

# Activity: Create your charts



## Activity Overview

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In this activity, you will create charts for the roleplay scenario you're working on. You'll visualize data from the Minnesota Department of Transportation to help them improve infrastructure on the Minneapolis interstate.

This activity will help you to brainstorm how to connect stakeholders' business needs to charts and visual designs. You will apply everything that you have learned up to this point about chart design to sketch out a mockup first, and then design functional BI charts. You can begin by reading the hints in this activity, or begin on your own and refer to this activity if you need help.

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

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

As a refresher, you've been tasked with creating a business intelligence visualization to help the Minnesota Department of Transportation improve highway infrastructure. You had a video call with your stakeholder and received an email with details of their needs. Refer to the [Role-play with a stakeholder](#) video and [Email from your supervisor: Chart design](#) reading for more context on the scenario.

The most important charts you need to make should represent the following needs:

- Traffic volume throughout the year; ideally organized by year, month, week, day, and hour
- Traffic volume in various weather conditions
- Traffic volume on different holidays

You now have the freedom to answer however you think is best. You might create one chart for each of these needs, combine them into fewer charts, or create more charts to expand your insights. You might also experiment with different approaches to practice your design strategies. In an upcoming activity, you'll have the opportunity to organize the charts you make into a dashboard.

## Step-By-Step Instructions

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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.

# Part 1 - Plan your charts

## Step 1: Access and examine the data

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

[Metro Interstate Traffic Volume CSV File](#)

## 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 **Metro Interstate Traffic Volume Data.csv** file you downloaded.

## Step 3: Create a mockup

Earlier in this course, you learned how to create a pen-and-paper mockup. Now, you should make one for this dashboard project. It can help you brainstorm the kinds of charts you'll need, as well as the arrangement of those charts in your dashboard.

# Part 2 - Create your charts

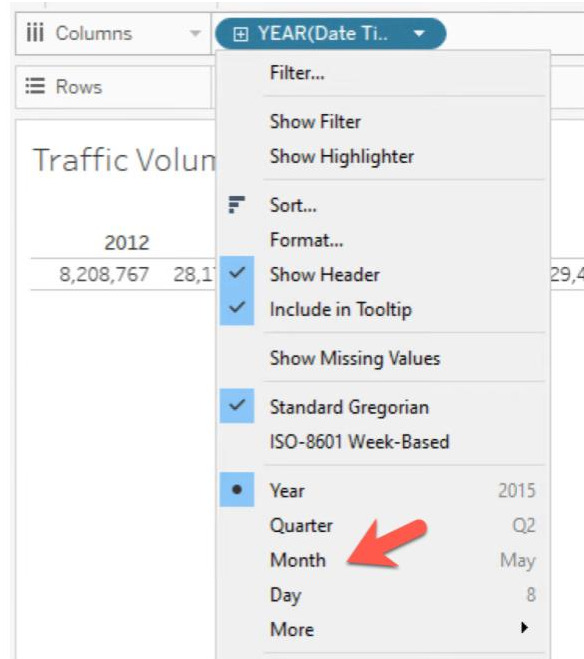
## Step 1: Think about which timescales to include

Your stakeholder wants to be able to view the data at multiple timescales. They want to examine a monthly view to know which days are the busiest, then examine a daily timescale to find which times of day have the highest traffic volume.

Before you begin creating a chart and deciding which timescales to include in your visualization, return to the [email from your supervisor](#). Make sure to evaluate all the timescales that your stakeholder asked for, then determine which charts will be appropriate to use. When you create your charts, ensure that they meet your stakeholders' needs while also being the clearest and most effective solution to their problem. You might decide that one of the timescales won't be very helpful for answering their questions. Or you might determine that all of them are necessary, so you can include all of them in your chart.

## Step 2: Change timescales

To change the timescale, right-click the date dimension you're using. In the dropdown menu, select *Year*, *Quarter*, *Month*, or *Day* to change the timescale of your chart. You can also instruct your stakeholders to do this when they want to switch between timescales.



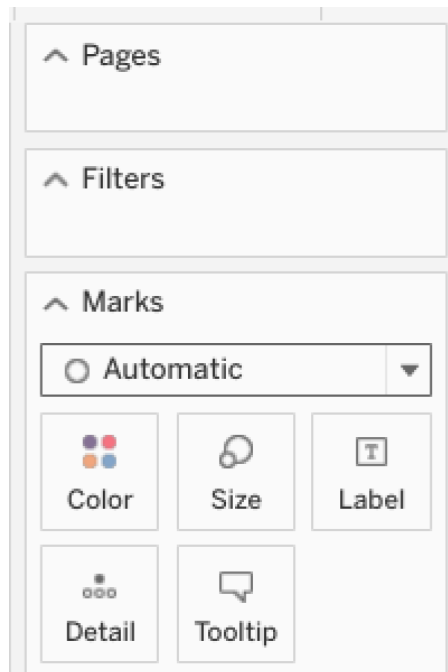
### Step 3: Think about which filters to include

You might find that filters can help you answer your stakeholder's questions. For example, you can use a filter to compare holiday traffic with traffic from normal days.

Before you begin creating a chart and deciding which filters to include in your visualization, return to the [email from your supervisor](#). Review your stakeholder's requests and decide what kinds of filters would be most helpful in your visualization.

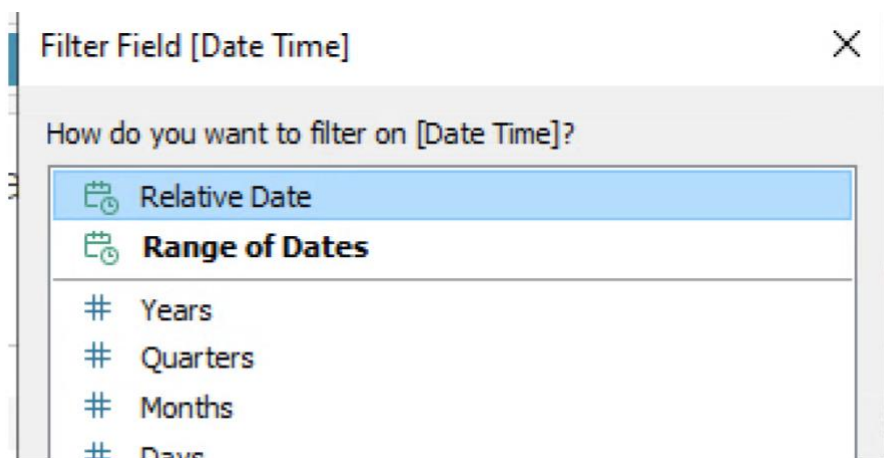
### Step 4: Add filters

To add a filter to your chart, you can drag and drop a dimension into the *Filters* section of the interface.



When you do this, a pop-up menu will open.

An example of this is when you drag the *Date Time* dimension to *Filters*. Then, you can select *Relative Date* to show a range of dates relative to the current date.



Filter [Date Time] X

Relative dates

Range of dates

Starting date

Ending date

Special

Relative dates 1/1/2016 to 12/31/2022

Years

Quarters

Months

Weeks

Days

Hours

Minutes

☐ Previous year

☒ Last 7 years

☐ This year

☐ Next 3 years

☐ Next year

☐ Year to date

☐ Anchor relative to Today
☐ Include null values

Reset

OK

Cancel

Apply

You could use this to show only data from the previous seven days, regardless of the date that you view the chart. You can also select any other specific window of time.

## Step 5: Make calculations

Since your stakeholder asked about the holidays with the highest traffic volume, it might help to make a calculation in Tableau. You used calculations in the analysis stage of the BI process, but you can also use them in visualizations. If you're unsure about what kind of calculations might be appropriate for your charts, refer to the [email from your supervisor](#).

To create a calculated field, click the dropdown arrow for a column in Tableau's data viewer. Select *Create Calculated Field* to open a code window.

Abc	Metro_Interstate_Traffic_Volu...	#	
Weather Descripti...	Date Time	Traffic Volume	
scattered clouds	10/2/2012 9:00:00 AM	5,5	
broken clouds	10/2/2012 10:00:00 AM	4,5	
overcast clouds	10/2/2012 11:00:00 AM	4,7	
overcast clouds	10/2/2012 12:00:00 PM	5,0	
broken clouds	10/2/2012 1:00:00 PM	4,9	
sky is clear	10/2/2012 2:00:00 PM	5,1	
sky is clear	10/2/2012 3:00:00 PM	5,584	

Rename

Reset Name

Copy Values

Hide

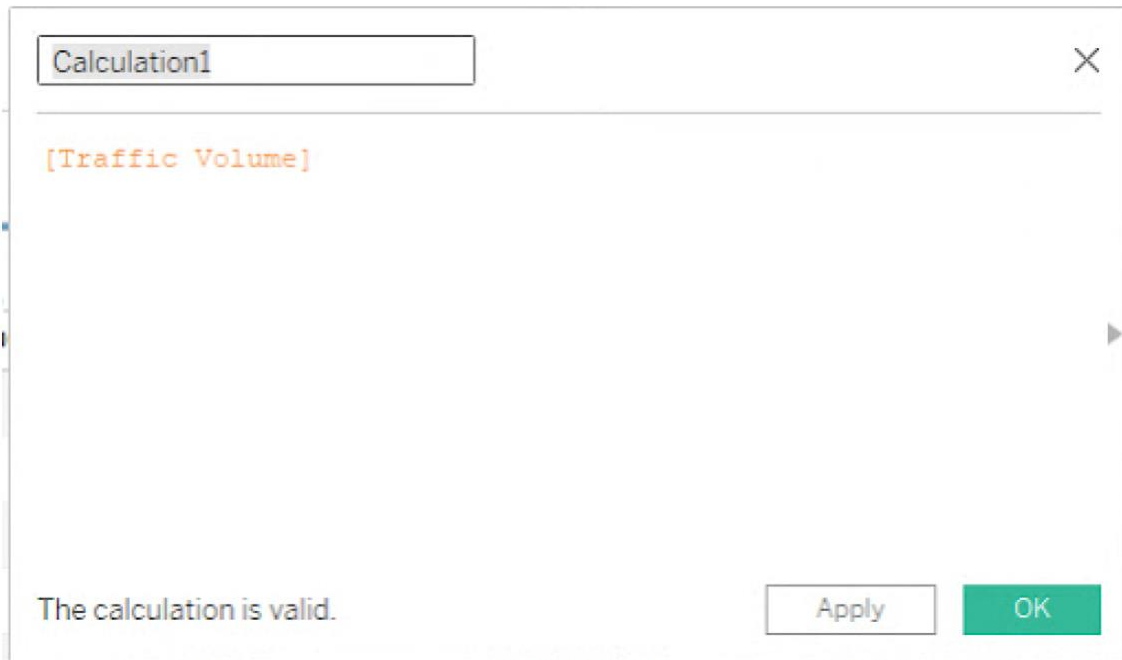
Create Calculated Field...

Create Group...

Create Bins...

Pivot (select multiple fields)

Describe...



In the window, copy and paste the following code:

**if [Holiday] = "None" then null else "X" end**

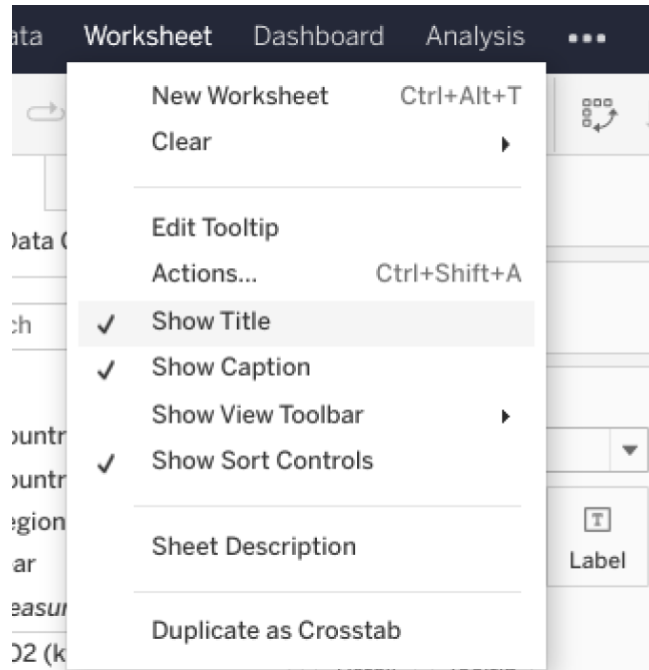
This will create a new column in your data called IS\_HOLIDAY that will have an X value for each holiday and a Null value for each normal day. This column will only exist in Tableau, but you can use it in any charts that visualize holiday data.

Sort fields	Modified									
Abc	#	#	#	#	Abc	Abc	Abc	#	Abc	
Metro, Interstate, Tr...	Metro, Interst...	Metro, Interstate...	Metro, Interstate...	Metro, Interstate, T...	Metro, Interstate, Traffic, Vol...	Metro, Interstate, Traffic, Vol...	Metro, Interstate, Traffic, Vol...	Metro, Interstate, Traffic...	Calculation	
Holiday	Temp	Rain 1H	Snow 1H	Clouds All	Weather Main	Weather Descripti...	Date Time	Traffic Volume	IS_HOLIDAY	
New Years Day	249.36	0	0	1	Clear	sky is clear	1/1/2018 12:00:00 AM	1,478	X	
New Years Day	265.94	0	0	90	Snow	light snow	1/1/2016 12:00:00 AM	1,513	X	
New Years Day	270.62	0	0	90	Snow	light snow	1/2/2017 12:00:00 AM	798	X	
None	293.17	0	0	1	Clear	sky is clear	10/2/2012 3:00:00 PM	5,584	null	
None	293.86	0	0	1	Clear	sky is clear	10/2/2012 4:00:00 PM	6,015	null	
None	294.14	0	0	20	Clouds	few clouds	10/2/2012 5:00:00 PM	5,791	null	

## Step 6: Add captions

Accessibility is an essential part of building tools that everyone can use. Tableau has a built-in caption generator that automatically describes the details of your chart.

To enable captions, click *Worksheet* from the main toolbar. Then select *Show Caption* from the dropdown.



This will generate a caption, which you can edit or reformat to suit your needs.

### **Pro Tip: Save your charts**

Finally, be sure to save your charts. You will use them to create a dashboard in an upcoming activity, and you can use them in your professional projects.

## **What to Include in Your Response**

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

- Charts answer business questions from the scenario.
- Charts use more than one style.
- Charts use proper titles, labels, and color schemes.
- Charts are built using a pen-and-paper mockup as a reference.
- Optional: Charts use at least one of the tips in this activity.