Activity Overview

In this activity, you will create visualizations in Tableau based on a BI scenario. If you don't have a lot of experience with Tableau, this will help you get comfortable in the program. If you do have experience in Tableau, this activity will further your knowledge and teach you BI-specific techniques.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the following scenario. Then complete the step-by-step instructions.

Imagine that you are asked to build some charts for a business that purchases properties in an area, converts them into rentals, and offers them to people on vacation in Athens, Greece. Your contact gives you some recent data from Airbnb about the rentals in the city. This data includes the price to stay at each listing, the durations of each stay, the locations of these rentals, and more.

Your point of contact asks you to create charts to answer the following questions:

- What is the average price per night in each neighborhood?
- Where in the city are the highest concentrations of currently-available rentals?

In the following steps, you'll practice working with data in Tableau to create charts that answer these questions.

Step-By-Step Instructions

Follow the instructions to complete each step of the activity. Then, answer the questions at the end of the activity before going to the next course item to compare your work to a completed exemplar.

Pro Tip: Save your work

Be sure to save your work periodically as you complete this activity. This will help you avoid losing work. You can also use the deliverables from this activity for further practice or in your end-of-course project. These projects will help you demonstrate your experience to potential employers.

Part 1 - Set up your data

Step 1: Access the data

To access the data for this course item, download the following attachment.

Step 2: Load your data into Tableau Public

Log into Tableau Public. On your profile page, click **Create a Viz**.

This will open the **Connect to Data** window. Load your data into Tableau Public by clicking **Upload from Computer**, then select the **Athens Airbnb Data.csv** file you downloaded.

Step 3: Explore your data

It's always a good practice to understand your data before you visualize it. Now, take a moment to familiarize yourself with the Athens rental dataset. Note the most relevant columns: Id, Neighborhood, Longitude, Latitude, and Price. Get a sense of what types of data are in each of these columns since you'll be using them to make charts in the rest of this activity.

Ask yourself the following questions to help you evaluate the data:

- Which columns are string data and which are text?
- Is any data missing?
- Do any names or IDs occur particularly often?
- Are there any unusually high or low values in the Price column?

Part 2 - Build your first chart

## Step 1: Visualize average price per neighborhood

To create a new chart, click the tab for **Sheet 1**. This will open the chart-building interface where you can begin placing dimensions and measures into their respective places.

Because the client's priority is finding out the average price of each rental per night in each neighborhood, you'll build that visualization first. Click and drag the **Neighborhood dimension** next to the Columns field at the top of the screen.

Then, drag the **Price measure** to the Rows field. This will update the visualization to represent the sum of the price in each neighborhood. This could be a good metric to estimate which neighborhoods are the highest-grossing, but it won't tell you if this is because there are lots of rentals there or just a few high-priced ones.

Instead, change **SUM(Price)** to **AVG(Price)**. Right-click it, hover over **Measure** in the dropdown, and select **Average**.

When you do this, you'll get a bar chart that represents the average price per neighborhood. One of the bars in this chart is significantly taller than the others, which indicates that it's a significant outlier.
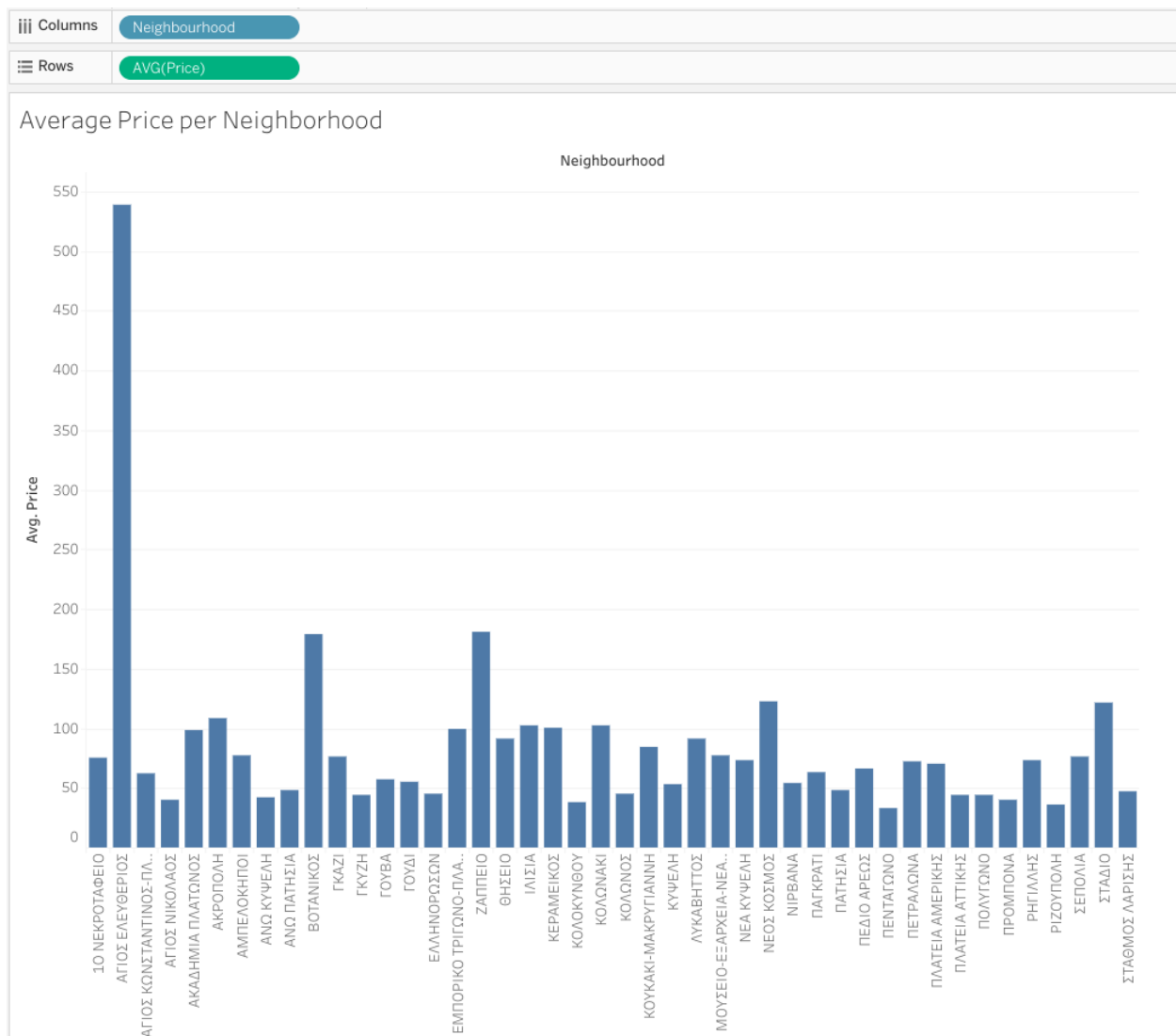
Step 2: Exclude the outlier

You might notice a significant outlier in this chart. One of the entries far outscales the other entries, making it hard to focus on trends in the chart. Outliers are important to identify and keep in mind, but in situations like this it helps to temporarily remove them from the view. This won't change the data itself, so you won't introduce bias to your analysis, but it will make your chart more proportional and help you notice trends.

To do this, click on the bar that corresponds to the outlier value. Select **Exclude** to update the chart and view it without the outlier.

You can also do this by clicking on **Measure** and choosing **Edit filter**. From this window, select the value you'd like to exclude and click **OK**.

Either of these methods will create a filter for **Neighborhood**. To include the outlier in the visualization again, undo the steps you took or right-click and delete the filter itself. Even if you aren't representing outliers in your charts, you should make note of them when presenting your visualization to your stakeholders.
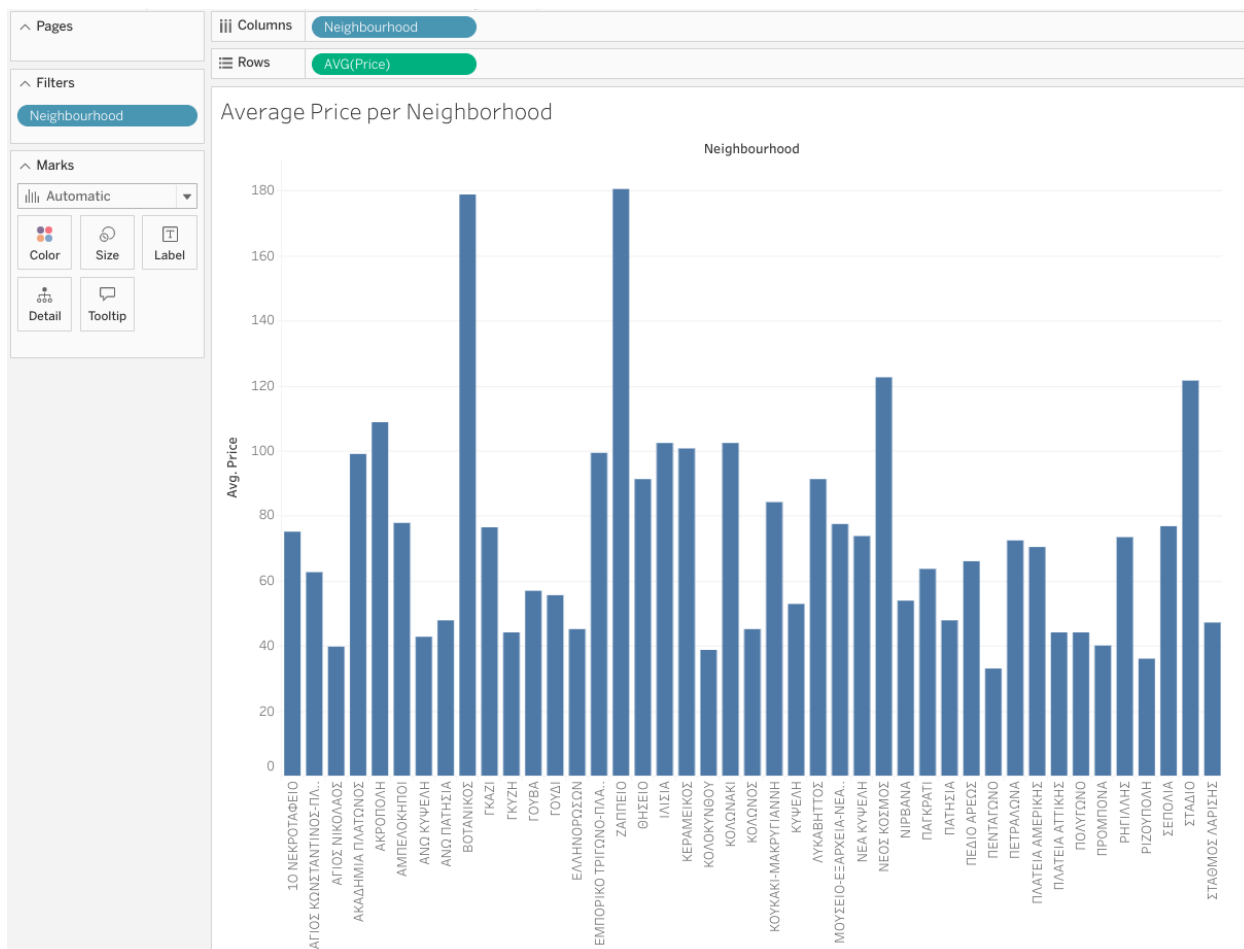
Step 3: Order the data

Removing the outlier helped rental price trends stand out, but there is one more step to take before presenting the data to your stakeholders. Ordering the bars in the chart from highest to lowest visualizes the data in a way that's easier to interpret at a glance.

To do so, select the table header, **Neighborhood**, then right-click and select **Sort descending** from the dropdown menu.

Neighbourhood

Sort ascending

Sort descending

Hide Field Labels for Columns
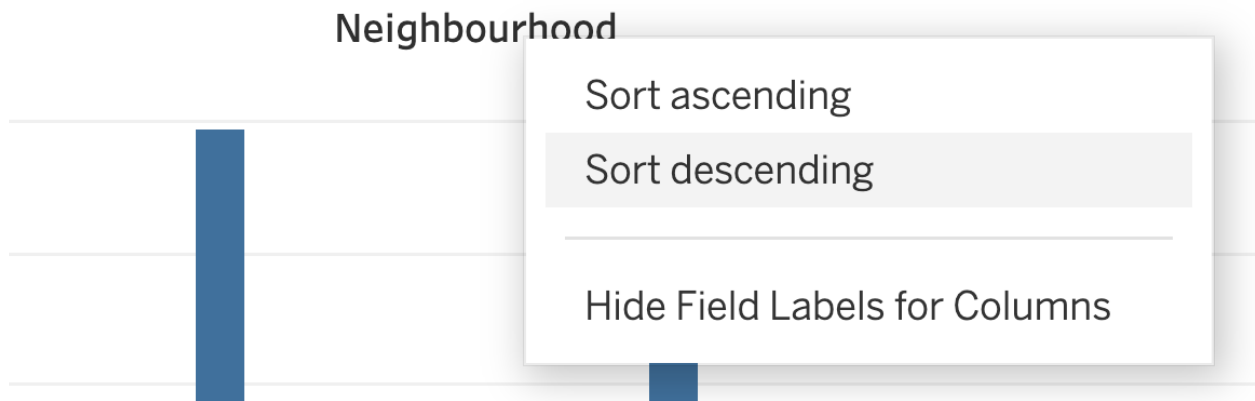
After it's sorted, the bar chart data will be arranged to represent the neighborhoods with the highest average rental price to the neighborhoods with the smallest average rental price.

Average Price per Neighborhood
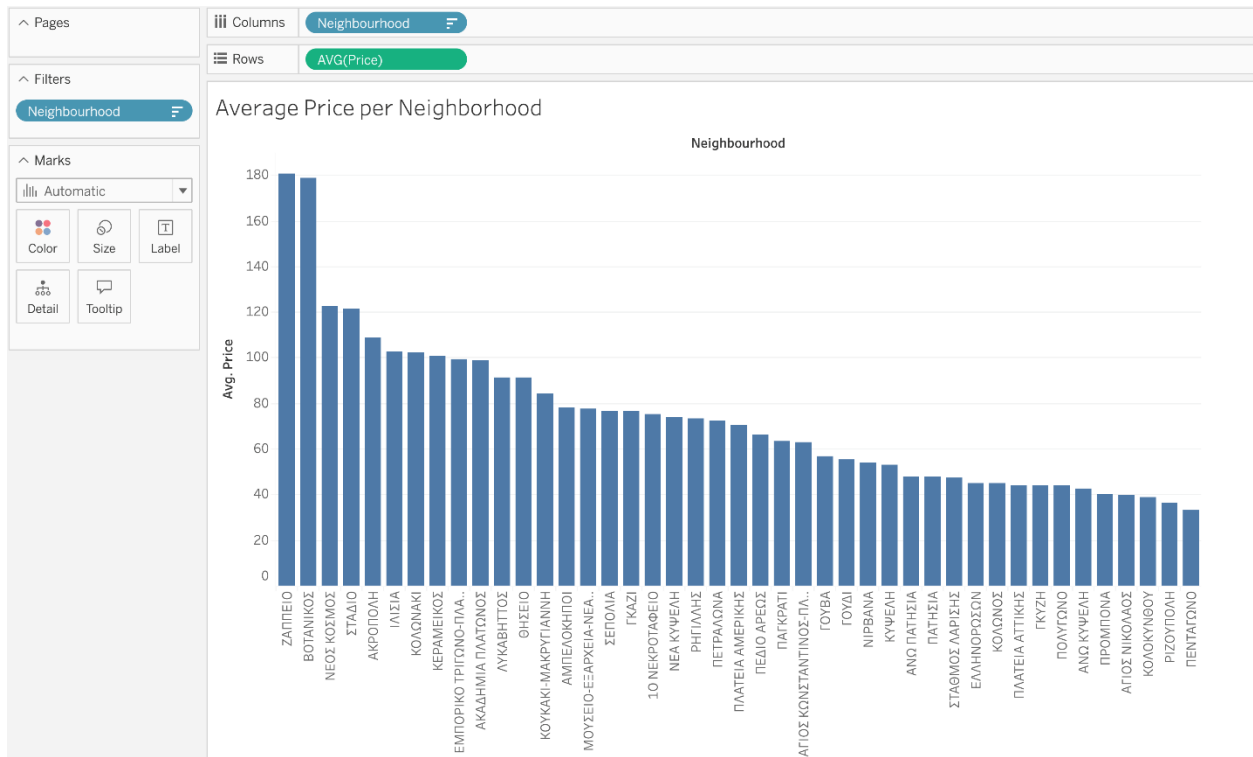
Part 3 - Build a map chart

Step 1: Visualize concentration of rentals

Now create a second chart. This time, you'll create a map that visualizes the concentrations of where rentals are located within Athens. This will help your stakeholder identify which neighborhoods are most popular so they know where to buy properties to turn into rentals.

To begin, create a new worksheet by clicking the **New Worksheet** next to **Sheet 1**. You can also do this by clicking **Worksheet** in the menu and selecting **New Worksheet**.

Note: It's a good idea to rename each worksheet as you create it. If you haven't already, right-click **Sheet 1** to name it "Average Price per Neighborhood." Then, rename **Sheet 2** to "Rental Map of Athens." This will help you find each chart when you need to arrange them into a dashboard in an upcoming activity.

To make your map, start by dragging **Longitude** into the Columns field and **Latitude** into the Rows field. At first, Tableau will represent these as averages. Since you want each data point to be discrete, right-click **Longitude** and select **Dimension** in the dropdown instead of Measure. Do the same for **Latitude**. Now, your map will show a dot for each rental location.
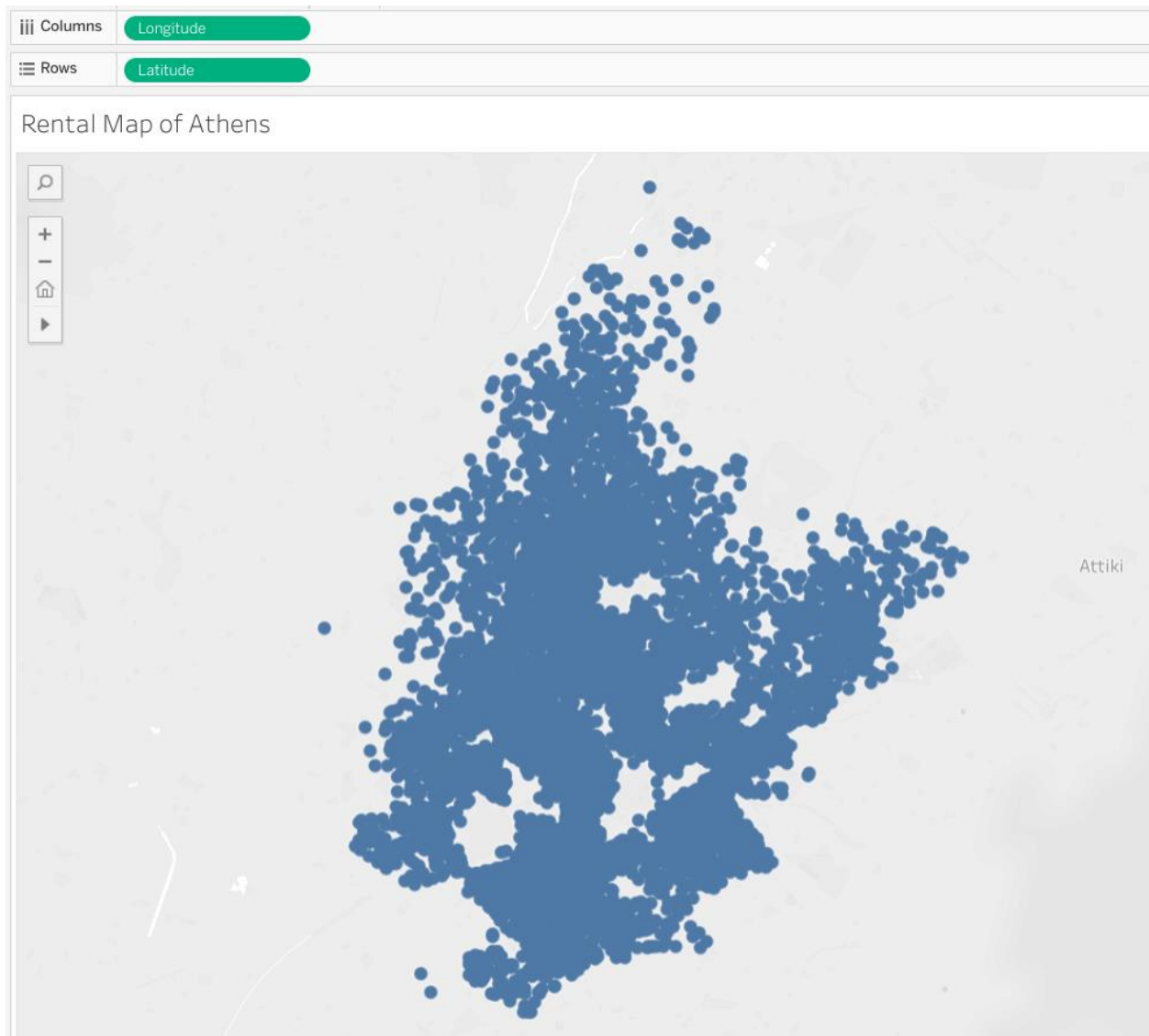
Step 2: Add proportion

At this point, because all the dots on the map are the same size, it's hard to tell where each one begins and ends. You can change the size of each dot to reflect the number of times each property ID appears in an entry. This will indicate which properties have been booked the most.

To do this, drag the **Id dimension** to the **Size** square under the **Marks** dropdown. Then right-click **Id**, hover over **Measure**, and select **Count**.
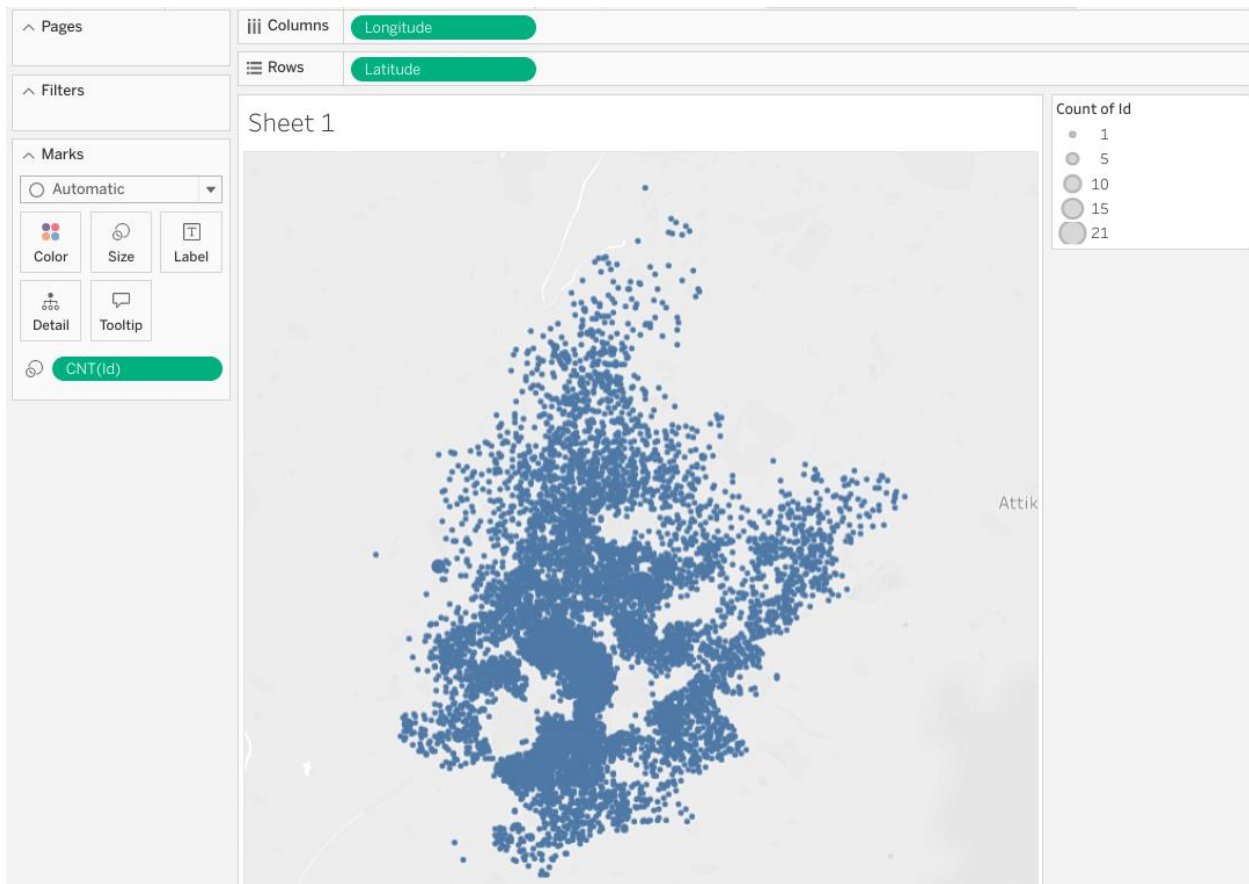

# Step 3: Make more map adjustments

Now that your data points are properly in your map, there are some visual elements you can change to make your map easier to read.

First, click on **Map** in the toolbar. In the dropdown, select **Background Layers** and the layers window will appear on the screen.

Under **style**, select **Streets** instead of Light. Including highways, roads, neighborhoods, and other features of the city of Athens will make your visualization appear more like a traditional map. It will also place your data points within the context of their surroundings.
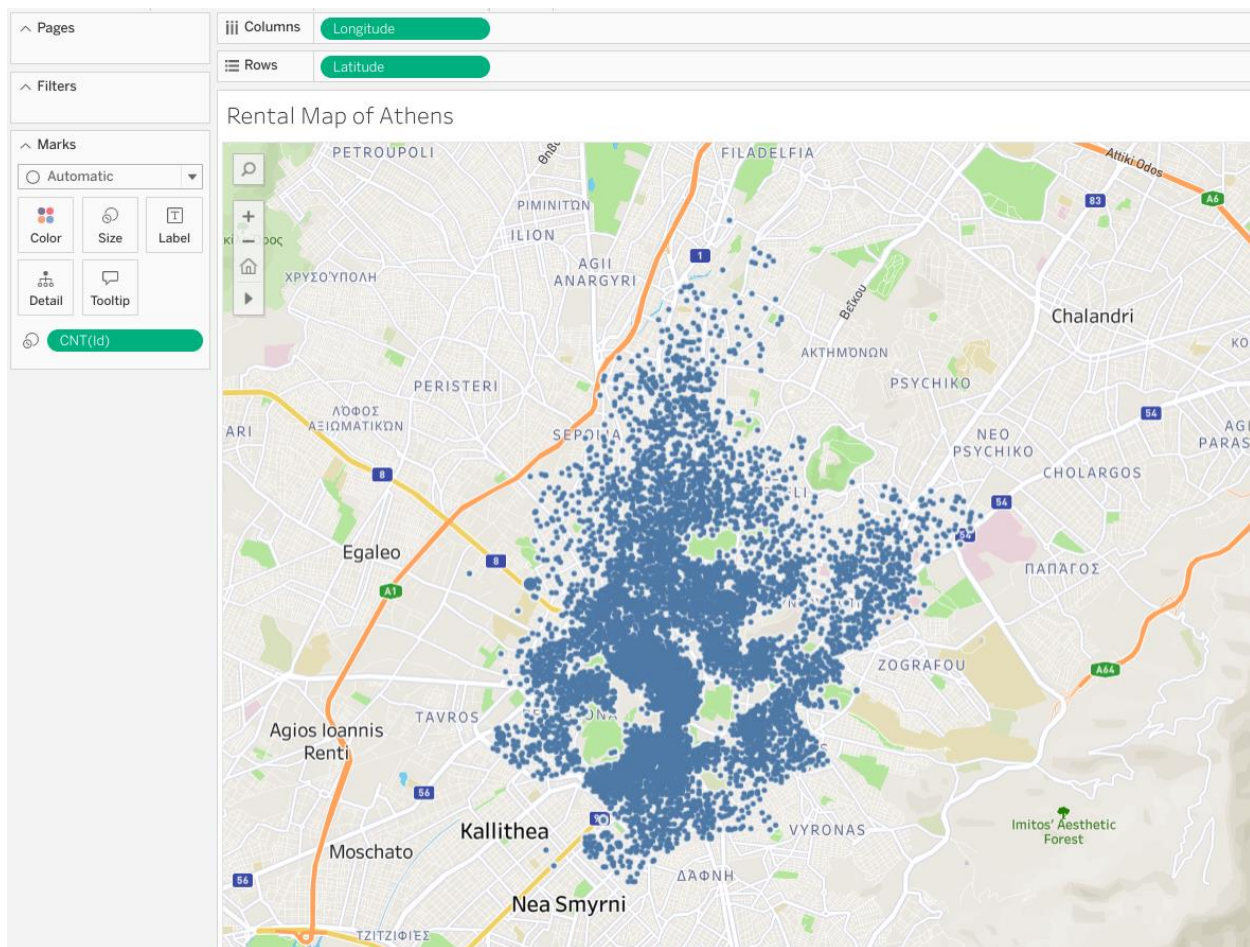
This way, your map is more useful than a collection of dots on your screen. You can also zoom in with the + and - icons to focus on specific parts of the map.
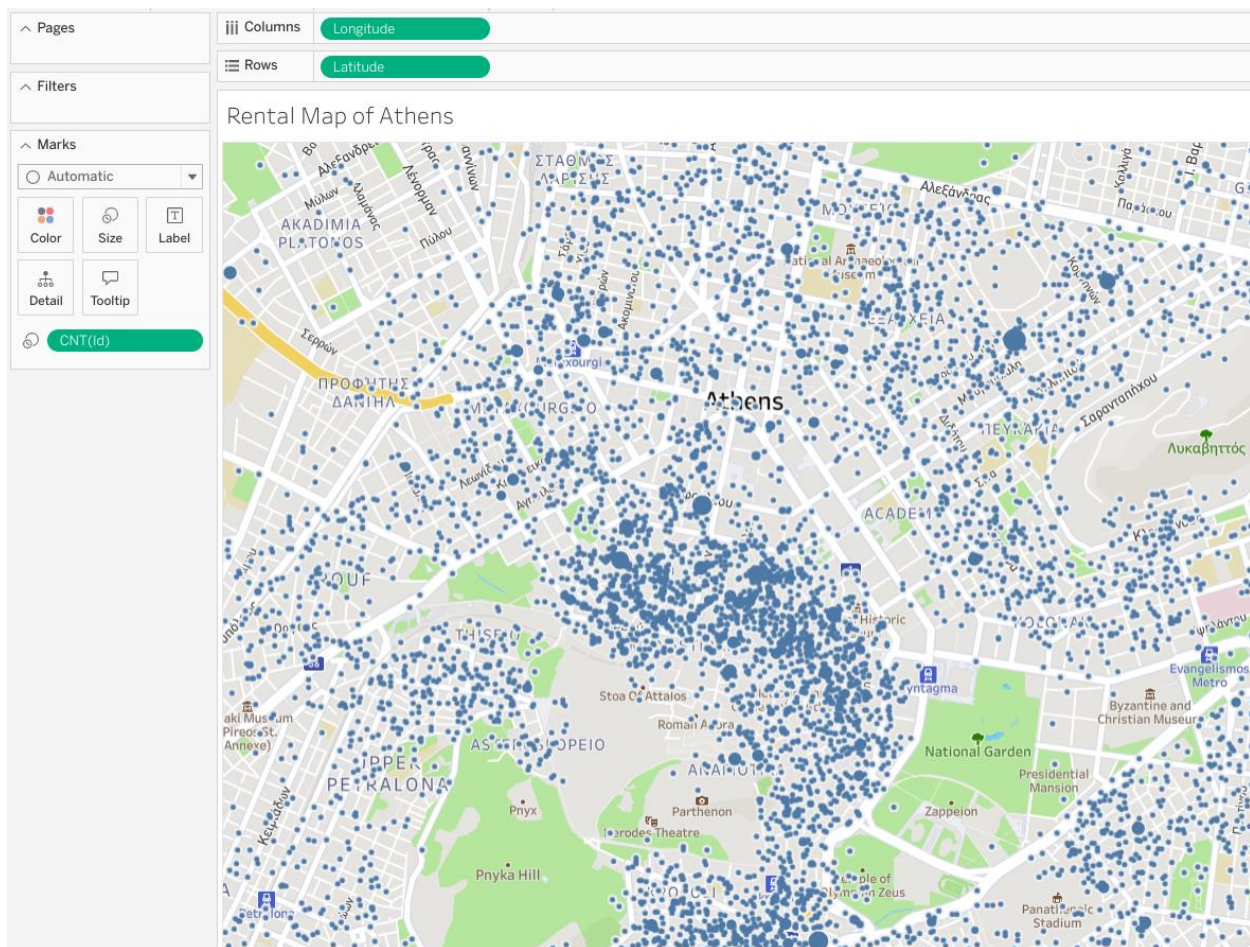
Step 4: Save your work

If you haven't already, take a moment to save your work in Tableau Public. Click **File** in the toolbar and then select **Publish**. Make sure to publish your work before clicking the X icon in the corner. The publish option functions as a save, and you can always change the privacy settings after your work is saved and published. In an upcoming activity, you'll need to start a dashboard using these charts, so it's important to keep them in a place that's easy to find.

If you do not want to publish your charts publicly, publish your work, and then click the X icon in the upper right corner. This will take you to the shareable view page on Tableau Public. To stop sharing this project on your public profile, click the settings wheel. You can toggle the **Show Viz on Profile** option as well as the **Allow Access** option.
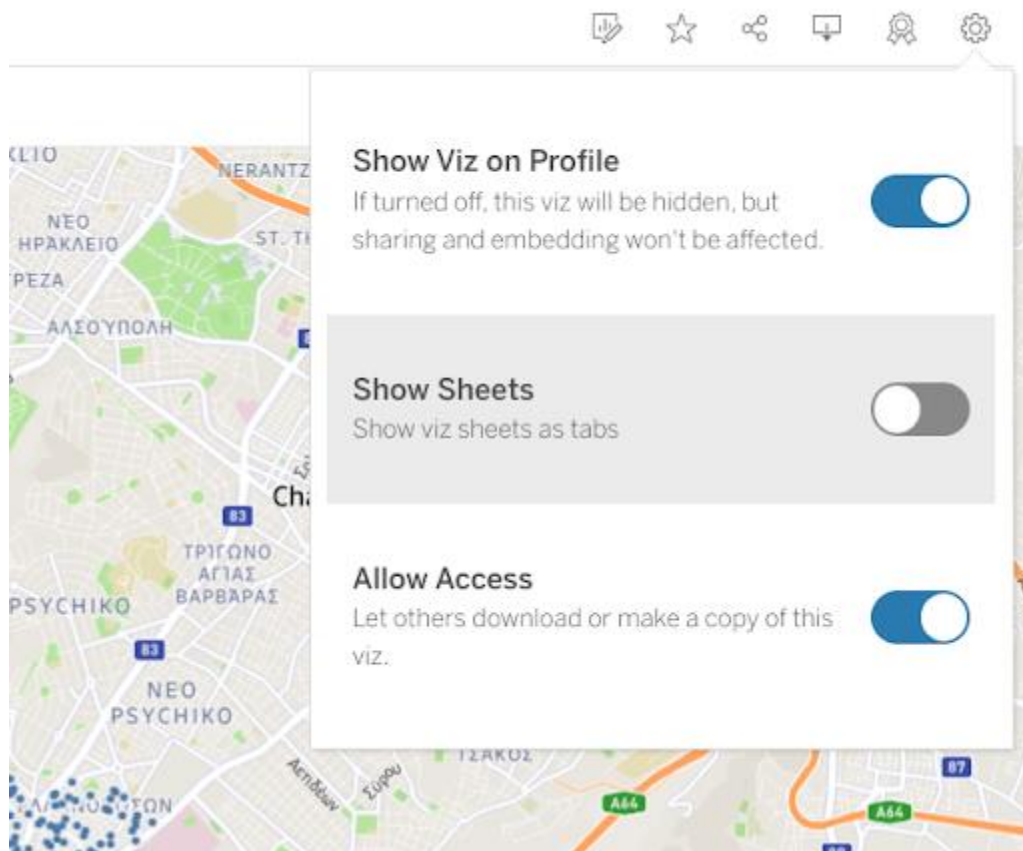
If you'd like to download your work, click the download icon. This will give you several file formats to choose from. To save your work in a format you can use directly in Tableau Public later on, select the **Tableau Workbook** file format.

What to Include in Your Response

Be sure to address the following elements in your completed charts:

- A chart that visualizes Average Price per Neighborhood with Neighborhood in the Columns field and Price in the Rows field
- A map that visualizes Concentration of Rentals with Longitude in the Columns field, Latitude in the Rows field, and CNT(Id) as the size modifier.