Activity Exemplar: Create your charts

Here is a completed exemplar along with an explanation of how the exemplar fulfills the expectations for the activity.

Completed Exemplar

To review the exemplar for this course item, click the following link.

Link to exemplar: Minnesota Traffic Volume Charts⤤

Assessment of Exemplar

Compare the exemplar to your completed activity. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Note: *The exemplar represents one possible way to complete the activity. Yours will likely differ in certain ways. What's important is that you apply your BI design knowledge and that your charts answer the business questions from the scenario in this activity. If you had trouble creating charts on your own, you can use this exemplar as a guide in your future projects.*

Traffic volumes by month per year

This line chart compares traffic volumes for each month from one year to the next. This chart answers the question: Which month typically has the highest traffic volume? It uses the *Date Time* dimension with a filter to show the *Month* timescale. It also uses the sum of traffic volume from each period of time to make a singular total value of traffic volume at each month interval. Each point on the chart represents the total number of cars on the road during an entire month.

This exemplar has three lines on a chart to represent the years 2016, 2017, and 2018. The 2018 line ends in September, simulating how near-real-time data might make unfinished lines in a BI visualization.
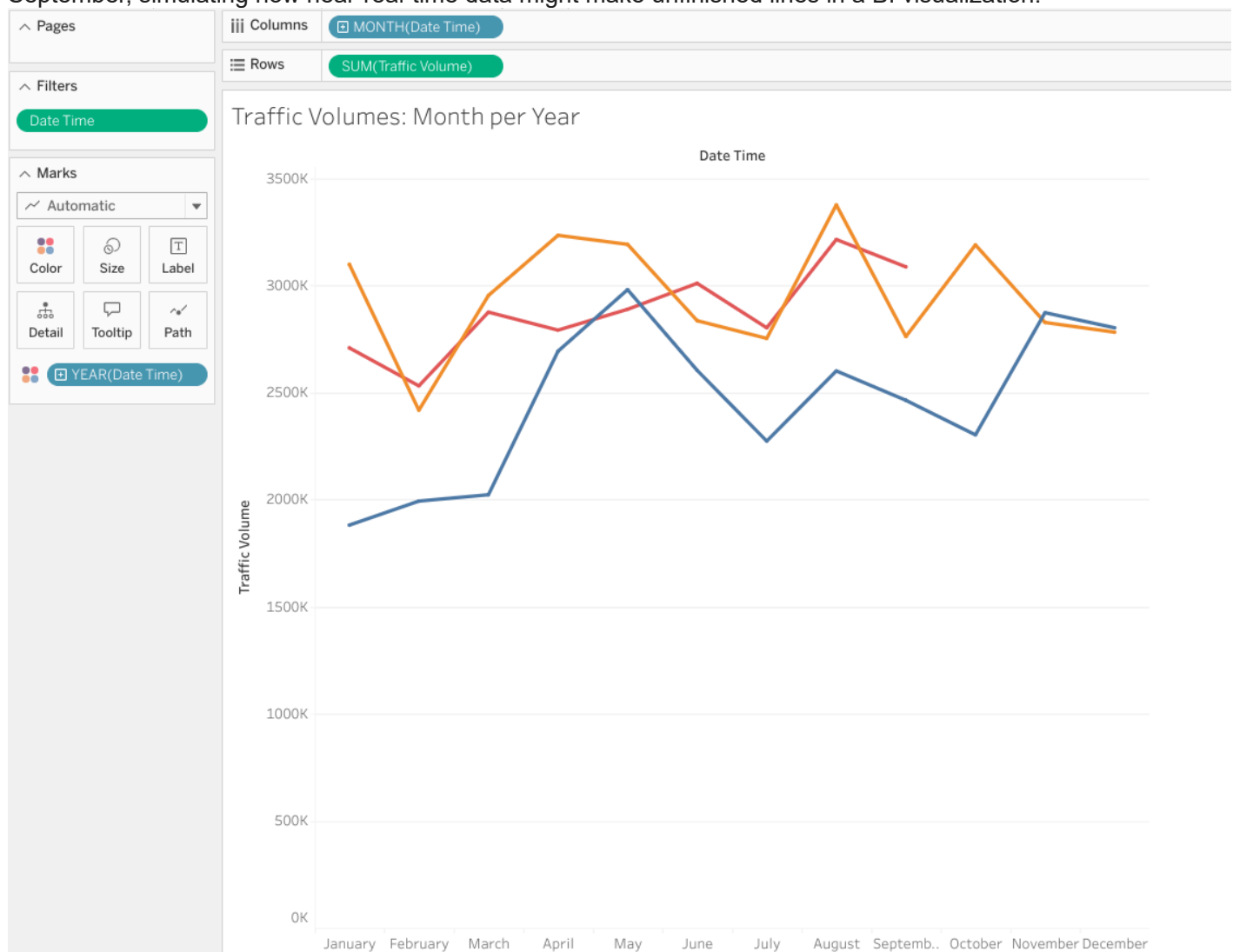
You could also make other charts to represent different timescales. You could use a filter on the *Date Time* dimension to represent the sum of traffic volume at different months, days of the week, or hours of the day. These other charts answer the stakeholder's questions about what times of day, week, month, and year have the highest traffic volume.
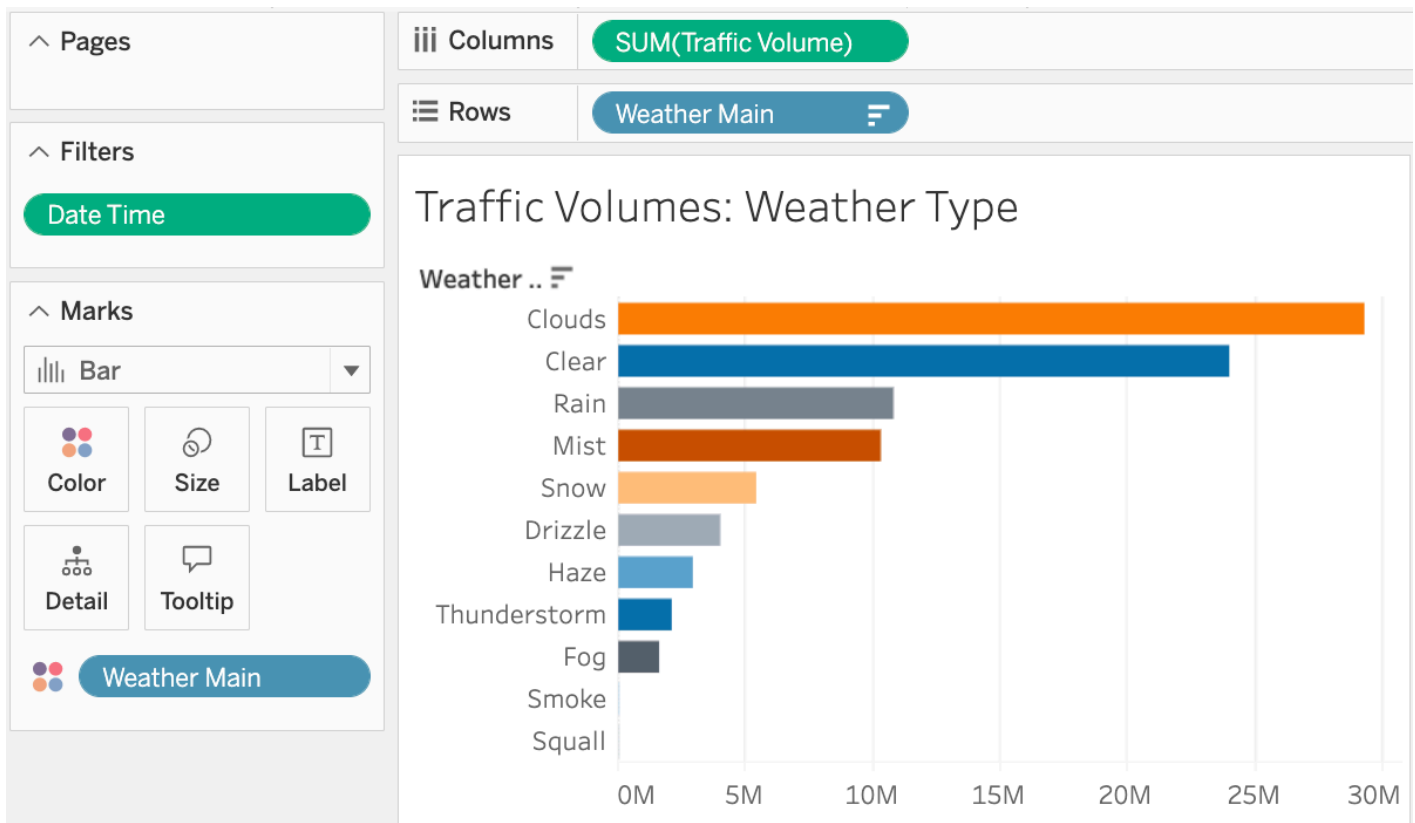
Traffic volumes by hour

This heat map breaks down traffic concentration for each day and hour of each month. As you scroll through visualization, the chart automatically updates to display each month's data. This chart lets you compare each day and hour of traffic to the next, detailing traffic volume down to the hour. Columns in this heat map represent the day of the month and rows represent the time of day. Higher concentrations of traffic are represented by the color of each square in the heat map, with orange demonstrating a higher volume while the darker blue squares indicate less traffic.
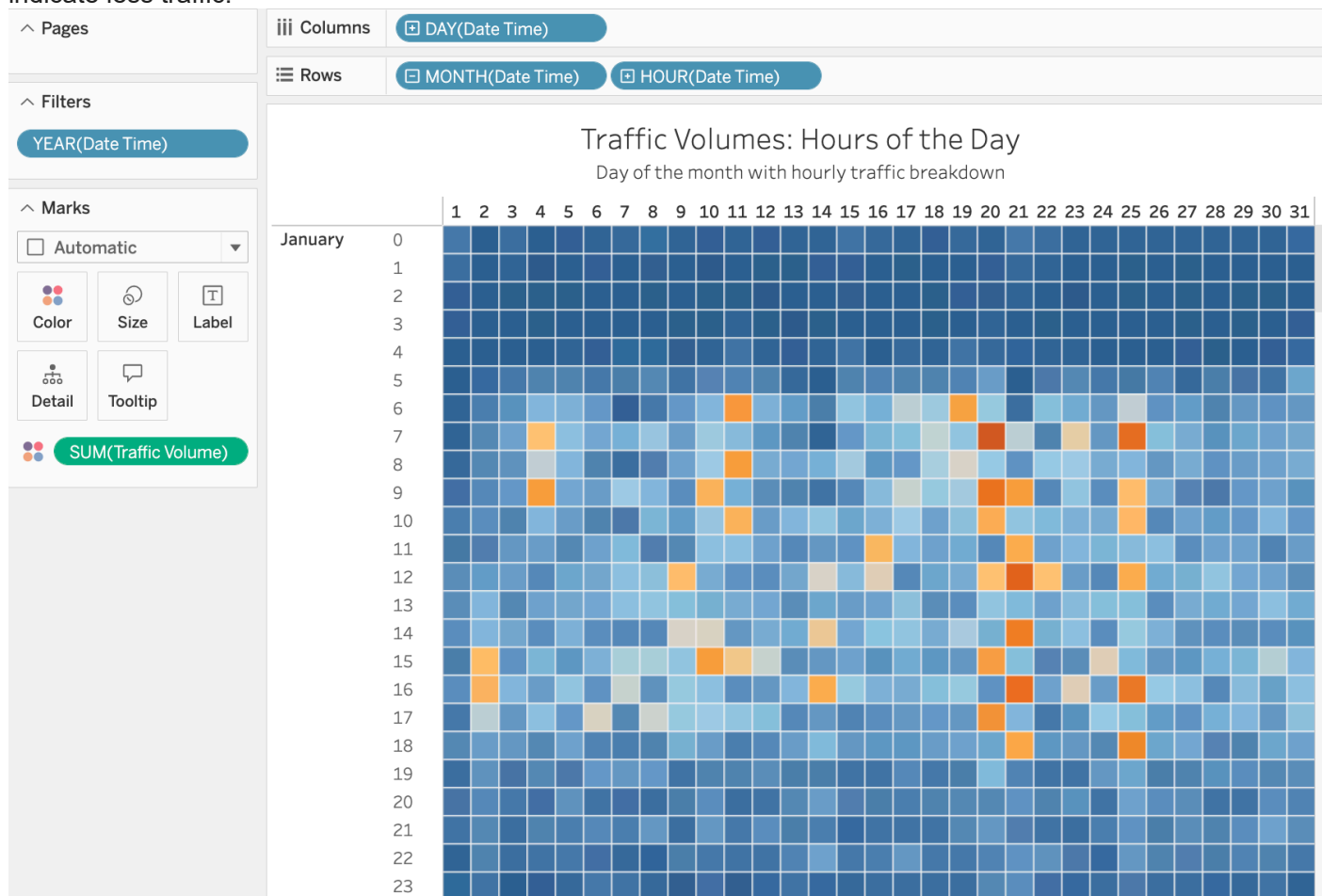
Traffic volumes by weather pattern

This bar chart displays yearly traffic volume grouped by weather type. By including a date time filter that spans the years 2016 through 2018, you can represent total traffic volume for those years and group it by weather type. For example, in those years, there were 24 million cars on the road during days with clear weather, while traffic volume decreased to 10 million during rainy weather. This also answers the stakeholder's question about the effect that weather has on traffic.

Pages

Columns SUM(Traffic Volume)

Filters

Rows Weather Main

Date Time

Traffic Volumes: Weather Type

Marks

Weather ..

	Bar	▼

Clouds
Clear
Rain
Mist
Snow
Drizzle
Haze
Thunderstorm
Fog
Smoke
Squall

Color	Size	Label

Detail	Tooltip

Weather Main

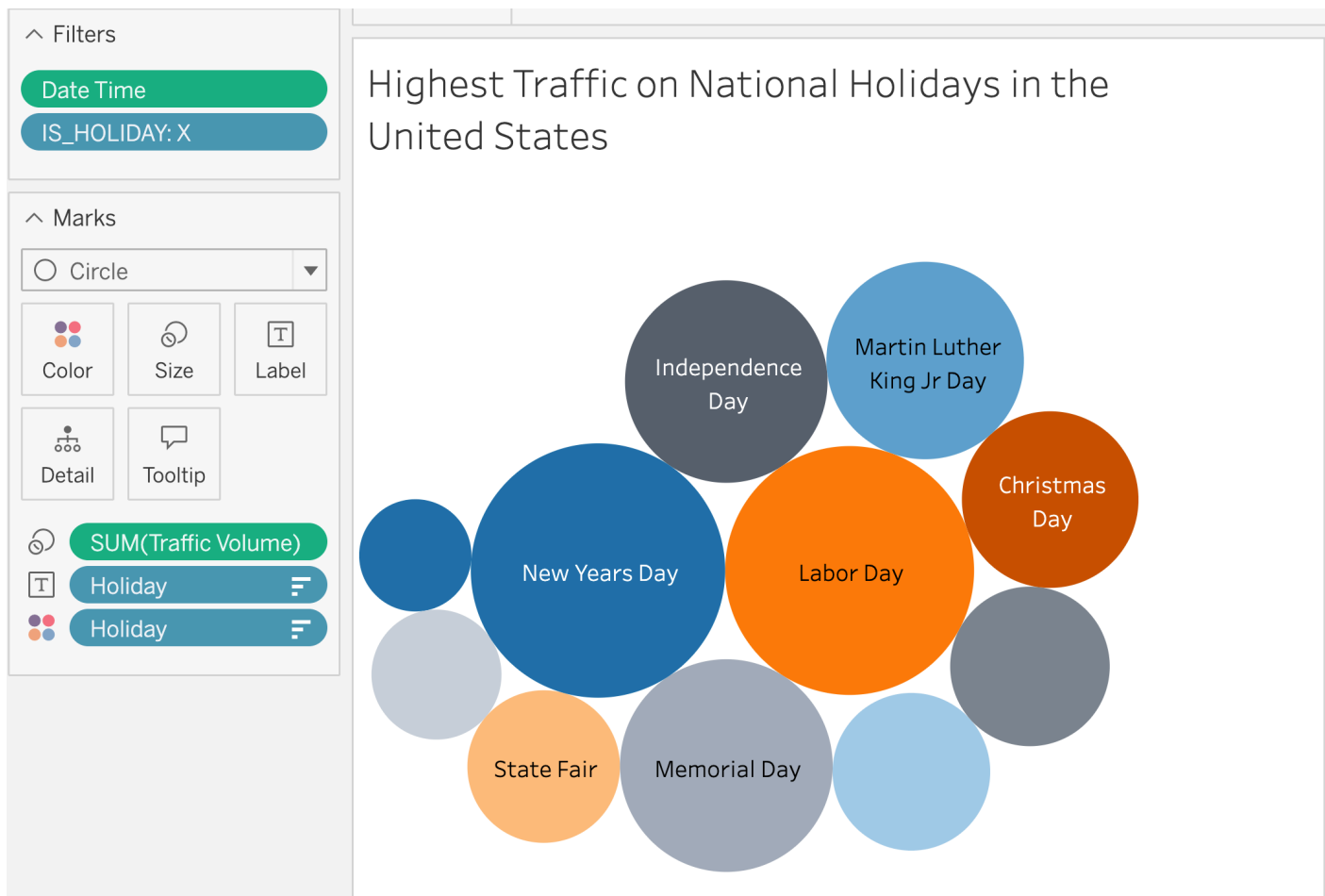0M   5M   10M   15M   20M   25M   30M

Holidays with highest traffic

While examining the data for this project, you might decide that you want to create a new column that specifies which entries are on holidays. To make this chart, you should use the calculation described in the activity: **if [Holiday] = "None" then null else "X" end**. This will create a column that you can use to make a chart that compares only holiday traffic, such as this circle chart.

This chart uses color and size to compare the holidays with the highest traffic. The color represents the holiday, while the size of each circle represents the traffic volume on that holiday. The use of size and color in this way demonstrates relationships between numeric data, and presents it in a compact format.

You could also make a bar chart to represent holiday data, which would provide a more direct comparison. But, this circle format gives you variation among your charts, which can be more engaging for your client. While making individual charts, it's still important to keep in mind the design strategies you'll use for your whole dashboard. If you only use one type of chart for every visualization, your dashboard can be too repetitive and less effective.

Filters

Date Time

IS_HOLIDAY: X

Marks

○ Circle ▾

Color | Size | Label

Detail | Tooltip

SUM(Traffic Volume)

Holiday

Holiday

Highest Traffic on National Holidays in the United States

Key takeaways

In this activity, you examined your stakeholder's needs and made charts to address them. Visualizing BI data is a nuanced process because there are lots of design best practices and data visualization strategies to use together. In upcoming exercises, you'll use the charts you created to make and iterate on a dashboard. Through practice and time, you will develop your own visual style and design process.