Data Analytics

Dashboards in Tableau

GENERAL ASSEMBLY

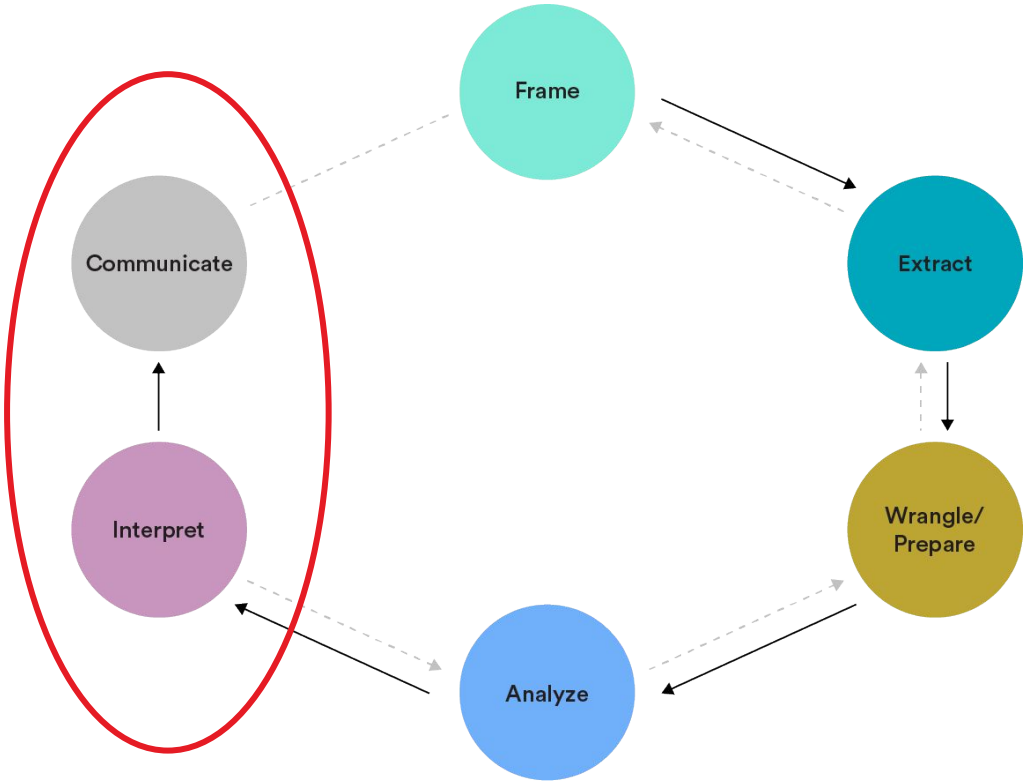
Our Learning Goals

- Apply visual analytics best practices.
- Design interactive dashboards with
  - Parameters
  - Advanced filters
  - Layout containers
  - Dashboard actions

The DA Workflow

Interpret: Leverage your analysis to make decisions and recommendations.

Communicate: Present data-driven findings and insights in a compelling manner.



Discussion:

Dashboards in Tableau

Open **Superstore Dashboard** from today's workbook.

Let's take a look at this dashboard and identify the key elements on display.

What do you notice? What would you like to see that's not already on the dashboard?

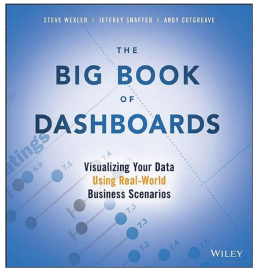
Dashboards in Tableau

Visual Analytics

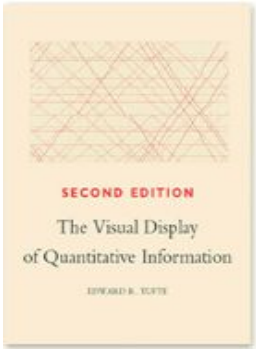
Data Analysis and Visualization Best Practices

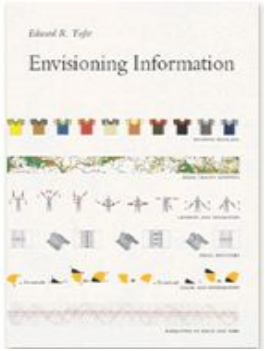
Best Practices, from Trusted Industry Leaders:

- **"The Big Book of Dashboards:** Visualizing Your Data Using Real-World Business Scenarios" by Andy Cotgreave, Dr. Jeffrey Shaffer, Steve Wexler



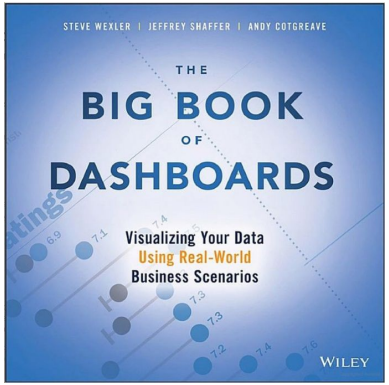
- **Edward Tufte's** Visual Display of Quantitative Information, and Envisioning Information





Shaffer's Four Cs from The Big Book of Dashboards

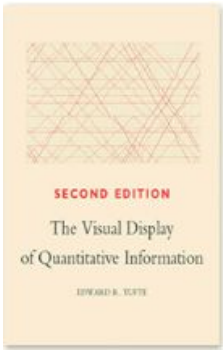
- **Clear**
  - Who is the **audience**? What is the call to action?
  - Clarity is more important than aesthetics.
- **Clean**
  - Labels, axes, gridlines, formats, color choice and chart type**.**
- **Concise**
  - Balance of elements across the viz.
  - Be brief and to the point.
- **Captivating**
  - Does it capture attention? Does it tell a story?

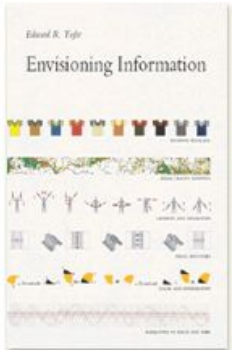


Reminder: Guidelines for Visualizing Information

From Edward Tufte, the world's leading authority on data visualization:

1. **Graphical excellence**: Provide the user with "the greatest number of ideas, in the shortest time, using the least amount of ink, in the smallest space."
2. **Visual integrity**: No distorting of the data and no false impressions of the interpretation.
3. **Maximizing the data-ink ratio**: Remove all superfluous visual elements.
4. **Aesthetic excellence**: Focus on the simplicity of design to evoke the complexity of data clearly.





Source: Interaction Design Foundation

Data Analytics Best Practices

- **Who is your target audience?**
  - Consider their level of detail and focus on their top concerns (KPI's, Service Level Agreements).

- **What's the purpose of the analysis?**
  - Recommendation or analysis of a hypothesis? Or providing a tool for managing data?

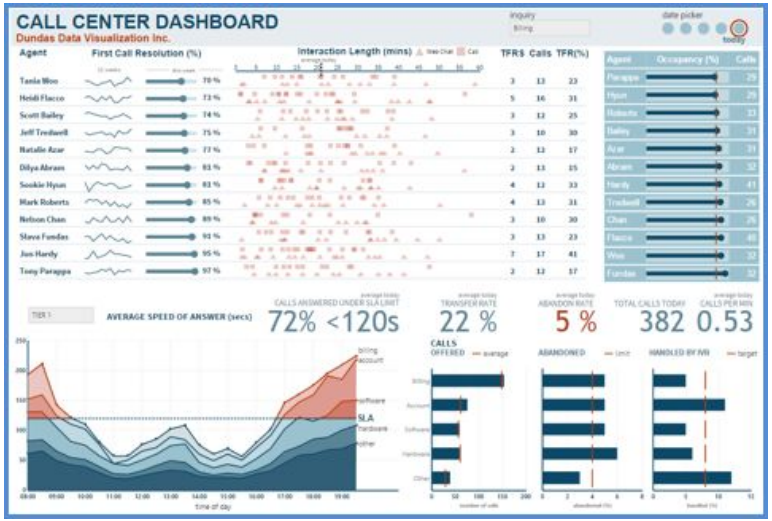
- **Consider target resolution**
  - Desktops or mobile devices?

Data Analytics Best Practices:

Different Visualizations for Different Audiences

Executive

Technical Manager



Dashboards in Tableau

Parameters

Discussion:

Figuring out the Top N

The stakeholders at Superstore want to know which products are the “tops,” but can’t agree whether to look at these by **Top 10**, **Top 20**, or **Top 100**!

How would you, the analyst, come up with a solution that will allow them to look up sales based on whichever “top” level they need?

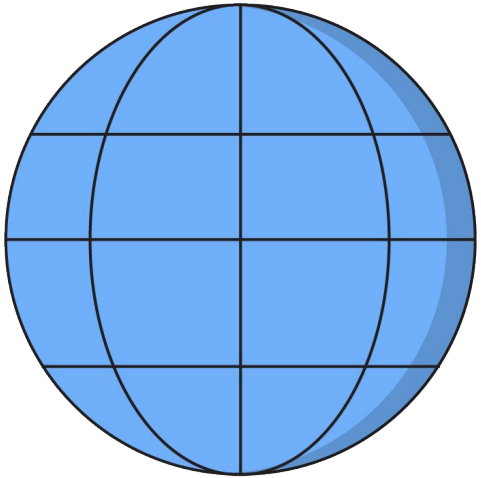
Source: giphy.com

Meet Parameters

A parameter is **a data point that is not in the data set**. It's an outside input, containing a **global *placeholder* value** (i.e. a number, date, or string) that can replace a constant value in a calculation, filter, or reference line.

What makes it cool?

Parameters allow your stakeholders to interact with your report by manipulating inputs to see how the results will change.

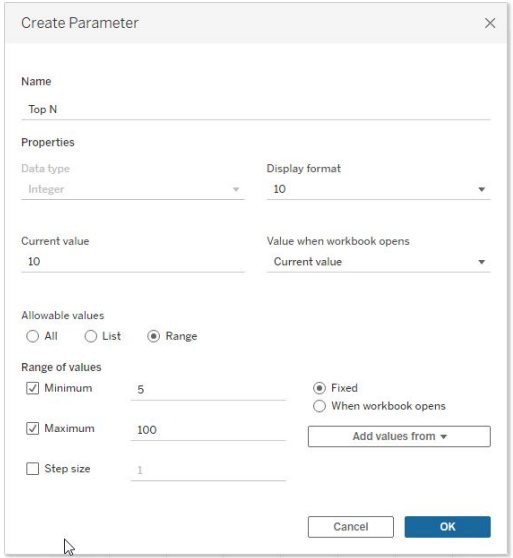


Source: Tableau

Guided Walk-Through:
Creating a Parameter for Superstore

Let's create a parameter for our Superstore stakeholders so they can easily change the input of Top N. First, let's complete **Guided Practice_01** in the **Tableau_Lesson_3_Activities.twbx** workbook.

1. Edit **Title** to **Top N Products.**
2. Move **Product Name** to **Rows**. Add all members.
3. Move **Sales** to **Columns**.
4. Click the dropdown on **Product Name** in **Rows**, choose **Filter**.
5. Click the **Top** tab. Choose **By field**.
6. Click the dropdown on **10** next to **Top**. Choose **Create a New Parameter**.
7. Name the parameter **Top N**.
8. Enter the minimum (5) and maximum (100) for **Top,** click **OK**.
9. Click the dropdown on the **Top N** parameter and choose **Show Parameter**.



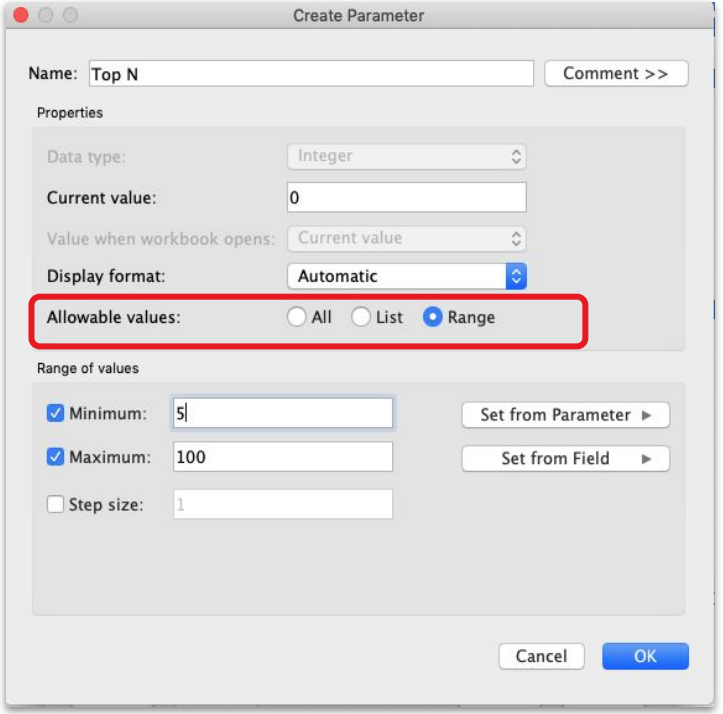
Source: Tableau

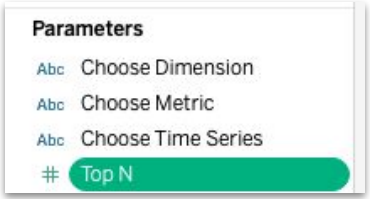
Guided Walk-Through:
Selecting the Value for the Parameter

Parameters can accept a variety of values:

- **All**: The parameter control is a user-entered text field.
- **List:** The parameter control provides a list of possible values to choose from.
- **Range:** The parameter control allows you to select values within a specified range.

We chose **Range**. Parameters can be found in the **Parameters** section at the bottom of the **Data** pane. Well done!





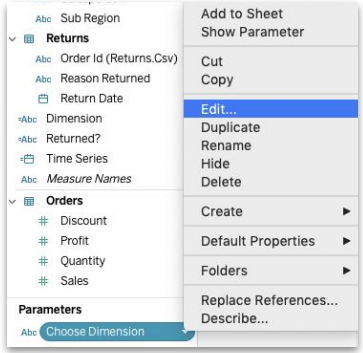
Source: Tableau

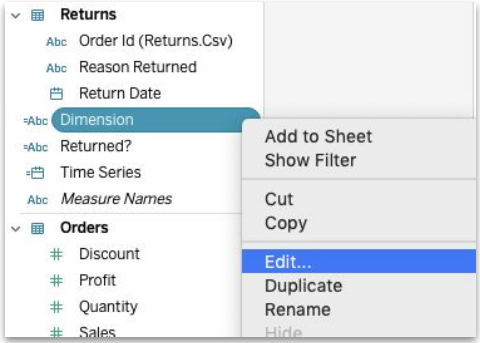
Partner Exercise:

Investigating Existing Parameters

In some examples, we'll want to use parameters to control which dimension and/or measure are shown.

1. With your partner, click on the **Choose Dimension** parameter dropdown and see how it was created. Discuss whether or not there should be more values available.
2. Next, click on the **Dimension** dropdown and see how it interacts with the **Choose Dimension** parameter.
    - **How would you add more options?**





Be prepared to share your answers with the class.

Group Exercise:

Parameters and Calculated Fields for Superstore

Let's add a new value to the the **Choose Dimension** parameter and update the **Dimension** calculated field. Go to **Group Practice_01** in today's workbook.

1. Click the dropdown on the **Choose Dimension** parameter. Choose **Edit.**
2. Add **Subcategory** under **Value**. Click **OK.**
3. Click the dropdown on the **Choose Dimension** parameter. **Show Parameter**.
4. Click the dropdown on the **Dimension** calculated field. Choose **Edit**.
5. Add an **ELSEIF** line for Subcategory. Click **OK**.

```
ELSEIF [Choose Dimension]="Subcategory"
then [Sub Category]
```

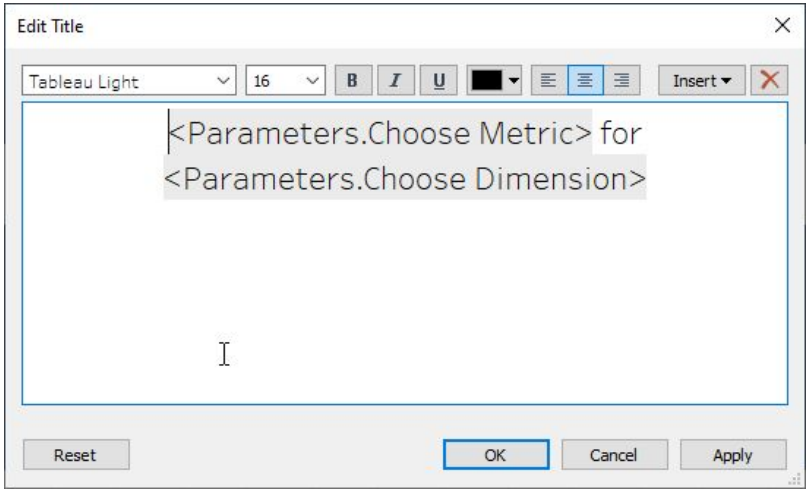
Source: Tableau

Group Exercise:

Parameters and Calculated Fields for Superstore (cont.)

Let's see how **Choose Dimension** parameter and the **Dimension** calculated field work together for Subcategory. Continue on **Group Practice_01**.

1. Drag **Dimension** to **Rows**.
2. Drag **Metric** to **Columns**.
3. Click the dropdown on the **Choose Metric** parameter. **Show Parameter**.
4. Click the dropdown on the **Choose Dimension** parameter. **Show Parameter**.
5. Change the title to use **Insert** to choose **Parameters.Choose Metric** and **Parameters.Choose Dimension** to allow the title to change dynamically.



Source: Tableau

Discussion:
In Your Own Words...

What is the difference between a parameter and a filter?

Dashboards in Tableau

Advanced Filters

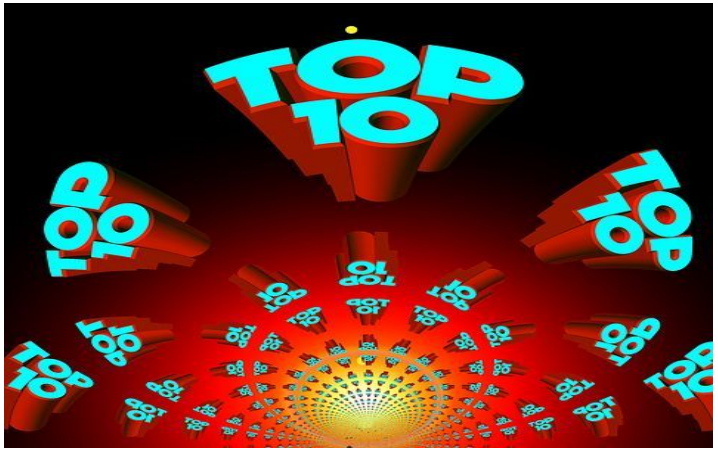
Discussion:

Which Regions Have the Highest Sales?

Let's revisit the visualization we made earlier. Your stakeholders at Superstore are interested in learning more about how sales are doing in different regions.

In particular, they want to know the **top 10 performing regions**.

How will you use Tableau to sort through **1 million rows of data** to identify the regions?



Source: pixabay.com

Guided Walk-Through:
Finding the Top 10 Regions

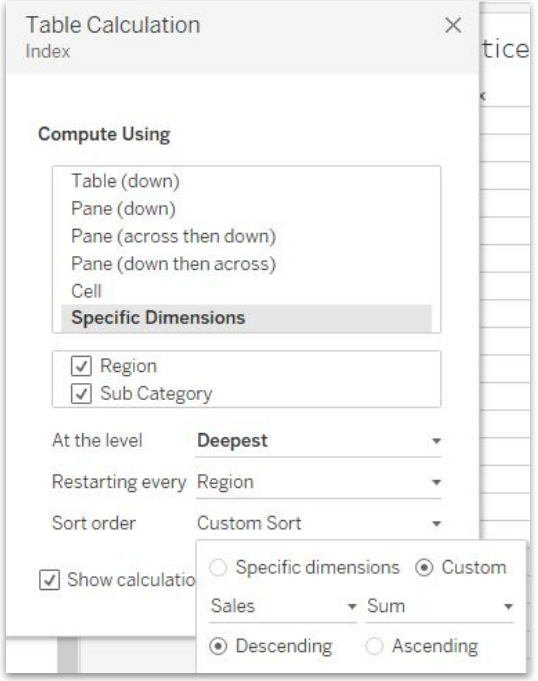
To create the initial view, go to **Guided Practice_02** and place **Region** and **Sub Category** on **Rows** and **SUM(Sales)** on **Columns**.

1. Select **Analysis** > **Create Calculated Field**.
2. Name the calculation "**Index**" and enter the calculation: `INDEX()`.
3. Click **OK**. In the **Measures** pane, right click **Index** and select **Convert to Discrete**.
4. Place **Index** on **Rows**, between **Region** and **Subcategory**.
5. Add **Region** to **Filters** and uncheck **Null**.
6. Right click **Index** on **Rows** and select **Edit Table Calculation**.
7. Under **Compute Using**, select **Specific Dimensions**.
8. Under **Restarting Every**, select **Region**.

Source: Tableau

Guided Walk-Through:
Finding the Top 10 Regions (cont.)

9. Under **Sort Order**, select **Custom** and enter the following options: **Sales** (for Field)**, Sum** (for Aggregation)**, and Descending** (for Order).
10. Click the X to return to your visualization.
11. Drag **Index** from Rows to **Filters**. Choose **Use All**.
12. On the **Filters** shelf, click **Index** and select **Continuous**.
13. In the dialog box, type the range of values for your top 10, then click **OK**.
14. Show the **Index** filter to allow users to choose Top N.
15. On the filter at the right, Click the dropdown to **Edit Title** from AGG(Index) to **Top N by Region**.
16. Change the Title to **Top Subcategories by Region**.

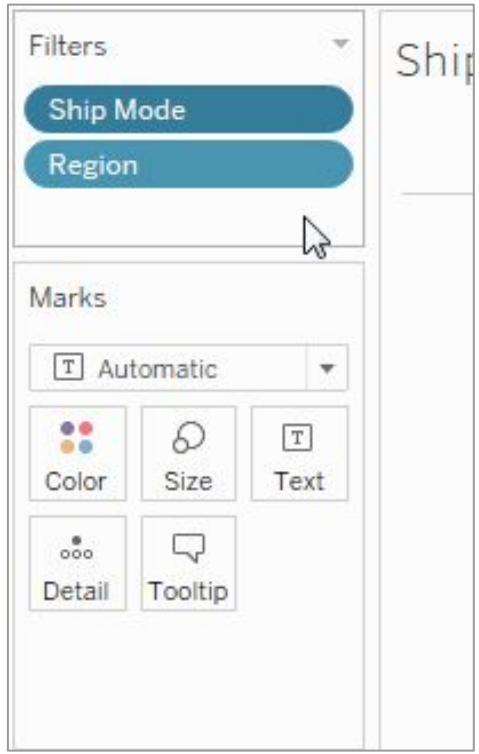


Source: Tableau

Context Filters

Over time, as you continue to apply new filters to a large data set, your queries can begin to *slow down*.

To optimize the query performance, you can use a **context filter** by adding context to a filter. This will process only the data that passes through the context filter.



Context filters are applied to the underlying data set, so any filtered values won't appear in calculations either.

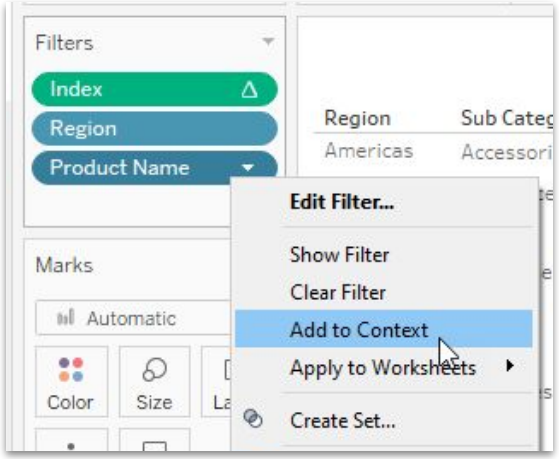
Source: Tableau

Guided Walk-Through:

Adding a Context Filter to the Top 10 Subcategories

Let's head back to the Top Subcategories by Region and add a context filter to help us find the **top-selling products** in these regions.

1. Right click on your **Guided Practice_02** tab and click **Duplicate**. Rename the resulting tab **Guided Practice_03**.
2. Then, move **Product Name** to the **Filters** shelf. Choose the **Top** tab, choose **Top 100 by Sum of Sales**, and click **OK**.
3. Right click on the **Product Name** in the **Filters** shelf and choose **Add to Context**. Your visualization may not change.



Tips For Optimizing Context Filters

1

Quality over quantity: Using a single context filter that significantly reduces the size of the data set is much better than applying many context filters.

2

Be a completionist: Finish modifying your data before creating a context.

3

Set the necessary filters for the context and create the context *before* adding fields to other shelves.

4

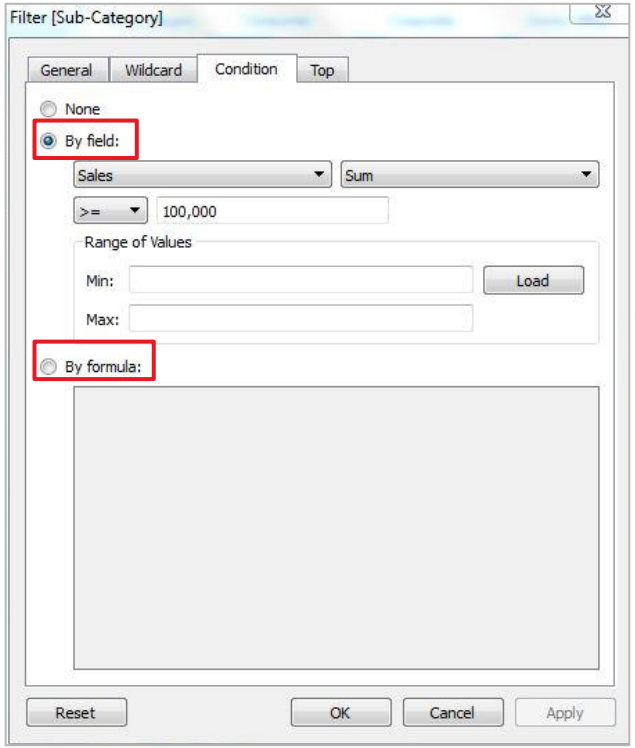
Use a continuous date if you want to set a context filter on a date. However, using date bins such as **YEAR(date)** or **context filters on discrete dates** are also very effective.

Conditional Filters

Conditional filters involve applying *conditions* to existing filters — similar to "selecting specific boxes" in an Excel filter.

Here is an example: Create a filter for **Sales**, with the **condition** that the **sum (of Sales) is >= $100,000.**

The conditional filter will only display data points in your results sheet that meet the **criteria set in the condition**.



Source: Tutorials Point

Guided Walk-Through:

Conditional Filters by Field

Let's create a calculated field to check whether the Time to Ship was more than our standard three days and put it in the filter to exclude those entries. Use **Guided Practice_04** to create a new visualization that shows **the average Time to Ship by Subcategory.**

For our filters:

1. Create a new calculated field named **"Time to Ship Filter"**.
2. Enter the calculation: `[Time to Ship] > 3` and click **OK**.
3. Drag this new field to the **Filters** shelf and choose **"False"**.

Discussion:

Context Vs. Conditional

Given the following scenarios, how do you determine when to use context filters and when to use conditional filters (or both)?

Scenario 1

You only want to calculate sales for the United States.

Scenario 2

You only want to see sales for salespeople who have made over $1M lifetime sales.

Scenario 3

You only want to see sales for items that cost more than $1,000.

Partner Exercise:

Bringing It All Together

Working with a partner, follow the instructions laid out in the following tabs in your workbook:

- **Partner Exercise_01**
- **Partner Exercise_02**
- **Partner Exercise_03**

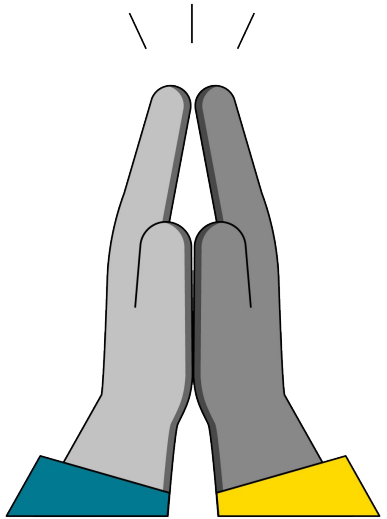


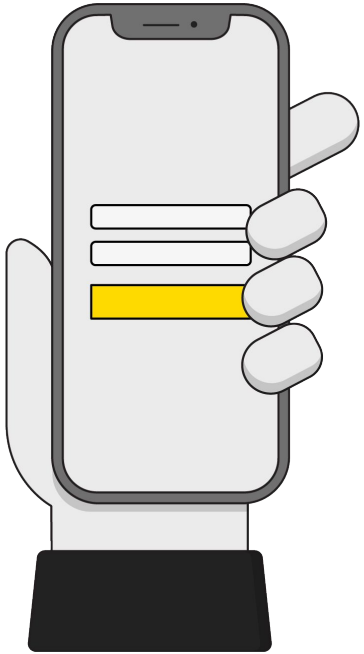
Image Source: imgflip

Dashboards in Tableau

Dashboard Design

Discussion:
What Do They Have in Common?

2 minutes



What Do Dashboards Do?

Source: McKinsey: [The New Consumer Decision Journey]

Steps to Designing an Effective Dashboard

Collect Requirements	Choose Charts and Prototype	Verify Charts are Effective	Gather Feedback and Reiterate
Collect requirements and assess the need. • Identify 5 key questions the dashboard can answer or result in action. • Determine level of granularity needed. • Identify the audience.	Choose the charts and make a prototype of the charts to use (even if it is sketching on paper). • Trends over time (Line Charts) • Comparison (Bar Charts) • Correlation (Scatterplot) • Other chart types	Charts should be effective, not misleading, and tell the right data story. • Look at chart design best practices. • Tableau has a white paper on visual analytics on best practices.	Gather feedback from the users on the dashboard and reiterate as needed. • Dashboards should answer key questions • Charts should be easy to understand • Improve the design via feedback

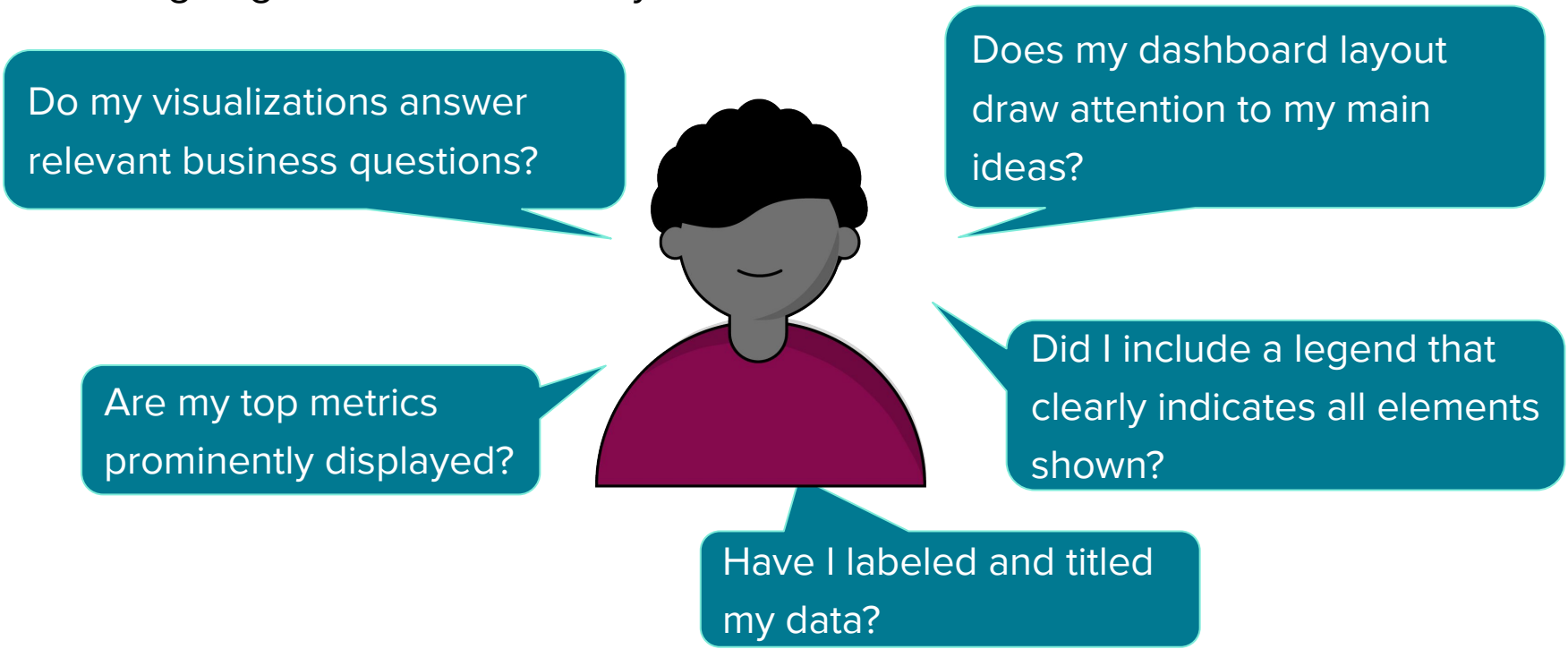
Dashboard Design: Guiding Questions

When collecting requirements and determining data sets, consider:

1. Are we trying to answer specific questions or monitor different events?
2. What is the root or key cause(s) of our question/problem?

Dashboard Design: Guiding Questions

When designing visualizations, ask yourself:



Discussion:

Collecting Dashboard Requirements

What were some of the requirements you had when deciding on a data set for your final or earlier projects?

Did the requirements in some way inform your visualization choices? If so, how?

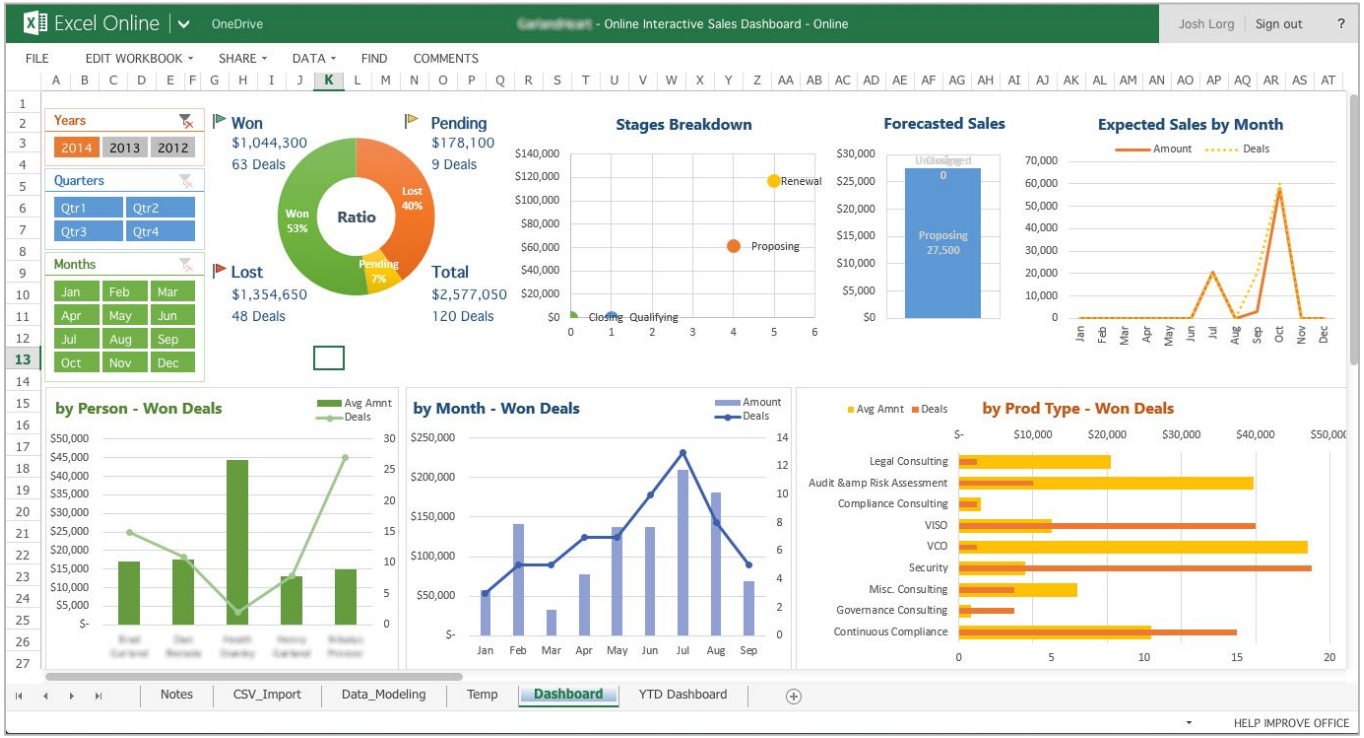
Dashboard Design Best Practices

- **The Five-Second Rule**: Show relevant information in five seconds.
- **Logical Layout With the Inverted Pyramid**: With the most significant insights at the top, trends in the middle, and granular details at the bottom.
- **Less Is More:** No more than five to nine visualizations per dashboard.
- **Choose the Right Visualization:** Based on your use case.
- **Your End Users**: Always consider how they'll use the dashboard you designed.

Source: Dashboard Design Best Practices

Discussion:

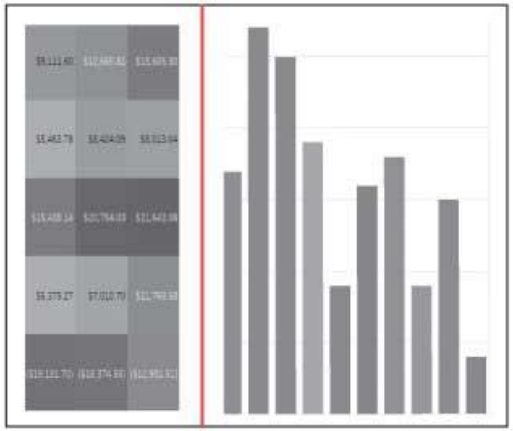
How Does This Dashboard Do?



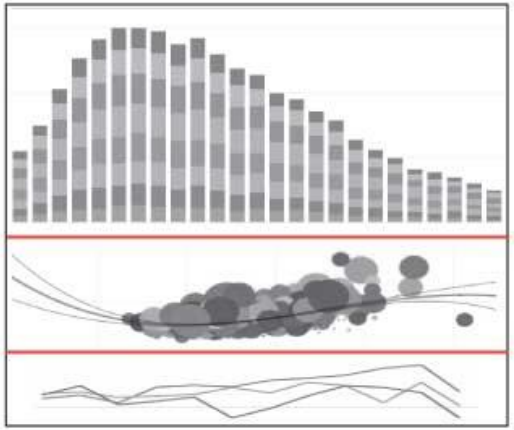
Layout Containers in Tableau

Layout containers let you group related dashboard items together so you can quickly position them. There are two types of layout containers:

Vertical

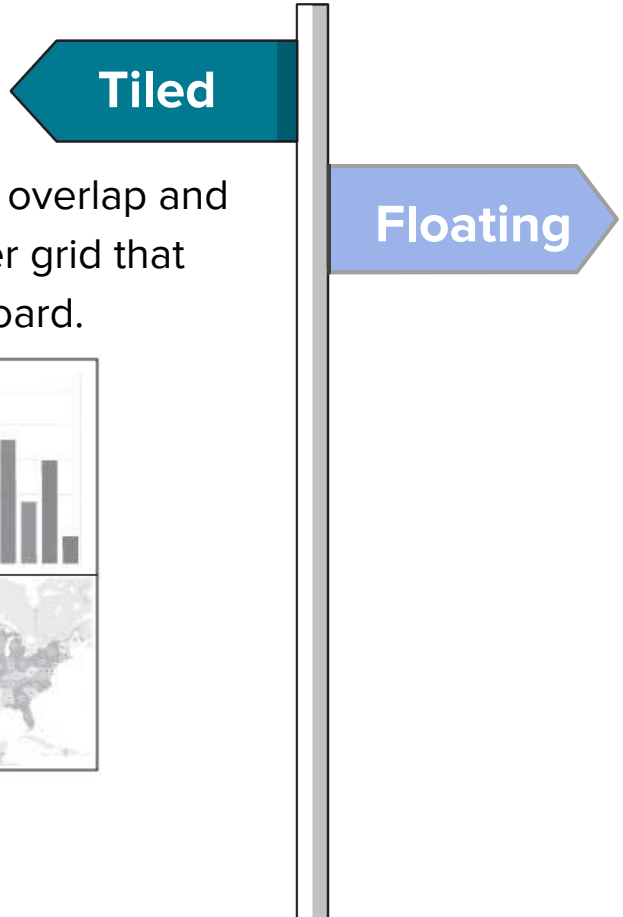


Horizontal

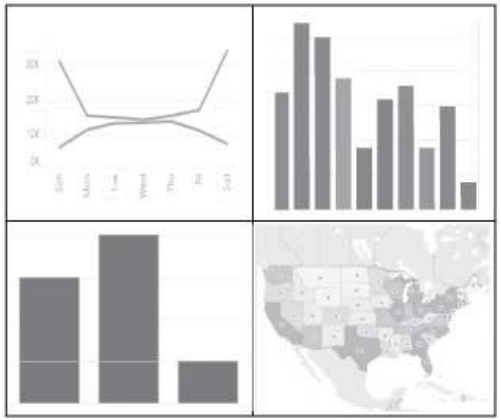


Source: Tableau

Tiled vs. Floating Layouts in Tableau



The default: The items don’t overlap and become part of a single-layer grid that resizes based on the dashboard.

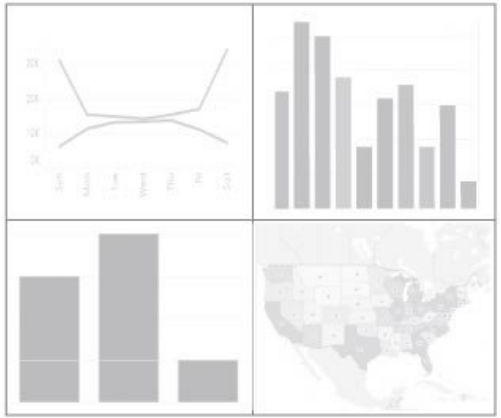


Source: Tableau

Tiled vs. Floating Layouts in Tableau

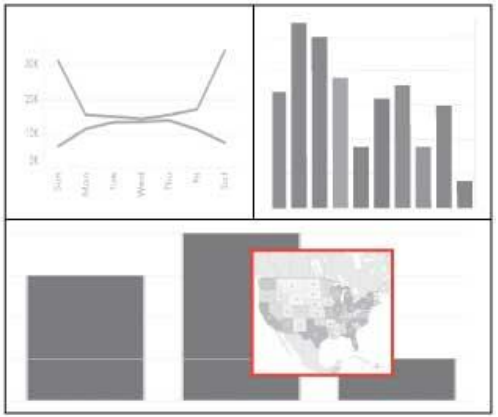
Tiled

The default: The items don't overlap and become part of a single-layer grid that resizes based on the dashboard.



Floating

Items can be layered over other objects.



Source: Tableau

Discussion:

Choosing the Right Layout

Let's take a quick look at the **Superstore Dashboard** tab again. Which layout containers do you think were used here?

What type of **layout** would you choose? And why?

Hint: *Click the* ***Layout*** *tab and look at the* ***Item Hierarchy*** *at the bottom.*

Guided Walk-Through:

Adding and Formatting a Layout Container

Let’s start putting together our Superstore dashboard.

First, we’ll start with a single container.

1. Click on **Guided Dashboard_01**.
2. Move a horizontal container onto the main sheet.

All good? Next, we’ll resize the sheets in layout containers.

Source: Tableau

Guided Walk-Through:

Resizing Sheets in Layout Containers

1. Continue with **Guided Dashboard_01,** move the **Partner Exercise_01** sheet onto the horizontal container.
2. Add a new horizontal container beneath your first, making sure it goes outside of the first horizontal container.
3. Add in **Partner Exercise_02** to your new container.
4. Try resizing both containers by hovering over the borders, clicking, and dragging.
5. Finally, add **Partner Exercise_03** to the **left** of **Partner Exercise_02** in your second horizontal container.

Pro tip: *You can remove a layout container to independently edit items it contains.*

Source: Tableau

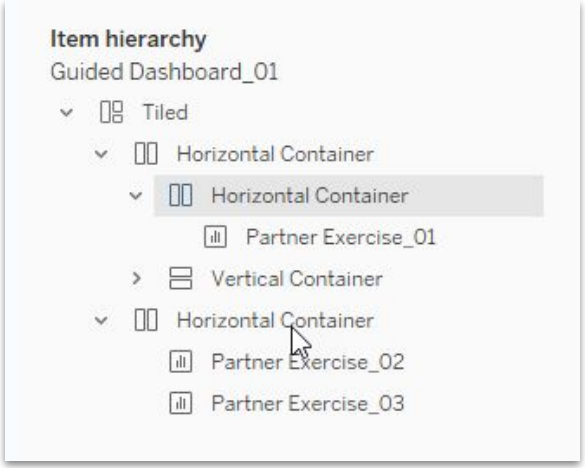
Guided Walk-Through:

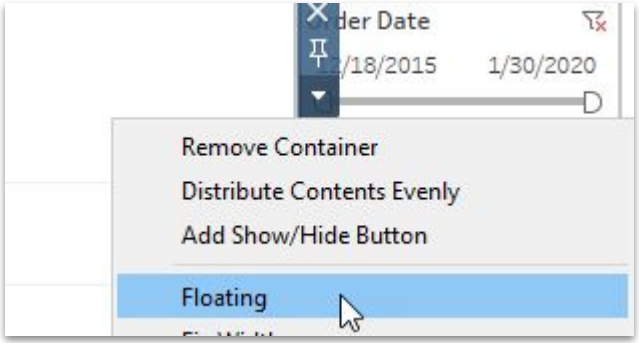
Applying Floating Layouts

Currently, our layout is an organized, **tiled** layout.

Let's *float* the containers and objects:

1. Go to the **Layout** tab and under **Item Hierarchy** choose the **Horizontal Container** with **Partner Exercise_01**.
2. Clicking on the container dropdown.
3. Choosing **floating**. How does this change our layout?
4. Undo this change to leave the container with the **Partner Exercise_01** at the top instead of floating.





Guided Walk-Through:
Adding a Title

We can add a title to our dashboard by dragging the **Text** object to the top of the dashboard and adding a title, much as we would for a sheet.

1. Click the **Text** object and drag it to the top of your dashboard.
2. Change the font size to **18** and type "**Superstore Dashboard**".
3. Click **OK**.
4. Adjust the size by dragging the edges.

Source: giphy.com

Guided Walk-Through:
Applying Filters to a Dashboard

Order Date has been added to the dashboard, but when you adjust the filter it only changes the values for **Partner Exercise_01**.

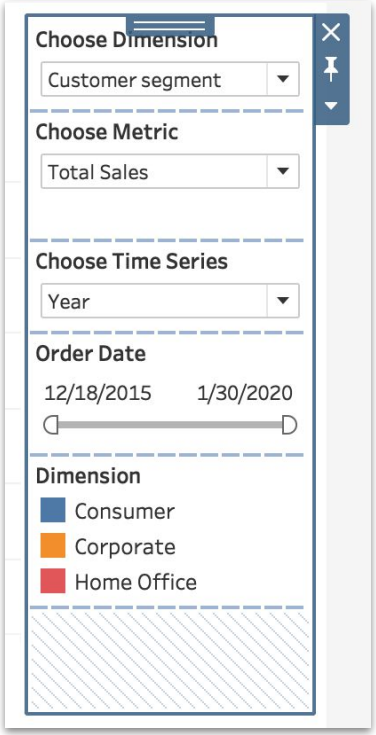
1. Click the dropdown on the **Order Date** filter.
2. Choose **Apply to Worksheets** > **Selected Worksheets** and choose the ones you have used in the dashboard**,** then click **OK**.
3. Adjust the Order Date filter to see it is now applied to the worksheets selected.

Tip: Filters didn’t show up? Click the carrot dropdown on any of your sheets, hover on **Filters** and choose the filter you’d like to add.

Guided Walk-Through:
Adding Layout Formatting

We can use **layout formatting** to change how each of our objects — sheets, layout containers, and text — appear on our dashboard.

1. In the dashboard sheet, choose the **Layout Container** that contains your filters, parameters, and legend.
2. Click the **Layout** tab on the left-hand panel.
3. Then, click the dropdown on **Background** to apply a background to this container.



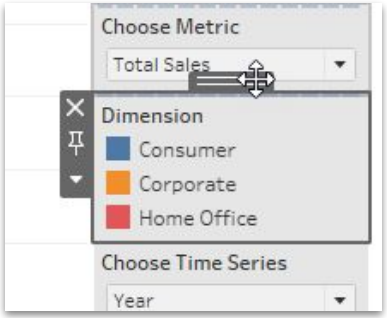
Guided Walk-Through:

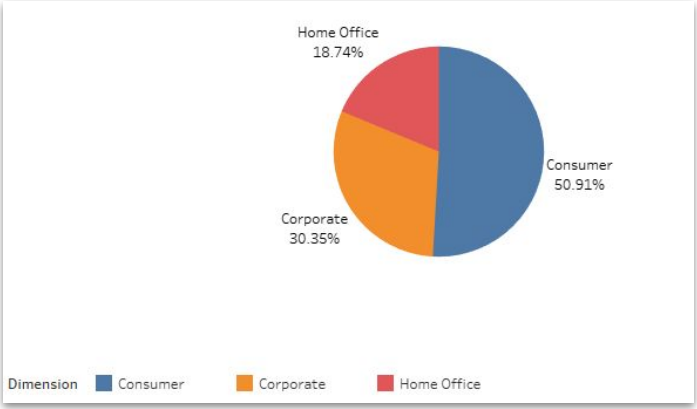
Moving Filters and Legends on the Dashboard

Each of the filters and legends in have the ability to move on the dashboard.

1.In the dashboard sheet, Click on the **Legend** for **Dimension**.

2.Grab the tab at the top and drag the Legend to be under the pie chart.





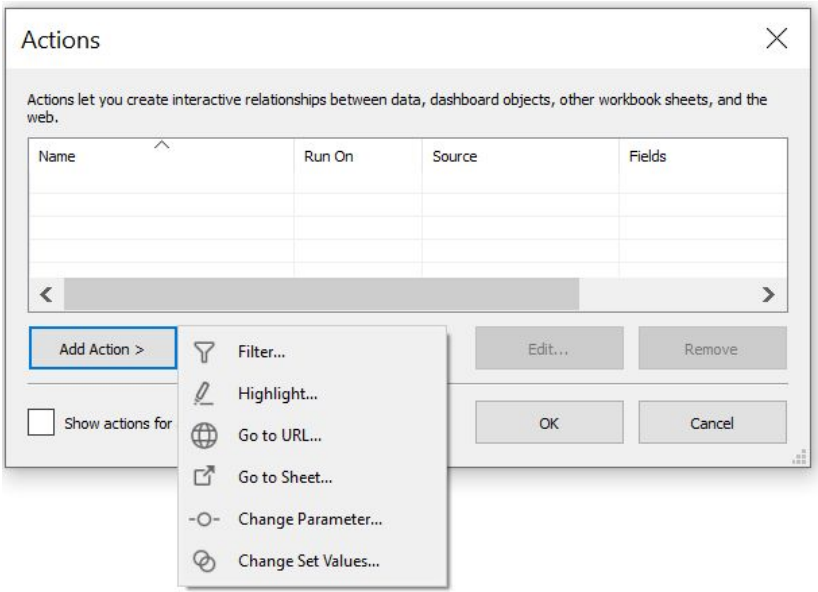
Dashboards in Tableau

Dynamically Filtering Dashboards Using Actions

Dashboard Actions

Dashboard actions are a great way to add interactivity to dashboards.

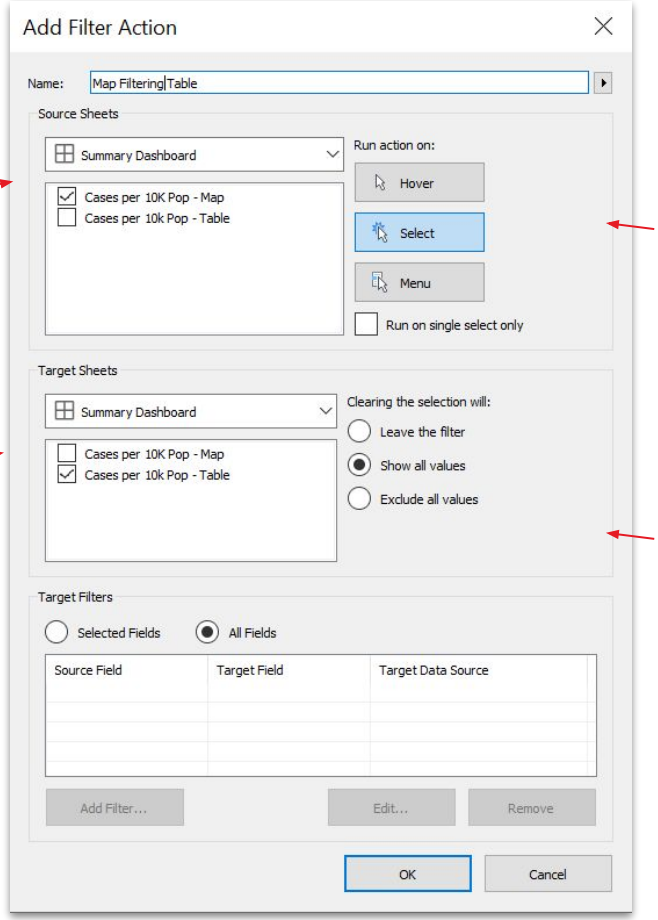
Filtering is a key Dashboard Action, accessed through **Dashboard > Actions > Add Action**.



Dashboard Filtering

The source sheet determines the dashboard elements that can act as a filter control.

The target sheet determines the dashboard elements that act as a recipient of filtering.



‘Select’ (click) is the usual method to invoke a filter.

Users often expect unselecting a filter to show all values (reset the filter).

Guided Walk-Through:

Filtering a Dashboard

1

Step One: Create source visualizations

Create a filled map on **Guided Practice_05** using:

- Columns: **Longitude(generated)**
- Rows: **Latitude(generated)**
- Color: **Sub Region**
- Detail: **Country**
- Label: **SUM(Sales)**
- Remove Legend for Subcategory
- Optional: Format the labels to display the Sales in Millions

2

Step Two: Create and filter a dashboard

- Add the map to a dashboard.
- Add dashboard actions:
  - Go to Dashboard > Actions
  - Add Action > Filter
  - Name Filter **Map**
  - Choose **Select**
  - Click **OK** twice

Guided Walk-Through:

Launch a URL with a Dashboard Action

Let's add another Dashboard Action to launch a URL from our map.

1. Go to **Dashboard** > **Action**. Click **Add Action**.
2. Choose **Go to URL**.
3. Name the Action, **Australia**.
4. Choose **Menu**.
5. Enter the URL https://en.wikipedia.org/wiki/Australia
6. Click **OK**.
7. Click on Australia on the map to see the link. When you click the link it will launch the website in a separate browser tab.

Data Analytics

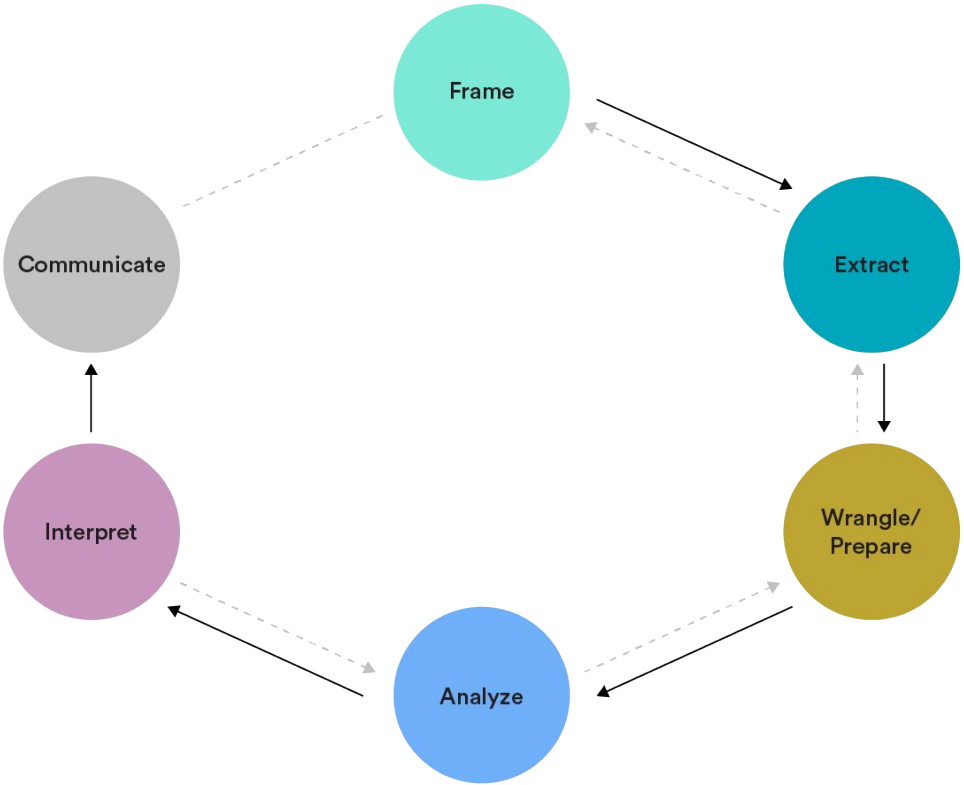
Data Narratives In Tableau

GENERAL ASSEMBLY

Our Learning Goals

- Create stories in Tableau to illustrate data-driven decisions.
- Finalize dashboards and stories for the capstone project.

The DA Workflow



Frame: Develop hypothesis-driven questions for your analysis.

Extract: Select and import relevant data.

Wrangle/Prepare: Clean and prepare relevant data.

Analyze: Structure, comprehend, and visualize data.

Interpret: Leverage your analysis to make decisions and recommendations.

Communicate: Present data-driven findings and insights in a compelling manner.

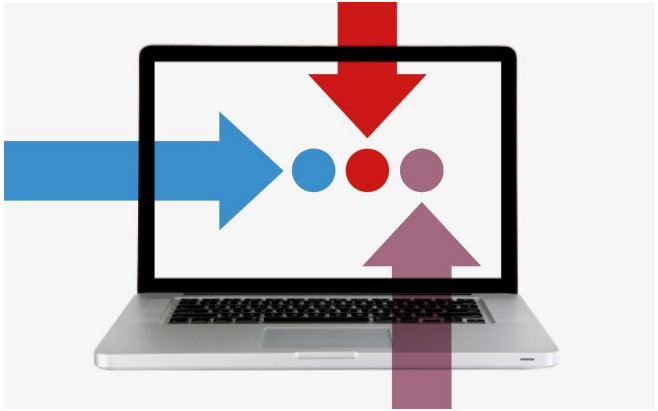
Discussion:

What Story Do You Want to Tell?

Looking at the visualizations we've built in class so far, how will you link them together to tell a story?

Specifically, which questions should be answered first and why?

Which visualization will be used to introduce the story, and which ones will be used to support your analysis?



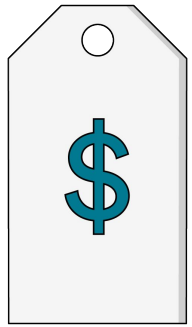
Superstore Data Narrative

Today, we're finally going to answer our million-dollar question:

What's really going on with returns at Superstore?

We'll be looking at returns from *all* angles:

- How returns affect our profit.
- Which salesperson has more returns and why.
- Whether we need to retire some products or vendors because of their high return rate.



Data Narratives in Tableau

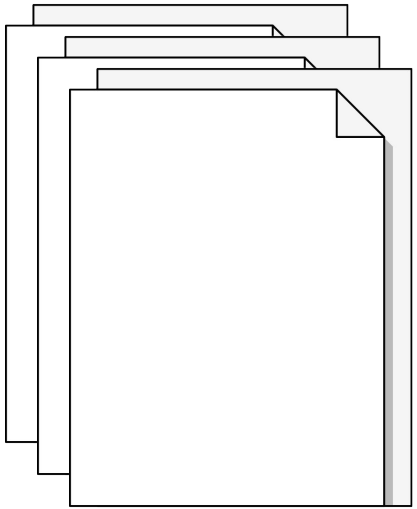
Stories in Tableau

What's A Story?

A story is **a sheet or a collection of sheets** that feature a sequence of visualizations in Tableau. Each individual sheet in a story is called a **story point**.

You can create stories to:

- Tell a data narrative.
- Provide context.
- Make a compelling case.
- Demonstrate how data-driven decisions are made.



Source: Tableau

Partner Exercise:

Reviewing the *Superstory*

Before diving into Tableau stories, review the following sheets in the **Tableau_Lesson_4_Activities.twbx** file with your partner:

Story_**01**, Story_**02**, Story_**03**, Story_**04**, Story_**05**, Story_**06**, Story_**07**

Add at least one key takeaway to the caption on each story and answer these questions:

- **Are these sheets in an order that makes sense for our story?**
- **Are we telling a coherent, cogent story about returns?**

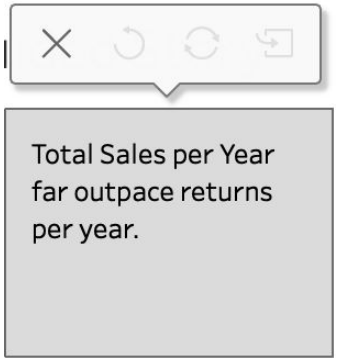
Be prepared to share your answers with the class!

Guided Walk-Through:

Creating a Story Point

If a **story** is a collection of slides that builds a presentation, a **story point** is a single slide.

1. Click the **Guided Story** tab. You should see a blank workspace that reads, "Drag a sheet here." This is your first story point!
2. From the **Story** pane on the left, drag the **Story_01** worksheet onto your view.
3. Add a caption by editing the text in the gray box above the worksheet.



Source: Tableau

Guided Walk-Through:
Highlighting Key Insights in the Story

1. In the **Story** pane, click “Duplicate” to clone the first caption. Continue working where you left off, but know that your first story point will be exactly as you left it.
2. Because we’re telling a story about returns, on the **Returned?** filter, de-select the “Not Returned” option. Now your viewers can quickly identify the biggest reasons for returns.
3. Add a caption to underscore what your viewers see; for example: “Returns skyrocketed in 2019.”

Source: Tableau

Guided Walk-Through:

Digging Deeper With More Stories

We've previously hypothesized that returns are because of particular salespeople. Let's look into this more:

1. In the **Story** pane, select "Blank."
2. Drag **Story_02** onto the canvas.
3. Add a caption that reflects your findings.

Does any salesperson stand out with too many of their sales being returned?

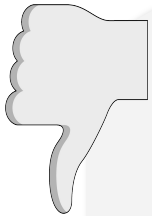
Pluses and Deltas

Do:

Flip the script: Think about your views as a *supplement* to the text you use to describe it.

Focus your text on your visualizations and what you are showing, cutting out anything extraneous.

Use simple, easy-to-understand language: Stay away from jargon, acronyms, or abbreviations.



Don’t:

Include terms such as "*image of*" or "*picture of.*”

USE ALL CAPITAL LETTERS: they can be difficult to read.

Partner Exercise:

Digging Deeper With More Stories

Now it's your turn!

1. Work with a partner to add blank story points and the following sheets to Guided Story:
    - **Story_04**
    - **Story_05**
2. Add captions as you go.

What are the key takeaways?

Guided Walk-Through:
Adding the Finishing Touches

While the captions are helpful, they don’t entirely do the findings justice.

1. Create a blank story point.
2. Drag **Sheet_06** to the blank point.

Let’s add a description:

1. In the left-hand pane, select **Drag** to add text and drag it onto your view.
2. Enter a description for your dashboard that addresses **which of our top-returning customers are the worst offenders and why**.

Guided Walk-Through:
Adding the Finishing Touches (cont.)

And now, for the final story point, let's drill down into the details:

1. In the **Story** pane, click "Blank."
2. From the **Story** pane, drag **Story_07** to the view.
3. In the view, right click near the "**Chairs -> Alyssa Crouse**" bar and select "**Annotate > Mark.**"
4. In the "**Edit Annotation**" dialog box that appears, delete the filler text and type in a caption, then click **OK**.

Guided Walk-Through:

Adding the Finishing Touches (cont.)

Almost there!

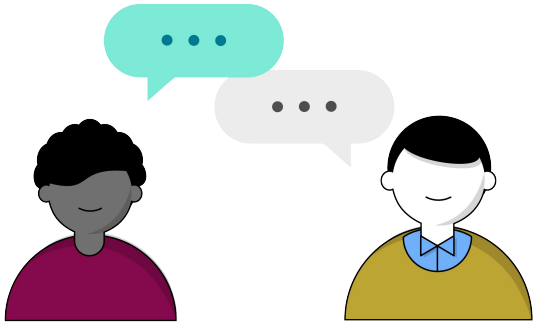
1. In the view, click the annotation and drag it to adjust where it appears.
2. Give this story point a caption.
3. Double click the **Guided Story** tab and rename your story to “Superstore Return Analysis.”
4. Review your story by selecting **Window** > **Presentation** mode.

Discussion:

Let's Debrief!

That was a good number of steps! Let's take a moment to debrief:

- When creating a story, which part of the process felt intuitive and which part feels counterintuitive?
- What were some roadblocks that you and your partner encountered when creating the stories?



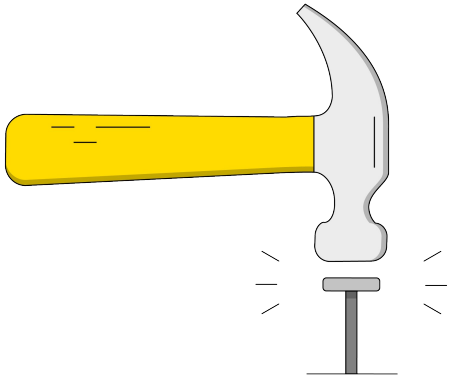
Data Narratives in Tableau

Dashboards as Story Points

From Sheets, to Dashboards, to Stories

When we add sheets to stories, we **lose the ability to add key formatting**, such as titles, borders, backgrounds, or non-floating text boxes!

Instead, we can **use dashboards for this functionality** – even adding multiple sheets to the same dashboard – before we add anything to our stories.



Guided Walk-Through:
From Sheets, to Dashboards, to Stories

Let's start with creating a structured, interactive dashboard with **Dashboard_01.**

1. Drag **Story_01** to the dashboard.
2. Then, drag a text box to the right-hand side of **Story_01** and below your "Returned" filters, and write a caption about the trend of orders and returns. [Optional] Move the text box above the "Returned" filter.
3. Then, move to **Guided Story_02**. Drag **Dashboard_01** to your blank story point. It should have more structure and information than just adding a single sheet.
4. Add a caption to this story point.
5. Duplicate this story point, un-check "Not Returned," and add a caption.

Guided Walk-Through:
From Sheets, to Dashboards, to Stories (cont.)

Let's move onto **Dashboard_02.**

1. Drag **Story_02** to the dashboard.
2. Then, drag a text box to the right-hand side of **Story_02** and write a caption about the lack of trend in returns by salesperson.
3. Then, move to **Guided Story_02**. Create a new blank story point.
4. Drag **Dashboard_02** to your blank story point and add a caption.

Guided Walk-Through:
From Sheets, to Dashboards, to Stories (cont.)

Now, we can use **Dashboard_03** to add multiple sheets to our story points.

1. Drag **Story_03** and **Story_04** to the dashboard and move them side by side.
2. Move the legends to associate with each chart and add titles where appropriate.
3. Then, move to **Guided Story_02**. Create a new blank story point.
4. Drag **Dashboard_03** to your blank story point and add a caption.

Partner Exercise:

From Sheets to Dashboards

Work with your partner to complete the following tasks:

1. Add **Story_05** and a text-box caption to **Dashboard_04**, then add **Dashboard_04** to a new blank story point on **Guided Story_02**.
2. Add **Story_06** and a text-box caption to **Dashboard_05**, then add **Dashboard_05** to a new blank story point on **Guided Story_02**.
3. Add **Story_07** and a text-box caption to **Dashboard_06**, then add **Dashboard_06** to a new blank story point on **Guided Story_02**.
4. Finally, add a text box with a title, your name, and date to the **Dashboard_Intro** tab. Add **Dashboard_Intro** to a new blank story point *at the beginning* of **Guided Story_02**.

Data Narratives in Tableau

Story-Building for Your Capstone

Data Stories Best Practices

- **Determine the purpose of your story:** Is it a simple narrative, a call to action, or a case study?
- **Choose an approach:** How will you sequence each point of the story?
- **Keep it simple:** Every element should serve a purpose.
- **Use “Fit to” in your dashboard:** Use the **Fit to** option under **Size** on the **Dashboard** pane to ensure your dashboard is the right size for your story.
- **Plan for fast load times:** Be aware of how you’re using filters, as they can impact performance.

Source: Tableau

Solo Exercise:

Story-Building for Your Capstone

Review the data set and worksheets/dashboard you have been using for your capstone project, as well as the problem statement you drafted.

- Review if your visualizations (worksheets/dashboards) answering the questions in your problem statement/hypothesis.
- Write down a takeaway for each one you will include in your presentation.
- Start creating your Story Points and putting on the finishing touches.

Partner Exercise:

Checking Your Work

Now, walk your partner through your story points. As you review each other's work, ask yourself the following:

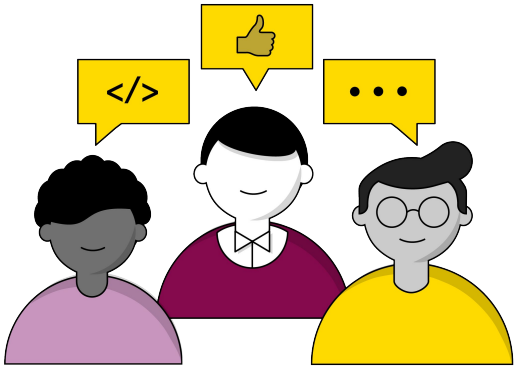
- Do you know the problem(s) your partner is addressing with their analysis?
- What data points is your partner choosing to focus on, and why?
- What did you find most insightful in your partner's analysis?
- What next steps does your partner recommend, and why?

Discussion:

How Did It Go?

Let’s debrief as a class!

- How was the process of having your story reviewed by a peer?
- How was the process of reviewing a peer’s story?
- What are some insights that emerged from this process?



Data Narratives in Tableau

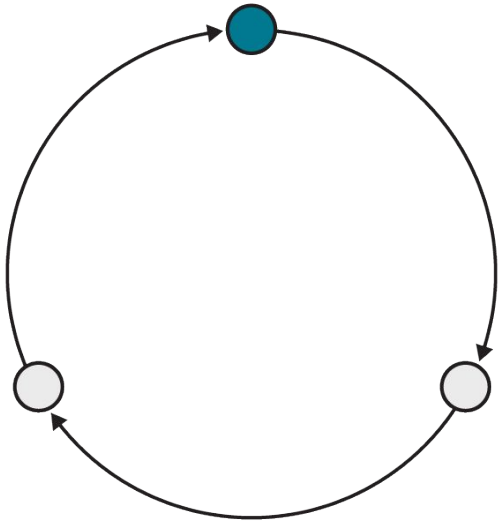
Tableau Portfolio Examples

Publishing Your Stories

Tableau Public is the free version of Tableau — a desktop application that allows you to continue using Tableau for free.

It also refers to the online **Tableau community** where Tableau portfolio work can be uploaded publicly.

This means anything you save in the Tableau Public program will be public on the Tableau Public gallery site.



Source: Tableau

Discussion:

Tableau Portfolio Review

Let's spend a couple of minutes looking at Tableau portfolios. As you review, keep the following in mind:

- What makes the dashboards visually appealing and accessible?
- What information can you glean from the dashboards?
- Are the dashboards user-friendly?
- Are the stories compelling? Why or why not?

Guided Walk-Through:
Publishing on Tableau Public

To publish your work on Tableau Public, you'll first need to create an account.

1. Click the **Server** dropdown in your Tableau window.
2. Hover on Tableau Public and then click **Manage My Profile**.
3. In the account sign-in window that pops up, click **Create One Now For Free**.
4. Create an account, then return to your Tableau file.

Guided Walk-Through:

Publishing on Tableau Public (cont.)

Once you're signed into Tableau Public, you're now ready to publish your work for the world to see:

1. Extract any data sources you used by clicking the **Data** dropdown, hovering over the **Data Source**, and choosing **Use Extract**.
2. Hide or delete any erroneous sheets that you do not wish to be published.
3. Then, click the **Server** dropdown and choose **Save to Tableau Public As**.
4. Give your workbook a *descriptive, searchable* title and click **Save**.

Data Narratives in Tableau

Wrapping Up

Solo Exercise:

Let's Recap... the Entire Course!

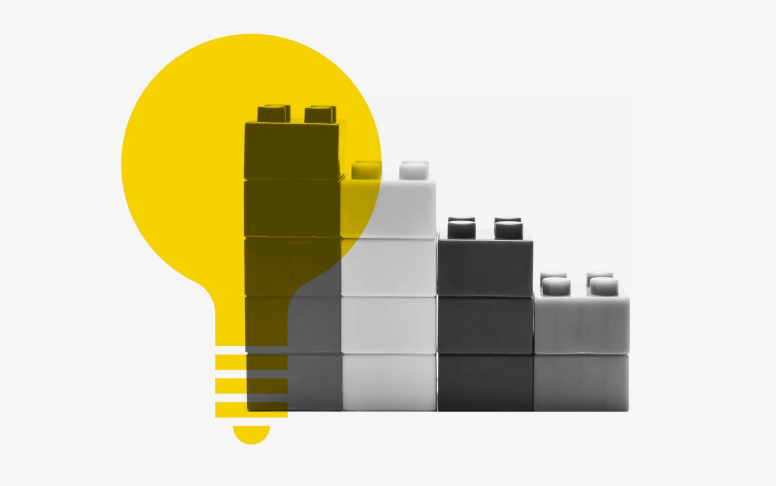
Spend a few minutes writing down **1–2 things** you've learned from each of the tools and the DA Workflow. We'll debrief as a class.

Excel	SQL	Tableau
Considered a **general purpose** tool for viewing, prepping, calculating, and graphing data.	Typically used to retrieve **big data** before performing an analysis and requires lots of code!	Greatly streamlines analysis from various data sources and turns visualizations into **interactive dashboards**.

Discussion:

Let’s Recap as a Class

Share what you’ve written down previously and discuss how you plan to apply them to your work — this can be your capstone project or a project at work.



Dashboards and Data Narratives in Tableau

Wrapping Up

Additional Resources

- Creating Dynamic Titles Using Actions (Tableau): http://kb.tableau.com/articles/howto/creating-dynamic-titles-based-on-filters
- Stories (Tableau): https://help.tableau.com/current/pro/desktop/en-us/stories.htm
- Gallery of Featured Tableau Visualizations (Tableau Public): https://public.tableau.com/en-us/s/gallery?qt-overview_gallery=1
- Creating Dynamic Titles Using Actions (Tableau): http://kb.tableau.com/articles/howto/creating-dynamic-titles-based-on-filter
- Tableau Table Calculation Examples: https://www.tableau.com/about/blog/2019/11/top-10-tableau-table-calculations

Recap

Today, we...

- Applied visual analytics best practices.
- Designed interactive dashboards with parameters, advanced filters, and layout containers.
- Created stories in Tableau to illustrate data-driven decisions.
- Finalized dashboards and stories for the capstone project.

Looking Ahead

Up Next:

Capstone Project Presentation


GA