INSY661

Database and Distributed Systems for Analytics
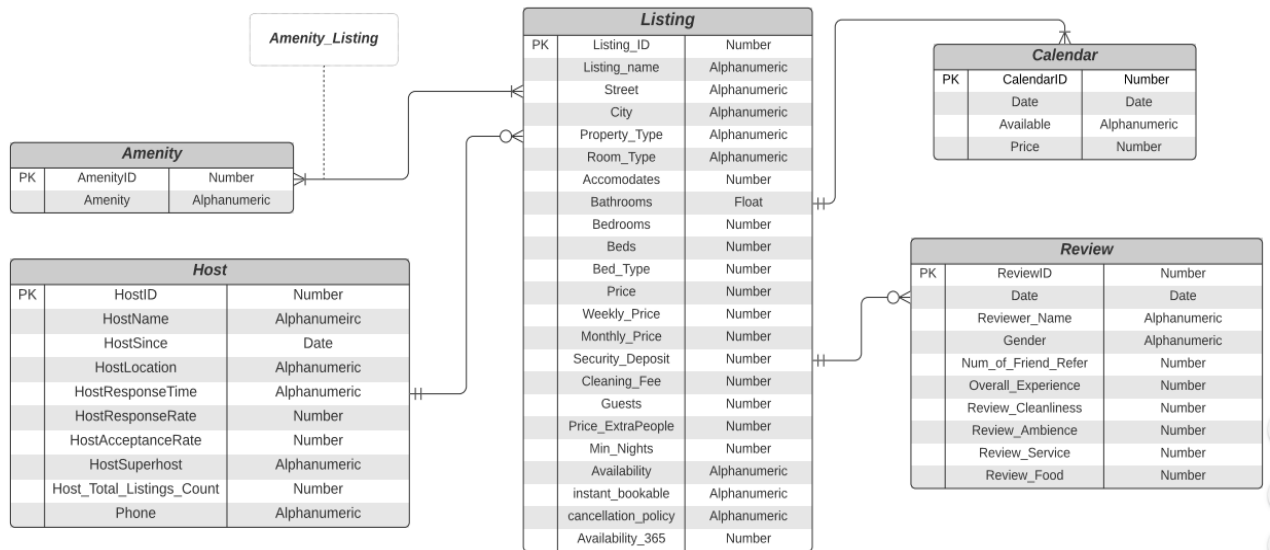
Individual Project- Part 1

Collected Dataset Information

I have taken a dataset of Airbnb Washington and based on this data I have build an ERD and DDL to generate multiple interesting queries. I selected this data as it seemed interesting to me to find out the customer preferences and the demand of different properties listed on Airbnb and to understand the trend in data related to vacation rentals. The dataset was obtained from data.world website and it contains information about the Hosts which are listed on Airbnb and that have various types of rental properties and amenities at different prices. It also provides details about which listings are available for which dates in the entire year(here the data was truncated a little since it was huge, so I have included only 2015 from two years data). There were information about the customers and what kind of reviews they have given for different listings as well as how many friends they referred for different listings and hosts. All these information are important and relevant to understand what customer prefer in terms of vacation rentals and how the prices vary with location, property types and other amenities. This information can be collected by many data analysts who wants to understand the Airbnb business model and gain some insights related to the trend of vacation rental bookings in the market and how competitive is Airbnb as compared to other companies in the similar business. Note: Only relevant information was taken for the purpose of the project from the entire dataset due to huge size of the data.

Entity Relationship Diagram

Assumptions:

- A host may or may not have multiple listings and a listing should have only one unique host assigned to it.
- One amenity can be available in more than one listing but there should be atleast one amenity for each listing. A listing can have multiple amenities and at least one is mandatory.
- A listing can be available for multiple calendar dates and it should be available for at least one date. A calendar ID is unique and is assigned to a particular date so for one calendar ID there should be only one listing available.
- A listing may or may not have multiple reviews. A review ID is associated to each customer which is unique to a listing, therefore one review from a customer should be assigned to only one listing.

Relational Schema

Host(**HostID**,HostName,HostSince,HostLocation,HostResponseTime,HostResponseRate,HostAcceptanceRate,HostSuperhost,Host_Total_Listings_Count,phone)
Primary Key: HostID

Listing(**Listing_ID**,Listing_name,**HostID**,Street,City,Property_Type,Room_Type,Accomodates,Bathrooms,Bedrooms,Beds,Bed_Type,Price,Weekly_Price,Monthly_Price,Security_Deposit,Cleaning_Fee,Guests,Price_ExtraPeople,Min_Nights,Availability,instant_bookable,cancellation_policy,Availability_365)
Primary Key: Listing_ID
Foreign Key: HostID references Host(HostID)

Amenity(**AmenityID**, Amenities)
Primary Key: Amenity_ID

Amenity_Listing(**Listing_ID, AmenityID**)
Primary Key: AmentyID, Listing_ID
Foreign Key: Listing_ID references Listing(Listing_ID)
Foreign Key: AmenityID references Amenity(AmenityID)

Review(**Listing_ID,ReviewID**,Date,Reviewer_ID,Reviewer_Name,Gender,Num_of_Friend_Refer,Overall_Experience,Review_Cleanliness,Review_Ambience,Review_Service,Review_Food)
Primary Key: Review_ID
Foreign Key: Listing_ID references Listing(Listing_ID)

Calendar(**CalendarID,** **Listing_ID,** Date,Available,Price)
Primary Key: Calendar_ID
Foreign Key: Listing_ID references Listing(Listing_ID)

Data Definition Language

Host Table

CREATE TABLE Host(

    `HostID` INT(40) NOT NULL,

    `HostName` VARCHAR(500) DEFAULT NULL,

    `HostSince` DATE DEFAULT NULL,

    `HostLocation` VARCHAR(1000) DEFAULT NULL,

    `HostResponseTime` VARCHAR(500),

    `HostResponseRate` FLOAT,

    `HostAcceptanceRate` FLOAT,

    `HostSuperhost` VARCHAR(20),

    `Host_Total_Listings_Count` INT(20),

    `phone` VARCHAR(500) DEFAULT NULL,

    PRIMARY KEY (HostID)

);

```
INSERT INTO Host(`HostID`, `HostName`, `HostSince`, `HostLocation`, `HostResponseTime`, `HostResponseRate`, `HostAcceptanceRate`, `HostSuperhost`, `Host_Total_Listings_Count`
 (5338703, 'Sebastian', '2013-03-05', 'New York, New York, United States', 'within a day', 0.90, 1.00, 'f', 1, '593-140-5095'),
 (1487418, 'Craig', '2011-12-09', 'Washington, District of Columbia, United States', 'within a day', 0.90, 1.00, 'f', 2, '224-565-8759'),
 (16970249, 'Christopher', '2014-06-18', 'Washington, District of Columbia, United States', 'within an hour', 1.00, 0.00, 'f', 1, '555-679-6954'),
 (30369828, 'Joshua', '2015-03-31', 'Baltimore, Maryland, United States', 'within a few hours', 0.92, 0.67, 'f', 1, '907-659-2685'),
 (951119, 'Todd', '2011-08-10', 'Washington, District of Columbia, United States', 'within an hour', 1.00, 1.00, 'f', 1, '332-453-2564'),
 (4628, 'Michelle', '2008-11-25', 'Washington, District of Columbia, United States', 'within an hour', 1.00, 0.00, 'f', 1, '502-124-8473'),
 (3671500, 'Shahrzad', '2012-09-25', 'Washington, District of Columbia, United States', 'within a few hours', 1.00, 0.00, 'f', 1, '263-700-9523'),
```

HostID	HostName	HostSince	HostLocation	HostResponseTime	HostResponseRate	HostAcceptanceRate	HostSuperhost	Host_Total_Listings_Count	phone
2798	Ayeh	2008-09-07	Washington D.C., District of Columbia, United S…	within a few hours	1	1	f	3	490-970-8707
4628	Michelle	2008-11-25	Washington, District of Columbia, United States	within an hour	1	0	f	1	502-124-8473
17633	Charlotte	2009-05-18	Washington, District of Columbia, United States	within a few hours	0.99	0.96	f	32	780-553-2944
25188	Seamless	2009-07-10	US	within a day	0.58	0.51	f	480	940-746-8490
37014	Lara & Alex	2009-09-08	Washington, District of Columbia, United States	within a few hours	0.99	0.89	f	25	879-479-7508
56646	Serge	2009-11-22	Washington D.C., District of Columbia, United S…	within a few hours	1	1	t	1	378-721-3500

Listing Table

CREATE TABLE Listing(

    `Listing_ID` INT(30) NOT NULL,

    `Listing_name` VARCHAR(1500),

    `HostID` INT(20) NOT NULL,

    `Street` VARCHAR(1000),

    `City` VARCHAR(500),

    `Property_Type` VARCHAR(500),

    `Room_Type` VARCHAR(500),

    `Accomodates` INT(20),

    `Bathrooms` FLOAT,

    `Bedrooms` INT(10),

    `Beds` INT(10),

    `Bed_Type` VARCHAR(40),

    `Price` INT(20),

    `Weekly_Price` INT(20),

    `Monthly_Price` INT(20),

    `Security_Deposit` INT(20),

    `Cleaning_Fee` INT(20),

    `Guests` INT(10),

    `Price_ExtraPeople` INT(20),

    `Min_Nights` INT(20),

    `Availability` VARCHAR(10),

    `instant_bookable` VARCHAR(15),

    `cancellation_policy` VARCHAR(20),

    `Availability_365` INT(30),

    PRIMARY KEY (Listing_ID),

    FOREIGN KEY (HostID) REFERENCES Host (HostID)

);

```
INSERT INTO Listing(`Listing_ID`, `Listing_name`, `HostID`, `Street`, `City`, `Property_Type`, `Room_Type`, `Accomodates`, `Bathrooms`, `Bedrooms`, `Beds`,
 (975833, 'Spacious Capitol Hill Townhouse', 5338703, '11th Street Southeast, Washington, DC 20003, United States', 'Washington', 'House', 'Entire home/apt',
 (8249488, 'Spacious/private room for single', 1487418, '14th Place, Hyattsville, MD 20782, United States', 'Hyattsville', 'House', 'Private room', 1, 2, 1,
 (8409022, 'A wonderful bedroom with library', 16970249, 'O St, Washington, DC 20024, United States', 'Washington', 'House', 'Private room', 2, 1, 1, 1, 'Rea
 (8411173, 'Downtown Silver Spring', 30369828, 'East-West Highway, Silver Spring, MD 20910, United States', 'Silver Spring', 'Townhouse', 'Entire home/apt',
 (8634774, 'Exclusive Catamaran Houseboat', 951119, 'V St, Washington, DC 20024, United States', 'Washington', 'Boat', 'Entire home/apt', 4, 1, 2, 4, 'Real E
 (8498095, 'Cozy DC Condo, Close to Metro!', 4628, 'Butternut Street Northwest, Washington, DC 20012, United States', 'Washington', 'Condominium', 'Entire ho
 (8513660, 'Warm and Cozy 1 Bedroom Apt', 3671500, 'Russell Avenue, Mount Rainier, MD 20712, United States', 'Mount Rainier', 'Apartment', 'Entire home/apt',
 (8298145, 'Private room for rent', 5159038, 'Larchmont Avenue, Capitol Heights, MD 20743, United States', 'Capitol Heights', 'House', 'Private room', 2, 1.5
 (295345, 'Elite Room w/private bath Eden Park', 347309, 'Carroll Ave, Takoma Park, MD 20912, United States', 'Takoma Park', 'Bed & Breakfast', 'Private room
 (1745866, 'Takoma Comfort, DC Convenience', 9188872, 'Piney Branch Road, Takoma Park, MD 20912, United States', 'Takoma Park', 'House', 'Entire home/apt', 4
```

Listing_ID	Listing_name	HostID	Street	City	Property_Type	Room_Type
3362	Rowhouse	2798	P St Nw, Washington, DC 20001, United States	Washington	House	Private room
14570	Downtown Spacious BR /Private Bath	56646	N St, Washington, DC 20001, United States	Washington	Apartment	Private room
17377	Lux 1 BR - Near Convention Center	25188	Massachusetts Avenue Northwest, Washington...	Washington	Apartment	Entire home/apt
18883	[1396-J1]Jr. 1 BR-Newseum Residences	25188	Pennsylvania Avenue Northwest, Washington, ...	Washington	Apartment	Entire home/apt
20832	[1375-2] 2BR-1 Block to White House	25188	15th Street Northwest, Washington, DC 20005,...	Washington	Apartment	Entire home/apt
23378	[1396] 1 BR at Newseum Residences	25188	Pennsylvania Avenue Northwest, Washington, ...	Washington	Apartment	Entire home/apt
34180	Furnished 1BR - Massachusetts Ave.	25188	Massachusetts Ave, Washington, DC 20001, U...	Washington	Apartment	Entire home/apt

Calendar Table

CREATE TABLE Calendar(

CalendarID INT (10) AUTO_INCREMENT PRIMARY KEY NOT NULL,

    `Listing_ID` INT(20) NOT NULL,

    `Date` DATE,

    `Available` VARCHAR(5),

    `Price` INT(20),

    FOREIGN KEY (Listing_ID) REFERENCES Listing (Listing_ID)

);

```
INSERT INTO Calendar(`Listing_ID`, `Date`, `Available`, `Price`)
VALUES (7087327, '2015-10-02', 'f', 0),
 (7087327, '2015-10-03', 'f', 0),
 (7087327, '2015-10-04', 'f', 0),
 (7087327, '2015-10-05', 'f', 0),
 (7087327, '2015-10-06', 'f', 0),
 (7087327, '2015-10-07', 'f', 0),
 (7087327, '2015-10-08', 'f', 0),
```

CalendarID	Listing_ID	Date	Available	Price
27043	7087327	2015-10-02	f	0
27044	7087327	2015-10-03	f	0
27045	7087327	2015-10-04	f	0
27046	7087327	2015-10-05	f	0
27047	7087327	2015-10-06	f	0
27048	7087327	2015-10-07	f	0
27049	7087327	2015-10-08	f	0
27050	7087327	2015-10-09	f	0

Amenity Table

CREATE TABLE Amenity(

 AmenityID VARCHAR(50) PRIMARY KEY NOT NULL,

 `Amenities` VARCHAR(500)

);

```sql
INSERT INTO Amenity
   (`AmenityID`, `Amenities`)
VALUES
   ('A1', 'TV'),
   ('A2', 'Cable TV'),
   ('A3', 'Internet'),
   ('A4', 'Wireless Internet'),
   ('A5', 'Air Conditioning'),
   ('A6', 'Kitchen'),
   ('A7', 'Washer'),
   ('A8', 'Free Parking on Premises'),
```

AmenityID	Amenities
A1	TV
A10	Wheelchair Accessible
A11	Gym
A12	Dryer
A13	Pool
A14	Heating
A15	Indoor Fireplace
A16	Pets live on this property
A17	Elevator in Building

Amenity_Listing Table

CREATE TABLE Amenity_Listing (

 `Listing_ID` INT(30) NOT NULL,

 `AmenityID` VARCHAR(50) NOT NULL,

 PRIMARY KEY (Listing_ID,AmenityID),

  FOREIGN KEY (Listing_ID) REFERENCES Listing (Listing_ID),

  FOREIGN KEY (AmenityID) REFERENCES Amenity (AmenityID)

```sql
INSERT INTO Amenity_Listing
  (`Listing_ID`, `AmenityID`)
VALUES
  ('7087327', 'A1'),
  ('975833', 'A1'),
  ('8249488', 'A2'),
  ('8409022', 'A1'),
  ('8411173', 'A1'),
  ('8634774', 'A1'),
```

Listing_ID	AmenityID
14570	A1
17377	A1
18883	A1
20832	A1
23378	A1
34180	A1
36943	A1

Review Table

CREATE TABLE Review(

`Listing_ID` INT(20) NOT NULL,

`ReviewID` INT(20) NOT NULL,

`Date` DATE,

`Reviewer_Name` VARCHAR(500),

`Gender` VARCHAR(10),

`Num_of_Friend_Refer` INT(20),

`Overall_Experience` INT(20),

`Review_Cleanliness` INT(20),

`Review_Ambience` INT(20),

`Review_Service` INT(20),

`Review_Food` INT(20),

PRIMARY KEY (ReviewID),

FOREIGN KEY (Listing_ID) REFERENCES Listing (Listing_ID)

);

```
INSERT INTO Review(`Listing_ID`, `ReviewID`, `Date`, `Reviewer_Name`, `Gender`,
  (3421927, 44975441, '2015-08-30', 'Lia', 'Male', 4, 5, 2, 9, 9, 2),
  (3421927, 46761715, '2015-09-13', 'Angela', 'Male', 16, 6, 10, 9, 9, 10),
  (5039240, 27794844, '2015-03-12', 'Leah', 'Male', 13, 9, 6, 9, 6, 6),
  (5039240, 27906355, '2015-03-14', 'Ive', 'Female', 6, 5, 1, 7, 2, 1),
  (5039240, 27929649, '2015-03-15', 'Rachel', 'Female', 2, 9, 5, 8, 9, 5),
  (5039240, 28064199, '2015-03-16', 'Jessie', 'Male', 20, 4, 2, 5, 10, 2),
  (5039240, 28165697, '2015-03-19', 'Alison', 'Female', 16, 8, 10, 8, 9, 10),
  (5039240, 28234115, '2015-03-20', 'Christina', 'Male', 8, 6, 4, 6, 3, 4),
  (5039240, 28786972, '2015-03-30', 'Christine', 'Male', 10, 8, 3, 5, 10, 3),
```

Listing_ID	ReviewID	Date	Reviewer_Name	Gender	Num_of_Friend_Refer	Overall_Experience	Review_Cleanliness	Review_Ambience	Review_Service	Review_Food
3362	662	2009-01-21	Robyn	Male	20	4	4	10	9	4
3362	1099	2009-03-26	Brian	Female	2	10	2	8	6	2
3362	6300	2009-07-28	Anthony	Female	14	10	10	5	4	10
3362	8387	2009-08-27	Alina	Female	18	8	10	9	2	10
3362	8451	2009-08-28	Nicole	Female	2	6	10	10	3	10
3362	9807	2009-09-12	Laura	Male	12	10	6	5	5	6
3362	12271	2009-10-03	Rebecca	Female	17	4	6	8	10	6

SQL Queries

1) **How many listings are associated to each property type and what are their average rating for the overall experience as well as for the cleanliness.**

SELECT
   L.Property_Type,
   COUNT(L.Listing_ID) AS Num_of_Listings,
   AVG(R.Review_Cleanliness) AS Avg_Clean_Rating,
   AVG(R.Overall_Experience) AS Avg_Total_Rating
FROM
   Listing AS L,
   Review AS R
WHERE
R.Listing_ID = L.Listing_ID
GROUP BY Property_Type
ORDER BY Avg_Total_Rating DESC, Avg_Clean_Rating;

Property_Type	Num_of_Listings	Avg_Clean_Rating	Avg_Total_Rating
Loft	91	5.6703	7.1538
Condominium	2	2.5000	7.0000
Townhouse	99	5.6364	6.8586
Apartment	3301	5.4802	6.8122
House	1309	5.5455	6.4966
Bed & Breakfast	6	5.5000	5.6667
Dorm	2	6.0000	5.0000

2) All the Listings where host response rate is greater than the average host response rate.

SELECT
   Listing.Listing_ID,
   Listing.Listing_name,
   Listing.City,
   Listing.Property_Type,
   Listing.Price,
   (SELECT
      AVG(HostResponseRate) AS Avg_Response_Rate
    FROM
      Host) AS Avg_Response_Rate,
   X.HostResponseRate
FROM
   (SELECT
    Host.HostID, Host.HostResponseRate
   FROM
    Host
   WHERE
    HostResponseRate > (SELECT
      AVG(HostResponseRate) AS Avg_Response_Rate
     FROM
      Host)) X
   JOIN
  Listing ON Listing.HostID = X.HostID;

Listing_ID	Listing_name	City	Property_Type	Price	Avg_Response_Rate	HostResponseRate
3362	Rowhouse	Washington	House	250	0.8319736838079336	1
8498095	Cozy DC Condo, Close to Metro!	Washington	Condominium	100	0.8319736838079336	1
130470	DuPont Retreat, walk 2 Metro	Washington	Apartment	189	0.8319736838079336	0.99
6900870	Airy Loft In Downtown!	Washington	Loft	250	0.8319736838079336	0.99
14570	Downtown Spacious BR /Private Bath	Washington	Apartment	85	0.8319736838079336	1
7825726	Spacious room by Convention Center	Washington	Apartment	59	0.8319736838079336	1
3504621	Cozy Apt w/ Views of the Monument!	Washington	Apartment	135	0.8319736838079336	1
4430318	Stunning Penthouse Loft Guestroom	Washington	Apartment	120	0.8319736838079336	1
68962	Sunny Bedroom with En Suite Bath	Washington	House	94	0.8319736838079336	1
295345	Elite Room w/private bath Eden Park	Takoma Park	Bed & Breakfast	71	0.8319736838079336	1
295346	Renaissance Rm shared bath Eden PK	Takoma Park	Bed & Breakfast	60	0.8319736838079336	1
374043	Capitol Hill Row-House w/ Priv Bath	Washington	House	85	0.8319736838079336	0.9

3) How many listings each city have and what are their average monthly price and average overall price.

SELECT

    L.City,

    COUNT(L.Listing_ID) AS Num_of_Listings,

    AVG(L.Monthly_Price) AS Avg_Monthly_Price,

    AVG(L.Price) AS Avg_Total_Price

FROM

    Listing AS L

GROUP BY City

ORDER BY Avg_Monthly_Price DESC , Avg_Total_Price DESC;

City	Num_of_Listings	Avg_Monthly_Price	Avg_Total_Price
Washington	278	2238.6187	181.5324
Takoma Park	6	1275.0000	119.5000
Capitol Heights	1	800.0000	38.0000
Silver Spring	5	499.8000	90.8000
Hyattsville	2	350.0000	36.5000
Annapolis	1	0.0000	375.0000
Washington, D.C.	2	0.0000	109.5000
Mount Rainier	4	0.0000	73.0000

4) Top 5 most expensive listings grouped by hosts.

SELECT L.Listing_ID, L.Listing_name, L.Price

FROM Listing AS L

GROUP BY L.HostID

ORDER BY L.Price DESC

LIMIT 5;

Listing_ID	Listing_name	Price
8408614	Spectacular Penn Quarter Lux Apt.	725
5869529	Lux Furnished 1BR Newseum Apt.	569
8514469	Luxury- Right in the heart of DC	450
892183	SHORT/LONG TERM: SPECTACULAR HOME !	400
813573	Inauguration 2013	$400/nt	SW DC	400

5) Apartments in Washington with internet amenity and do not require security deposit

SELECT

L.Listing_ID, L.Listing_name, L.Street, L.Room_Type, L.Price

FROM

Amenity_Listing AS AL

JOIN

Listing AS L ON AL.Listing_ID = L.Listing_ID

JOIN

Amenity AS A ON A.AmenityID = AL.AmenityID

WHERE L.City = 'Washington'

AND A.Amenities = 'Internet'

AND L.Room_Type = 'Entire home/apt'

AND L.Security_Deposit = '0'

ORDER BY L.Price DESC;

Listing_ID	Listing_name	Street	Room_Type	Price
7629993	Luxury Furnished 2BR Apt in Newseum	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	629
6967482	Lux Furnished 2BR Apt in Newseum	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	629
8286241	Lux 1BR NW Washington APT	Thomas Circle Northwest, Washington, DC 200…	Entire home/apt	571
6953508	Lux Furnished 1BR Newseum Apt	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	569
6953706	Lux Furnished 1BR Apt in Newseum	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	569
6781783	Logan Circle Lux Furnished 1BR Apt	M Street Northwest, Washington, DC 20005, U…	Entire home/apt	569
5869529	Lux Furnished 1BR Newseum Apt.	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	569
6846210	Lux Fully Furnished 1BR Newseum Apt	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	569
7630675	Luxury 1BR Apt in Newseum.	Pennsylvania Avenue Northwest, Washington, …	Entire home/apt	569
5990979	Dupont Circle, 14th ST Unbeatable!	S Street Northwest, Washington, DC 20009, Un…	Entire home/apt	480

6) What are the top 5 Hosts based on the overall rating received from the customers.

SELECT

L.HostID,

L.Listing_ID,

H.HostName,

AVG(R.Overall_Experience) AS Avg_Overll_Rating

FROM

Host AS H

JOIN

Listing AS L ON H.HostID = L.HostID

JOIN

Review AS R ON R.Listing_ID = L.Listing_ID

GROUP BY H.HostID

ORDER BY Avg_Overll_Rating DESC

LIMIT 5;

HostID	Listing_ID	HostName	Avg_Overll_Rating
6424358	6404138	Ashanna	10.0000
39767027	7596192	Piyali	10.0000
1487418	8249488	Craig	10.0000
34862310	6660622	Gabby	10.0000
33664909	7219322	Audrey	10.0000

7) Average price by property type for Washington City and where response rate of Host is greater than 90%

SELECT

L.Property_Type,

AVG(L.Price) AS Average_Price

FROM

Listing AS L

WHERE

L.HostID IN (SELECT

H.HostID

FROM

Host AS H

WHERE

H.HostLocation LIKE '%Washington%' AND H.HostResponseRate>0.90)

GROUP BY L.Property_Type;

Property_Type	Average_Price
Apartment	149.8046
Boat	99.0000
Condominium	108.4000
Dorm	38.0000
House	130.4063
Loft	195.2500
Townhouse	101.8571

8) Which Listing and Host were the most expensive across all months, in which location they are present and for which property type.

SELECT

T.Month,

    L.Listing_ID,

    L.Listing_name,

    L.HostID,

    L.Property_Type,

    L.City,

    T.Max_Price

FROM

    (SELECT

      Cal.Listing_ID,

        DATE_FORMAT(Cal.Date, '%M') AS Month,

        MAX(CAl.Price) AS Max_Price

    FROM

      Calendar AS Cal

    GROUP BY Month) T

      JOIN

    Listing AS L ON T.Listing_ID = L.Listing_ID

      JOIN

    Host AS H ON H.HostID = L.HostID;

Month	Listing_ID	Listing_name	HostID	Property_Type	City	Max_Price
December	7087327	Historic DC Condo-Walk to Capitol!	15830506	House	Washington	725
November	7087327	Historic DC Condo-Walk to Capitol!	15830506	House	Washington	725
October	7087327	Historic DC Condo-Walk to Capitol!	15830506	House	Washington	725

9) Which listing has been referred the most by customers to their friends and how many friends have been referred to by the customers.

SELECT

L.Listing_ID,

COUNT(R.Gender) AS Total_Customers,

SUM(Num_of_Friend_Refer) AS Friends_Referred

FROM

Listing AS L

   JOIN

Review AS R ON R.Listing_ID = L.Listing_ID

GROUP BY L.Listing_ID

ORDER BY Total_Customers DESC;

Listing_ID	Total_Customers	Friends_Referred
14570	338	3393
1170249	245	2574
805490	169	1590
195344	163	1685
68962	150	1526
374043	139	1336
1173115	139	1453
1391504	136	1489

10) In which month, the listings are highly occupied.

SELECT

DATE_FORMAT(Cal.Date, '%M') AS Month,

COUNT(Cal.Available) AS Total_Occupied

FROM

Calendar AS Cal

   JOIN

Listing AS L ON Cal.Listing_ID = L.Listing_ID

WHERE

  Cal.Available = 'f'

GROUP BY DATE_FORMAT(Cal.Date, '%M')

ORDER BY Total_Occupied DESC;

Month	Total_Occupied
October	5173
November	3372
December	2818

11) How many listings are available each month and what are their average price per month.

SELECT

  DATE_FORMAT(Cal.Date, '%M') AS Month,

  COUNT(Cal.Available) AS Total_Available,

  AVG(Cal.Price) AS avg_price

FROM

  Calendar AS Cal

    JOIN

  Listing AS L ON Cal.Listing_ID = L.Listing_ID

WHERE

  Cal.Available = 't'

GROUP BY DATE_FORMAT(Cal.Date, '%M')

ORDER BY Total_Available DESC;

Month	Total_Available	avg_price
December	6451	190.5123
November	5598	187.6172
October	3630	207.3113

12) Total number of occupied listings in each city for each month.

SELECT

DATE_FORMAT(Cal.Date, '%M') AS Month,

L.City,

COUNT(Cal.Available) AS Total_Occupied

FROM

Calendar AS Cal

JOIN

Listing AS L ON Cal.Listing_ID = L.Listing_ID

WHERE

Cal.Available = 'f'

GROUP BY DATE_FORMAT(Cal.Date, '%M') , City

ORDER BY month DESC , Total_Occupied DESC;

Month	City	Total_Occupied
October	Washington	4894
October	Takoma Park	77
October	Washington, D.C.	58
October	Hyattsville	57
October	Silver Spring	46
October	Mount Rainier	36
October	Capitol Heights	5
November	Washington	3189
November	Takoma Park	60
November	Washington, D.C.	58
November	Mount Rainier	30
November	Silver Spring	30
November	Hyattsville	5
December	Washington	2665

13) Which amenities were highly preferred by customers.

SELECT

A.Amenities, COUNT(R.ReviewID) AS Num_of_customers

FROM

Listing AS L,

Amenity AS A,

Amenity_Listing AS AL,

Review AS R

WHERE

L.Listing_ID = R.Listing_ID

AND L.Listing_ID = AL.Listing_ID

AND A.AmenityID = AL.AmenityID

GROUP BY A.Amenities

ORDER BY Num_of_customers DESC;

Amenities	Num_of_customers
Air Conditioning	4804
Gym	4793
Wireless Internet	4762
Kitchen	4649
Internet	4362
TV	4108
Doorman	4042
Fire Extinguisher	3890
Breakfast	3074
Hot Tub	3046
Cable TV	3037

14) Total number of reviews received for each city by customers and what are their average overall ratings.

SELECT

L.City,

COUNT(R.ReviewID) AS Num_of_Reviews,

AVG(R.Overall_Experience) AS Avg_Rating

FROM

Listing AS L

JOIN

Review AS R ON L.Listing_ID = R.Listing_ID

GROUP BY City

ORDER BY Avg_Rating DESC;

City	Num_of_Reviews	Avg_Rating
Silver Spring	1	9.0000
Hyattsville	2	8.5000
Capitol Heights	1	7.0000
Washington, D.C.	4	6.7500
Washington	4790	6.7334
Takoma Park	11	5.6364
Mount Rainier	1	4.0000

15) Which property type was highly preferred among male and female customers.

```
SELECT
L.Property_Type,
   COUNT(CASE
      WHEN R.GENDER = 'Female' THEN L.Property_Type
   END) AS `Female_Pref`,
   COUNT(CASE
      WHEN R.GENDER = 'Male' THEN L.Property_Type
   END) AS `Male_Pref`
FROM
   Review AS R
      JOIN
   Listing AS L ON R.Listing_ID = L.Listing_ID
GROUP BY L.Property_Type;
```

Property_Type	Female_Pref	Male_Pref
Apartment	1707	1594
Bed & Breakfast	3	3
Condominium	1	1
Dorm	2	0
House	659	650
Loft	38	53
Townhouse	48	51

16) **Which SuperHost Listing accommodates more than 4 people for apartment style property type, what are their monthly and total prices as well as for how many days they are available out of 365 days.**

SELECT

    L.Listing_ID,

    L.Listing_name,

    H.HostID,

    H.HostName,

    H.HostSince,

    H.HostResponseTime,

    L.Availability_365,

    L.Monthly_Price,

    L.Price

FROM

    Listing AS L

        JOIN

    Host AS H ON L.HostID = H.HostID

WHERE

    H.HostSuperhost = 't'

        AND L.Property_Type = 'Apartment'

        AND L.Accomodates > 4;

Listing_ID	Listing_name	HostID	HostName	HostSince	HostResponseTime	Availability_365	Monthly_Price	Price
4629445	Huge Unit Near Everything!	23974493	Greg	2014-11-20	within a few hours	0	4500	155
6074361	Modern 2Bed/2Bath Downtown Condo	6539620	Alexandra	2013-05-23	within a few hours	143	0	400
6881600	Walk2Everything/Downtown Apt	25476243	Sara	2015-01-01	within an hour	203	0	179
7502313	Center of DC - 4 Beds in 2 BR	1642856	Jon	2012-01-23	within an hour	156	5000	194

17) **Number of listing that SuperHost and NonSuperHost have and what are their average Overall, Cleanliness and Service ratings along with their average monthly price and average security deposit amounts.**

SELECT

"SuperHost" AS HostType,

    H.HostID,

```
        COUNT(L.Listing_ID) AS Num_of_Listings,

        AVG(R.Overall_Experience) AS Avg_Rating,

        AVG(R.Review_Cleanliness) AS Avg_Clean_Rating,

        AVG(R.Review_Service) AS Avg_Service_Rating,

        AVG(L.Monthly_Price) AS Avg_Monthly_Price,

        AVG(L.Security_Deposit) AS Avg_Sec_Dep

FROM

        Host AS H,

        Listing AS L,

        Review AS R

WHERE

        H.HostID = L.HostID

            AND L.Listing_ID = R.Listing_ID

            AND H.HostSuperhost = 't'

GROUP BY H.HostID

UNION

SELECT

"NonSuperHost" AS HostType,

        H.HostID,

        COUNT(L.Listing_ID) AS Num_of_Listings,

        AVG(R.Overall_Experience) AS Avg_Rating,

        AVG(R.Review_Cleanliness) AS Avg_Clean_Rating,

        AVG(R.Review_Service) AS Avg_Service_Rating,

        AVG(L.Monthly_Price) AS Avg_Monthly_Price,

        AVG(L.Security_Deposit) AS Avg_Sec_Dep

FROM

        Host AS H,

        Listing AS L,

        Review AS R

WHERE
```

H.HostID = L.HostID

   AND L.Listing_ID = R.Listing_ID

   AND H.HostSuperhost = 'f'

GROUP BY H.HostID

ORDER BY HostType,Avg_Monthly_Price DESC;

HostType	HostID	Num_of_Listings	Avg_Rating	Avg_Clean_Rating	Avg_Service_Rating	Avg_Monthly_Price	Avg_Sec_Dep
NonSuperHost	4280278	26	5.8077	5.5000	6.9231	8000.0000	500.0000
NonSuperHost	19312635	19	7.2632	4.1579	7.2632	7995.0000	300.0000
NonSuperHost	25188	106	6.9906	5.8019	6.7736	7558.0472	0.0000
NonSuperHost	9419684	18	6.7222	5.3333	7.1111	6970.0000	0.0000
NonSuperHost	5750063	33	7.4545	5.8485	5.3333	6500.0000	0.0000
NonSuperHost	2944360	96	6.4792	5.2083	5.6979	6423.2813	110.4167
NonSuperHost	4028670	5	6.6000	4.2000	5.6000	5950.0000	200.0000
NonSuperHost	9054845	6	7.6667	4.6667	7.6667	5800.0000	0.0000
NonSuperHost	949856	163	5.8957	5.5460	7.0245	5500.0000	200.0000
NonSuperHost	553227	29	6.6207	5.1379	5.1379	5500.0000	500.0000
NonSuperHost	1569728	20	6.4000	5.3000	6.0500	5400.0000	0.0000
NonSuperHost	4219994	17	6.4706	4.4706	5.4706	5110.0000	1500.0000
NonSuperHost	17633	47	6.8511	5.4255	5.4255	4784.0000	200.0000

HostType	HostID	Num_of_Listings	Avg_Rating	Avg_Clean_Rating	Avg_Service_Rating	Avg_Monthly_Price	Avg_Sec_Dep
SuperHost	1642856	8	5.5000	4.2500	4.6250	5000.0000	0.0000
SuperHost	23974493	23	6.4348	5.9565	5.3478	4500.0000	99.0000
SuperHost	1640384	15	7.2000	5.8667	7.2000	4400.0000	500.0000
SuperHost	2070536	84	7.0357	5.6905	5.1667	3700.0000	100.0000
SuperHost	28825130	11	6.5455	4.1818	6.9091	3570.0000	500.0000
SuperHost	4265015	18	7.6111	5.6111	7.6111	3000.0000	400.0000
SuperHost	966914	46	7.2391	5.8696	5.1739	2499.0000	0.0000
SuperHost	56646	338	7.5710	5.2456	7.5710	2300.0000	150.0000
SuperHost	705346	54	6.6296	6.0741	6.5185	1950.0000	200.0000
SuperHost	27863856	12	8.5833	5.0833	8.5833	1750.0000	0.0000
SuperHost	7042945	166	6.5723	5.7831	5.6928	1245.0241	95.0000

18) Total available listings per month and how many of those were booked by customers. This basically tells us how the demand varies across months for Airbnb. The Months 10,11,12 refers to October, November and December respectively.

SELECT A.bookingmonth AS Month, B.Total_Available, A.Bookings

FROM

   (SELECT

      MONTH(Review.Date) AS bookingmonth, COUNT(Review.Date) AS Bookings

   FROM

      Review

   WHERE

      MONTH(Review.Date) > 9

   GROUP BY MONTH(Review.Date)) A

JOIN

(SELECT

MONTH(Calendar.Date) AS supplymonth, COUNT(Calendar.Date) AS Total_Available

FROM

Calendar

WHERE Available = 't'

GROUP BY MONTH(Calendar.Date)) B ON A.bookingmonth = B.supplymonth;

Month	Total_Available	Bookings
10	3630	382
11	5598	231
12	6451	186

19) **What are the average prices each day of the month for the listings that are available in Washington and are the prices higher during weekends.**

SELECT

DATE_FORMAT(Cal.Date, '%a') AS WkDay,

AVG(Cal.Price) AS avg_price

FROM

Calendar AS Cal

JOIN

Listing AS L ON Cal.Listing_ID=L.Listing_ID

WHERE

L.City = 'Washington'

GROUP BY DATE_FORMAT(Cal.Date, '%a')

ORDER BY avg_price DESC;

WkDay	avg_price
Sun	116.2330
Mon	116.2111
Tue	115.7720
Wed	115.1375
Thu	114.7272
Fri	113.2652
Sat	111.7761

20) **How many hosts grouped by SuperHost and NonSuperHost have different types of cancellation policies where instant bookings are avaible. The "f" refer to NonSuperHost and "t" refers to SuperHost under HostSuperhost column.**

```
SELECT
    H.HostSuperhost,
    COUNT(H.HostID) AS Num_of_Hosts,
    L.cancellation_policy
FROM
    Listing AS L
        JOIN
    Host AS H ON L.HostID = H.HostID
    WHERE instant_bookable = 't'
GROUP BY H.HostSuperhost,cancellation_policy;
```

HostSuperhost	Num_of_Hosts	cancellation_policy
f	11	flexible
f	9	moderate
f	11	strict
t	3	flexible
t	2	moderate
t	2	strict

21) **Listings that received maximum number of reviews from customers and whose Overall rating is higher than the average total rating.**

```
SELECT

    L.Listing_ID,

    L.Listing_name,

    COUNT(R.ReviewID) AS Num_of_Reviews,

    R.Overall_Experience,

    (SELECT AVG(Review.Overall_Experience) FROM Review) AS Avg_Rating

FROM

    Listing AS L

        JOIN

    Review AS R ON L.Listing_ID = R.Listing_ID

WHERE

    R.Overall_Experience > (SELECT AVG(Review.Overall_Experience) FROM Review)

    GROUP BY L.Listing_ID

    ORDER BY Num_of_Reviews DESC;
```

Listing_ID	Listing_name	Num_of_Reviews	Overall_Experience	Avg_Rating
14570	Downtown Spacious BR /Private Bath	226	9	6.7316
1170249	Private bedroom with private bath!	126	8	6.7316
805490	Awesome Location! -- Clean Studio	100	9	6.7316
1173115	Best Location/Street / Logan Circle	96	8	6.7316
195344	New Luxury Downtown Private Apt.	75	9	6.7316
1391504	Luxurious Apartment, Heart of DC	73	8	6.7316
374043	Capitol Hill Row-House w/ Priv Bath	70	9	6.7316
68962	Sunny Bedroom with En Suite Bath	69	10	6.7316
536232	"The Executive" Flat - DC - 442	56	9	6.7316
2517969	Sports themed room next to metro	55	10	6.7316

22) **Listings that have TV, Air Conditioning and Free Parking on Premises as amenities, how much do they charge for cleaning and what are their monthly price sorted in descending order.**

SELECT

DISTINCT L.Listing_ID, H.HostID,

L.Listing_name,

L.City,

L.Availability,

L.Monthly_Price,

L.Cleaning_Fee

FROM

Listing AS L

JOIN

Host AS H ON L.HostID=H.HostID

JOIN Amenity_Listing AS AL ON AL.Listing_ID = L.Listing_ID

JOIN Amenity AS A ON A.AmenityID = AL.AmenityID

WHERE A.Amenities IN ('TV','Air Conditioning','Free Parking on Premises')

ORDER BY L.Monthly_Price DESC;

Listing_ID	HostID	Listing_name	City	Availability	Monthly_Price	Cleaning_Fee
5990979	8008783	Dupont Circle, 14th ST Unbeatable!	Washington	t	10500	200
786693	25188	[1396-2/3] 2BR at Newseum Residences	Washington	t	8829	0
786670	25188	[1396-2/2] 2BR At Newseum Residences	Washington	t	8829	0
5952761	25188	[1375-2/2B] 1 Block to White House	Washington	t	8519	0
786804	25188	[1375-2B] 1 Block to White House	Washington	t	8519	0
7629993	30283594	Luxury Furnished 2BR Apt in Newseum	Washington	t	8339	100
6967482	30283594	Lux Furnished 2BR Apt in Newseum	Washington	t	8339	100
1085657	25188	[1686-1D] 1BR w/Den - Foggy Bottom	Washington	t	8200	0
892183	4280278	SHORT/LONG TERM: SPECTACULAR HOME !	Washington	t	8000	150
3768871	19312635	Luxury Rowhouse in Dupont Circle	Washington	t	7995	0

23) Which SuperHost provide amenities 'Cable TV', 'Internet', 'Wireless Internet', how many listings they have, in which city they are present and what are their average price and average overall rating by the customers.

SELECT

H.HostID,

L.City,

COUNT(L.Listing_ID) Num_of_Listings,

H.HostResponseRate,

AVG(L.Price) AS Avg_Price,

AVG(R.Overall_Experience) AS Avg_Rating

FROM

Listing AS L,

Host AS H,

Review AS R,

Amenity AS A,

Amenity_Listing AS AL

WHERE

L.HostID = H.HostID

AND L.Listing_ID = R.Listing_ID

AND L.Listing_ID = AL.Listing_ID

AND A.AmenityID = AL.AmenityID

AND H.HostSuperhost = 't'

AND A.Amenities IN ('Cable TV' , 'Internet', 'Wireless Internet')

GROUP BY H.HostID

ORDER BY Avg_Rating DESC;

HostID	City	Num_of_Listings	HostResponseRate	Avg_Price	Avg_Rating
27863856	Washington	36	1	99.0000	8.5833
4265015	Washington	54	1	159.0000	7.6111
56646	Washington	676	1	85.0000	7.5710
173592	Washington	16	1	120.0000	7.2500
966914	Washington	92	1	149.0000	7.2391
1640384	Washington	30	1	283.0000	7.2000
2070536	Washington	252	1	150.0000	7.0357
4737755	Washington	56	0.65	295.0000	6.9643
24421384	Washington	49	1	178.5510	6.7347
705346	Washington	162	1	99.0000	6.6296

24) **Number of amenities available at each listing grouped by hosts and what are their average monthly price.**

SELECT

   L.Listing_ID,

   L.Listing_name,

   L.HostID,

   COUNT(A.AmenityID) AS Num_of_Amenities,

   AVG(L.Monthly_Price) AS Avg_Monthly_Price

FROM

   Listing AS L

     JOIN

   Amenity_Listing AS AL ON AL.Listing_ID = L.Listing_ID

     JOIN

   Amenity AS A ON A.AmenityID = AL.AmenityID

GROUP BY L.HostID

ORDER BY Avg_Monthly_Price DESC;

Listing_ID	Listing_name	HostID	Num_of_Amenities	Avg_Monthly_Price
892183	SHORT/LONG TERM: SPECTACULAR HOME !	4280278	14	8000.0000
3768871	Luxury Rowhouse in Dupont Circle	19312635	12	7995.0000
5869529	Lux Furnished 1BR Newseum Apt.	30283594	160	7039.5750
1839373	Lux 1BR Newseum Apt on the Mall	9419684	162	6688.5185
1086168	2bd/2ba A+ Logan Circle Penthouse	5750063	19	6500.0000
17377	Lux 1 BR - Near Convention Center	25188	320	6495.1938
6790744	critical mass	4028670	19	5950.0000
2707225	One Block from the White House!	9054845	16	5800.0000
5039240	Downtown Luxury 2bed by the Capitol	2944360	70	5639.0714
195344	New Luxury Downtown Private Apt.	949856	13	5500.0000

25) Hosts that have listed properties in Washington and that have Internet as amenity.

SELECT

      H.HostID,

  H.HostName,

  H.HostSince,

  H.HostLocation,

  H.phone

FROM

  Host AS H

WHERE

  H.HostID IN (SELECT

     L.HostID

   FROM

    Amenity_Listing AS AL

     JOIN

    Listing AS L ON AL.Listing_ID=L.Listing_ID

    JOIN Amenity AS A ON A.AmenityID = AL.AmenityID

   WHERE L.City = 'Washington'

    AND A.Amenities = 'Internet'

   ORDER BY L.Monthly_Price);

HostID	HostName	HostSince	HostLocation	phone
2798	Ayeh	2008-09-07	Washington D.C., District of Columbia, United S...	490-970-8707
56646	Serge	2009-11-22	Washington D.C., District of Columbia, United S...	378-721-3500
25188	Seamless	2009-07-10	US	940-746-8490
343320	Helen & Journey	2011-01-11	Washington D.C., District of Columbia, United S...	898-935-4578
481929	Chris	2011-04-03	Washington D.C., District of Columbia, United S...	201-182-6878
17633	Charlotte	2009-05-18	Washington, District of Columbia, United States	780-553-2944
611958	Bryan	2011-05-22	Washington, District of Columbia, United States	764-864-5692
949856	Nat	2011-08-10	Washington D.C., District of Columbia, United S...	476-621-8553
1632216	Louisa	2012-01-20	Washington, District of Columbia, United States	395-720-9090
966914	Annie	2011-08-14	Washington, District of Columbia, United States	385-473-4179

26) Private rooms in Washington which do not require security deposit

SELECT

  L.Listing_ID, L.Listing_name, L.Street, L.Room_Type, L.Price, A.Amenities, A.AmenityID

FROM

  Amenity_Listing AS AL

    JOIN

  Listing AS L ON AL.Listing_ID = L.Listing_ID

    JOIN

  Amenity AS A ON A.AmenityID = AL.AmenityID

WHERE L.City = 'Washington'

    AND A.Amenities = 'Internet'

    AND L.Room_Type = 'Private Room'

    AND L.Security_Deposit = '0'

ORDER BY L.Price DESC;

Listing_ID	Listing_name	Street	Room_Type	Price	Amenities	AmenityID
3362	Rowhouse	P St Nw, Washington, DC 20001, United States	Private room	250	Internet	A3
1403549	Private room in center of DC!	6th Street Northwest, Washington, DC 20001, ...	Private room	150	Internet	A3
8606829	Master Suite in Navy Yard	South Capitol Street Southwest, Washington, D...	Private room	125	Internet	A3
7790166	Private room near Gallery Place	Massachusetts Avenue Northwest, Washington...	Private room	120	Internet	A3
6911905	Brand New Apt in the NOMA district	H St, Washington, DC 20001, United States	Private room	110	Internet	A3
7067790	Private Master Bedroom Capitol Hill	H St, Washington, DC 20001, United States	Private room	109	Internet	A3
1170249	Private bedroom with private bath!	12th Street Northwest, Washington, DC 20005,...	Private room	105	Internet	A3
5023531	Comfortable studio with dinosaur.	Ames St, Washington, DC 20019, United States	Private room	100	Internet	A3
2339961	Union Station/Chinatown/Downtown	Massachusetts Avenue Northwest, Washington...	Private room	99	Internet	A3
8428938	Verizon Center: Chinatown	, Washington, DC 20001, United States	Private room	99	Internet	A3

27) Apartments in Washington which have internet and > 1 bedrooms and have moderate cancellation policy

SELECT

    L.Listing_ID,

    L.Street,

    L.Listing_name,

    L.City,

    L.Bedrooms,

    L.Price,

    L.Monthly_Price

FROM

    Amenity_Listing AS AL

      JOIN

    Listing AS L ON AL.Listing_ID = L.Listing_ID

      JOIN

    Amenity AS A ON A.AmenityID = AL.AmenityID

WHERE

  L.City = 'Washington'

    AND A.Amenities = 'Internet'

    AND L.Room_Type = 'Entire home/apt'

    AND L.cancellation_policy = 'moderate'

    AND L.Property_Type = 'Apartment'

    AND L.Bedrooms > 1

      ORDER BY L. Monthly_Price DESC, L.Price DESC;

Listing_ID	Street	Listing_name	City	Bedrooms	Price	Monthly_Price
7257104	CityCenterDC, 825 10th Street Northwest, Was...	Lux 2BR Apt near Convention Center	Washington	2	429	7770
5844616	CityCenterDC, 825 10th Street Northwest, Was...	Lux 2BR Apt near Convention Center	Washington	2	337	7770
1839589	Pennsylvania Avenue Northwest, Washington, ...	Lux 2BR Newseum Apt on the Mall	Washington	2	311	7170
2171039	Pennsylvania Avenue Northwest, Washington, ...	Lux 2BR Newseum Apt on the Mall	Washington	2	311	7170
1086168	Vermont Avenue Northwest, Washington, DC 2...	2bd/2ba A+ Logan Circle Penthouse	Washington	2	372	6500
6790744	Massachusetts Avenue Northwest, Washington...	critical mass	Washington	2	269	5950
7916003	K Street Northwest, Washington, DC 20001, Un...	Luxury Corporate Apartment in NW DC	Washington	2	225	4500
4629445	3rd Street Northwest, Washington, DC 20001, ...	Huge Unit Near Everything!	Washington	2	155	4500
7922208	New York Avenue Northwest, Washington, DC ...	Walking Distance to Everything!	Washington	2	175	3800
3635723	I Street Northwest, Washington, DC 20001, Uni...	Super Chic & Gorgeous Downtown Apt.	Washington	2	290	0
7258774	Mass Apartments, 425 Massachusetts Avenue ...	2 Bed/2bath Apt. in Downtown DC	Washington	2	250	0
6288255	4th Street Northwest, Washington, DC 20001, ...	2 bedroom Condo w/private yard	Washington	2	120	0

28) What are the average deposits in Washington for each property types.

SELECT

    L.Property_Type,

    AVG(L.Security_Deposit) AS Average_Deposit

FROM

    Listing AS L

WHERE

    L.HostID IN (SELECT

        H.HostID

      FROM

        Host AS H

      WHERE

        H.HostLocation LIKE '%Washington%'

          AND H.HostResponseRate > 0.90)

GROUP BY L.Property_Type

ORDER BY Average_Deposit DESC;

Property_Type	Average_Deposit
Loft	287.5000
Townhouse	228.5714
Apartment	119.5172
House	83.5938
Condominium	60.0000
Boat	0.0000
Dorm	0.0000

29) Average prices for different types of properties across different cities.

SELECT

    L.City,

    L.Room_Type,

    AVG(L.Price) AS Average_Price

FROM

    Listing AS L

GROUP BY L.City , L.Room_Type

ORDER BY Average_Price DESC;

City	Room_Type	Average_Price
Annapolis	Entire home/apt	375.0000
Washington	Entire home/apt	220.9137
Silver Spring	Shared room	200.0000
Takoma Park	Private room	122.7500
Washington, D.C.	Private room	120.0000
Takoma Park	Entire home/apt	113.0000
Washington, D.C.	Entire home/apt	99.0000
Washington	Private room	89.1389
Mount Rainier	Entire home/apt	80.0000
Silver Spring	Entire home/apt	68.0000
Washington	Shared room	58.6667
Mount Rainier	Private room	52.0000
Silver Spring	Private room	50.0000
Capitol Heights	Private room	38.0000
Hyattsville	Private room	36.5000

30) The Listings which have Internet and Cable across various property types.

SELECT DISTINCT L.Listing_ID, L.Listing_name, L.HostID, L.Property_Type, A.Amenities

FROM

    Amenity_Listing AS AL JOIN Amenity AS A ON A.AmenityID = AL.AmenityID

    JOIN Listing AS L ON AL.Listing_ID = L.Listing_ID

WHERE

    A.Amenities IN ('Cable TV' , 'Internet')

    GROUP BY HostID;

Listing_ID	Listing_name	HostID	Property_Type	Amenities
3362	Rowhouse	2798	House	Internet
8498095	Cozy DC Condo, Close to Metro!	4628	Condominium	Cable TV
130470	DuPont Retreat, walk 2 Metro	17633	Apartment	Cable TV
17377	Lux 1 BR - Near Convention Center	25188	Apartment	Cable TV
6900870	Airy Loft In Downtown!	37014	Loft	Internet
14570	Downtown Spacious BR /Private Bath	56646	Apartment	Internet
7825726	Spacious room by Convention Center	60683	Apartment	Internet
3504621	Cozy Apt w/ Views of the Monument!	112193	Apartment	Cable TV
1989187	Convention Center/Downtown 1BR Apt.	130539	Apartment	Internet
4430318	Stunning Penthouse Loft Guestroom	173592	Apartment	Cable TV
68962	Sunny Bedroom with En Suite Bath	343320	House	Cable TV
295345	Elite Room w/private bath Eden Park	347309	Bed & Breakfast	Cable TV
374043	Capitol Hill Row-House w/ Priv Bath	473055	House	Internet
93551	Upscale Master Close to Everything	481929	House	Internet

31) Total accommodations and total number of beds for each host and property type.

SELECT

    L.HostID,

    L.Property_Type,

    SUM(Accomodates) AS Total_Accomodation,

    SUM(Beds) AS Total_Beds,

    AVG(L.Price) AS Avg_Price

FROM

    Listing AS L

WHERE

    L.City = 'Washington'

GROUP BY L.Property_Type , L.HostID

ORDER BY Avg_Price DESC;

HostID	Property_Type	Total_Accomodation	Total_Beds	Avg_Price
28254613	Apartment	6	3	725.0000
30283594	Apartment	37	13	534.1818
8008783	House	9	5	480.0000
44834480	Condominium	4	2	450.0000
4275311	Apartment	2	1	400.0000
4280278	House	8	4	400.0000
6277558	Apartment	3	2	400.0000
3596189	Apartment	4	1	399.0000