To pass this practice quiz, you must receive 100%, or 1 out of 1 point, by completing the following activity. You can learn more about graded and practice items in the course overview.

Activity Overview

In this activity, you will design a professional and accessible bar graph data visualization in Tableau Public. Your bar graph will share a story and will help a business manager make a data-driven decision for their business needs.
The structure of this activity is designed to emulate the proposals you will likely be assigned in your career as a data professional. Completing this activity will help prepare you for those career moments.
Be sure to complete this activity before moving on. At the end of this activity, you will be provided 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 you are a data professional consulting for the transportation department in Seoul, South Korea. Your client contact is the director of the department. For your next project, the director asks you to analyze the rented bicycle data they've gathered in 2018 in order to learn the best time of day to have their maintenance teams repair bikes. The director wants the maintenance work to occur during lower traffic times, when bicycle rental numbers are minimal, but still during standard working hours (8 a.m. to 5 p.m).
Your task is to use Tableau to design a data visualization that illustrates the low-traffic times of standard workdays in order to remove bicycles from circulation for maintenance. The director wants the visualization to include gradients of orange to represent the company colors. Be sure your data visualization is clear, accessible, and ethical.

Step-By-Step Instructions

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

Step 1: Access supporting materials

The following supporting materials will help you complete this activity. Keep them open as you proceed to the next steps.

To use the supporting materials for this course item, click the following link and select *Use Template*.

Link to supporting materials: Seoul bicycle rental dataset

OR

If you don't have a Google account, you can download the supporting materials directly from the following attachment.

Seoul bicycle rental dataset
XLSX File

Step 2: Create a Tableau Public account or log in

You will need a Tableau Public account to complete this activity. If you haven't created an account yet or need to review how to connect to data, review the reading about *how to sign on to Tableau Public*.
If you already have a Tableau Public account, log in to your account.

Step 3: Upload your dataset

In your Tableau Public account, go to your profile and select *Create a Viz*. You will be directed to a screen that asks you to connect to data. When prompted, upload the Seoul bicycle rental dataset.

Step 4: Decide which columns are applicable

Check the *Data Source* page on Tableau Public to get a sense of the size, shape, and makeup of the dataset. You'll notice more than 10 columns of data values.
Determine which columns are most applicable for the scenario. To do this, refer back to the department request. The director is asking you to determine the hour bike rentals are minimal during weekdays. With that target in mind, identify the columns of data that will help you derive that answer. One way to start is to set aside the irrelevant columns and narrow your selection. Once identified, you should have four columns of relevant data and six irrelevant columns.

Step 5: Assess whether the dimensions and measures are correct

Check the data types for the applicable columns you selected in the previous step. You should pay particular attention to the dimensions and measures to assure they are correctly designated as continuous or discrete.
Confirm that the "Date" and "Rented Bike Count" columns are correctly designated as dimension and measure, respectively.

Convert 'Hour' to a *dimension* (to match the "Date" column) rather than a *measure* (like "Rented Bike Count") because "Hour" acts as a time quantifier and should be treated like a datetime string, rather than a numeric measure.

Fields

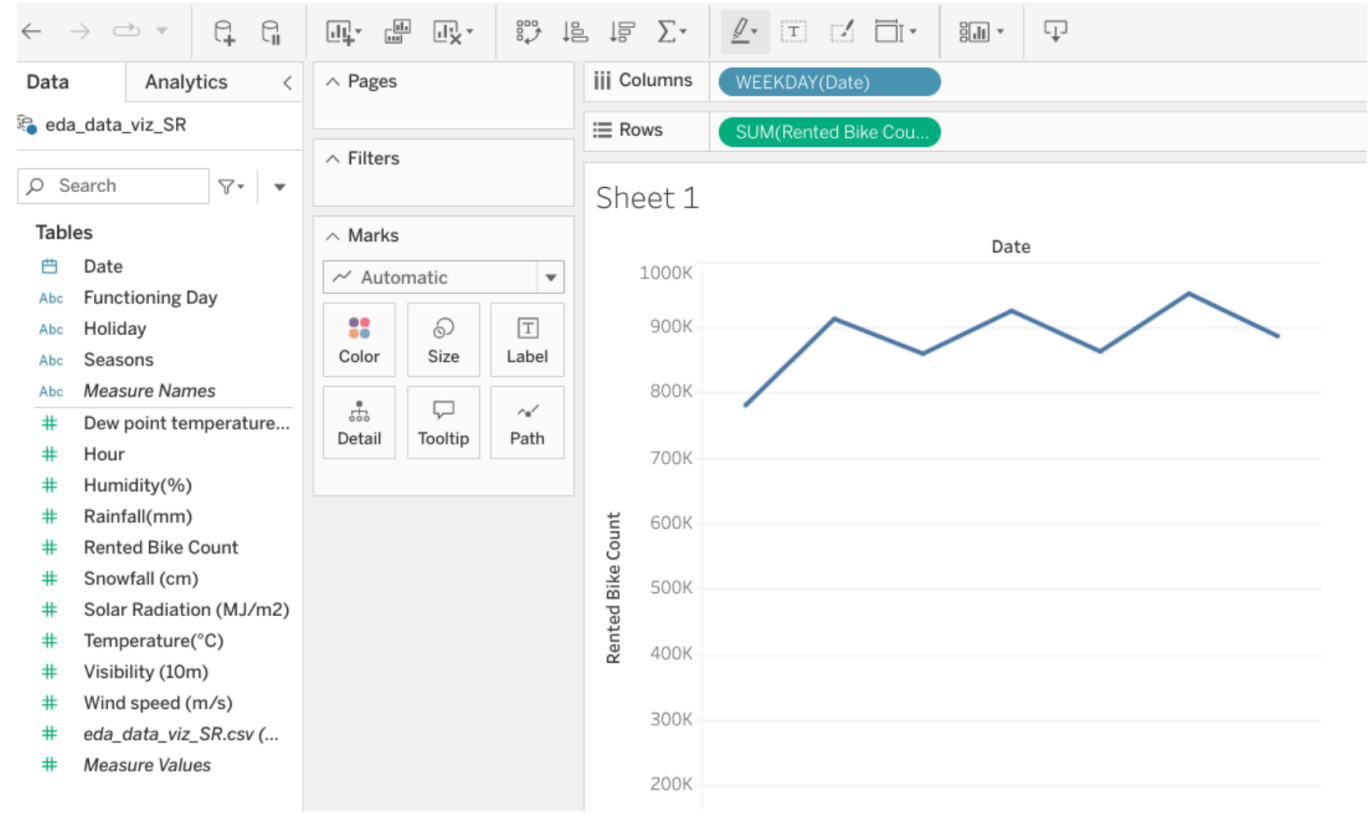
Type	Field Name	Physic...	Rem...
📅	Date	eda_dat...	Date
#	Rented Bike Count	eda_dat...	Rente...
#	Hour	eda_dat...	Hour
#	Temperature(°C)	eda_dat...	Temp...
#	Humidity(%)	eda_dat...	Humi...
#	Wind speed (m/s)	eda_dat...	Wind ...
#	Visibility (10m)	eda_dat...	Visibili...
#	Dew point temperature(°C)	eda_dat...	Dew p...
#	Solar Radiation (MJ/m2)	eda_dat...	Solar ...
#	Rainfall(mm)	eda_dat...	Rainfa...
#	Snowfall (cm)	eda_dat...	Snowf...
Abc	Seasons	eda_dat...	Seaso...
Abc	Holiday	eda_dat...	Holiday

Step 6: Plot your data

You've assessed your data and decided on which data variables are most applicable. Now it's time to plot the bar graph. Start by placing the two most important data variables in the "Column" and "Row" shelves.

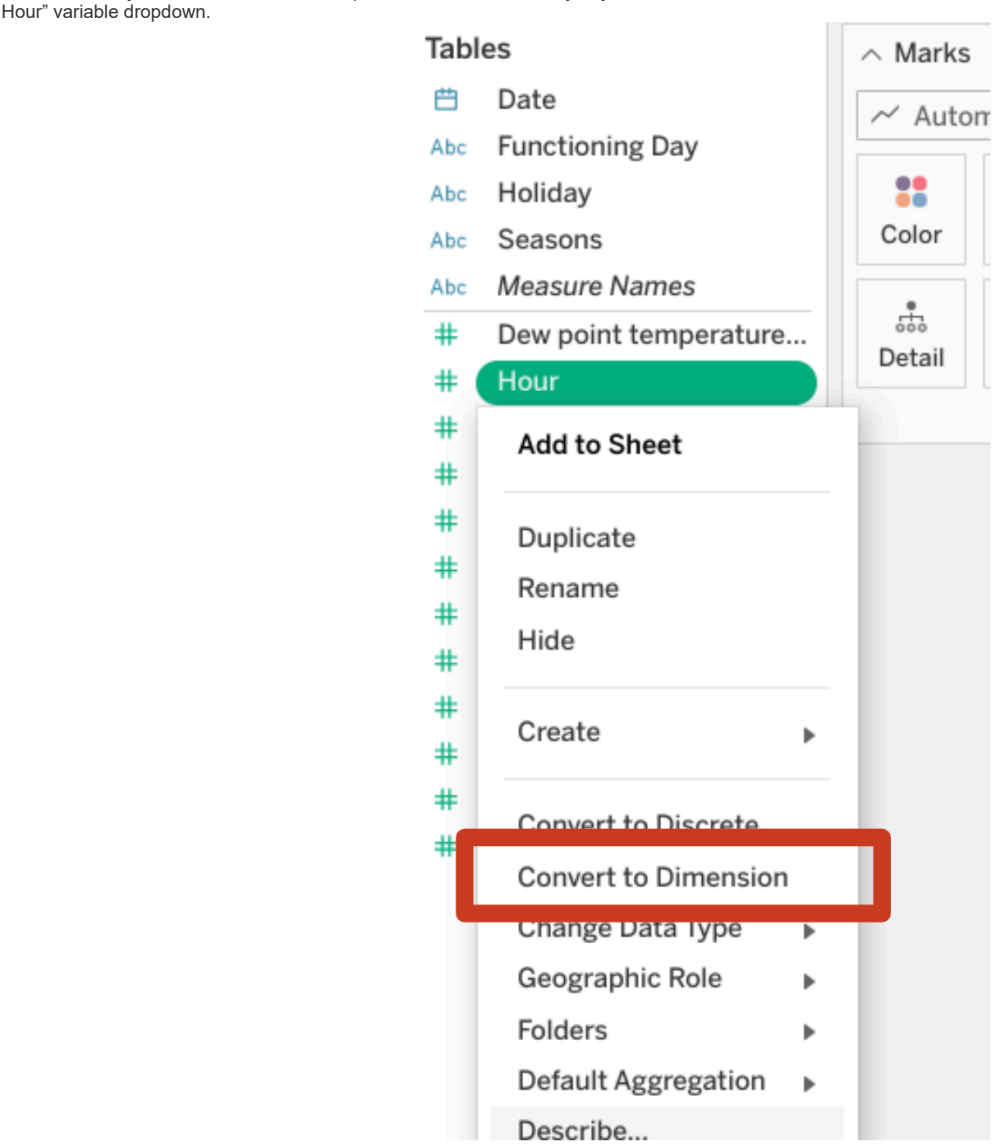
Next, drag "Date" to the columns shelf and "Bike Rental Count" to the rows shelf to show the average number of bike rentals every hour of the workday of the course of the entire year.

Note: Tableau will default to a line chart to start. That's expected. You can convert it to a bar graph later.

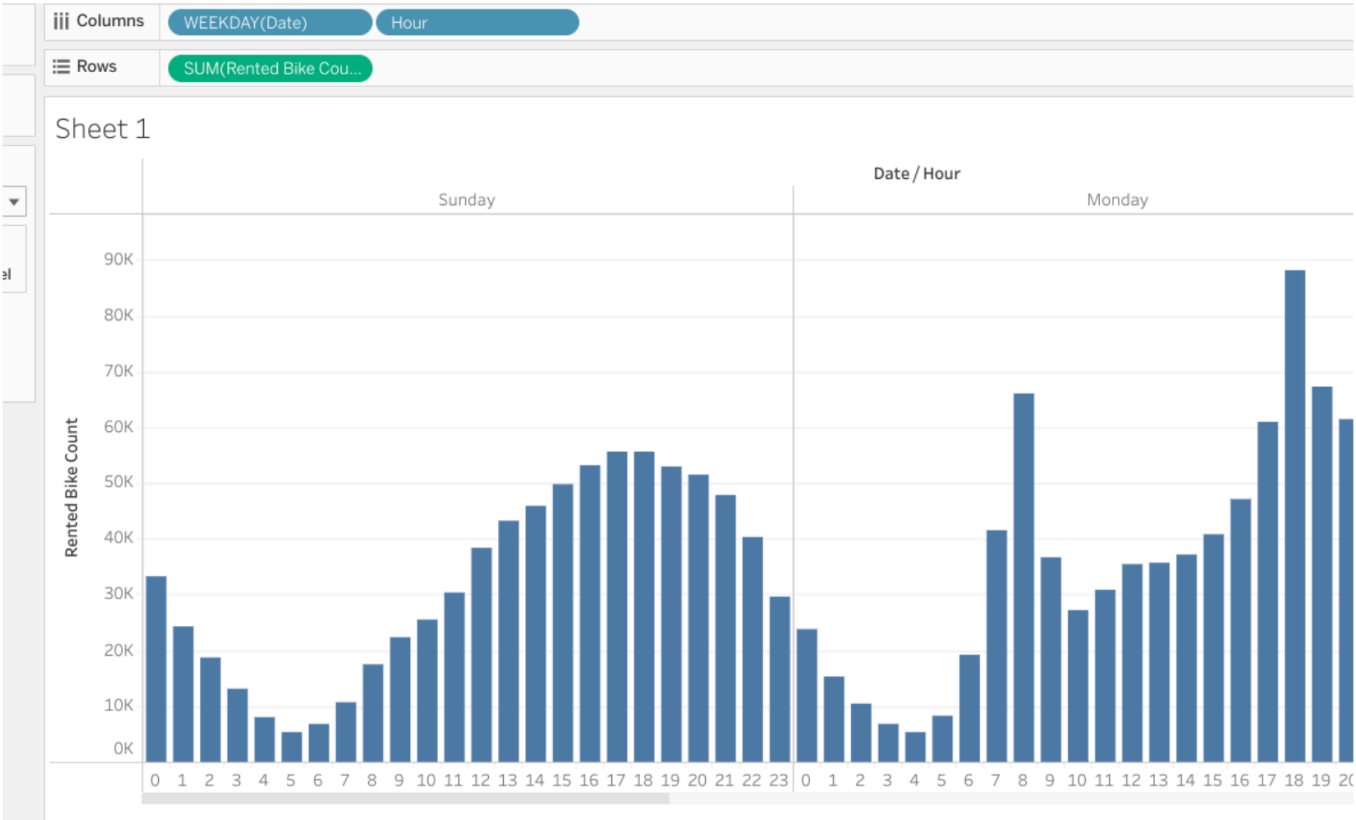


Step 7: Add the “Hour” data

Select “Weekday” in the “Date” variable dropdown to order the data by day of the week. Then, convert the “Hour” variable to a dimension by selecting the option in the Hour” variable dropdown.



Next, organize the “Rented Bike Count” variable by “Hour” along with the “WEEKDAY(Date)” variable that is already there. Place the “Hour” variable in the “Column” shelf, next to the “WEEKDAY (Date)” variable.



Step 8: Filter the data

Now structure the data to show only the most relevant details based on the business need.

Drag “Date” to the “Filters” field.

Tableau will default the “Date” variable to be formatted in years.

In the popup window that opens, uncheck the box for “2017.”

Drag “Date” to the “Filters” field.

Click on the “Date” dropdown menu.

Select “Weekday.”

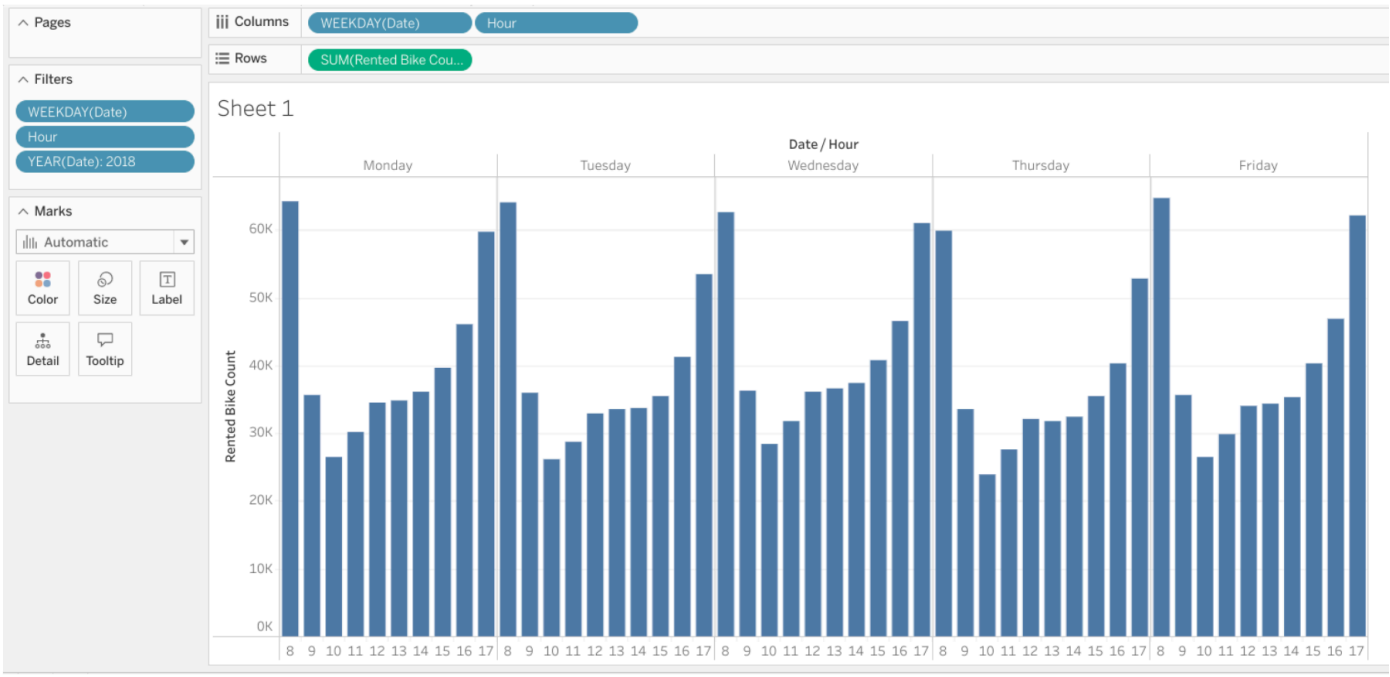
Uncheck the boxes for “Saturday” and “Sunday.”

Drag “Hour” to the “Filters” field.

A popup window will appear.

Check only boxes 8 to 17 (representing 8 a.m. to 5 p.m.).

Uncheck all other boxes.



Step 9: Add color and contrast

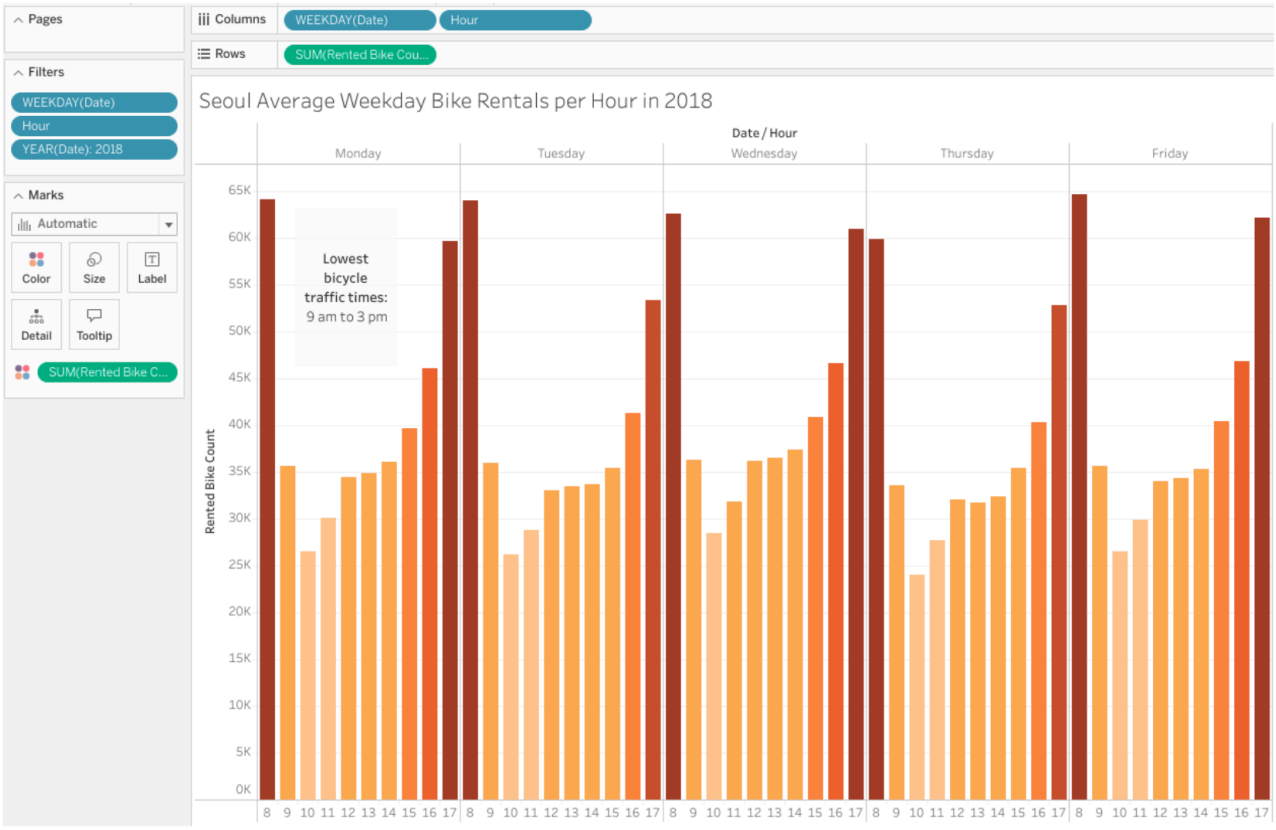
You have visualized the data you need to share with the director now. The bar graph you created confirms that the 9 a.m. to 3 p.m. time frame is the best block for pulling bicycles for maintenance.

Before you present the data to the director, you should clean up the data visualization to highlight your findings. Remember, the goal of a data visualization is for the audience to get the important information on the chart.

When it comes to color and contrast, there is not *one* correct approach. The goal is to ensure that all members of the audience, including , including people with color blindness, can still clearly perceive the difference in the bars’ contrast.

The following picture includes gradients of orange, the colors of the company requesting the visualization. The contrast in this chart also meets accessibility standards.

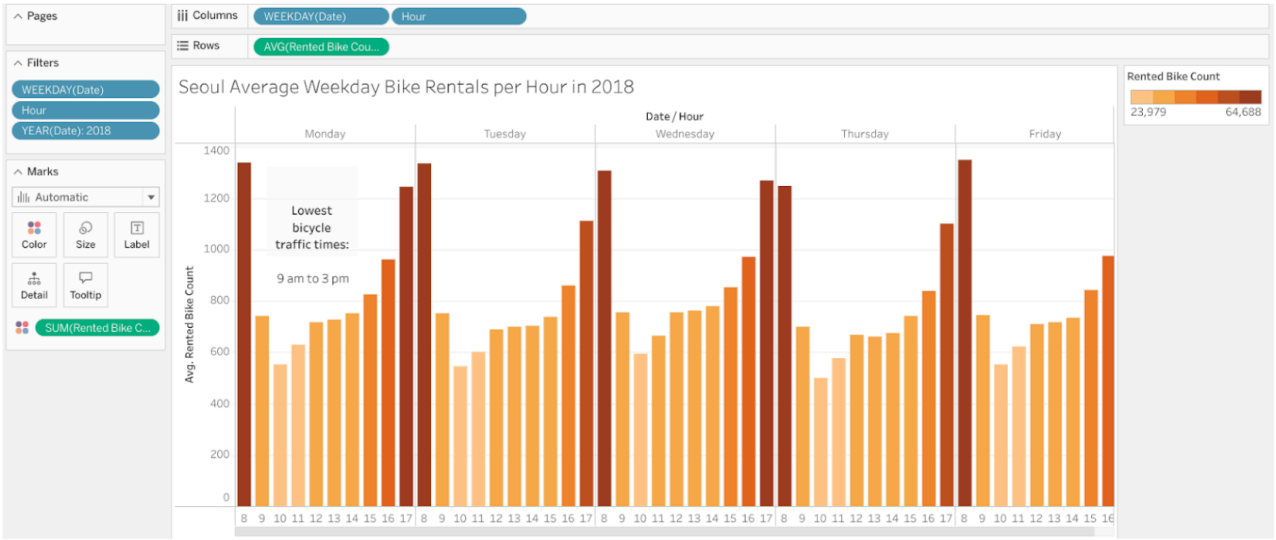
To change the color, click on the “color” square dropdown and select “edit colors.”



Step 10: Annotate and title the chart

Right click on the data visualization and select “Annotate Area.” This will open a text box. Fill that text box with “Lowest bicycle traffic times: 9 a.m. to 3 p.m."

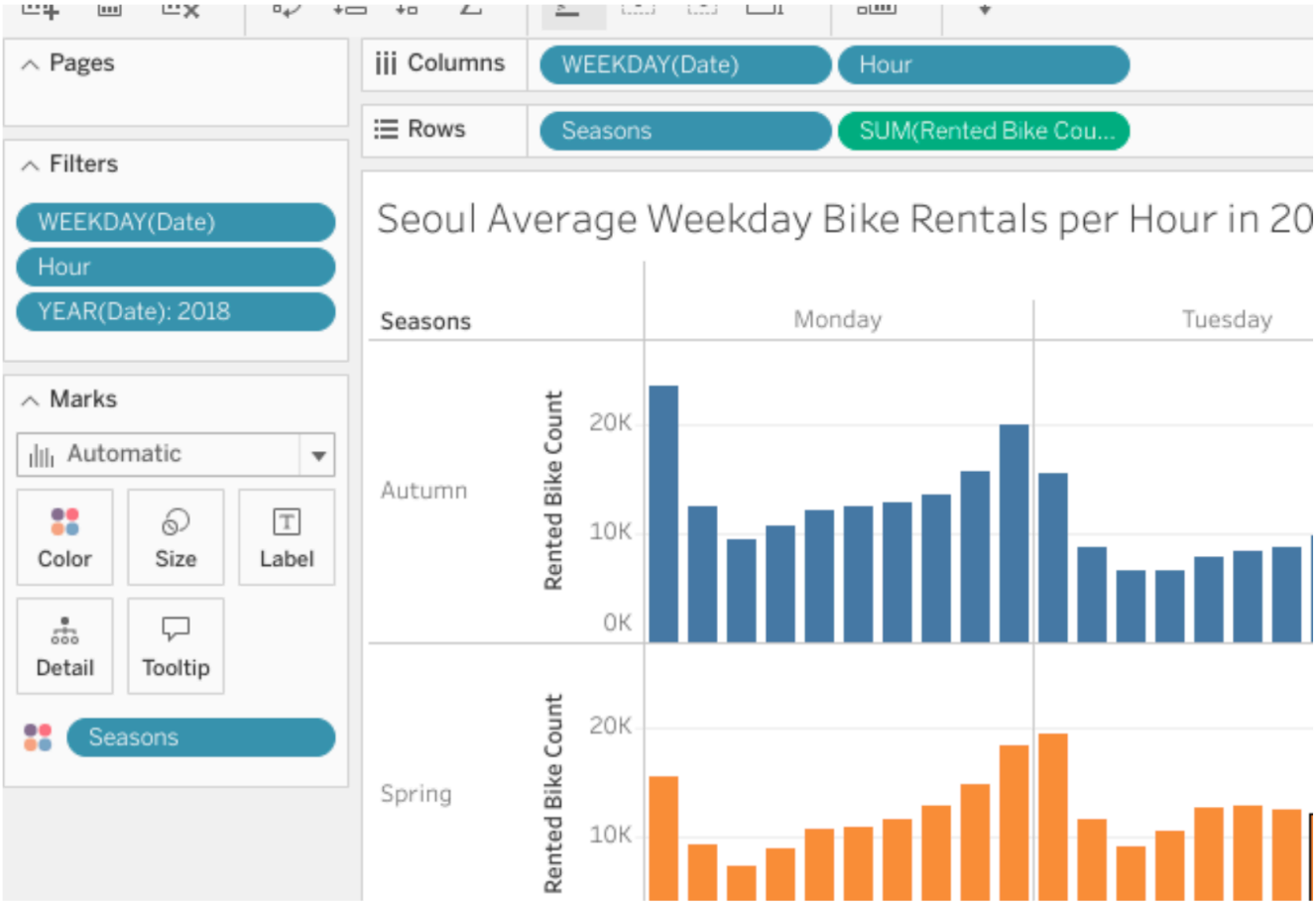
Then, add a title to the data visualization: “Seoul Average Bike Rentals per Hour on Weekdays in 2018.”



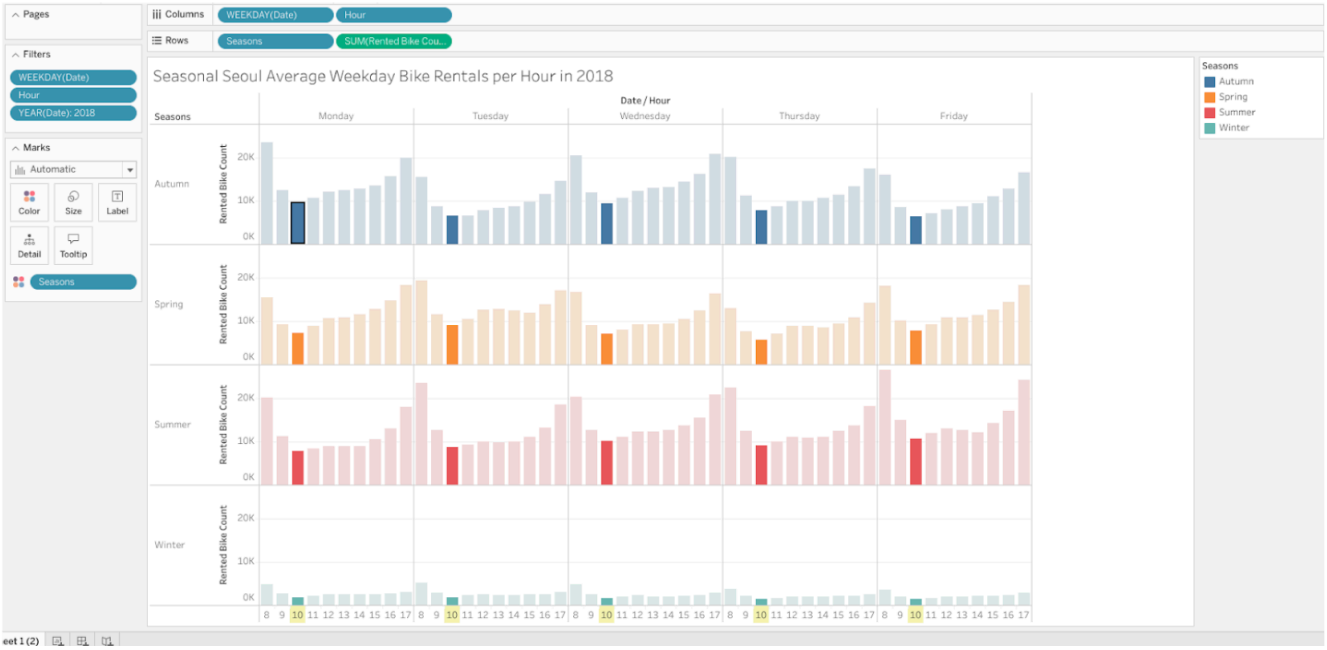
Step 11: Visualize the data by season

What you have already created is a valuable data visualization that can help the department of transportation identify the best times to perform maintenance on rental bicycles. But your findings can also help provide answers to questions that stakeholders didn’t even consider. For example, do these hours change when you divide the bike rentals by season?

You can test that by adding the “Seasons” variable to the rows shelf.



f you click on the 10 a.m. hour block in Tableau, you can emphasize to the department of transportation that no matter the season, 10 a.m. is the hour with the lowest umber of bike rentals on a given weekday.



What you have now provided is a comprehensive, data-driven answer to a stakeholder's request. This is the way a data professional provides an answer.

Be sure to save your visualization as a reference for later work in Tableau by clicking "Publish."

What to Include in Your Data Visualization

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

The data visualization includes only data from 2018.

The data visualization includes only weekdays, Monday to Friday.

The data visualization type makes sense for the data shown and includes color, contrast, labeling, and emphasis elements that draw attention to the most relevant data.

The data visualization can be observed without scrolling out or zooming in.

The data visualization depicts an answer to the question, "Which hour of the day is best for bicycle maintenance?"