TRAVEL DATA ANALYSIS –
AIRBNB DATA ANALYSIS

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Introduction

Airbnb is an American company that facilitates an online marketplace for lodging, primarily homestays for vacation rentals, and tourism activities. It basically connecting travelers with local hosts who want to rent out their homes with people who are looking for accommodations in that locality. On the other hand, this platform enables host to list their available space and earn extra income in the form of rent and it also enables travelers to book unique homestays from local hosts, saving them money and giving them a chance to interact with locals.

Objective

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In the world of rising new technology and innovation, Travel industry is advancing with the role of Data Science and Analytics. Data analysis can help them to understand their business in a quiet different manner and helps to improve the quality of the service by identifying the weak areas of the business.

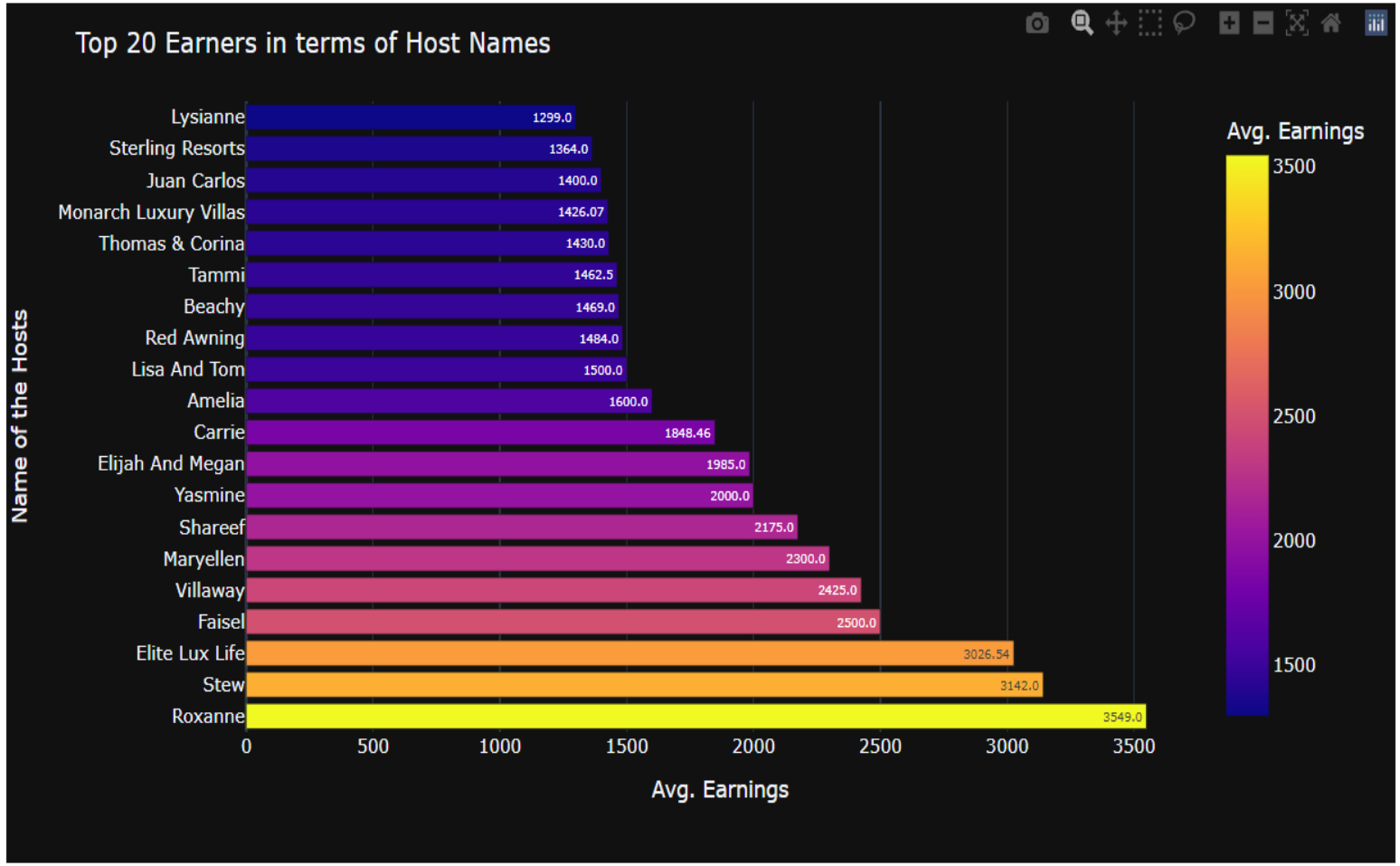
Benefits:

- Help out to make better business decisions.
- Help analyze customer trends and satisfaction, which can lead to new and better products and services.
- Gives better insight of customers base.
- Helps in easy flow for managing resources.

Problem Statement

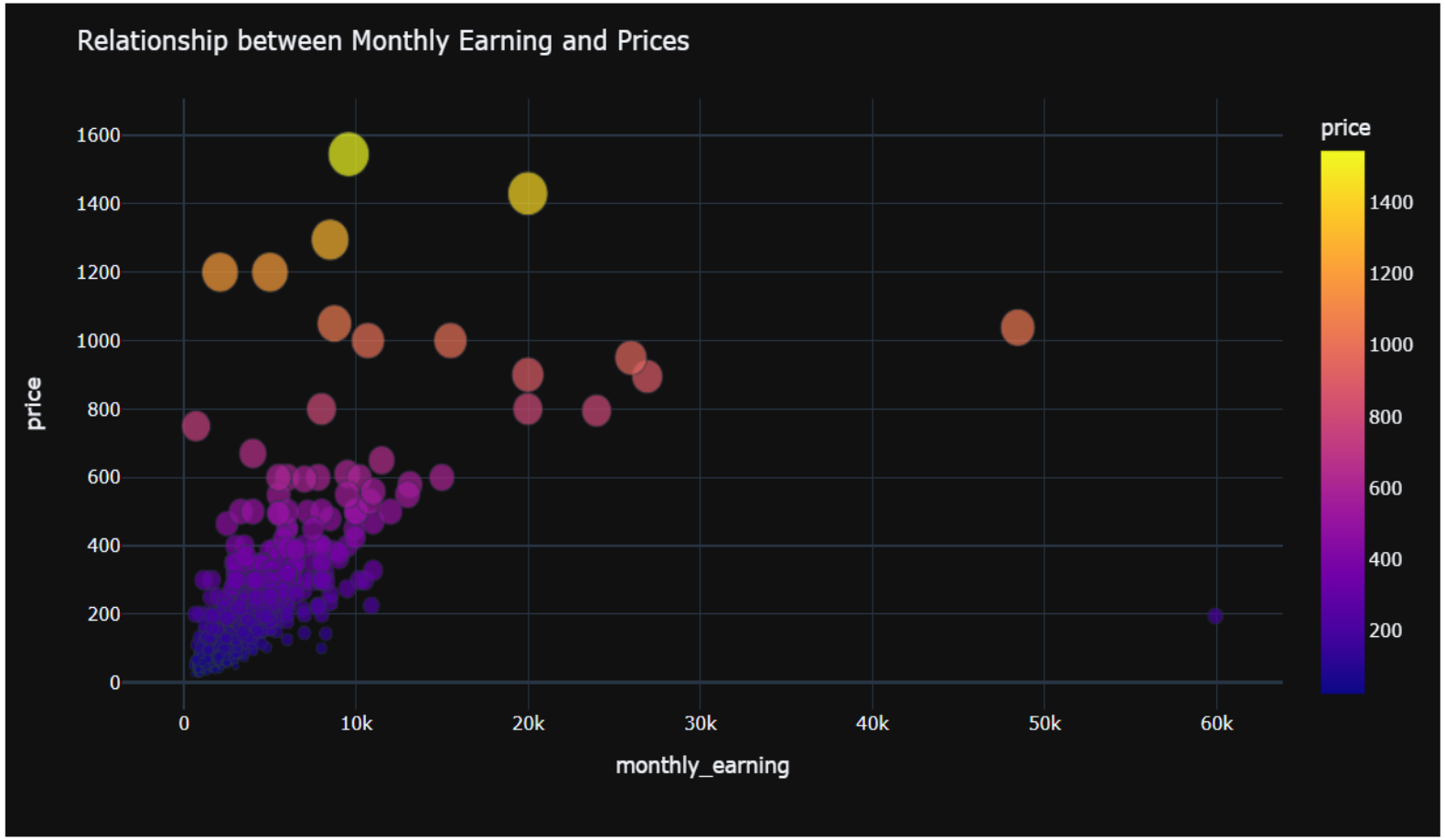
Travel industries are having important reflection of the economy from past few decades, and Airbnb housing price ranges are of great interest for both Hosts and Traveler. In this project, we are analyzing the various aspects with different use cases which covers many aspects of airbnb listings. It helps in not only understanding the meaningful relationships between attributes but it also allows us to do our own research and come-up with our findings.

1. Top Earners (Hosts):



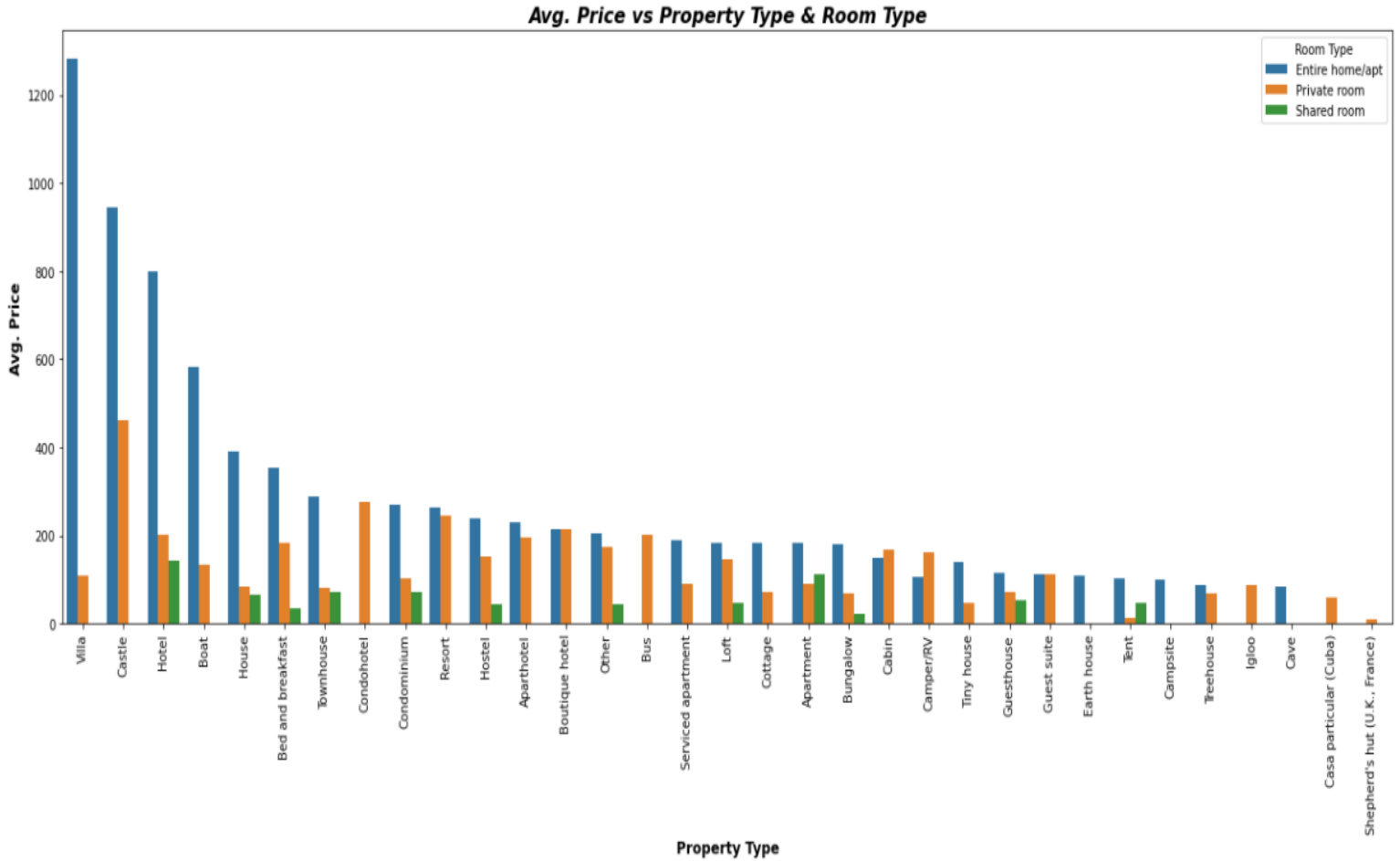
- **Conclusion:**
  - In the above Chart, we've listed/ploted ***Top 20 Earners in terms of Hosts***, one after the other.
  - From the above visual, We can say that **"Roxanne"** is the ***Top Earner*** followed by **"Stew"** and **"Elite Lux Life"**.

2. Relationship between Monthly Earning and Prices:



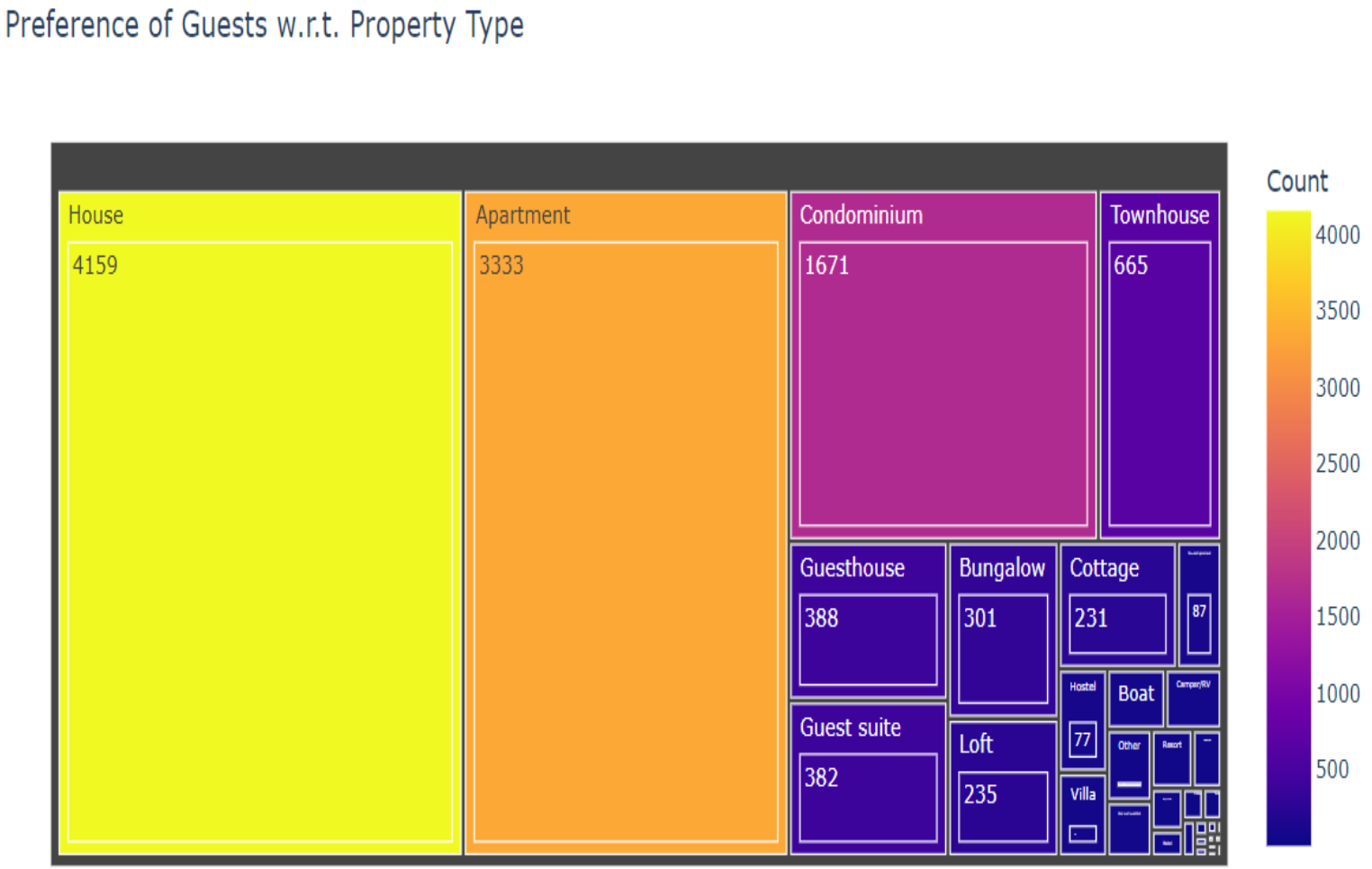
- **Conclusion**:
  - From this, you can come up with Various Conclusions like -
  - Bigger the Bubble, higher the Price is... Similarly, Smaller the Bubble, lesser the Price is...
  - As the **"Price"** increases, we can see that **"Monthly Earning"** decreases. This might be happened because Most of the Guests prefer Affordable/Budget-Friendly Rooms and We can also confirm the same from above plot Dense Area (High density).
  - Moreover, We can also say that, Some Rooms made great Fortune which are having ***Meager Price (i.e. '195')***, has ***Monthly Earning of "60K"***.
  - On the other hand, the ***Expensive Rooms*** which are having ***More Price***, We can say that, those ***doesn't make Much Earnings***. Same we can see, For ***Price "1545", "1430", "1295", and "1200"***, the ***Monthly Earnings*** were **"9579", "20K", "8500", and "5000"** respectively. This was again happened because Most of the Guests prefer Affordable/Budget-Friendly Rooms.
  - So, that's a **Conclusion** we can drawn from this **Scatter Plot**.

3. Price comparison in terms of "Property Type" and "Room Type":



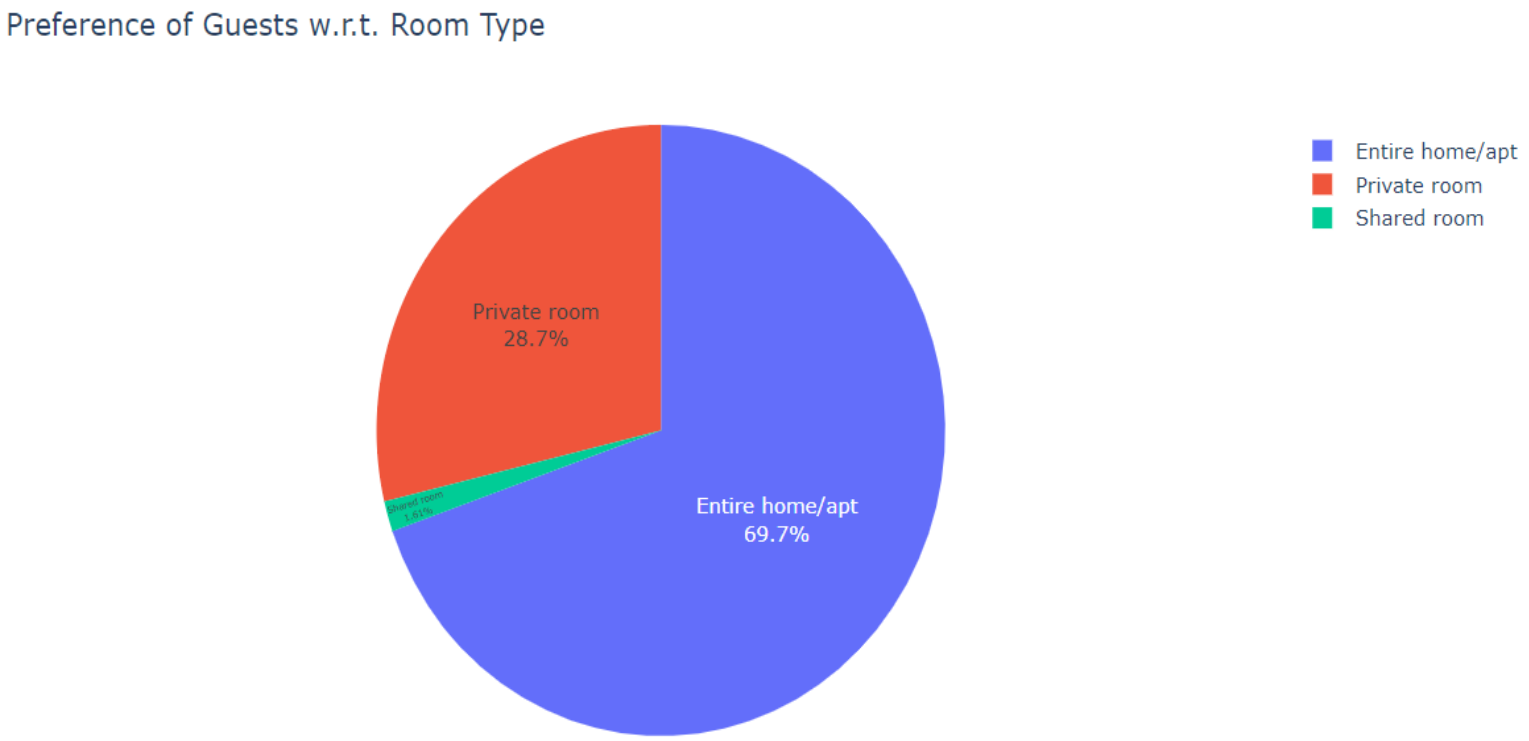
- **Conclusion:**
  - From this **"Bar Plot"**, We can say, the **"Villa", "Castle", "Hotel", "Boat", "House"**, etc. These are the ***Most Expensive "Property Types"*** in terms of **"Entire Home/Apt."**.
  - Next, In terms of **"Private Room", "Castle", "Condohotel", "Resort", "Boutique Hotel", "Hotel"**, etc. are the ***Most Expensive "Property Types"***.
  - Similarly, In terms of **"Shared Room"**, We can see that **"Hotel", "Apartment", "Condominium", "Town House", "House"**, etc. are the ***Most Expensive "Property Types"***.

4. Preference of Guests w.r.t. Property Type:



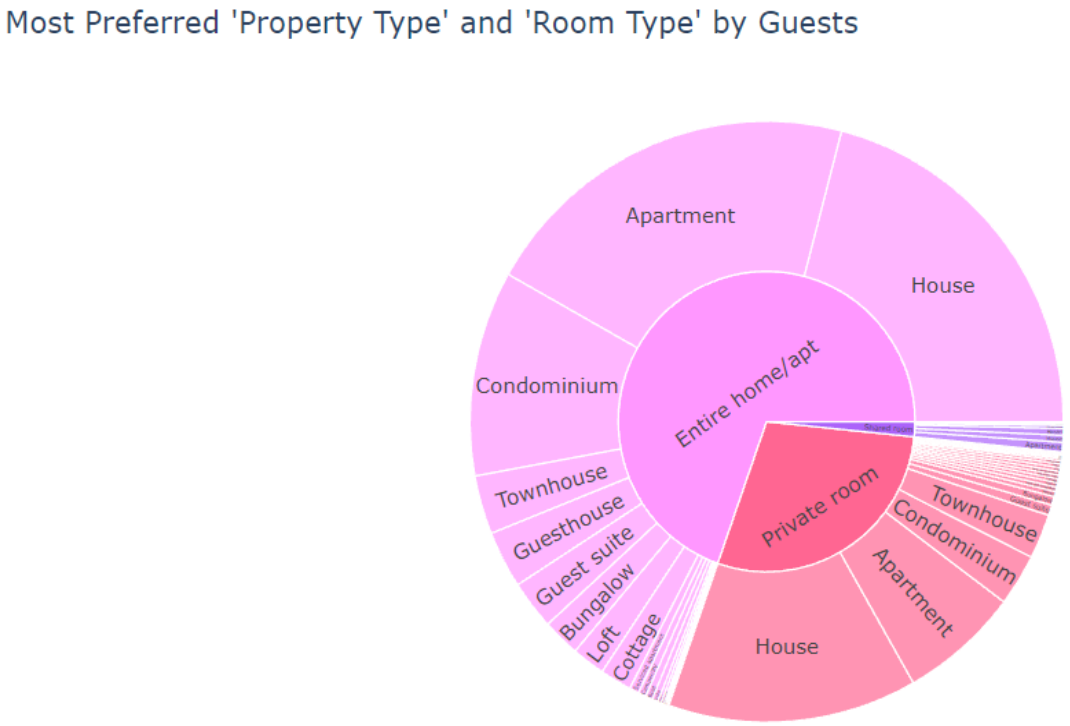
- **Conclusion:**
  - This beautiful "TreeMap" displays the Most preferred 'Property Type' by Guests.
  - To conclude this Chart, We can say, **"House", "Apartment", "Condominium“** these are the **'Top 3' Most Preferred Property Types** by the **Guests**.
  - From All these Guests Room Preference, We can observe the one thing that ***Mostly Guests*** *prefer* **"Moderate Level Priced" Rooms** not Much Expensive, nor Much Less.

5. Preference of Guests w.r.t. Room Type:



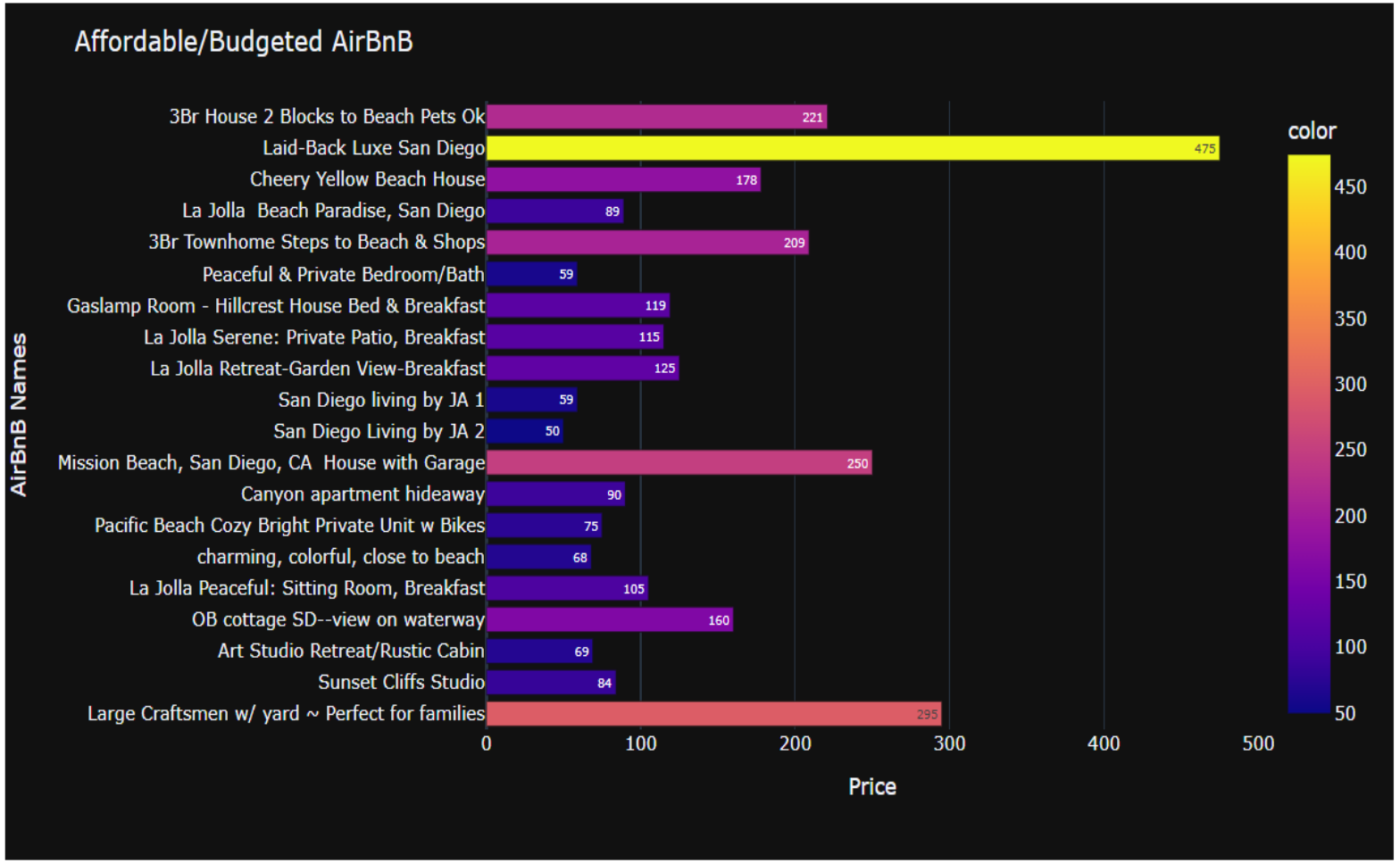
- **Conclusion:**
  - This beautiful **"Pie Chart"** displays the Most Preferred 'Room Type' by Guests.
  - To conclude this Chart, We can say, **"Entire home/apt"** was the First Choice/Most Preferred ***Room Type*** by approx. **'69.7%'** Guests followed by **"Private Room"** and **"Shared Room"** which are about **'28.7%' & '1.61%'** respectively.
  - From Overall distribution, We can say, **"Shared Room"** has ***much Less Preferred by the Guests***. This might because of there is a possibility like Most of the Guests Not prefer to Stay in Shared Room because they don't want to lose the Privacy there / as there is lack of Privacy and got disturbances by others.

6. Most Preferred "Property Type" and "Room Type" by Guests:



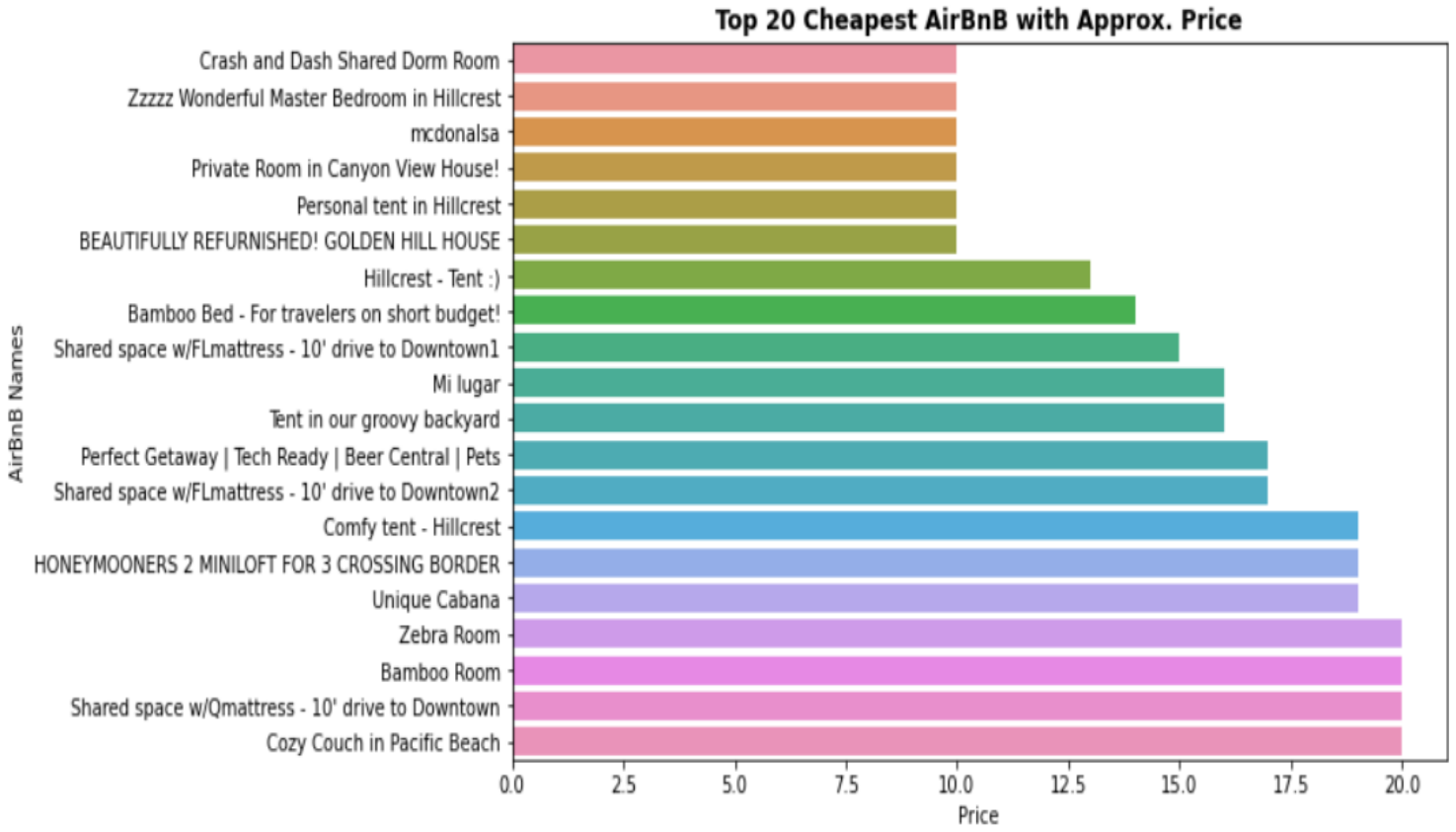
- **Conclusion:**
  - To conclude this Chart, We can say, **"Entire home/apt"** was the First Choice/Most Preferred ***Room Type*** followed by **"Private Room"** and **"Shared Room"**.
  - From Overall distribution, We can say, **"Shared Room"** has ***much Less Preferred by the Guests***.
  - Now, In terms of **"Entire home/apt"** Room Type, We can see, **"House", "Apartment", "Condominium"** these are the **'Top 3' Most Preferred Room Types** by the **Guests**.
  - Then, In case of **"Private Room"**, again we can see, **"House", "Apartment", "Condominium"** these are the **'Top 3' Most Preferred Room Types** by the **Guests**.
  - However, In case of **"Shared Room"**, We can see that, **"Apartment", "House", "Hotel", "Condominium"** these are the **Top Most Preferred Room Types** by the **Guests**.

7. AirBnB's that are below 500 (Budget Hotels) as well as Affordable:



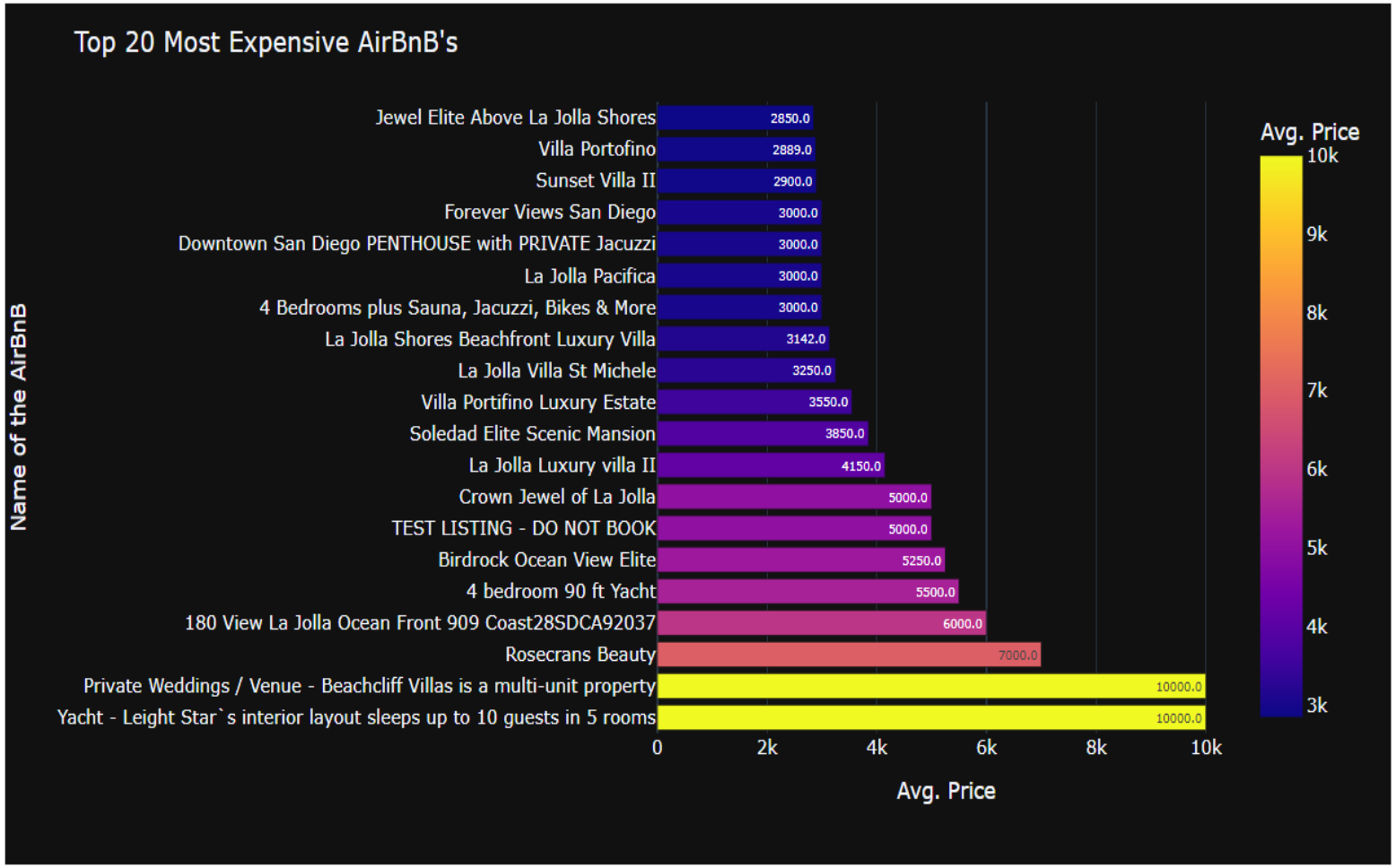
- **Conclusion**:
  - Now, We can Conclude that, We have **Total "11091" AirBnB's** which are the Affordable/Budgeted AirBnB's that are **below "500"**. It means, these are come under our "Budget Hotel" as well as they are "Affordable".
  - From this above Visual, We can see the some of the **Affordable/Budgeted AirBnB's** along with their **Names** and **Price**.

8. Top 20 Cheapest AirBnB with Approx. Price:



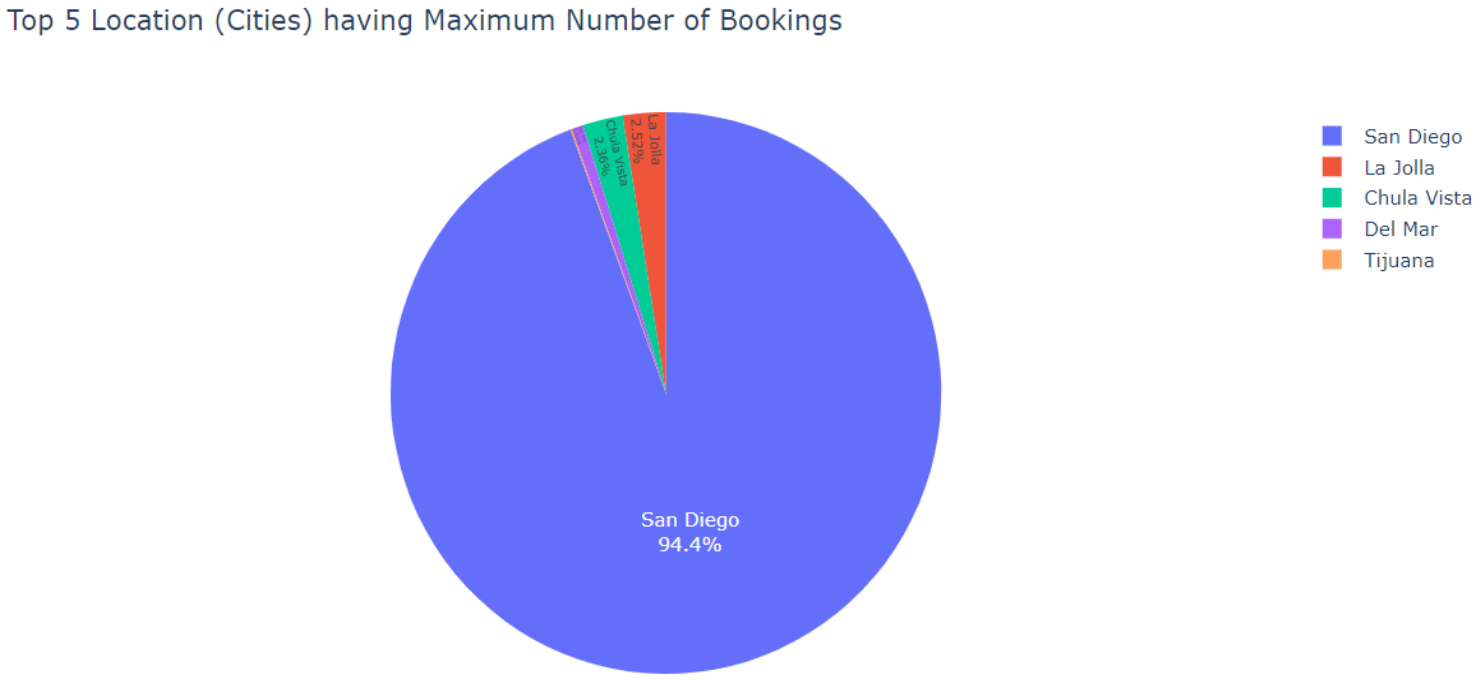
- **Conclusion**:
  - From this above Visual, We can see the our ***Top 20 Cheapest AirBnB with Approx. Price***.

9. Most Expensive AirBnB's:



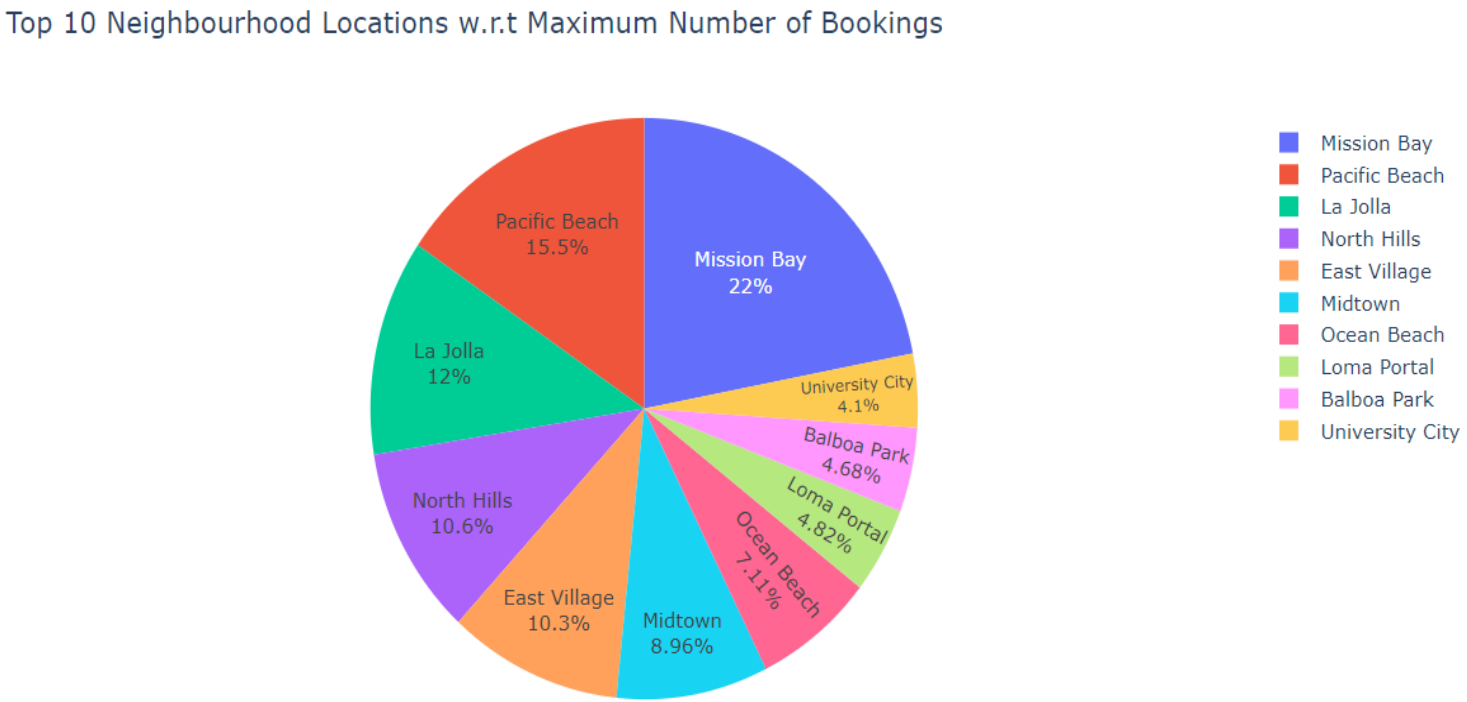
- **Conclusion:**
  - From this visual, We can say that **"Private Weddings / Venue - Beachcliff Villas", "Yacht - Leight Star's interior layout"** are the ***Most Expensive*** ones followed by **"Rosecrans Beauty"** and **"180 View La Jolla Ocean Front"**.
  - On Top of that, We've also observed that Most of these/Almost All these ***Expensive*** ones has bookings for **"Entire home/apt"** as a ***Room Type***. Hence, It seems to be like Most of the guests prefer to Stay in **"Entire home/apt"** and AirBnB has More Earners from these kind of Room Types.

10. Any particular Location (Cities) getting Maximum Number of Bookings:



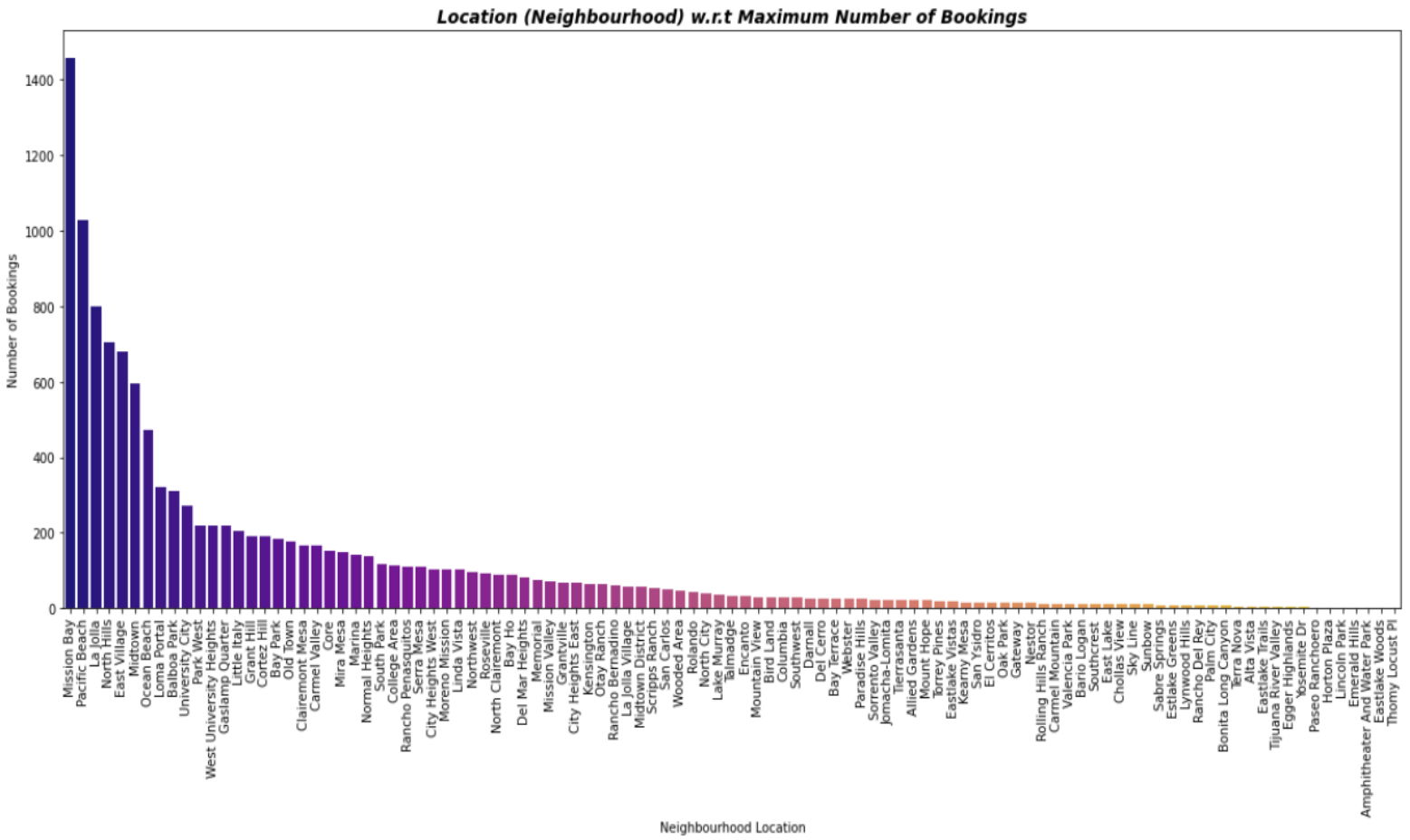
- **Conclusion**:
  - This Pie Chart, shows ***Top 5 Cities*** who's having ***Maximum Number of Bookings***.
  - To conclude above Chart, We can say, ***Most of the Bookings of around "94.4%"*** were takes place for **"San Diego" City** as ***lot of Tourist Attractions/Places (Neighbourhood)*** are there to ***Explore in the Vicinity of "San Diego"*** followed by **"La Jolla", "Chula Vista"** and so on...

11. Any particular Location (neighbourhood) getting Maximum Number of Bookings:



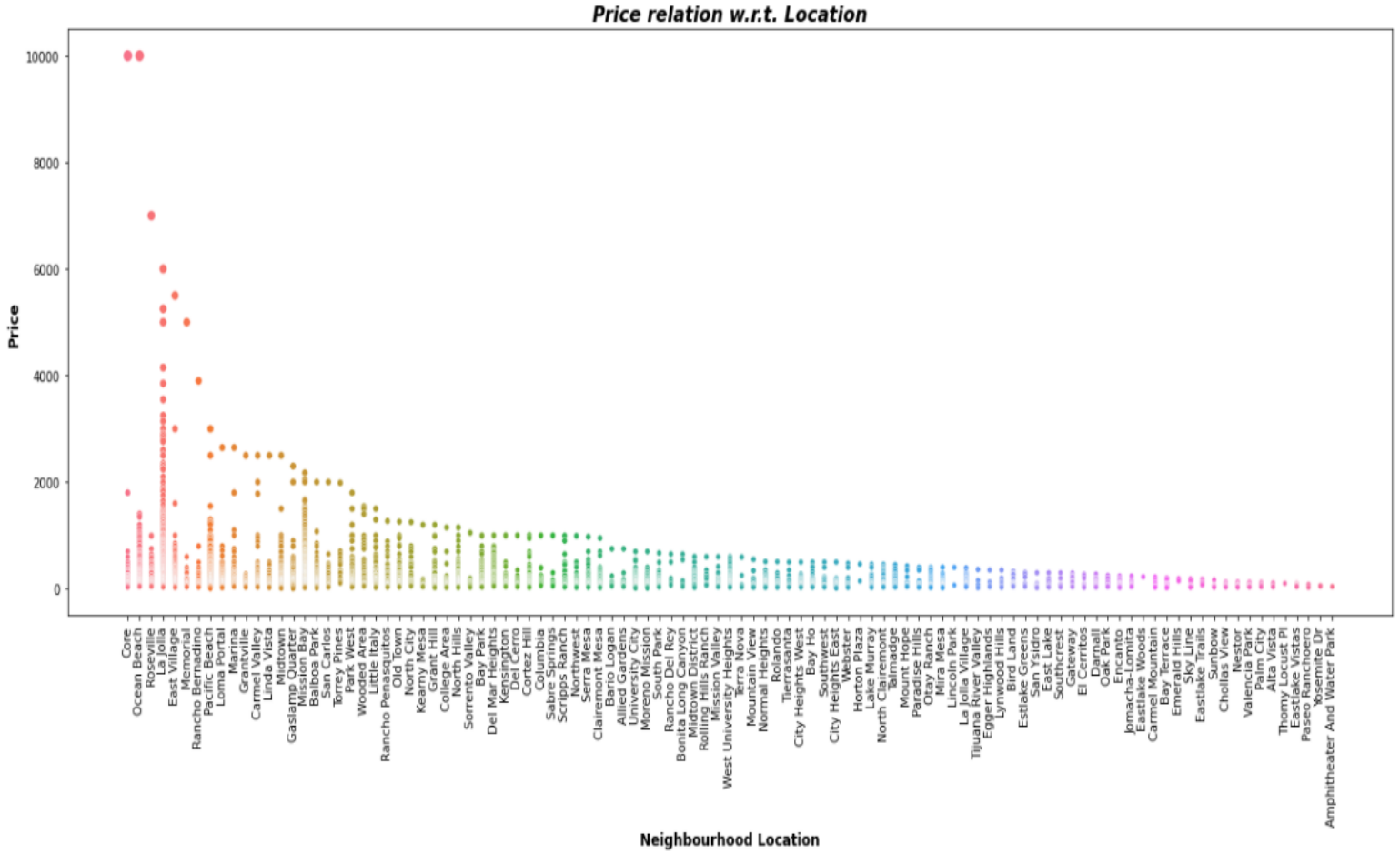
- **Conclusion:**
  - This Pie Chart shows, ***Top 10 Neighbourhood Locations*** who's having ***Maximum Number of Bookings***.
  - To conclude above Chart, We can say, In terms of ***Neighborhood Locations***, ***Most of the Bookings*** were takes place for **"Mission Bay"** of around **"22%"** followed by **"Pacific Beach", "La Jolla"** which has **"15.5%" & "12%"** respectively...

11. Any particular Location (neighbourhood) getting Maximum Number of Bookings:



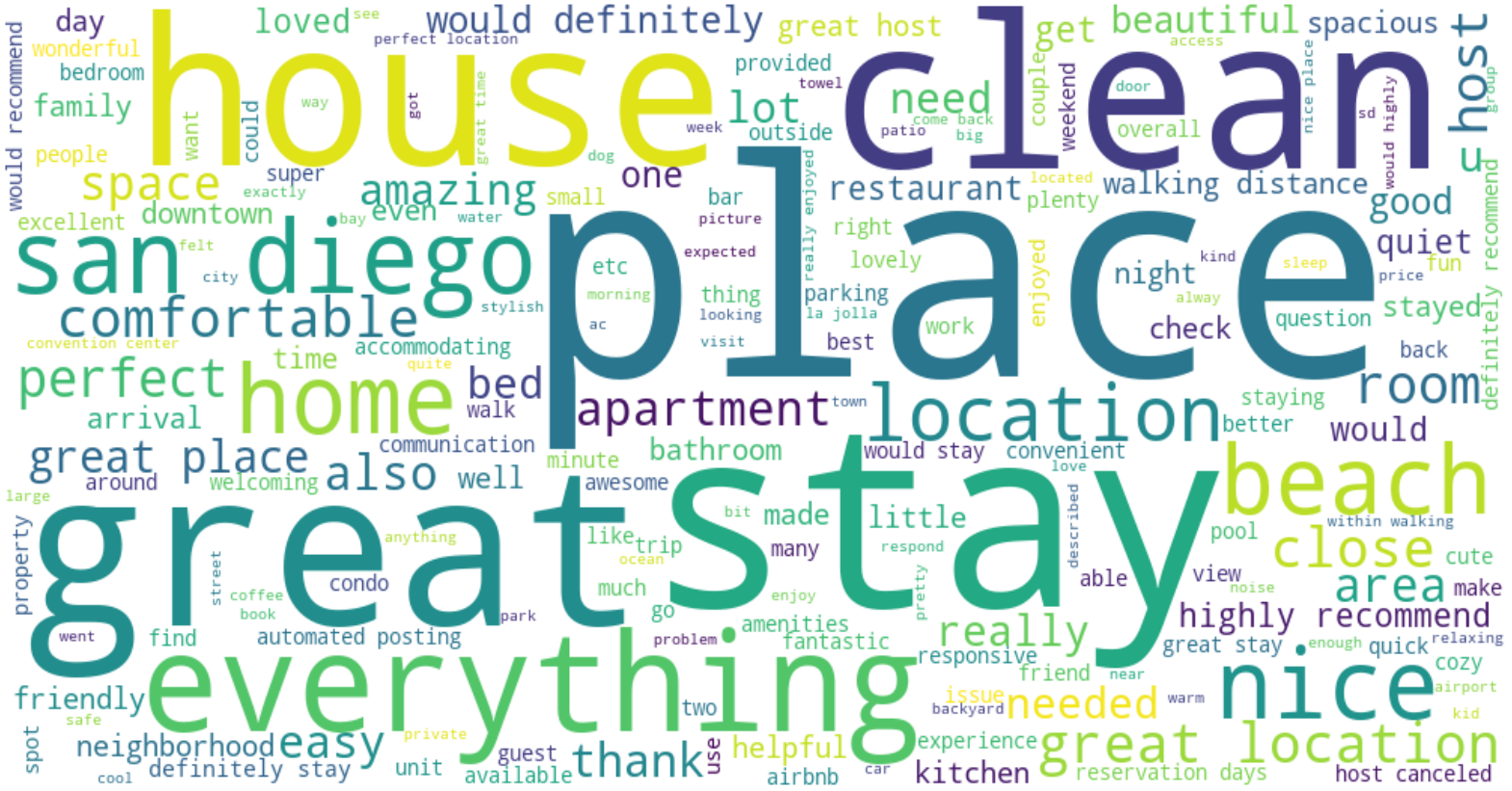
- **Conclusion:**
  - This Bar Chart shows, ***Neighbourhood Locations*** who's having ***Maximum Number of Bookings***.
  - To conclude above Chart, We can say, In terms of ***Neighbourhood Locations***, ***Most of the Bookings*** were takes place for **"Mission Bay"** of around **"22%"** followed by **"Pacific Beach", "La Jolla"** which has **"15.5%" & "12%"** respectively and so on...

12. Price relation with respect to Location - (Price vs. Location)



- **Conclusion:**
  - From this Scatter Plot, It is clear that, some of the **AirBnB's** that are located at **"Core"** and **"Ocean Beach"**, were Super Expensive and at the same time, there are less Number of **AirBnB's** available if compare with **"Mission Bay", "Pacific Beach", "La Jolla", "North Hills", "East Village"** and **"Midtown"**.
  - On the other hand, We can say, best Location (Neighborhood) with lower Priced AirBnB has Most of the Bookings by the Guests.
  - If we deep dive into this, We can clearly see that, As **"Mission Bay"** Location has Moderate Level Priced, Most of the guests preferred to Stay there. Next, If we see the **"Pacific Beach"** Location, Prices are slightly high compared to **"Mission Bay"**. Hence, less number of guests prefer to stay here than **"Mission Bay"**.
  - Similarly, **"La Jolla"** Location, seems to be Expensive compared to **"Mission Bay"** & **"Pacific Beach"**. Therefore, the Number to bookings were lesser than these 2 Locations.

13. Analysing "Reviews/Comments" of the Customers:

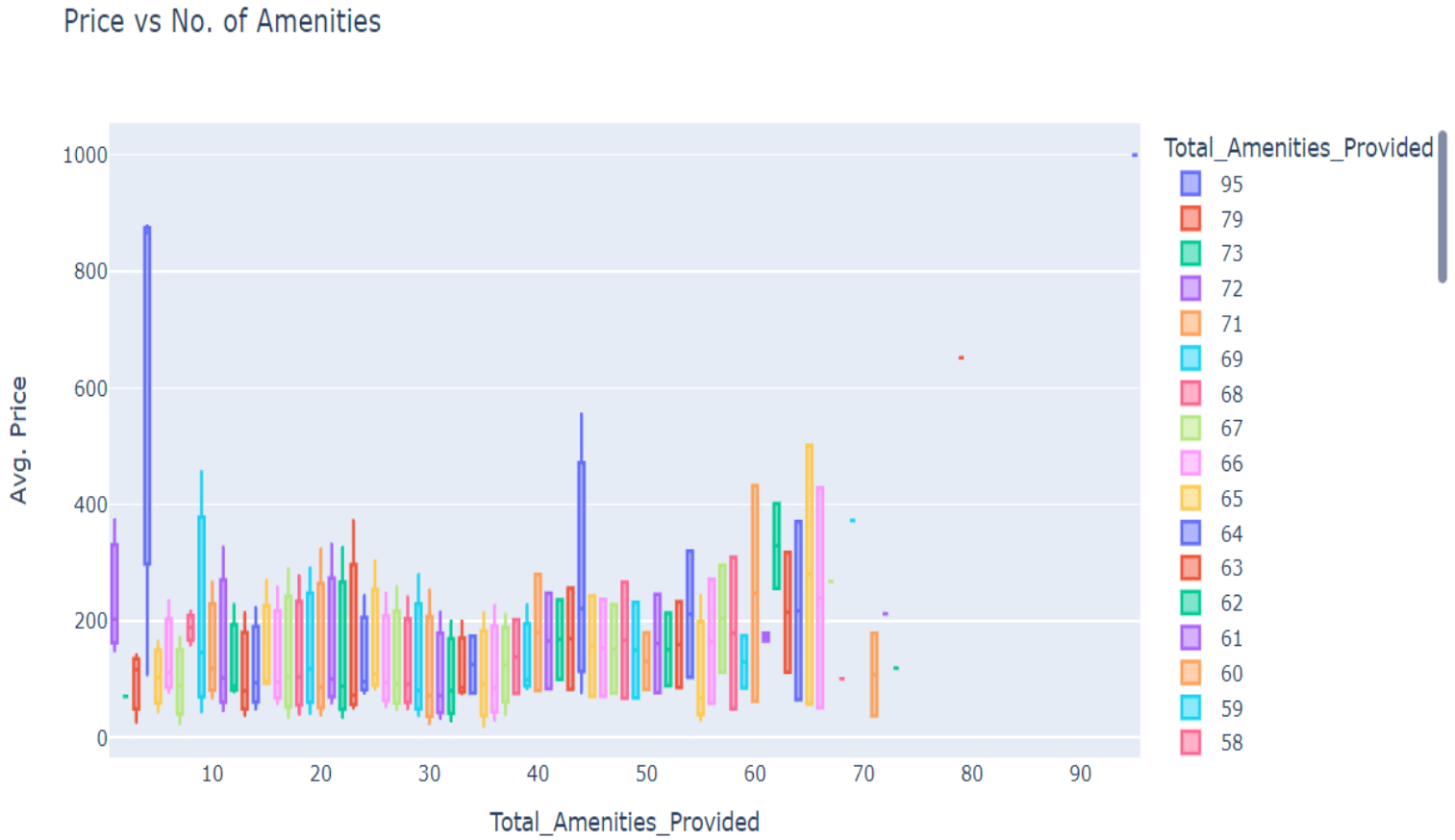


- **Conclusion:**
  - From this **"Word cloud"**, We can definitely come-up with some ***Conclusion*** like - These are ***exactly the "Reviews/Comments" of the Customers***.
  - It means, Our **"Customers"** are going to prefer All these **"Keywords"** such as - **"great", "place", "clean", "stay", "house", "great location", "comfortable", "highly recommend"**, And many more.
  - Most of the time, **"Customers"** are going to prefer, these **"Keywords"**, So we can easily examine What ***exactly the "Behavior and Views of our Customers***.

14. Analyzing Most Common "Amenities" provided by the AirBnB's to their Customers:

- **Conclusion**:
  - These are **Most Common "Amenities" provided by the AirBnB's to their Customers**.
  - It means, **Most of the AirBnB's has some Common "Amenities" / Most common "Amenities" provided by the AirBnB's to their Customers** such as - **"Smoke Detector", "Monoxide Detector", "Carbon Monoxide", "Washer Dryer", "Carbon Detector", "Essentials Shampoo", "Hair Dryer", "Fire Extinguisher"**, etc. These are the **Mainly/Primarily** provided **Amenities by AirBnB's** by taking into consideration **'Safety Precautions'** and general **'Essentials things'**.
  - Some of the **AirBnB's** are **also comes** with other **Amenities** like - **"Free Parking", "TV", "wifi", "hot water", "First Aid"**, etc.

15. Price vs Amenitites:



- **Conclusion:**
  - From this **"Box Plot"**, We can see that, there are ***few Super Luxurious/Expensive AirBnB's*** which ***provides lot of Amenities*** I.e. **Total of "95"** which will ***cost*** around **"1000" Dollars**. Then, the other one, will be providing **Total of "79"** Amenities which will costs **"652" Dollars**.
  - On the other hand, there are ***some Expensive AirBnB's***, who's ***Median Cost ranges*** from **"867" Dollars** and goes upto **"877.87" Dollars** at ***Max***. However/Although, being such a ***Super Expensive AirBnB***, if we see the ***Total Number of Amenities*** they are ***Providing along with***, then we can see, they are ***providing just '4 Amenities'*** at this Huge Price.
  - Furthermore, there are so ***many Affordable/Budgeted AirBnB's*** available and they are ***providing lot of Amenities*** too that will ***definitely fulfill*** the ***Basic as well as Essential Requirements*** of these ***Customers***.

16. Total Number of Amenities Provided w.r.t. Room Type:

- **Conclusion:**
  - **"Entire Home/Apt."** is ***prominent*** in terms of providing the ***Number of Amenities*** followed by **"Private Room"** and **"Shared Room"**.
  - From this **"Box Plot"**, We can also conclude that **"Entire Home/Apt."** are providing ***Total of "95" Amenities at Max*** and **"50%"** of this Category AirBnB's were giving approx. **'25' Amenities** which comprises/includes ***'Basic' as well as 'Essential Amenities'*** with **'Safety Precaution's Amenities'**.
  - Next, In terms of **"Private Room"**, they are providing ***Total of "71" Amenities at Max*** and **"50%"** of this Category Rooms were giving around **'22' Amenities** which comprises/includes some ***'Basic' as well as 'Essential Amenities'*** with some **'Safety Precaution's Amenities'**.
  - On the other hand, **"Shared Rooms"** are providing ***Total of "55" Amenities at Max*** and **"50%"** of these Category Rooms were giving almost **'18' Amenities** which comprises/includes few ***'Basic' as well as 'Essential Amenities'*** with few **'Safety Precaution's Amenities'**.