

Tableau Essentials II | Exercise 10: Global Terrorism

Exercise 10: Global Terrorism Time Based Data

Objectives

- 1. Create a calendar filter
- 2. Gain intuition regarding date parts (discrete) versus date values (continuous).
- 3. Gain experience with date calculations and custom dates

Building a Calendar Chart

For this dates exercise, we are going to build a filter in the form of a calendar. You can select an entire month or a series of days to create a subset of data on your dashboard. Let's create this dashboard step-by-step:





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- 1. Open the Tableau starter workbook called **Exercise 10 Global Terrorism Starter** in the Exercise Starter Workbooks folder. The data set you will use for this exercise represents world-wide terrorist events from 1970 to 2017 and is taken from the Global Terrorism Database (GTD).
- 2. First, navigate to your Data Source tab. You'll notice that there are two sheets in this dataset. One represents global terrorist attacks, called 'GTD (1970-2017),' and the other, called 'Date Master', contains the date for every single day from 1970 to 2017, regardless of whether an attack occurred on that specific date. This is so that when we build our calendar, a mark for every day appears in the calendar even if a terrorist event did not occur.
- 3. Drag 'Date Master' into your data source and then join 'GTD (1970-2017)' to 'Date Master' with a left join by the respective date fields. You will need to specify on which fields to perform the join.



Question 1: Why are we performing a left join here?

 To start building the calendar, add Weekday(Dates) onto Columns, Week(Dates) onto Rows and Day(Dates) onto Text to create a crosstab. Remember to use the Dates field from the 'Date Master' table.



Pages	iii Columns	W	EEKDAY(D	ates)					
	⊞ Rows	W	EEK(Dates	;)					
Filters	Calendar	r Filter							
					Dates				
	Week of Da	Sunday	Monday	Tuesday	Wednes	Thursday	Friday	Saturday	
Marks -	Week 1	1	12	123	12 …	12 …	12…	12 …	^
T Automatic V	Week 2	23 …	34 …	4 5 …	56	67 …	78 …	89…	
Color Size Text	Week 3	9	10 …	11 …	12	13 …	14 …	15 …	
Detail Tooltip	Week 4	16 …	17 …	18 …	19 …	20 …	21	22 …	
I DAY(Dates)	Week 5	23 …	24 …	25 …	1 …	12…	12…	12…	
	Week 6	12…	12…	12…	23 …	34 …	4 5 …	56…	

5. Right-click on the header field **Weekdays(Dates)** and select **format**. Choose **First Letter** and then **center align**.

Create Parameter			×
Name: Calendar Sel	ector		Comment >>
Properties			
Data type:	Date 🔻]	
Current value:	12/1/2017]	
Display format:	December 2017 ~]	
Allowable values:	◯ All ◯ List		
Range of values			
Minimum: 1/	1/1970	Set from	Parameter 🕨
Maximum: 12	2/31/2017	Set fro	om Field 🕨 🕨
Step size: 1	Months		
		ОК	Cancel

6. Next, create a date parameter called **Calendar Selector**.

To format the date with only the month and year, select that format from the **Display format** drop-down box. Under **Range of values**, click Set from Field and choose the **Dates** field from the primary table, 'Date Master,' and select a **Step size** of 1 Month.

7. Once you've created the parameter, right-click on the parameter in the Data Pane and select **Show Parameter Control.** To modify the parameter control's appearance, rename



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the parameter to **Select A Month** and use the down arrow on the parameter control and select **Customize**. Unselect **Show readout** to remove the text.

	Select A Month
	Edit Parameter
	✓ Show Title
F S	Edit Title
12 12	Format Parameters
Show readout	Customize 🕨
Show slider	Slider -O-
Show buttons	Type In 🛛 🕬
16 17	× <u>H</u> ide Card

8. Next, create a custom date field for continuous months. Remember to select **Date Value** for a continuous field.

Month Filter	×
[Dates (Continuous Months)] = [Select a Month]	
	4
The calculation is valid. Apply	ОК

9. Call it Month Filter. Drag this field onto the Filters card and show only true.

iii Columns	WE	EKDAY(Dat	tes)					
I Rows	WE	EK(Dates)						
Calendar	Filter			Dates				Select a Month December 2017
Week of Da	S	М	т	W	т	F	S	
Week 48						1	2	
Week 49	3	4	5	6	7	8	9	
Week 50	10	11	12	13	14	15	16	
Week 51	17	18	19	20	21	22	23	
Week 52	24	25	26	27	28	29	30	
Week 53	31							
	E Rows Calendar Week of Da Week 48 Week 49 Week 50 Week 50 Week 51 Week 52	E Rows WE Calendar Filter Week of Da S Week 48 Week 50 10 Week 51 17 Week 52 24	Rows WEEK(Dates) Calendar Filter Week of Da S M Week 48 Week 50 10 Week 51 17 Week 52 24	Image: Rows WEEK(Dates) Calendar Filter Week of Da S M T Week 48 Week 49 3 4 5 Week 50 10 11 12 Week 51 17 18 19 Week 52 24 25 26	Image: Rows WEEK(Dates) Dates Calendar Filter Dates Week of Da S M T W Week 48 Week 49 3 4 5 6 Week 50 10 11 12 13 Week 51 17 18 19 20 Week 52 24 25 26 27	Image: Rows WEEK(Dates) Calendar Filter Dates Week of Da S M T W T Week of Da S M T W T Week of Da S M T W T Week 49 3 4 5 6 7 Week 50 10 11 12 13 14 Week 51 17 18 19 20 21 Week 52 24 25 26 27 28	Image: Rows WEEK(Dates) Dates Dates Week of Da S M T W T F Week of Da S M T W T F Week 48 1 <td>Image: Rows WEEK(Dates) Dates Dates Week of Da S M T W T F S Week of Da S M T W T F S Week of Da S M T W T F S Week 48 1 2 2 Week 50 10 11 12 13 14 15 16 Week 51 17 18 19 20 21 22 23 Week 52 24 25 26 27 28 29 30</td>	Image: Rows WEEK(Dates) Dates Dates Week of Da S M T W T F S Week of Da S M T W T F S Week of Da S M T W T F S Week 48 1 2 2 Week 50 10 11 12 13 14 15 16 Week 51 17 18 19 20 21 22 23 Week 52 24 25 26 27 28 29 30

10. To create the title for the calendar, drag **Year(Dates)** and **Month(Dates)** to **Detail** so we can use the **Insert** option on the **Edit Title**.



Edit Title	×
Tableau Light ✓ 15 ✓ B I U I <td>ert 🕶 🗙</td>	ert 🕶 🗙
<month(dates)><year(dates)></year(dates)></month(dates)>	
Reset OK Cancel	Apply

- 11. Now it's time to format! Perform the following steps to format the calendar like the first image:
 - a. Right-click on the title and select **format** to add a thin grey border.
 - b. Right-click on the row header and unselect **Show Header**.
 - c. Right-click on **Dates** at the top of the table and select **Hide Field Labels for Columns.**
 - d. Change the mark type to square with white borders and adjust the mark size, width and height in the table to get a square that fills the entire space.
 - e. Center-align your labels
 - f. Remove the line beneath the table and the weekday initials by going to **Format** and then **Borders** and turn off **Row Dividers**.



12. Now that we have created the calendar using 'Sheet 1', we can begin using the **Date** field from 'GTD (1970-2017)'. Create the following calculated field:



Attack Occurred?			×
DAY([Date])>0			
The calculation is valid.	1 Dependency 🔻	Apply	ОК

Add the field to the Colors card. This will show which days on the calendar had terrorist events and which did not. You are now finished creating the calendar! The next step will be adding it to a dashboard and using it to filter a view.

Pages	iii Colu	mns		WEEKD	AY(Date	es)			
	E Rows	5							
Filters	April	197	8						Select a Month
Month Filter: True	S	М	т	W	т	F	S		
Marks							1		
Square V	2	з	4	5	6	7	8		Null True
Color Size Label	9	10	11	12	13	14	15		
Detail Tooltip	16	17	18	19	20	21	22		
Attack Occurr	23	24	25		27	28	29		
oto ☐ YEAR(Dates) oto ☐ MONTH(Da T DAY(Dates)	30							•	

Apply Calendar Filter

 To use the calendar as a filter, you will need to create a view on which you'd like to filter by month and date. Create the following map applying Latitude and Longitude to the Columns and Rows shelves, City and Exact Date to Detail, # Fatalities to Size and Attack Type to Color.



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- 2. Next, create a new Dashboard and position your calendar and map as shown in the first image of this exercise. You may need to hide or resize items.
- 3. Once you have your dashboard arranged correctly, the last step is applying filters to allow the map to be filtered by the calendar. Select the filter icon in the top right corner of the calendar on your dashboard to select 'Use as filter'. Now, you can select days on your calendar and your map will filter only attacks that occurred on that day.





4. When no days are selected, however, the map shows all terrorist events and we'd like only terrorist events that occurred in the given month/year to be shown. To do this we must go back to the map view and put **Month Filter** on the Filters card and set the filter to 'True' values only.



Now you've created a calendar filter for your dashboard!

