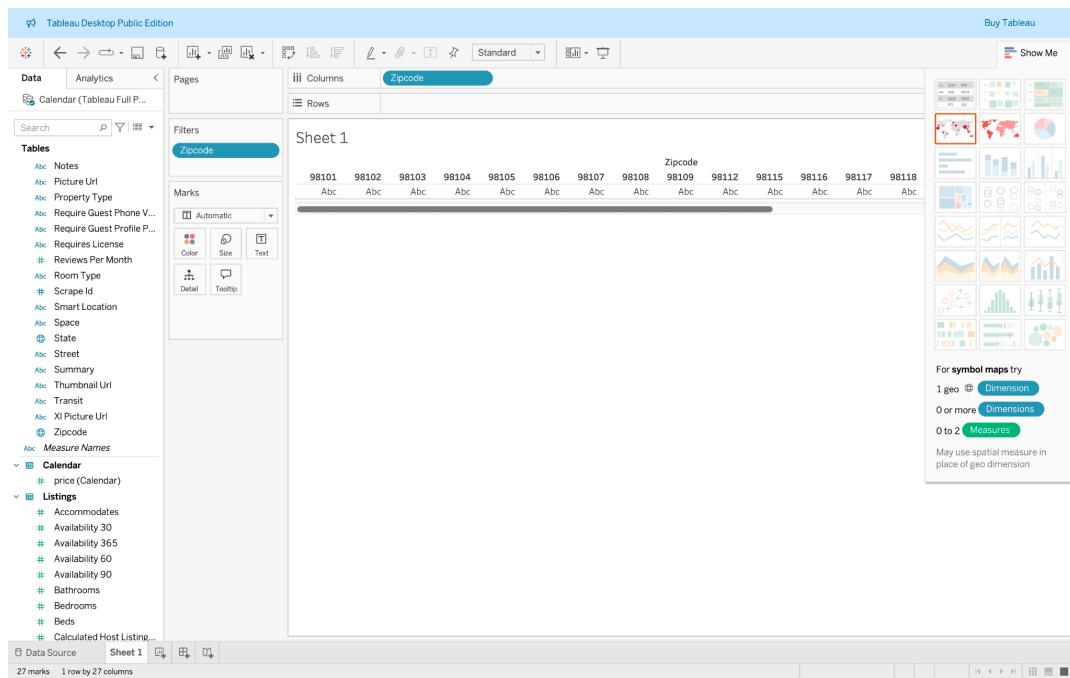


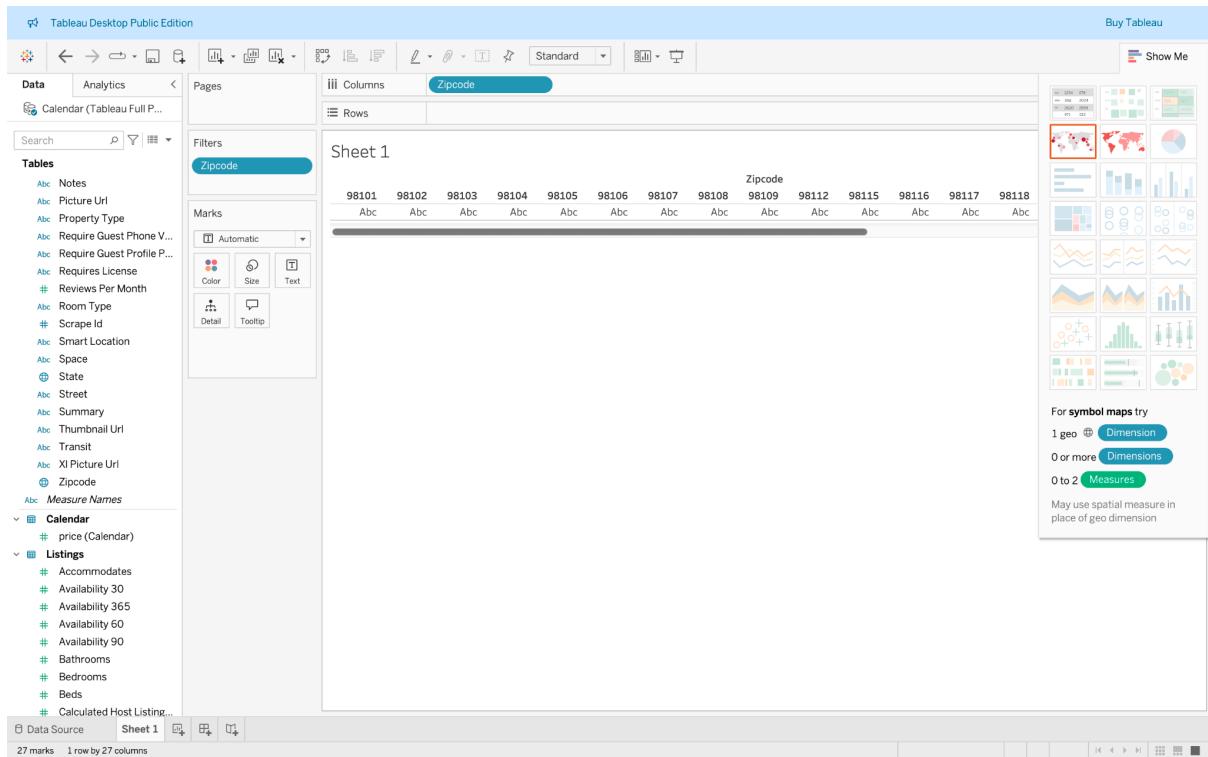
Airbnb Market Analysis and Investment Strategy Using Tableau

1. I initially planned to join the **Listings**, **Calendars**, and **Reviews** tables, but my version of Tableau supports only 15 million rows, whereas the full join results in around 23 million.
2. To work within this limit, I joined only the **Listings** and **Calendars** tables, which allowed me to proceed without issues.
3. I used **zipcode** as the key column for analysis.
4. Since there was a null value in the zipcode column, I removed that record from the dataset.

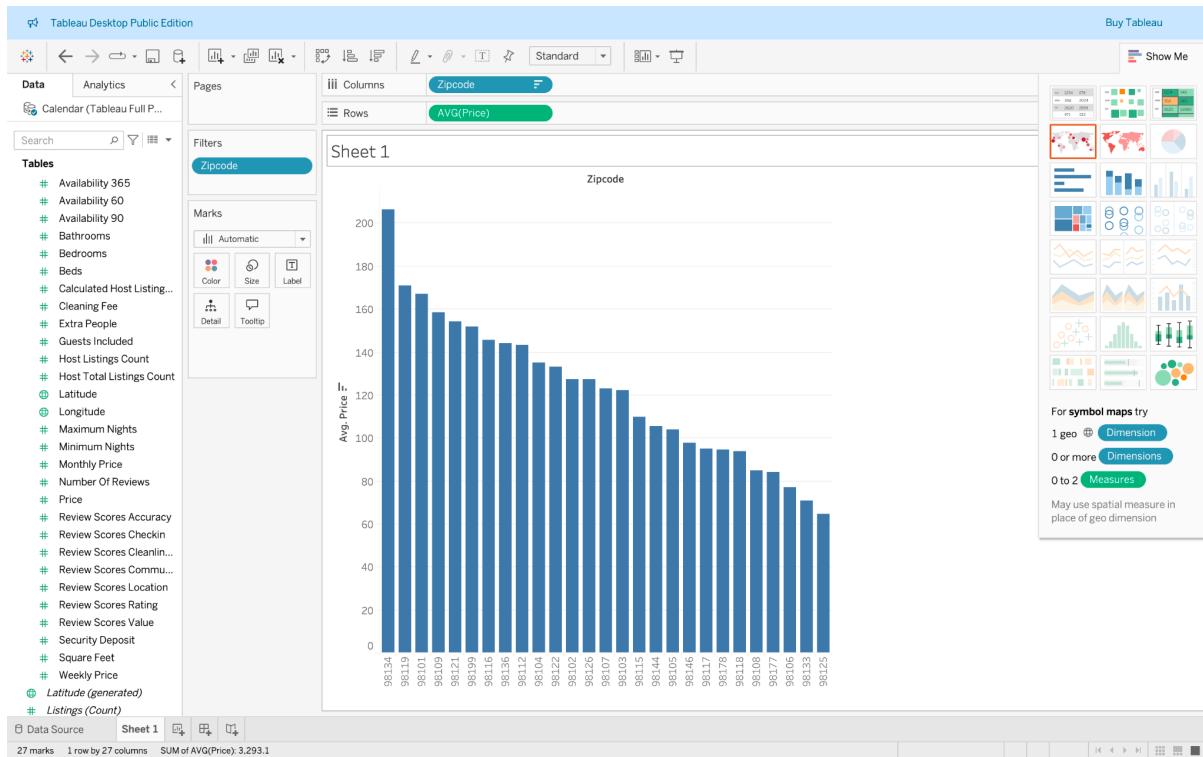
Before null removal



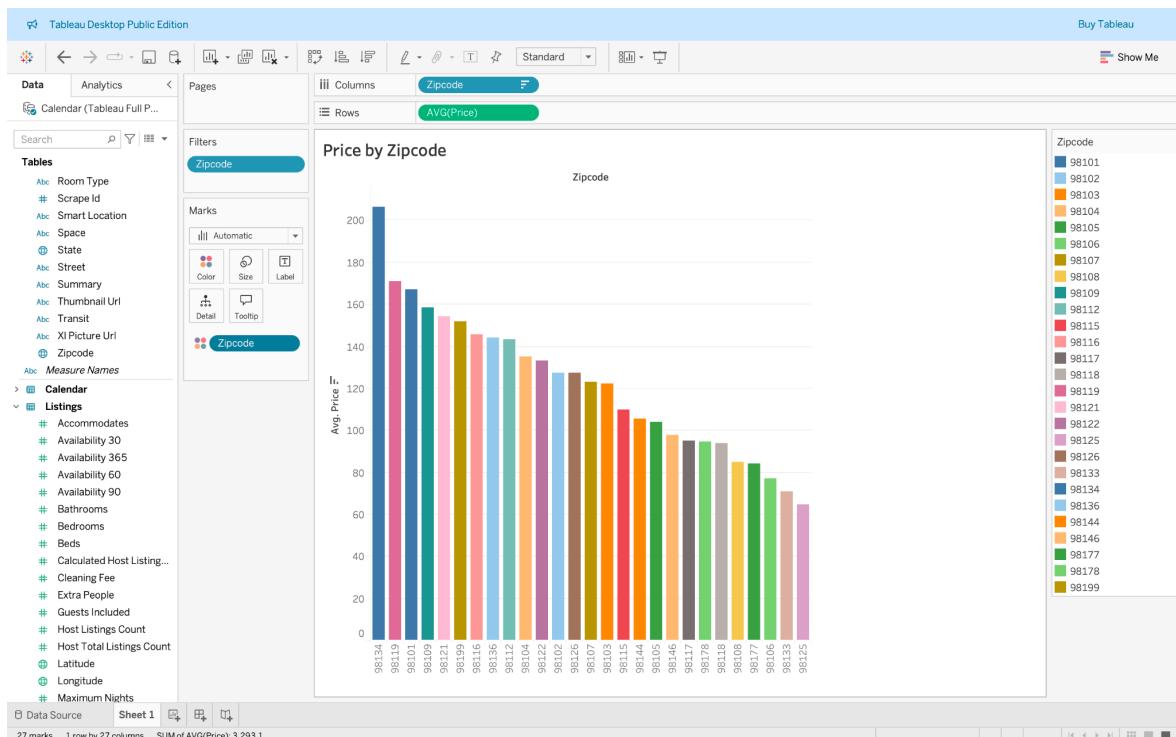
After null removal



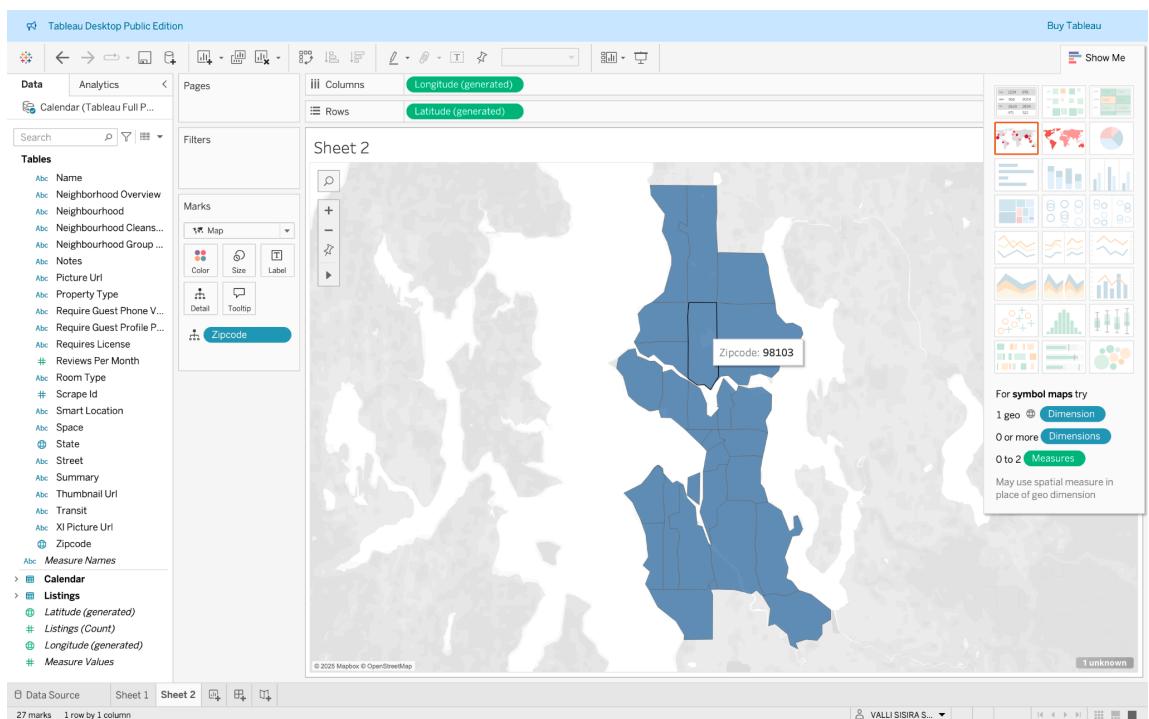
I have now selected **average price** in the Rows shelf to visualize the data, and the result is shown below.



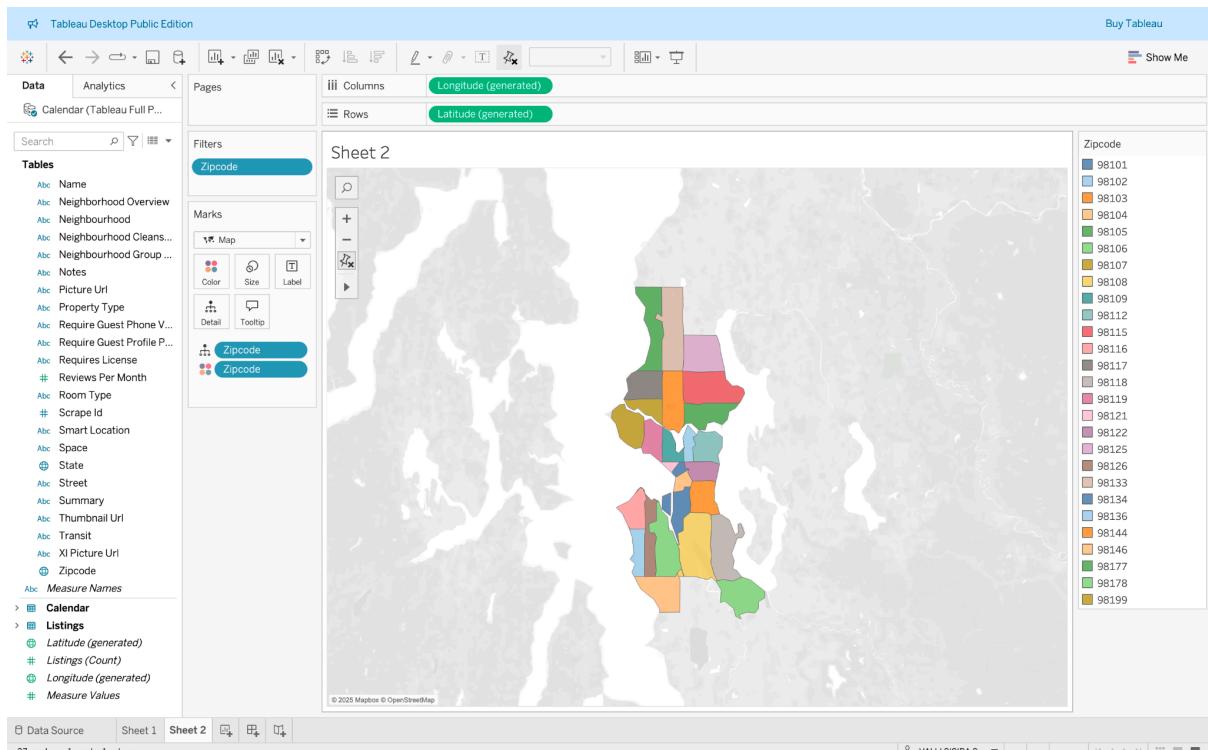
I applied a color filter and renamed the sheet to "**Price by Zipcode**" for better understanding.



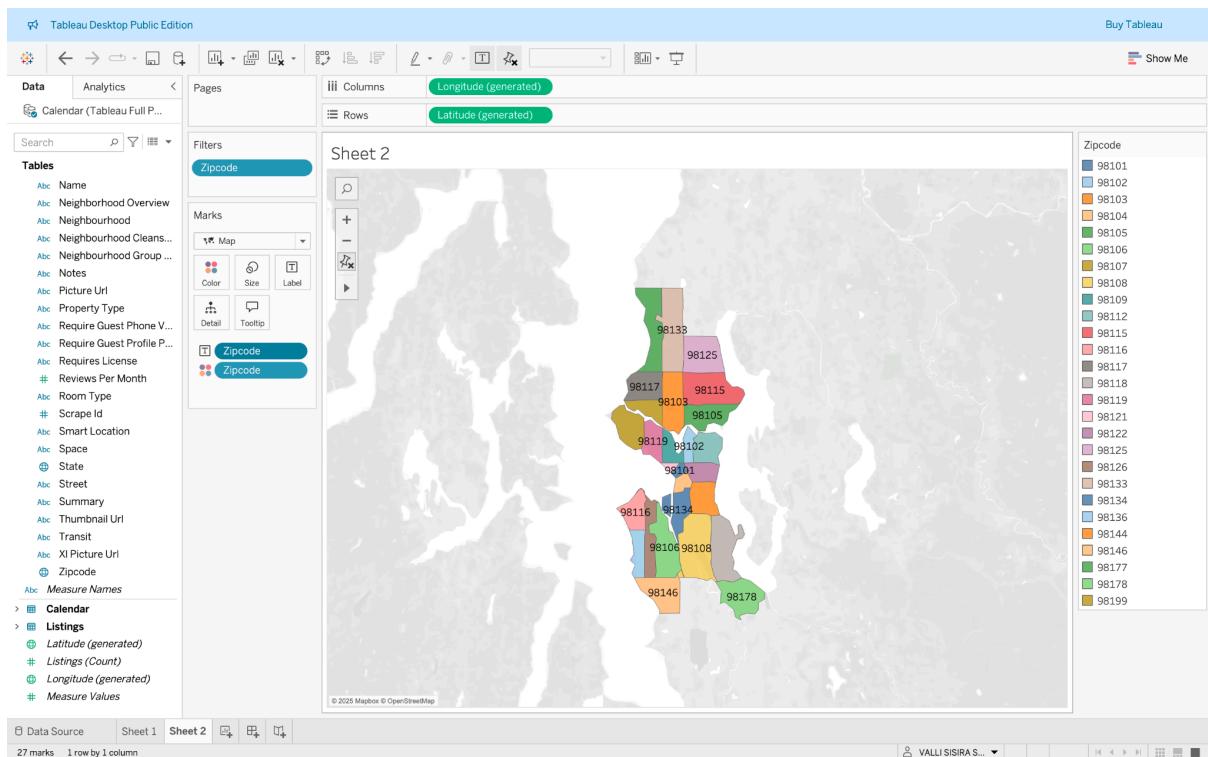
I set the location to **United States** and placed **zipcode** on the Columns shelf to display a map showing individual zip code areas.



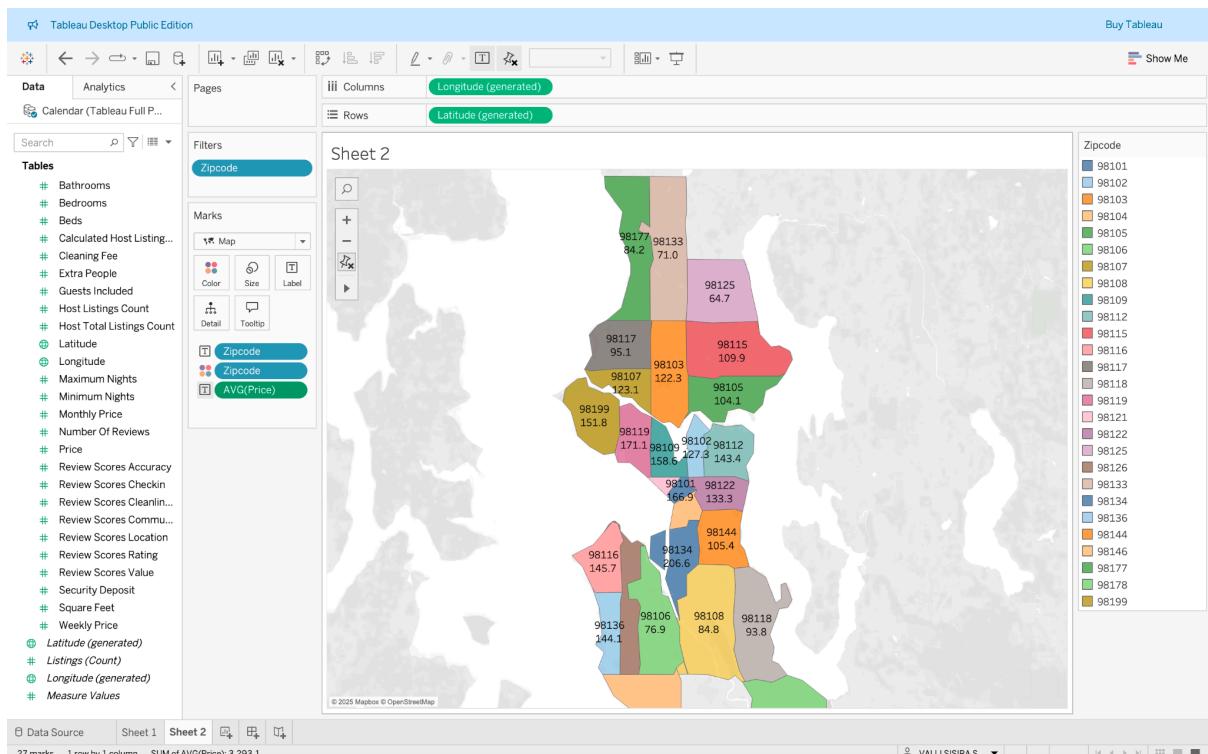
I added **zipcode** to the metrics and applied color to it. The colors are consistent with those used for zipcodes in the previous visualization.



Then, I added labels to the zipcodes.

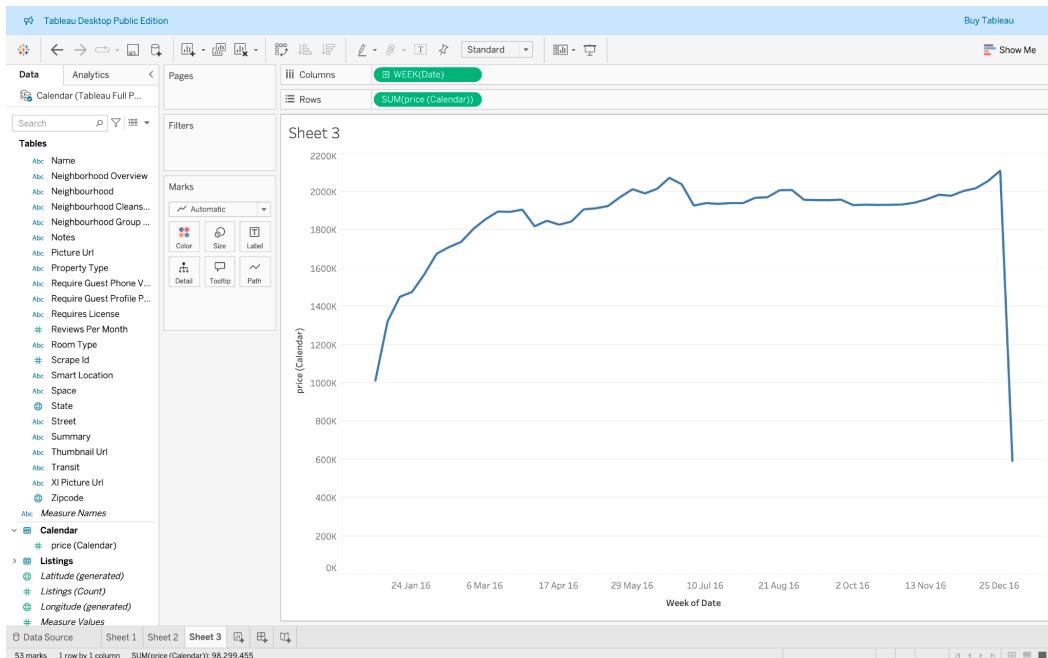


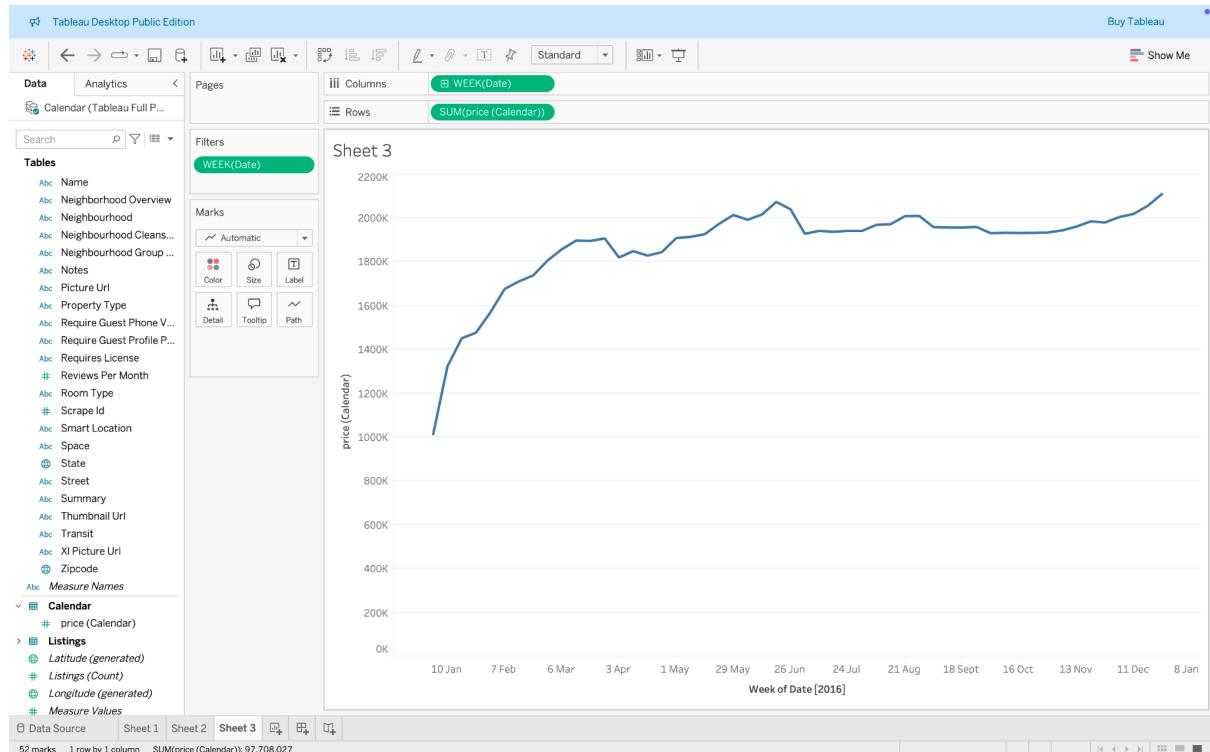
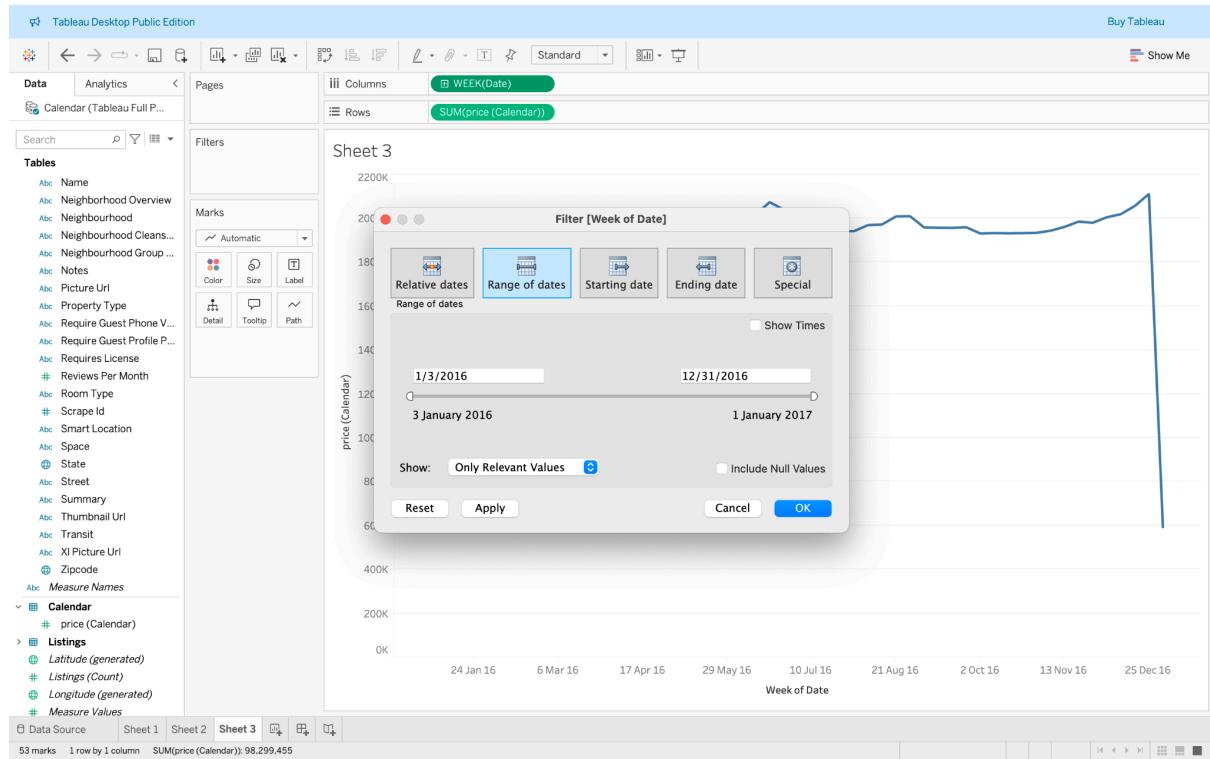
I added the **average price** as a filter and label to the map.



The person wants to list the property on Airbnb and also live there. What is the best time to rent it out on Airbnb?

While visualizing the year (with week number and price in the calendar), I observed a significant drop in December. This is because the data is only from 2016, and the drop is based on a single day — January 1st.





By shifting the date range from January 1, 2017 to December 31, 2016, we observed a change in the graph — the sudden drop in price disappeared, and the trend appeared more stable, as shown above.

From the updated graph, we can infer that prices are relatively low from January to the end of March, likely because fewer people travel during these months.

However, during summer and the end of the year, travel activity increases, making it an ideal time to rent the property on Airbnb.

Additionally, the number of bedrooms also influences the Airbnb price.

Understanding Measures vs. Dimensions in Tableau:

The difference between a normal value (measure) and a value converted to a dimension lies in how Tableau interprets and processes the data:

1. Measures (Default/Normal Values):

- Represent quantitative data (e.g., Sales, Profit, Quantity, Temperature).
- Treated as continuous and aggregated by default (SUM, AVG, etc.).
- Plotted along an axis.
- Used in calculations.

Example:

If you drag the **Sales** field into the view, Tableau will display something like **SUM(Sales)**.

2. Dimensions (Converted Values):

- Represent qualitative or categorical data (e.g., Region, Product Name, Zip Code, Date).
- Treated as discrete values that create headers or labels instead of axes.
- Used to slice, group, or categorize the data.

Example:

If you convert **Sales** to a dimension, Tableau will treat each distinct sales value as a separate category rather than aggregating it.

Quick Example:

If you have a **Zip Code** field stored as a number (measure), Tableau might try to sum or average the zip codes — which doesn't make sense. By converting it to a dimension, Tableau will group the data by each zip code instead.

When to Use What?

- Use as a measure → When you want to perform mathematical operations (SUM, AVG, MAX).
 - Convert to a dimension → When you want to group, filter, or categorize data.
-

In our case, the date field, which is originally treated as a measure, is converted to a dimension by clicking the dropdown icon next to the field name (on the left panel). This ensures Tableau treats each date as a distinct category rather than aggregating it — which is essential for accurate calendar-based visualizations.

Analysing using the bedroom count:

This helps me identify which number of bedrooms is generating the most revenue.

If I want to understand what the competition looks like — specifically for each bedroom count — I place **bedrooms** on the Rows shelf.

To find out how many listings exist for each bedroom type, I select **ID** in the Marks area, convert it to an **Attribute**, and then choose the **Distinct Count** option.

Tableau Desktop Public Edition

Buy Tableau Show Me

Data **Analytics** < **Pages** **Filters**

Columns: Bedrooms

Rows:

Sheet 4

Marks: Automatic

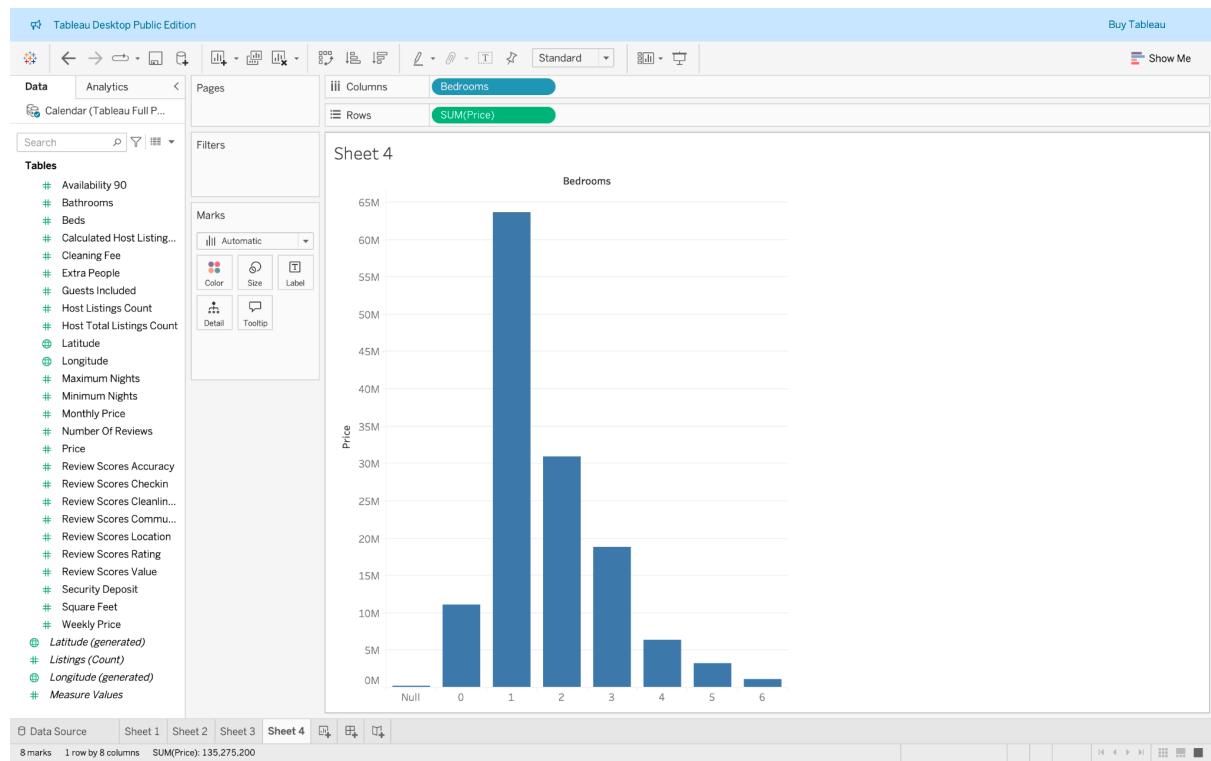
Null	0	1	2	3	4	5	6
Abc	Abc	Abc	Abc	Abc	Abc	Abc	Abc

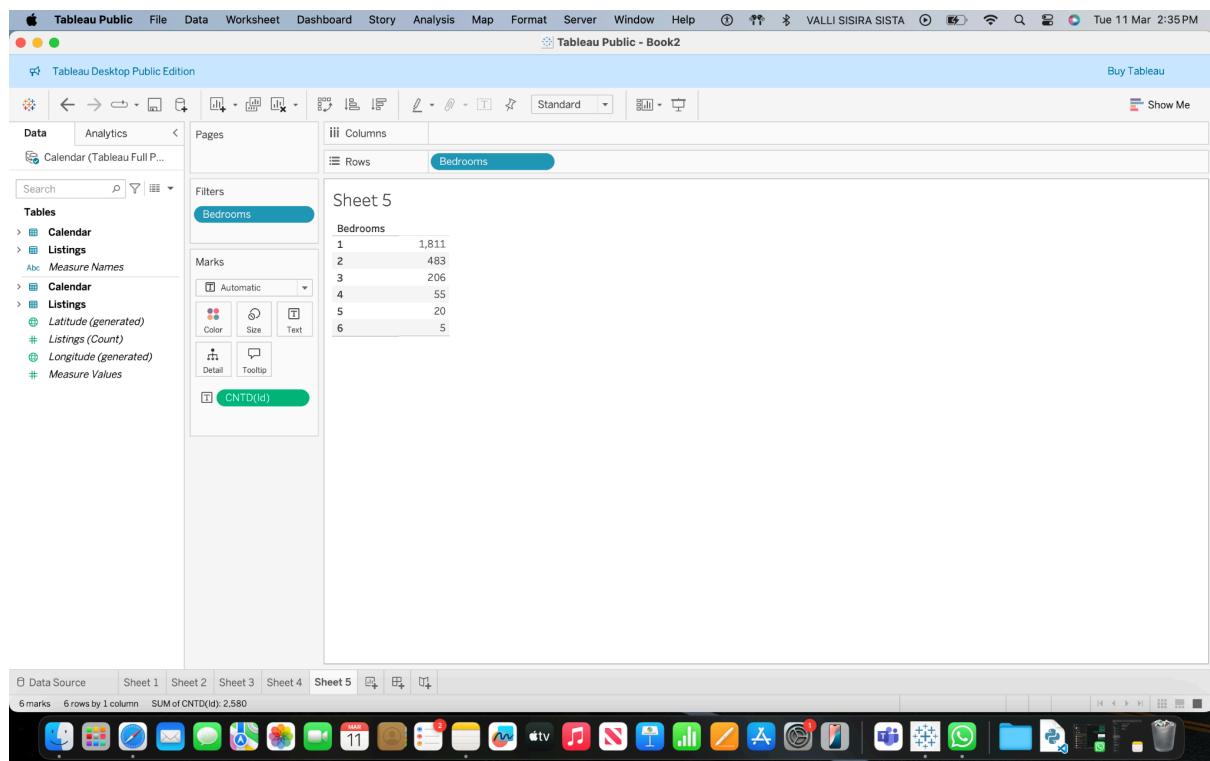
Tables

- Calendar**
 - Available
 - Date
 - Listing Id
- Listings**
 - Amenities
 - Bed Type
 - Bedrooms
 - Calendar Last Scrapped
 - Calendar Updated
 - Cancellation Policy
 - City
 - Country
 - Country Code
 - Description
 - Experiences Offered
 - First Review
 - Has Availability
 - Host About
 - Host Acceptance Rate
 - Host Has Profile Pic
 - Host Id
 - Host Identity Verified
 - Host Is Superhost
 - Host Location
 - Host Name
 - Host Neighbourhood
 - Host Picture Url
 - Host Response Rate
 - Host Response Time
 - Host Since

Data Source: Sheet 1 Sheet 2 Sheet 3 Sheet 4

8 marks 1 row by 8 columns





It shows me that there are 1,811 listings with one bedroom and 483 listings with two bedrooms, and so on.

This is the final dashboard of the Airbnb analysis.



- I designed an interactive Tableau dashboard to analyze Airbnb pricing trends, demand fluctuations, and competition across different zip codes and bedroom counts.
- I created geospatial and trend visualizations to help investors identify profitable locations, optimal pricing strategies, and high-revenue rental periods.
- I provided data-driven insights to guide investment decisions, including the impact of seasonality, bedroom count, and neighborhood competition on Airbnb rental profitability.
- Discovered correlations between Airbnb rental profitability and seasonality using Tableau, revealing that properties with 3+ bedrooms experienced a 15% revenue surge during peak tourist seasons.