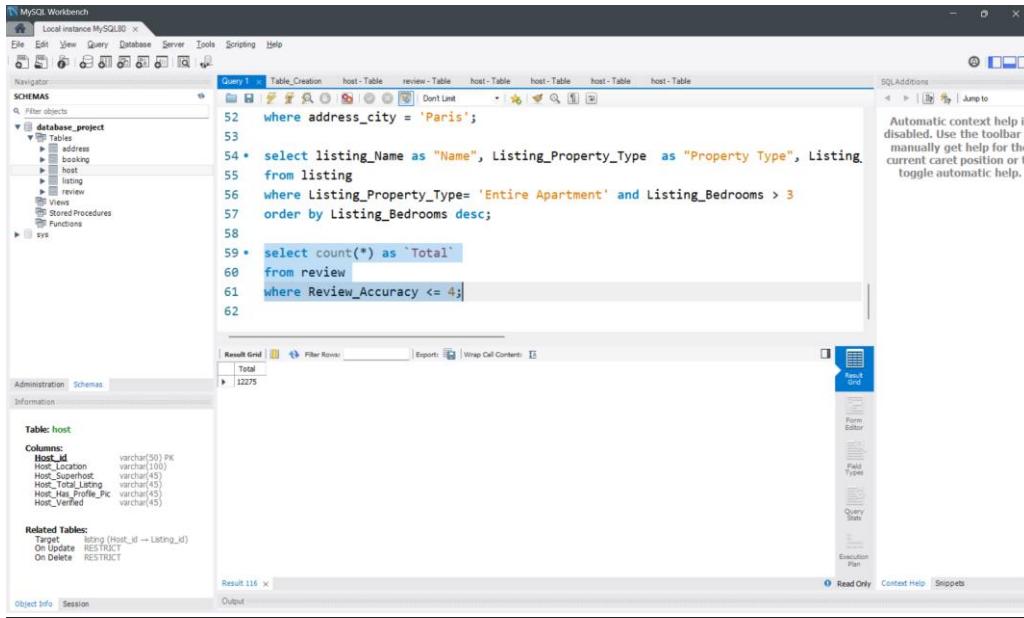
115 listings are there that are available with these features. In case there is a demand for larger properties, Airbnb should incentivize people with larger properties to become hosts, so it can attract bigger parties of people.

## Insight #10: How many listings have reviews with review accuracy being rated less than or equal to only 40%?

Code:

```
select count(*) as `Total`
from review
where Review_Accuracy <= 4;
```

MySQL Workbench:

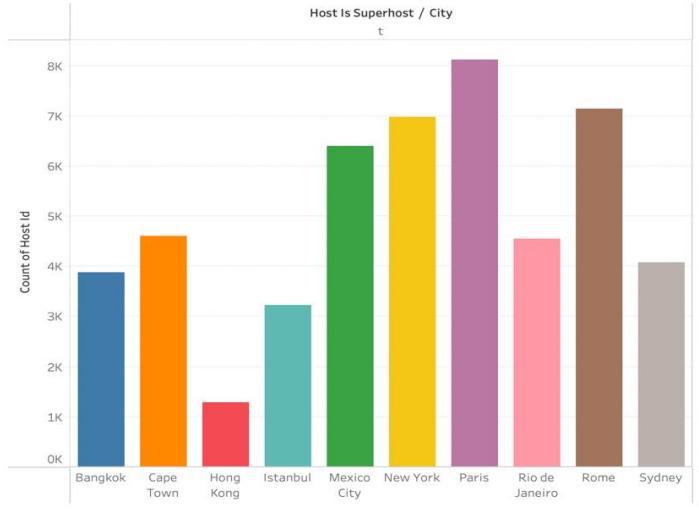


Conclusion:

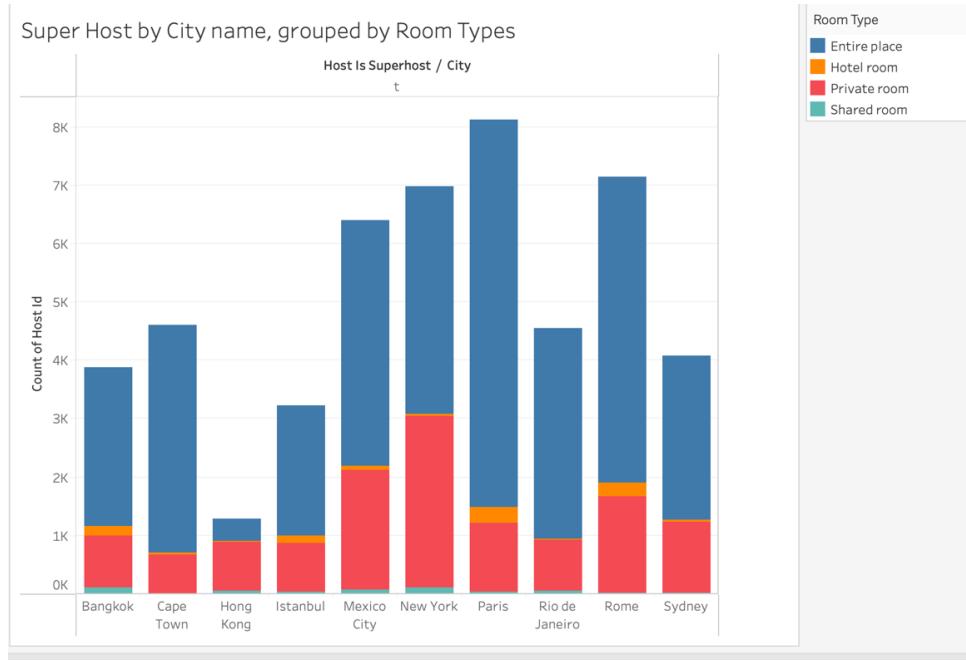
There are around 12,200 listings where the review for accuracy is low. This is not a good look for Airbnb as customers will feel the descriptions are misleading. The company should look into these listings and ask the hosts to be transparent to avoid dissatisfaction, refunds, and cancellations.

## VISUALIZATION CHARTS

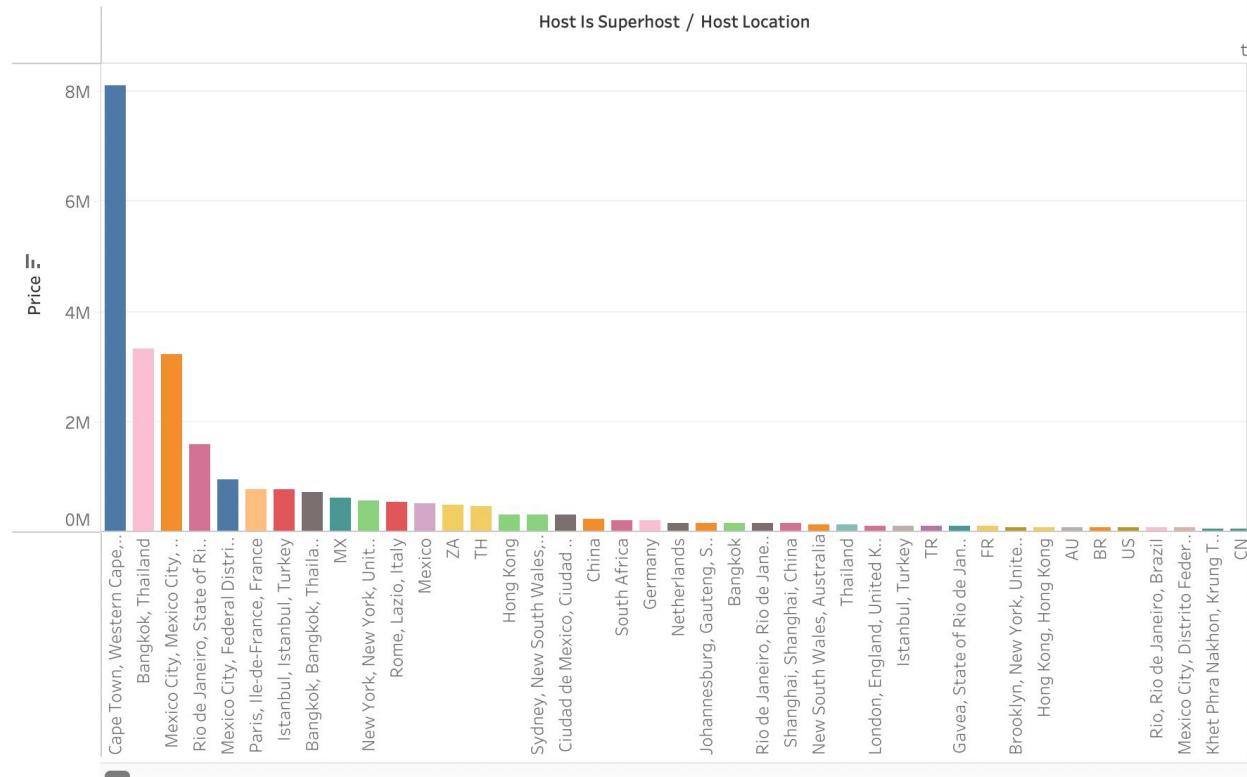
Number of Superhost in each city ( Filtered by: Host has Profile Pic = T )



Superhost by City name, grouped by Room Types



## Prices of listings in each location



## **REFERENCES**

Dataset link:

<https://www.kaggle.com/datasets/mysarahmadbhat/airbnb-listings-reviews>

Presentation Link:

[https://cometmail-my.sharepoint.com/personal/axs220151\\_utdallas\\_edu/\\_layouts/15/stream.aspx?id=%2Fpersonal%2Faxes220151%5Futdallas%5Fedu%2FDocuments%2FDBProjectPresentation%2Emp4&referrer=Teams%2ETEAMS%2DELECTRON&referrerScenario=p2p%5Fns%2Dbim&ga=1](https://cometmail-my.sharepoint.com/personal/axs220151_utdallas_edu/_layouts/15/stream.aspx?id=%2Fpersonal%2Faxes220151%5Futdallas%5Fedu%2FDocuments%2FDBProjectPresentation%2Emp4&referrer=Teams%2ETEAMS%2DELECTRON&referrerScenario=p2p%5Fns%2Dbim&ga=1)