

Einstein Analytics Part 2 - Produce and Add Intelligence

Summary	In this codelab you will build Advanced Analytics Dashboard and get an Idea of Einstein Discovery and Prediciton Builder
URL	https://docs.google.com/document/d/1jS0zSNOL1MO0roiqiRoBvfneq7Nhn5nyPFQG9sn1XPw/edit#heading=h.bj6ozw9dvu1u
Category	Salesforce
Status	First Review
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Overview

What you'll learn

- Advanced Analytics Dashboards
- SaQL
- Analytics Dashboard JSON Overview
- Various Templates
- Einstein Discovery
- Einstein Prediction Builder

What you'll need

- An Einstein Analytics Developer Account Setup

Compare Tables

[Selecting Right charts](#)

Here's your goal: You want to show projections for the percentage of total sales versus light laptop sales for the next few months. Charts are great to see the big picture and trends, but there's nothing like numbers to prove a point. Having both when you present your contest plan will put you ahead of the game.

This goal introduces a new concept that we haven't covered yet:

how to do calculations in Analytics. The compare table is an effective tool for doing that with just a few clicks.

Calculate the Percentage of Total Sales that are Light Laptops

Before starting the exploration, you need to identify a formula to calculate the percentage of sales of all product families that are light laptop sales. It should look something like this:

$$(\# \text{ of light laptop sales} / \# \text{ of all sales}) \times 100$$

Let's get those numbers and perform the calculation.

You still want to do analysis on opportunities and product data, so open the DTC Opportunity dataset to start a new exploration. First things first: Change the visualization to a compare table.

1. Click .
2. Choose Compare Table.

Let's create a compare table with the following columns.

Column A

Contains all won opportunities.

Column B

Contains all won light laptop opportunities. The filter is Product Family = Light Laptop.

Column C

Contains a calculated value with the percentage of total sales that are light laptop sales. The calculation is $(\# \text{ of light laptop sales} / \# \text{ of all sales}) \times 100$

Column A: All Won Opportunities

In the initial state, the compare table has only one column showing a number corresponding to the Count of Rows. You want the number of sold products, so you'll change the measure.

1. Click **Count of Rows**.
2. Select the **Sum** aggregation function on the left.
3. Select the **#** (quantity, *not* amount) measure on the right.

Notice that the name of your measure, Sum of #, is also the column name. The Compare Table lets you apply filters per column. Now you're ready to apply two filters to your first column.

- One filter is the past few months and next few months.
 - Another filter is won opportunities.
1. Next to **Sum of #**, click the menu control (**v**).
 2. In the menu, select **Add a Filter**.
 3. Select **Close Date**.
 4. Select **Custom**.
 5. Select the **Absolute date range** tab and select **Between**.

6. Set the **From** field to January 1, 2016, three months before today. (Remember, for our example, today is April 1, 2016.)
7. Set the **To** field to June 30, 2016—several months in the future.
8. Click **Add**.
9. To add the second filter, click the **v** for **Sum of #** again.
10. Select **Won**, then select **true**, and finally, click **Add**.

The number shows the volume of sales completed in the rolling year. The last thing you need to do is to rename your column.

The image displays two separate filter panels side-by-side. The left panel is titled 'Close Date' and includes fields for setting a date range ('From' set to 1/1/2016, 'To' set to 6/30/2016), a search bar ('Search for values...'), and a red '+' button. The right panel is titled 'Won' and includes a dropdown menu ('Equals') with 'true' selected, a search bar ('Search for values...'), a checkbox for 'All' which is unchecked, and a checkbox for 'true' which is checked. Both panels have a blue 'Add' button at the bottom.

1. Click the **v** next to **Sum of #**, and this time select **Edit this Column**.
2. In the Column Header field, enter **# All Sales**.
3. Click **Apply**, and then click **Close** to close the edit panel.

The screenshot shows a data visualization tool's interface. On the left, a sidebar titled "Datasets" contains a purple hexagon icon and the text "DTC Opportunity". Below this are tabs for "DATA" (which is selected) and "FILTERS". Under "Measures", there is a dropdown menu set to "All Sales". Two filters are applied: "Close Date" (set to "1/1/2016 to 6/30/2016") and "Won" (set to "true"). There are also "Group By" sections with a plus sign. On the right, a main panel starts with a search bar containing "What do you want to see? Just start typing...". Below it is a summary box with "All Sales" and the value "63,277".

Column B: Light Laptop Won Opportunities

Add another column similar to the first one, but filtered on light laptop sales.

1. Click the menu control (v) next to **# All Sales** (the new name of Column A) under **Measures**.
2. Select **Clone Column**.

The screenshot shows a data visualization interface. On the left, under the 'Dataset' section, there is a purple hexagon icon and the text 'DTC Opportunity'. Below it, the 'Fields' section lists 'All Sales' (with a dropdown arrow), 'Close Date' (with a date range '1/1/2016 to 6/30/2016'), and 'Won' (with a value 'true'). Under 'Measures', there are two more 'All Sales' dropdowns, each with its own 'Close Date' and 'Won' filters. The bottom sections are 'Group By' and 'Filters', both with a plus sign to add items. On the right, there is a search bar with the placeholder 'What do you want to see? Just start typing...'. Below it is a table with two rows: 'All Sales' and '63,277' in the first row, and 'All Sales' and '63,277' in the second row. A modal window titled 'Product Name' is open, containing a dropdown menu set to 'Contains' and a search input field with the text 'light laptop'. At the bottom of the modal is a blue 'Add' button.

When a cloned column is created, it copies all the filters and measures from the column that it's created from. Easy, right? Now we'll add a filter to Column B where Product Name contains Light laptop.

1. Click the **v** for the second **# All Sales** (Column B) and select **Add a Filter**.
2. In the search field, type **product**, then select **Product Name**.
3. Select **Contains** in the pulldown menu, type **light laptop**, and click **Add**.

Notice that you can scroll the Measures panel. It should show that your second column now has three filters. Time to rename the column to **# Light Laptop Sales**.

1. Under **Measures**, click the menu control (v) next to the second **# All Sales** (Column B).
2. Select **Edit this Column**.
3. In the Column Header field, enter **# Light Laptop Sales**.
4. Click **Apply**, and then click **Close**.

Now you're ready to do the calculation!

Column C: % of Light Laptop Won Opportunities

Up next, you'll add one more column and give it a formula. But first, let's cover a bit of the formula syntax. With a formula, you can perform a calculation using data in other columns, referencing each column by letter. Every column has a letter, starting with A and progressing alphabetically. The following graphic shows how the formula syntax maps onto the table:

Column	A	B	C
Calculation			B / A

Now let's add a column with a formula.

1. Click the menu control (v) next to **# Light Laptop Sales** (Column B) under **Measures**, and select **Clone column**.
2. Click the menu control (v) of the new column, and select **Edit this Column**.
3. Change the column header to **% Light Laptop Sales**.
4. In the formula field, put the formula defined above: **B/A**.
5. For the format, select **Percentage**.
6. Click **Apply**, and then click **Close**.

New Lens

A	B	C
All Sales	Light Laptop Sales	Light Laptop Sales
63,277	2,332	2,332

EDITING COLUMN

Column Alias

Enter an alias for column C...

Column Header

% Light Laptop Sales

Calculation

Formula $f(x)$

Functions ▾ Fields ▾

B/A

Format

Percentage (12.34%)

Cancel Apply

Group in a Compare Table

You've just seen how to do a percentage calculation using a compare table. In your original goal, you wanted to calculate this percentage for each month. Do you

remember the three basic actions of a query? Aggregation, grouping, and filtering. Did you already group in your compare table? Nope, so let's do it now!

1. In the Data tab, click the plus sign (+) under **Group by**.
2. Select **Close Date**.
3. Select **Year-Month**.

Close Date (Year-Month)	All Sales	Light Laptop Sales	% Light Laptop Sales
2016 - 01	11,499	-	-
2016 - 02	10,570	217	2.05%
2016 - 03	8,850	278	3.14%
2016 - 04	10,918	941	8.62%
2016 - 05	12,729	560	4.4%
2016 - 06	8,711	336	3.86%

The query is grouping by the closed month and getting the results of each column for all groups. The numbers show us that light laptop sales have been mediocre lately, even though they're spiking this month (remember, it's April 1!). And looks like they're headed back down in May and June, as we feared.

We're going to need that contest to get the light laptops results DTC's looking for, to boost the product in the home and education markets. To help convince the rest of the team, let's turn the numbers into a picture.

Show Results as Bars

Let's take this exploration a little further before we wrap it up. You can show the results of a formula as bars, which makes it easier to grasp.

1. Clone the % Light Laptop Sales column.
2. On the new column under **Measures**, click the menu control (v) and select **Format Column**.
3. In Column Properties, select **Show as Bars**.

TABLE COLUMN

Choose Column

% Light Laptop Sales

Show Data As

Text

Text

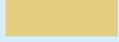
Bar

Text Style

Regular

The screenshot shows a user interface for configuring a column in a table. At the top, there are tabs for 'TABLE' and 'COLUMN', with 'COLUMN' being the active tab. Below this, a section titled 'Choose Column' contains a dropdown menu set to '% Light Laptop Sales'. Another section titled 'Show Data As' contains three dropdown menus: the first is set to 'Text', the second is set to 'Text' with a checked checkbox, and the third is set to 'Bar', which is highlighted with a blue background and a small icon below it. To the right of these dropdowns is a vertical toolbar with three icons: a bar chart, a line graph, and a clock. Below the 'Show Data As' section is a 'Text Style' section with a dropdown menu set to 'Regular'. A small dark blue button with the word 'Bar' in white is positioned between the 'Text Style' dropdown and the vertical toolbar.

With this visualization as part of your table, you'll be able to make your point about laptop performance much more dramatically.

Close Date (Year-Month)	# All Sales	# Light Laptop Sales	% Light Laptop Sales
2016 - 01	11,499	-	
2016 - 02	10,570	217	
2016 - 03	8,850	278	
2016 - 04	10,918	941	
2016 - 05	12,729	560	
2016 - 06	8,711	336	

The next step: to find out how to get more deals closed this month. But you're running out of time. You need to jump in a taxi and head to the airport, so you can't continue your exploration on desktop. In the next module, you'll see how to keep going with your research, but this time on your phone.

Save Your Exploration in a Lens

You've reached your exploration goal: You now have numbers and pictures that show light laptop sales need help. You're confident that your sales contest plan will be widely approved within DTC Electronics. So before getting in that taxi, save your exploration in a lens.

1. Click .
2. Enter D03 – Light Laptop Sales % Evolution / Time as the title.
3. Select the **My Exploration** app.
4. Click **Save**.

Update a Dataset's Extended Metadata

A dataset's extended metadata (XMD) file allows you to customize the formatting of dashboards associated with the dataset. You can update the XMD file through the dataset's edit page.

1. On the Analytics page, click the **Datasets** tab. If you're in the data manager, click the **Datasets** tab there.
2. Hover over the dataset that you want to update, click  , and then click **Edit**. If you're in the data manager, click **Edit Dataset**.
The dataset edit page opens.

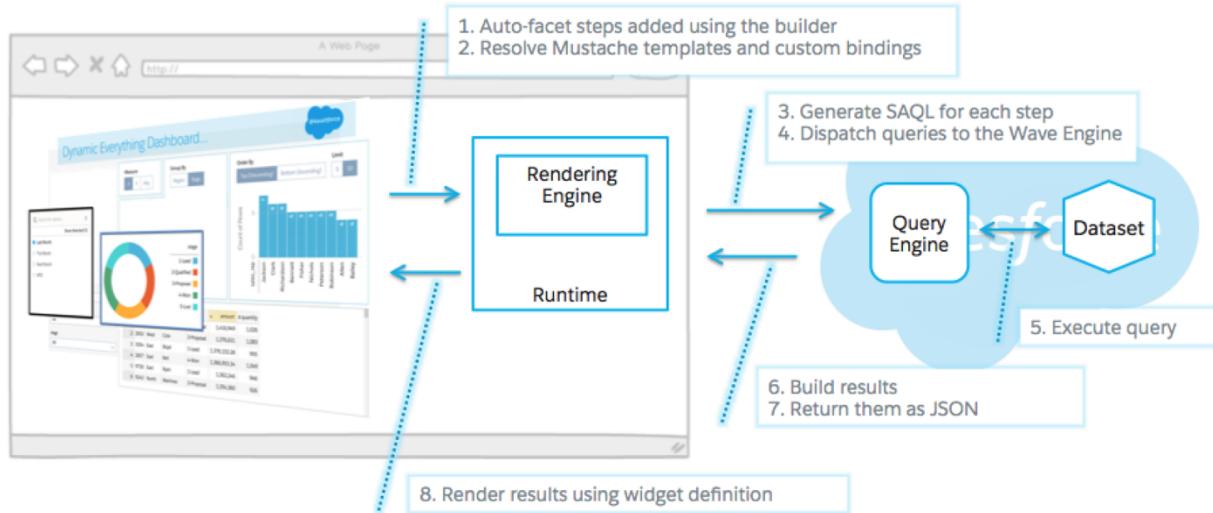
3. Under Extended Metadata File, click  , and then select **Download**. Download the current XMD file as a backup.
4. Under Extended Metadata File, click  , and then select **Replace**. Select your new XMD file and click **Open**. If the XMD file is not valid, you see an error message. Correct the syntax of the file and upload it again.

Einstein Analytics Architecture

Most actions you take in Analytics result in one or more SAQL queries. Every lens, dashboard, and explorer action generates and executes a SAQL statement to build the data needed for the visualization.

Analytics evaluates the steps, widgets, and layouts to render a dashboard. It converts every step to a SAQL query, then sends the query to the query engine for execution. The resulting data is passed to the charting library, which renders it using corresponding widget definitions. SAQL is influenced by the Apache Pig Latin (pigql) syntax, but their implementations differ, and they are not compatible.

How the components fit together



Developers can write SAQL to access Analytics data, either via the Analytics REST API, or by creating and editing SAQL queries contained in the dashboard JSON.

A SAQL query loads an input dataset, operates on it, and outputs a results dataset. Each SAQL statement has an input stream, an operation, and an output stream. Statements can span multiple lines and must end with a semicolon. Each query line is assigned to a named stream. A named stream can be used as input to any subsequent statement in the same query. The only exception to this rule is the last line in a query, which you don't need to assign explicitly.

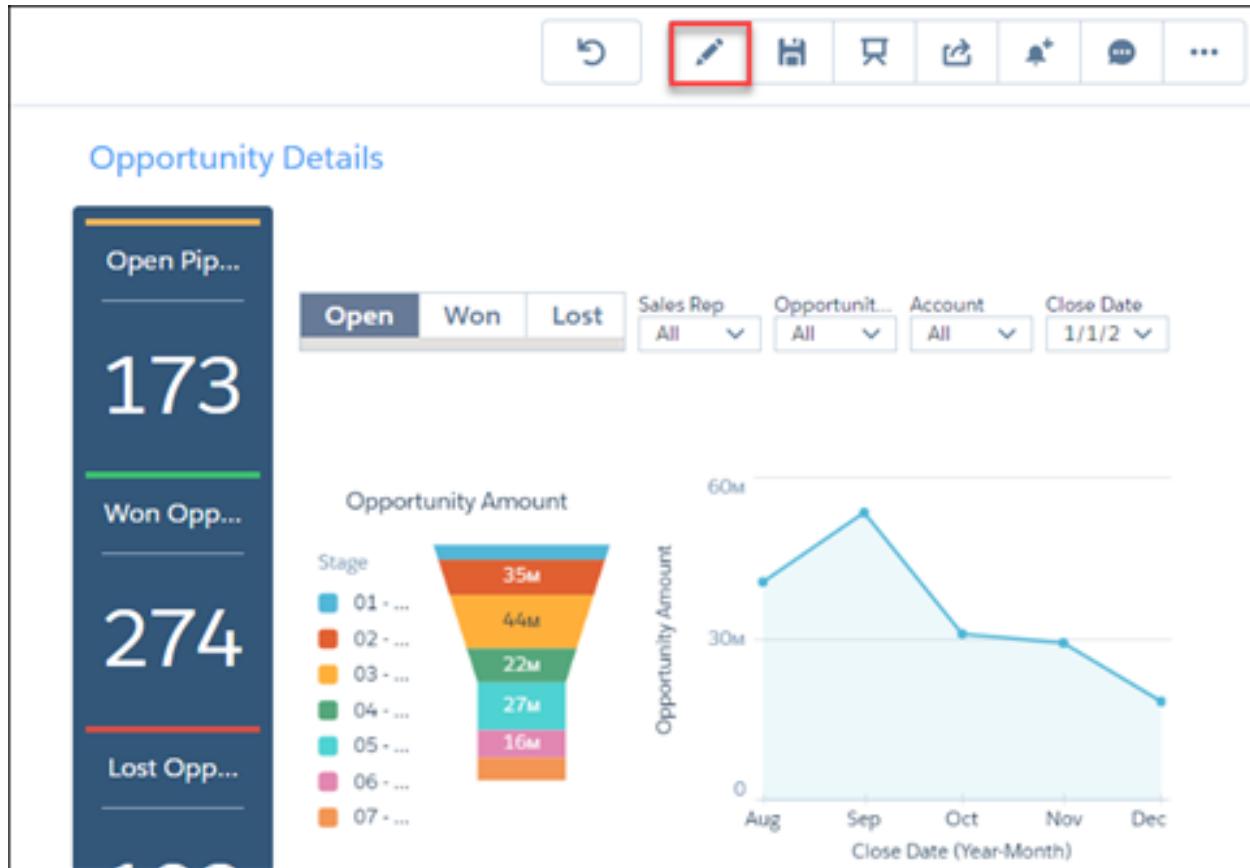
Use the Analytics Studio user interface to modify existing SAQL queries or write new ones. Writing SAQL queries in the user interface is the easiest way to get started.

Use SAQL in the Analytics Dashboard

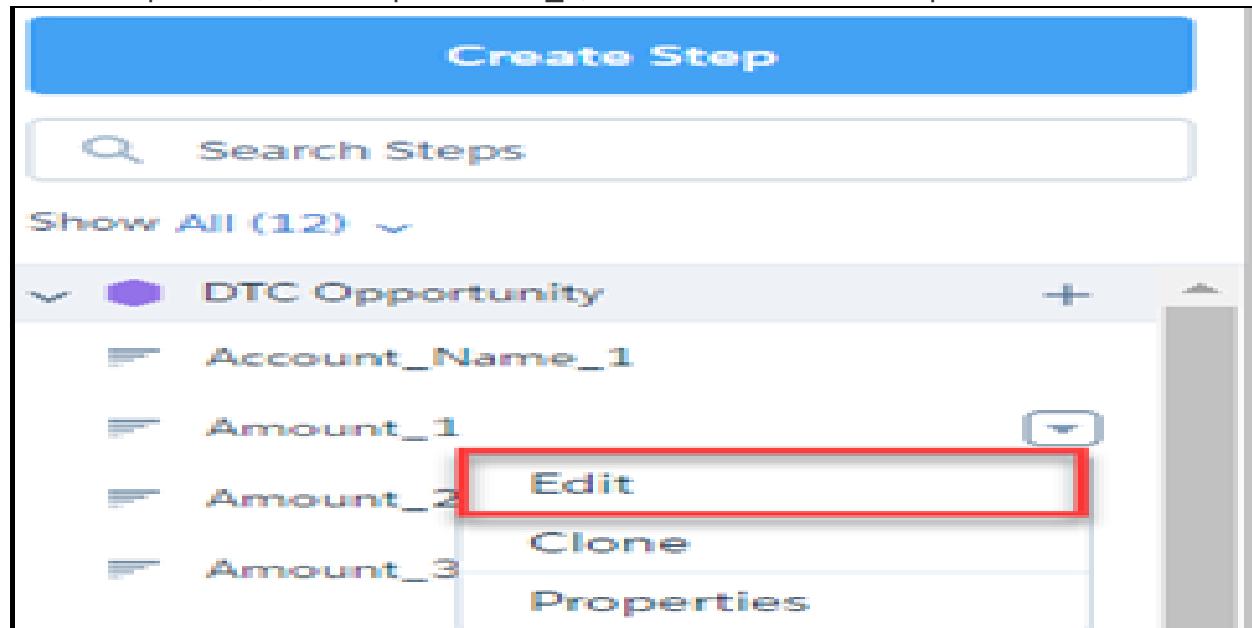
Every component in Einstein Analytics uses SAQL behind the scenes. You can build a widget in a dashboard, then switch to the SAQL view to see the SAQL query for the widget. Or, you can create a lens while exploring a dataset, then switch to the SAQL view to see the SAQL query for the lens.

Let's look at the query generated by a widget in a dashboard. After you edit the SAQL for a widget, you may not be able to go back to the dashboard view, depending on how complex the SAQL query is.

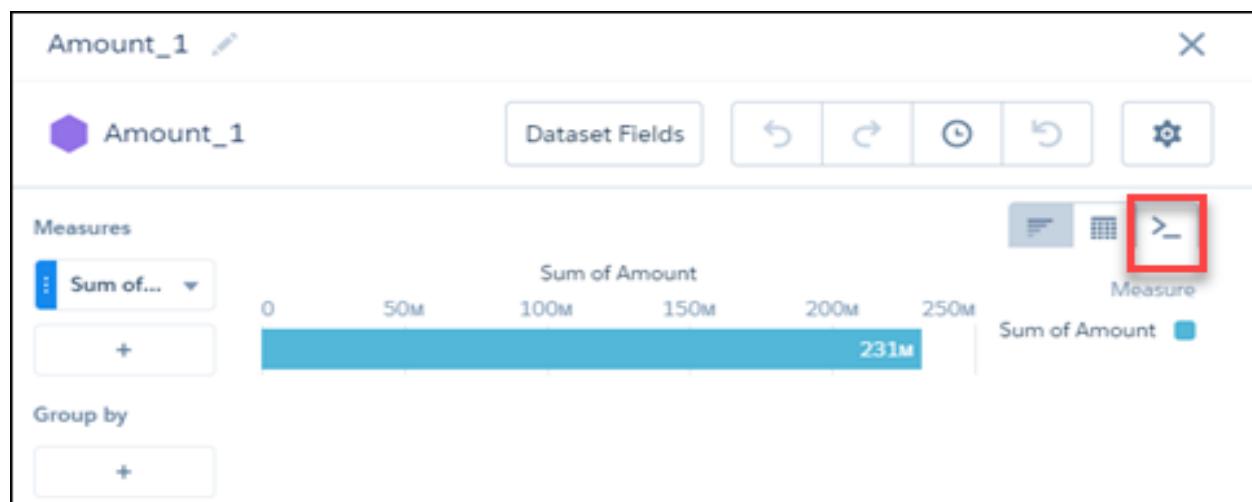
1. In your Salesforce org, open Analytics Studio, then open a dashboard. For example, open Opportunity Details.
2. Click **Edit**.



3. Click a step to edit, for example Amount_1, then click **Edit** in the dropdown list.



4. Click **SAQL Mode** to display the SAQL query for the step.
5.



6.
7. View the SAQL query for the step.

```
1 | q = load "DTC_Opportunity_SAMPLE";
2 | q = filter q by 'Closed' == "false";
3 | q = group q by all;
4 | q = foreach q generate sum('Amount') as 'sum_Amount';
5 | q = limit q 2000;
```

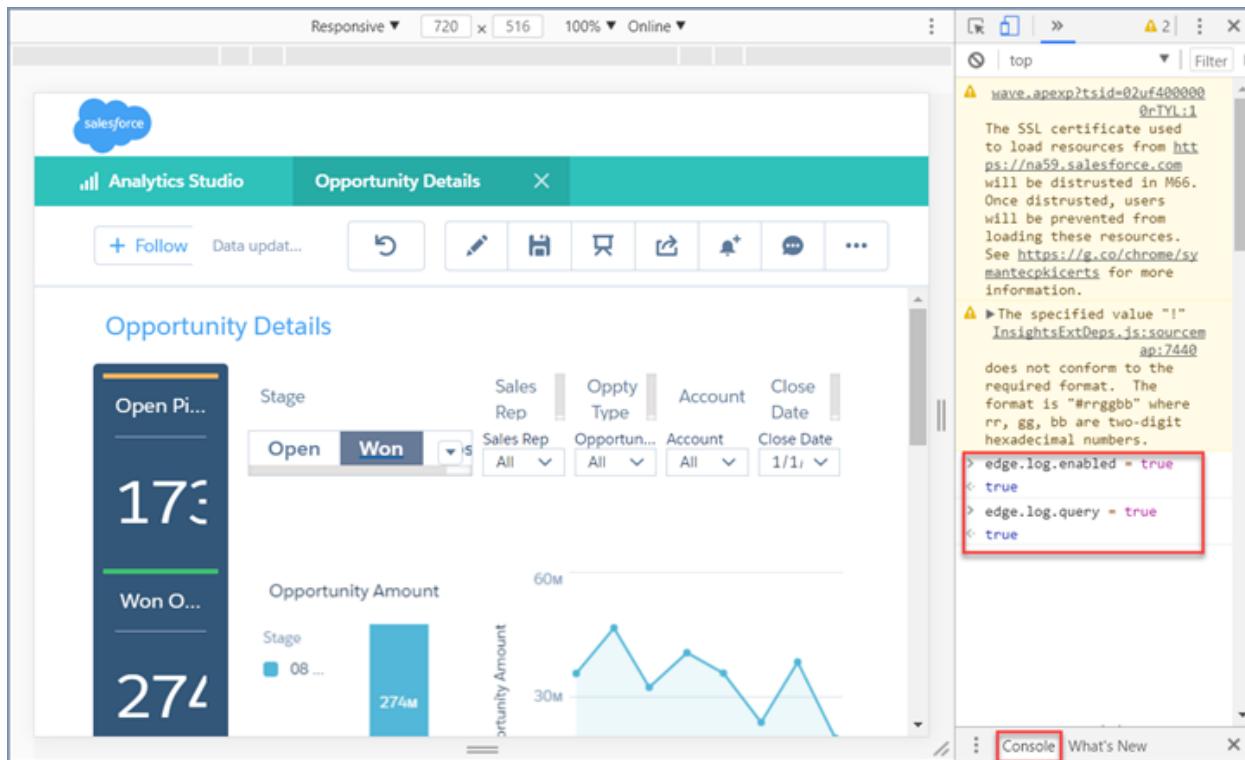
1. Edit the query, then click **Run Query** to run the new query. For example, you could change the `sum` to `average`.

Enable SAQL Logs in the Browser

Turning on SAQL logs in the browser prints queries in the Developer Tools Console. This lets you see what SAQL is generated by Einstein Analytics dashboards and lenses. This action doesn't change server-side logs.

1. In Google Chrome, open an Einstein Analytics dashboard.
2. In Google Chrome, open Developer Tools.
3. In Developer Tools, select Console.
4. In the Einstein Analytics dashboard, elect the explore (wave.apexp) frame.
5. In the developer tools console, enter `edge.log.enabled = true`
6. In the developer tools console, enter `edge.log.query = true`

SAQL logs are enabled. The logs are displayed when a query is sent from the dashboard or lens, for example when you drill into a chart.



Create a Derived Measure

Perform calculations on existing measures and use the result to create a new, or derived, measure.

Analytics calculates the value of derived measures at run time using the values from other fields.

Example - Calculate the Time to Win

Suppose that you have an Opportunities dataset with the Close Date and Open Date fields. You want to see the number of days it took to win the opportunity. Use Close_Date_day_epoch and Created_Date_day_epoch to create a derived measure called Time to Win:
('Close_Date_day_epoch'- 'Created_Date_day_epoch') as 'Time to Win'.

The field Time to Win is calculated at run time:

- q = load "Opportunities";
- q = foreach q generate 'Close_Date_day_epoch' as 'Close_Date_day_epoch', 'Created_Date_day_epoch' as 'Created_Date_day_epoch', 'Opportunity_Name' as 'Opportunity_Name', ('Close_Date_day_epoch'- 'Created_Date_day_epoch') as 'Time to Win';

The resulting table contains the number of days to win each opportunity:

Close Date (Epoch days)	Created Date (Epoch days)	Opportunity Name	Time to Win
16.762	16.707	Opportunity for Wood9	55
16.886	16.750	Opportunity for Jefferson17	136
17.066	16.942	Opportunity for McLaughlin130	124

Create a Derived Dimension

Perform string manipulations on existing dimensions to create a new, or derived, dimension. Analytics creates derived dimensions at run time.

You can also create a derived dimension in a dataflow rather than at runtime.

Example - Create a Field with City and State

Suppose that you have an Opportunities dataset with a City and a State field. You want to create a single field containing both city and state. Use SAQL to create a derived dimension.

- q = load "Ops";
- q = foreach q generate 'Account' as 'Account', 'Amount' as 'Amount', 'City' + "-" + 'State' as 'City - State';

The resulting table contains city and state in the same field.

Account	Amount	City - State
Shoes2Go	1.5	Springfield-Illinois
FreshMeals	2	Springfield-Alabama
ZipBikeShare	1.1	Springfield-Missouri
Shoes2Go	3	Springfield-Georgia

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SAQL Examples:

1. Analyze Your Data Over Time

Example - on Which Weekday Do Customers Send the Most Emails?

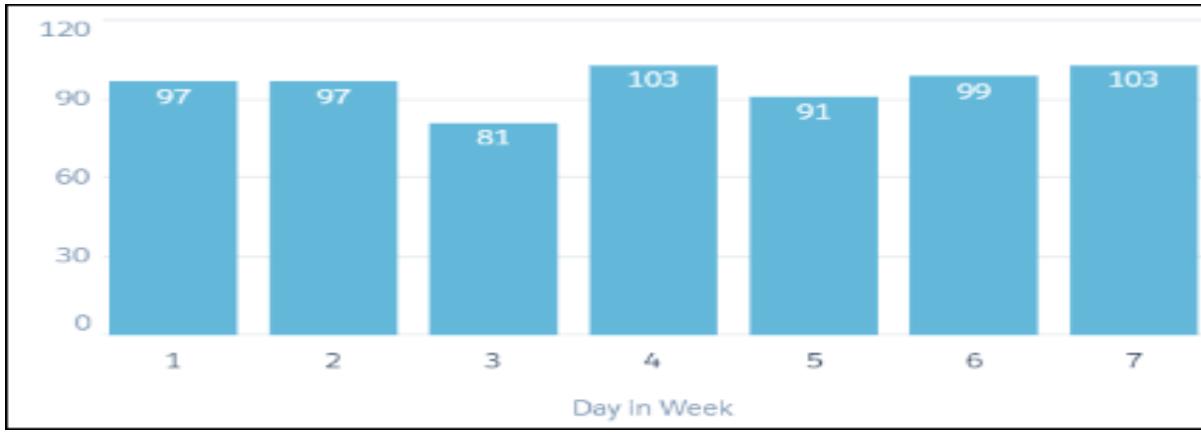
Suppose that you want to see which day of the week your customers are most active on email. This information allows you to better target your email campaigns. Use `day_in_week()` on the `Mail_sent_sec_epoch` field to calculate the day of the week, then count the number of records for each day.

```

1 | q = load "DTC_Opportunity_SAMPLE";
2 | q = foreach q generate day_in_week(toDate(Mail_sent_sec_epoch)) as 'Day in Week';
3 | q = group q by 'Day in Week';
4 | q = foreach q generate 'Day in Week', count() as 'count';

```

In this case, email traffic is slightly higher on day 4 (Wednesday) and day 7 (Sunday).



2. Forecast Future Data Points with time series

Use existing data to predict what might happen in the future.

Example - How Many Tourists Will Visit Next Year?

Suppose that you run a chain of retail stores, and the number of tourists in your city affect your sales. Use timeseries to predict how many tourists will come to your city next year:

- q = load "TouristData";
- q = group q by ('Visit_Year', 'Visit_Month');
- q = foreach q generate 'Visit_Year', 'Visit_Month', sum('NumTourist') as 'sum_NumTourist';
- -- If your data is missing some dates, use fill() before using timeseries()
- -- Make sure that the dateCols parameter in fill() matches the dateCols parameter in timeseries()
- q = fill q by (dateCols=("Visit_Year", "Visit_Month", "Y-M"));
- -- Use timeseries() to predict the number of tourists.
- q = timeseries q generate 'sum_NumTourist' as Tourists with (length=12, dateCols=("Visit_Year", "Visit_Month", "Y-M"));
- q = foreach q generate 'Visit_Year' + "~~~" + 'Visit_Month' as 'Visit_Year~~~Visit_Month', Tourists;

Use a timeline chart and set a predictive line to see the calculated future data. The resulting graph shows the likely number of tourists in the future.

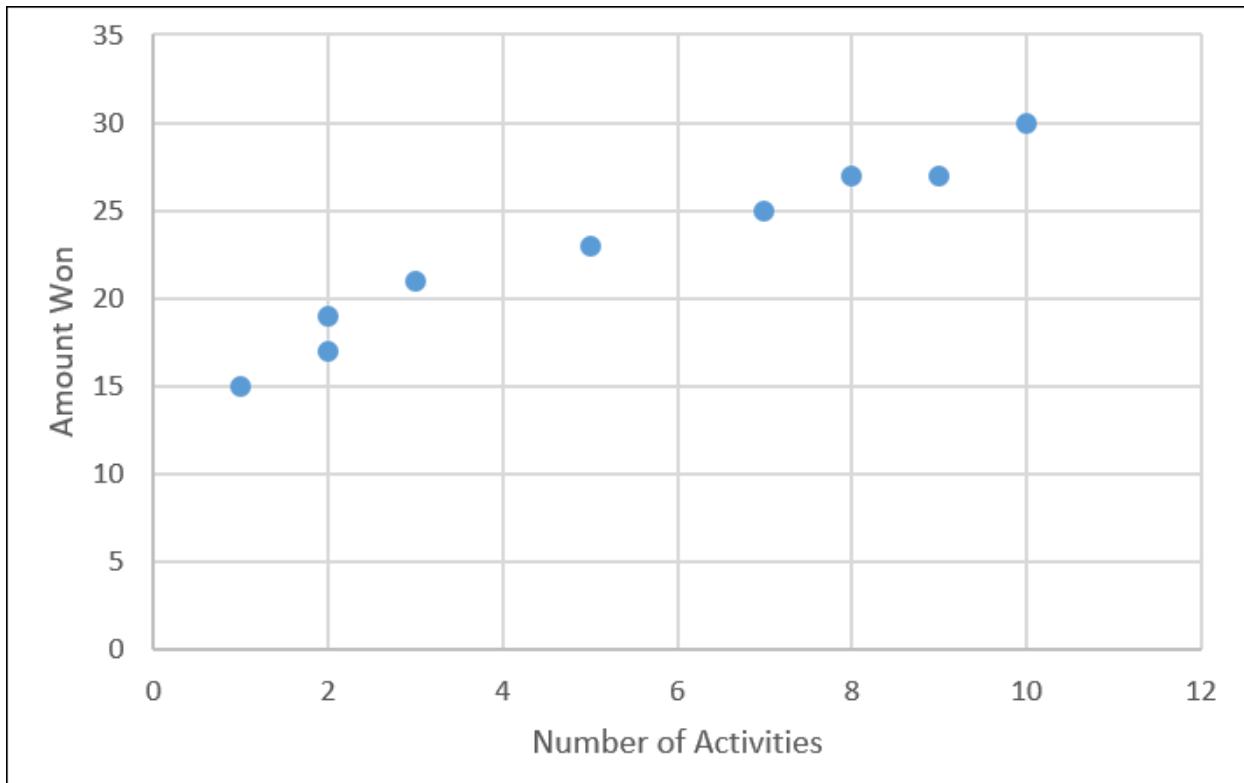


3. Calculate the Slope of the Regression Line

Use SAQL to perform linear analysis on your data to find the line that best fits the data. Then use `.regr_slope` to return the slope of this line.

Example - Calculate the Relationship Between Number of Activities and Deal Amount

Suppose that you have a dataset that includes the number of activities (such as meetings) and the won opportunity amount.



How much bigger with the deal size be for each extra activity? `regr_slope` performs a linear analysis on your data then calculates the slope (that is, the increased amount you win for each extra activity).

Based on your existing data, every extra activity that you have tends to increase the deal size by \$1.45 million, on average.

Gain per Activity

1.45

[SaQL Documentation](#)
[Basic SaQL Examples](#)

Analytics Dashboard JSON Overview

The easiest way to build dashboards in Analytics is to use the designer. However, if needed, you can further customize dashboards by editing their JSON files. The JSON defines the components of the dashboard and how they interact.

[View or Modify a Dashboard JSON File](#)

Use the JSON Editor to modify the JSON for a dashboard or lens.

User Permissions Needed

To modify the JSON file that defines a dashboard: Create and Edit Analytics Dashboards

JSON Editor displays the JSON of a lens or dashboard and lets you quickly see the effect of your edits in the running asset.

1. To access JSON Editor, open the lens or dashboard you want to edit, and press CTRL+E for PCs or CMD+E for Macs.
2. Modify the JSON in the editor. You can use standard keyboard shortcuts for editing functions and search.
3. To go back to the explorer and see how edits to the JSON appear in the lens or dashboard, click **Done**.
4. To retain your edits, save the lens or dashboard. Changes made in the JSON editor are not saved until you explicitly save the lens or dashboard.

In JSON Editor, the following shortcuts let you perform basic actions from your keyboard.

JSON Editor Keyboard Shortcut	Description
CRTL+Z (Windows); CMD+Z (Mac)	Disregard changes and load the original JSON
CRTL+X (Windows); CMD+X (Mac)	Cut
CRTL+C (Windows); CMD+C (Mac)	Copy
CRTL+V (Windows); CMD+V (Mac)	Paste

CRTL+Z (Windows); CMD+Z (Mac)	Undo
SHIFT+CRTL+Z (Windows); SHIFT+CMD+Z (Mac)	Redo
CRTL+F (Windows); CMD+F (Mac)	Search (RegExp, case-sensitive, or whole word searches available)
CRTL+E (Windows); CMD+E (Mac)	View dashboard with changes to JSON

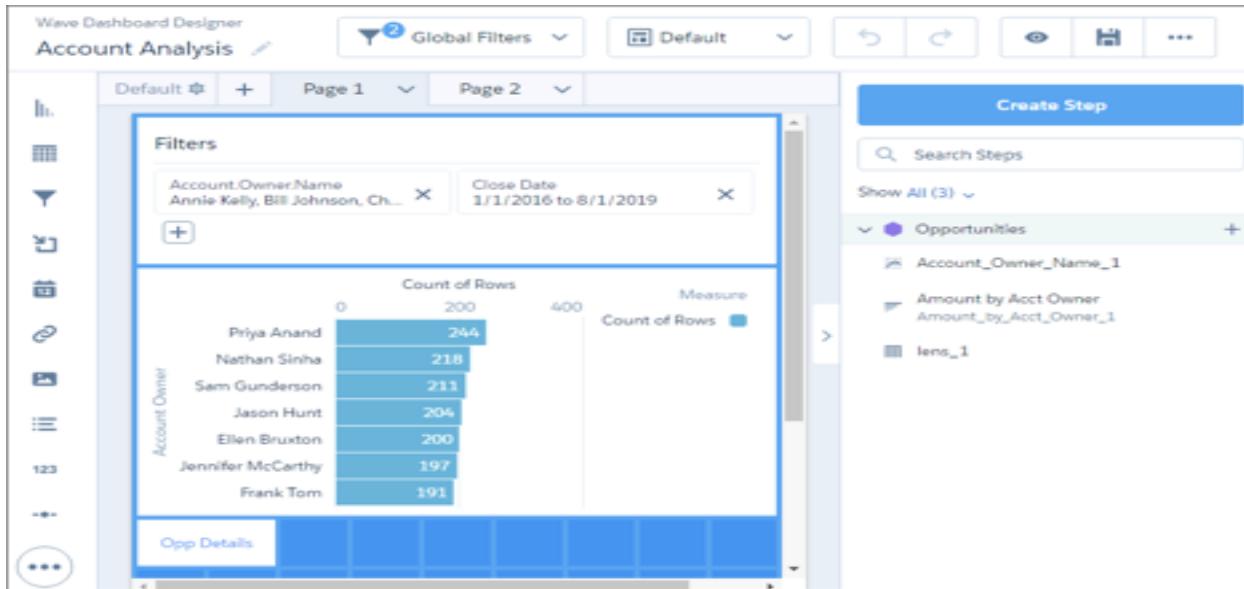
JSON Example of a Dashboard Designer Dashboard

The JSON for each dashboard designer dashboard contains multiple levels of properties. Review the sample JSON provided in this section to learn about the basic JSON structure of a dashboard designer dashboard.

The structure of the JSON varies based on whether you use dashboard designer or classic designer to build the dashboard.

Example

The sample dashboard JSON defines this dashboard designer dashboard.



The Account Analysis dashboard consists of the following objects.

- Layouts
 - Default, which has pages:
 - Page 1
 - Page 2
- Mobile
- Widgets:
 - Values table table_1 based on step lens_1 (Not shown in the screenshot because it exists only on Page 2.)
 - Global filter panel filterpanel_1
 - Link link_1
 - Horizontal Bar Chart chart_1 based on step Amount_by_Acct_Owner_1
- Steps:
 - Amount_by_Acct_Owner_1
 - Account_Owner_Name_1
 - lens_1

[JSON Properties](#)

Deploy Einstein Analytics Templates

Analytics templated apps give you a great way to get started with your Analytics journey. Create an app from a template to get best-practice dashboards and KPIs that your team can use out of the box to drive business success or customize to meet your precise requirements.

REQUIRED EDITIONS

Available in Salesforce Classic and Lightning Experience.

Available for an extra cost in **Enterprise**, **Performance**, and **Unlimited** Editions. Also available in [**Developer Edition**](#).

Analytics templated apps and prebuilt Analytics apps from Salesforce speed your organization's time-to-value with Analytics. Instead of having to build visualizations yourself, with templates we do the heavy lifting for you. Creation is simple. Either create an app from a template with just a few clicks or answer questions in a handy configuration wizard. Analytics takes care of the rest, creating datasets and dashboards designed and built by Salesforce based on our years of experience helping companies manage their customer interactions.

Many apps are designed for both desktop and mobile devices. They come with dashboards that you can embed in Salesforce pages to give users direct access to business intelligence right from the Salesforce pages where they do their everyday work. And you can drill deeper into key aspects of your business by customizing to meet your specific needs.

To get started, see generic instructions for creating apps from templates and specifics for each template by following these links.

[**Create Apps from Analytics Templates: Start Here**](#)

Follow these general procedures when you create Apps from any Analytics Template. Before you create an app, see the help for the Analytics Template you want to use for requirements and instructions specific to that template.

[**Adoption Analytics Template**](#)

Create an app from the Adoption Analytics template for ready-made insight into how your team uses Analytics apps, dashboards, lenses, and datasets.

[**Analytics for Retail Banking Template**](#)

Analytics for Retail Banking is part of a suite of Einstein Analytics apps for Financial Services Cloud customers. Its dashboards visualize all the metrics and key performance indicators (KPIs) personal bankers require to grow client relationships.

[**Approval Analytics Template**](#)

Create an app from the Approval Analytics Template to increase your visibility into approval processes. Managers and team leaders can use the app to view approval history, understand trends, identify bottlenecks, and take action to streamline the process.

[**B2B Commerce Analytics Template**](#)

The B2B Commerce Analytics template gives you a fast way to apply the power of Einstein Analytics to your B2B ecommerce data.

[**B2B Marketing Analytics App**](#)

B2B Marketing Analytics provides advanced analytics for the data-driven marketer, letting you explore both your marketing and sales data in one place. With powerful dashboards that consolidate Pardot and Sales Cloud data, you can quickly explore data, understand the impact of marketing on revenue, and take instant action to drive marketing results.

[**Event Monitoring Analytics App**](#)

The Event Monitoring Analytics App integrates with event monitoring and setup audit trail data to give you insights into your user and org behavior. The app is a built-in way to explore your monitoring data in Salesforce. App creation is easy and with its prebuilt dashboards and datasets, you can start exploring right away. This app helps you drill into your org's data and swiftly identify suspicious behavior, slow page performance, and poor user adoption.

[**Campaign Analytics Template**](#)

The Campaign Analytics template uses the power of Einstein Analytics to show how your marketing campaigns impact the bottom line.

[**Change Analytics Template**](#)

Use Change Analytics to visualize field history data in any Salesforce object and learn how, when, and where members of your team change data.

[**Consumer Banking Starter Analytics Template**](#)

Consumer Banking Starter Analytics is part of a suite of Einstein Analytics apps for Financial Services Cloud customers. It gives you a quick way of creating an analytics solution personal bankers can use to move clients up the value chain.

Einstein Analytics for Financial Services

Einstein Analytics for Financial Services gives financial advisors and personal bankers a comprehensive customer intelligence solution based on the Einstein Analytics platform. It includes Einstein Discovery, which lets you create automated artificial intelligence models on any dataset without writing code.

Fundraising Analytics Template

The Fundraising Analytics template lets you create an app that brings the power of Analytics to data from the Salesforce Nonprofit Success Pack.

Lead Trending Analytics Template

Create an app from the Lead Trending Analytics Template to increase your visibility into your team's lead conversion process. Sales operations can get instant insight into how quickly the team converts leads and can identify bottlenecks in the conversion process.

Multi Org Sales Analytics Template

Use the Multi Org Sales Analytics template to create a scaled-down version of the Sales Analytics app that pulls in data from all your connected orgs.

Patient Risk Stratification Template

The Patient Risk Stratification template creates an app that lets healthcare coordinators identify high-risk patients to make sure they get the extra care they need.

Pipeline Analytics Template

Use Pipeline Analytics to plug your pipeline snapshot data into a ready-made waterfall dashboard. You get instant insight into how the pipeline changes between two snapshots.

Pricing Analytics Template

With the Pricing Analytics template, Salesforce CPQ customers can be sure they're pricing their deals correctly. It recommends the ideal price for every quote and helps you identify potentially underpriced deals.

Public Sector Case Analytics Template

Public Sector Case Analytics lets public sector service organizations measure their effectiveness and identify immediate actions to improve case work performance.

Quoting Analytics Template

Salesforce CPQ customers: Create an app using the Quoting Analytics template to get instant insights into your configure-price-quote (CPQ) processes.

Sales Analytics App

The Sales Analytics app brings the power of Analytics to Sales Cloud on any device that supports Analytics. With intuitive visualizations based on your Salesforce data, Sales Analytics lets you move from insight to action quickly and helps you turn data into smarter sales.

Service Analytics App

The Service Analytics app gets you started fast with Analytics and provides a clear path through your Service Cloud data on any device. Whether you're a service manager or agent, you get everything you need in one place to uncover key data insights to help you grow your business.

Social Case Analytics Template

The Social Case Analytics template creates an app that provides ready-made insights into team performance on each social channel.

Subscription Analytics Template

Salesforce CPQ customers: Create an app from the Subscription Analytics template to track your renewal business.

Create a Story

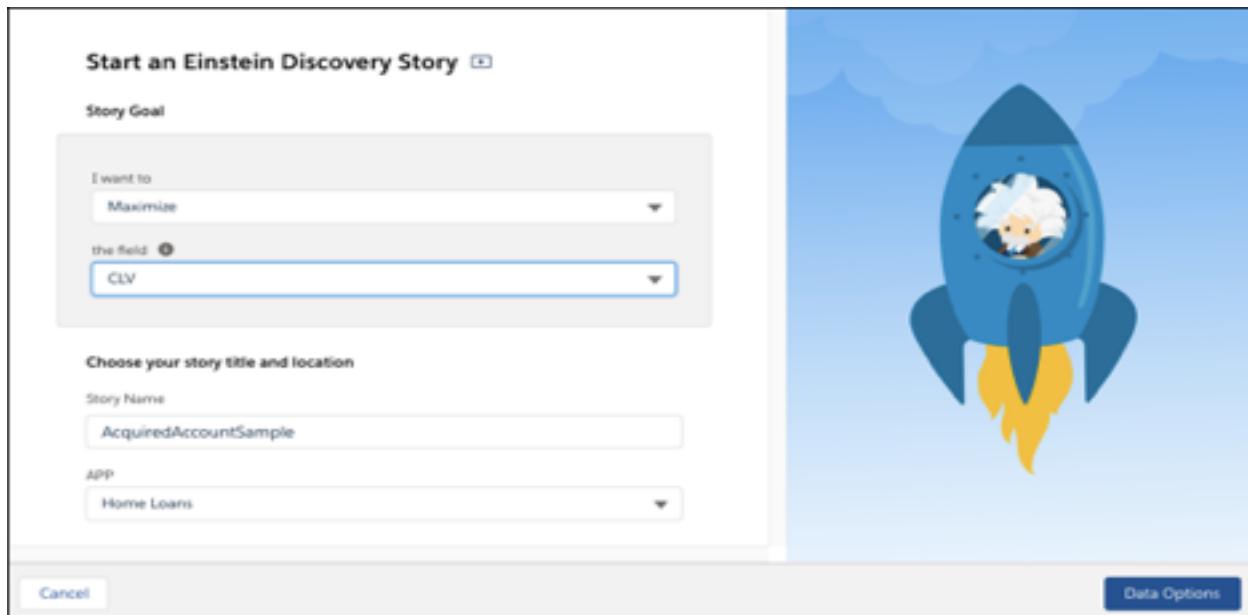
Create a story to uncover the meaningful relationships among fields in an Einstein Analytics dataset. Einstein Discovery quickly sifts through huge amounts of data to find the important correlations and make accurate predictions.

A story is based on a snapshot of the data in the dataset. The snapshot is taken when the story is created. Thereafter, the story is locked to that snapshot. Subsequent changes to the story do not affect the snapshot. Subsequent changes to the dataset are ignored.

Therefore, consider selecting datasets that are more static than dynamic. If your dataset continues to be updated, Salesforce periodically removes older versions of the dataset, which can include the snapshot upon which your story is based. If the snapshot is no longer available, then you can still view the story but cannot edit it.

To create a story, your dataset must contain enough rows, as described in [Einstein Discovery Limits](#). If your dataset contains enough rows to create descriptive insights but not enough rows to create predictive insights, your story contains only descriptive insights.

Hover over the dataset, click the dropdown menu on the far-right side, and click Create Story. Einstein Discovery launches the Story Setup wizard.



1. Configure the story.
 1. For **I want to**, select the prediction for the outcome variable. Select **Maximize** if you want the outcome variable to increase. Select **Minimize** if you want it to decrease.
 2. For **the field**, select the outcome variable (metric) that you want to use. You can choose number fields or text fields with two values.
 3. Calculations often result in fractions. If you want your story outcome values to show up as whole numbers (using automatic rounding), select **Are you expecting a whole number greater than or equal to 0?** Certain values make sense only when

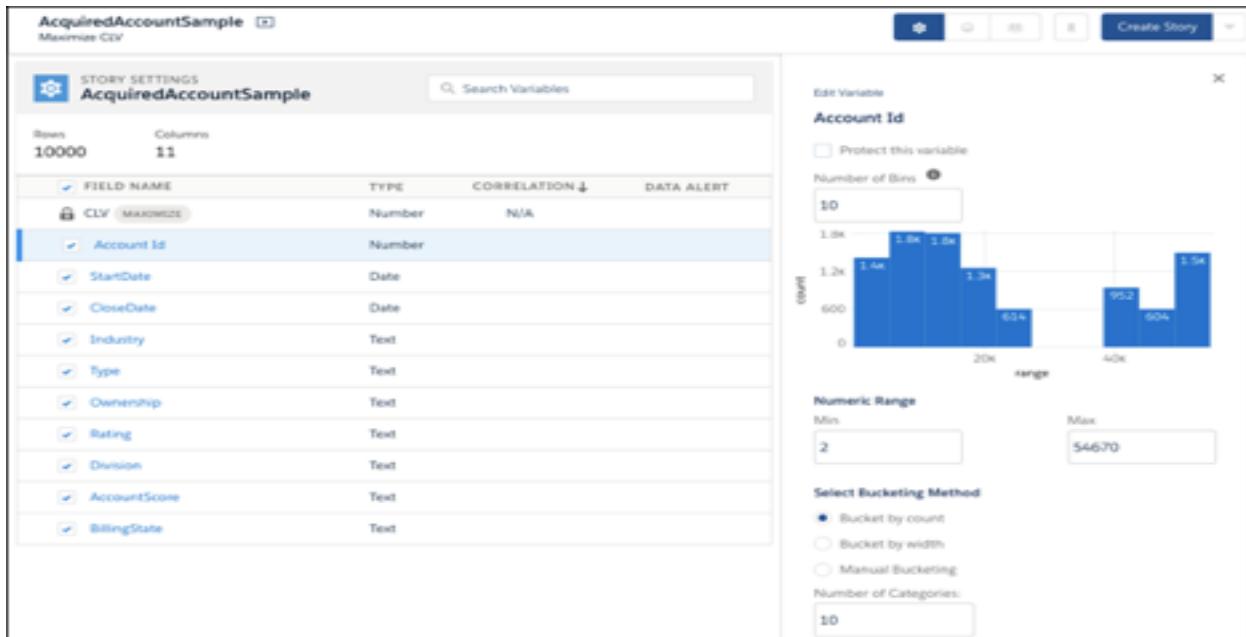
- expressed as whole numbers, such as the number of orders per month or the number of customers entering a store.
4. For **Story Name**, accept the default name or enter a new name.
 5. For **APP**, select the app where you want to save the story. If you want to share this story with others, you must save it into a shared app.
 2. Click **Data Options**. The Story Setup wizard prompts you to select data options for your story.

The screenshot shows the 'STORY SETTINGS' page for a story named 'AcquiredAccountSample'. At the top, it displays 'Rows: 10000' and 'Columns: 11'. Below this is a table with columns: FIELD NAME, TYPE, CORRELATION, and DATA ALERT. The table lists 11 fields: CLV (Number, N/A), AccountId (Number), StartDate (Date), CloseDate (Date), Industry (Text), Type (Text), Ownership (Text), Rating (Text), Division (Text), AccountScore (Text), and BillingState (Text). A 'Search Variables' input field is located at the top right of the table area.

FIELD NAME	TYPE	CORRELATION	DATA ALERT
CLV	Number	N/A	
AccountId	Number		
StartDate	Date		
CloseDate	Date		
Industry	Text		
Type	Text		
Ownership	Text		
Rating	Text		
Division	Text		
AccountScore	Text		
BillingState	Text		

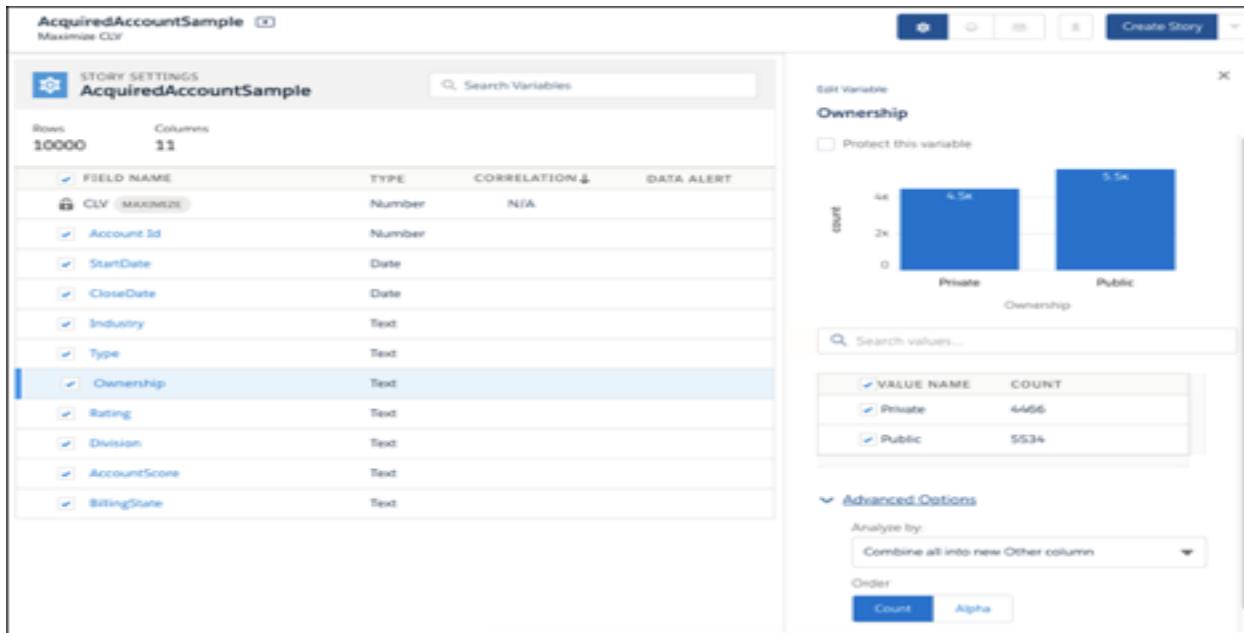
Select the fields to include in your story. Select a minimum of two fields. To filter the list of fields, type one or more characters in the **Search Variables** box.

1. *Number field options*. Click a number field and specify its options.
 - To exclude a field from the model but still be notified if it shows a 50% or higher correlation to the story's outcome variable, select **Protect this field**.
 - To customize the number of columns displayed in the following graph, change the **Number of Bins**.
 - To restrict the range of numeric field values, change the minimum and maximum values.
 - Select the **Bucketing Method**: by count or by width. You can also configure the bucketing method manually.
 - Specify the **Number of Categories**. Einstein Discovery automatically aggregates numbers into groups based on behavior.



Above is a graph shows the number of values that occur across the range of values.

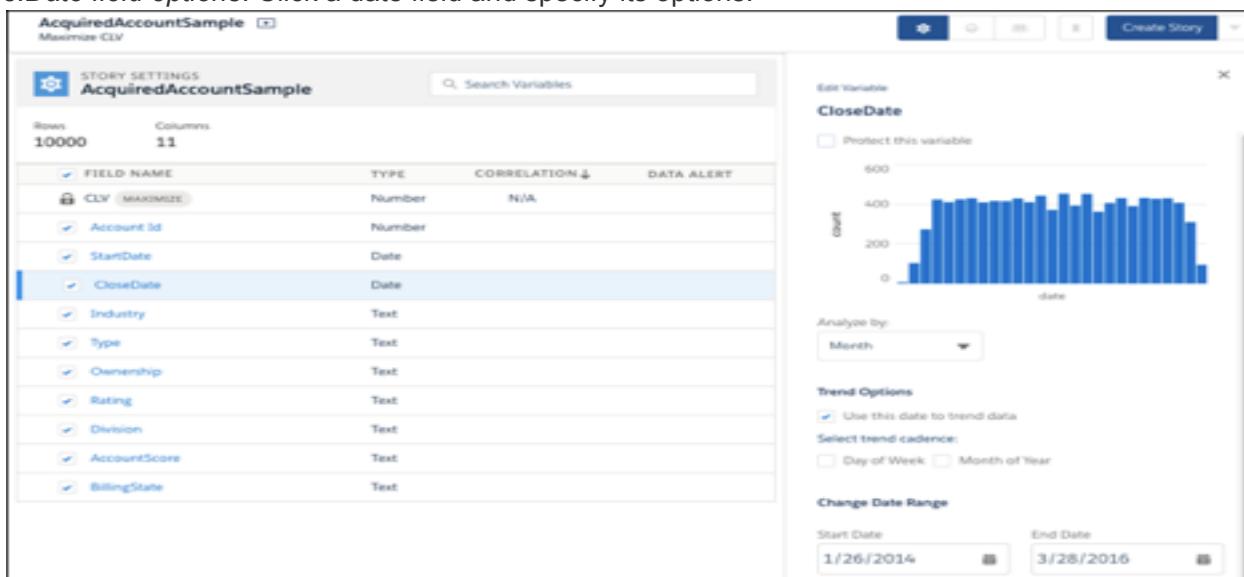
2. *Text field options.* Click a text field and specify its options.



A graph shows the number of values that occur across categories.

- To exclude a field from the model but still be notified if it shows a 50% or higher correlation to the story's outcome variable, select **Protect this field**.
- Select the categories you want to include in the graph. Depending on the following options, excluded categories are either omitted from analysis or merged into the Other category.
- Under **Advanced Options**, specify how to analyze the data: by combining all categories into a new Other column, or by ignoring all unchecked categories.
- Under **Advanced Options**, specify the sort order for insights: by count or alphabetically.

3.Date field options. Click a date field and specify its options.

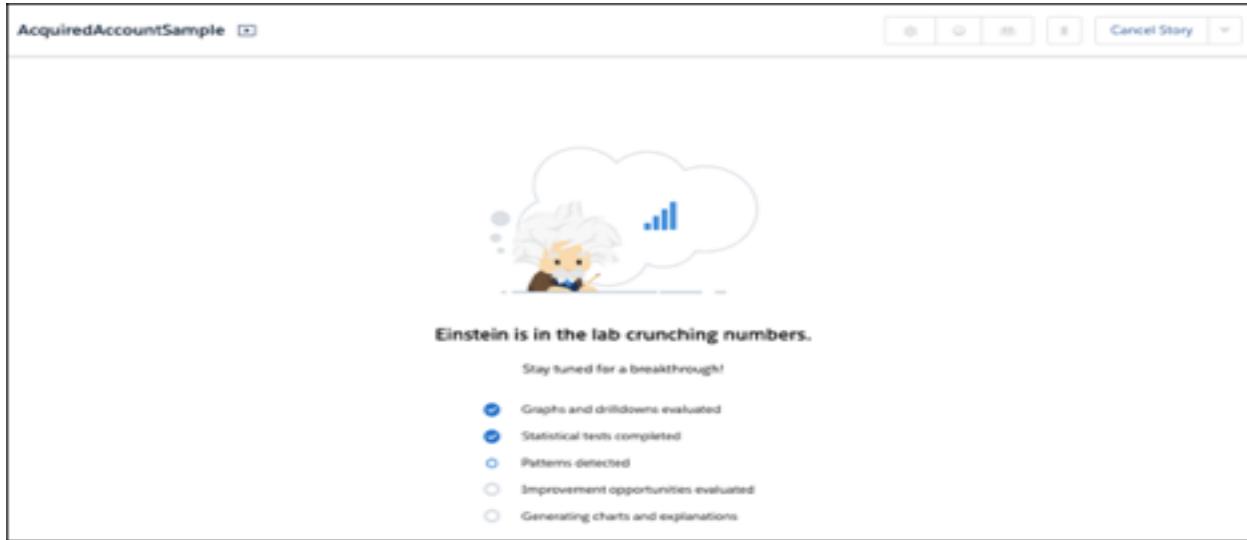


A graph shows the number of values that occur across the range of dates.

- To exclude a field from the model but still be notified if it shows a 50% or higher correlation to the story's outcome variable, select **Protect this field**.

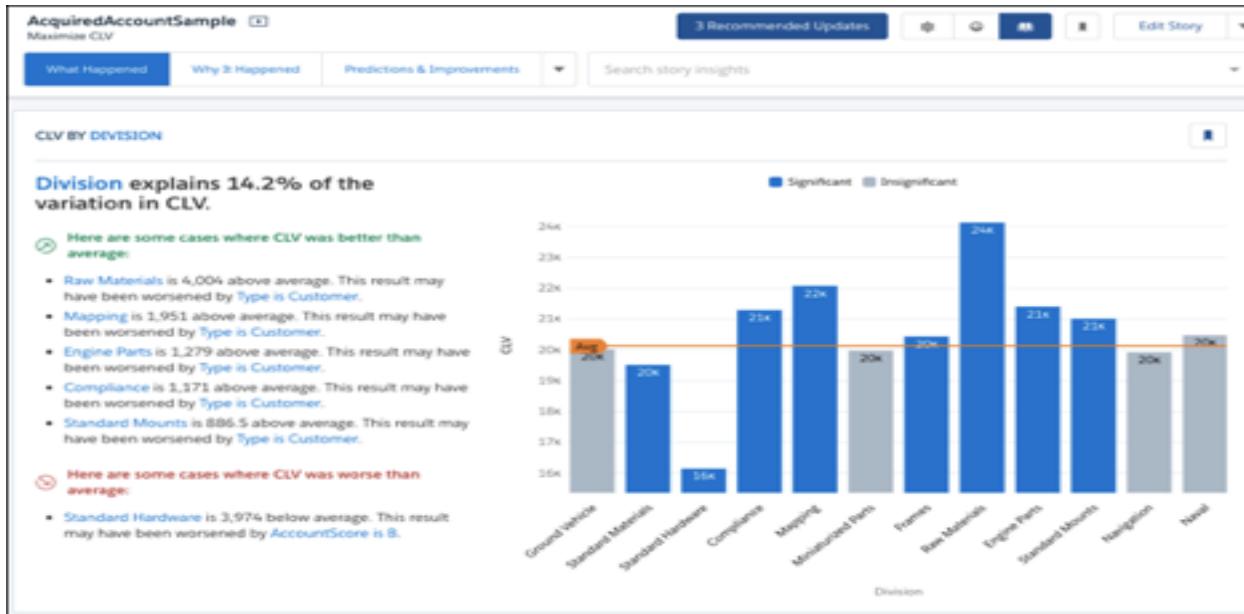
- Specify the time period to analyze: by Day, Month, or Year. For trending (line) charts, use time periods to specify how to represent historical data.
- Specify whether to use the values in this date field to trend data.
- Specify the trend cadence: day of week, or month of year.
- Specify the date range to include in the analysis.

When ready, click **Create Story**.



Einstein Discovery prepares your story, analyzes your data, and displays its progress each step of the way. Einstein Discovery analyzes hundreds, thousands, or millions of variable combinations to find hidden, statistically significant insights in your dataset. When finished, it opens the new story. The story provides a list of insights and charts that are ranked according to their impact on the selected outcome variable. In addition, Einstein Discovery determines their level of interest and relevance to the outcome.

Once created, your new story is added to the list of stories to which you have access. If you saved the story to a shared app, then users with access to that app have access to your story as well.



Build a Prediction

With Einstein Prediction Builder, you can make custom predictions about what happens next in your business without writing any code. After you determine what you want to predict, which field represents it, and what object contains that field, you're ready to build.

From Setup, enter Einstein Prediction Builder in the Quick Find box, then select Einstein Prediction Builder. Or, on the Einstein Prediction Builder tile in Setup Home, click Get Started. If it's your first time using Einstein Prediction Builder, click Get Started on the splash page. (Otherwise, skip to the next step.)

1. Click New Prediction.
2. Name your prediction, such as Annual Revenue Prediction.
3. Tab or click in the next field to auto-populate the API name, and click Next.

- Select the object that contains the field that you want to predict values for. To find an object quickly, enter its name in the Search field.

The screenshot shows the Einstein Prediction Builder interface. At the top, it says "Einstein Prediction Builder". On the left, there's a section titled "Select an object to predict" with a search bar containing "Account". Below the search bar, it asks "Want to focus on a particular segment in your data set?". There are two radio button options: one selected ("No segment (use data from all records on the selected object)") and one unselected ("Yes, focus on a segment (Advanced)"). On the right, there's a sidebar with "Einstein is here to help" featuring a cartoon Einstein character. It also shows "Data Checker" with a note about "Total records (400 minimum)" and a "Check Data" button. Under "Prediction Settings", it says "SELECTED OBJECT" followed by "Account" with an icon. A note at the bottom says "Let's choose an object. Start by selecting the object that contains the field you want to predict." Navigation buttons "Back" and "Next" are at the bottom.

- If you want to focus your prediction on a specific segment in your dataset, select Yes, focus on a segment, and set the conditions. Otherwise, leave the default option No segment selected. Run [Data Checker](#). If you have enough records, click Next.
- Select the field that you want to predict values for. The list of available fields is determined by the object that you previously selected. To find the field you want in a long list, enter its name in the Search field.
- If you want Einstein to use specific records as examples for your prediction (the training set), select Use specific records, and set the conditions according to which records you want. Otherwise, leave the default option selected. Run [Data Checker](#). If you have enough records, click Next.

NOTE *If you're predicting a number field that defaults to 0, don't use all records as examples. You won't get any prediction results. Instead, select Use specific records and add a condition that the field value does not equal 0.*

1. Deselect any fields that you want Einstein to ignore when making a prediction.

Einstein Prediction Builder

What fields should Einstein base your prediction on?

Object: Account · 17 of 17 fields selected

Search

FIELD LABEL	FIELD NAME	DATA TYPE
✓ Account Name	Name	Name
✓ Account Owner	OwnerId	Lookup(User)
✓ Account Source	AccountSource	Picklist
✓ Billing Address	BillingAddress	Address
✓ Created By	CreatedById	Lookup(User)
✓ Data.com Key	Jigsaw	Text(20)
✓ Description	Description	Long Text Area(32000)
✓ Employees	NumberOfEmployees	Number(8, 0)

Einstein is here to help 

Prediction Settings

SELECTED OBJECT  Account
Account

PREDICTED FIELD
Annual Revenue
AnnualRevenue - Currency(18, 0)

How do I decide which fields to select or deselect?

Most fields can be used to create your prediction. However, there are various reasons you might want to exclude a field. If you know a field is not currently being used in your organization, it shouldn't be used in

[Back](#)  [Next](#)

NOTE: When building a prediction using Einstein Prediction Builder, you can select and deselect fields of data to include in the predictive model. By default, all fields are selected. Deselect fields in order to exclude them from the predictive model. Predictions are built using only the remaining selected fields. Any fields you deselect are excluded from the predictive model. Salesforce doesn't use the excluded fields to build predictive models.

Enter a label for the field that stores your prediction results, such as Predicted Annual Revenue. Tab or click in the next field to auto-populate the field name. Click Next.

Einstein Prediction Builder

Name the custom field that stores your results

We create a custom field for you that stores your prediction results. You get to name it whatever you like. Prediction results are stored in this field on each Account record.

* Field Label
Predicted Annual Revenue

* Field Name
Predicted_Annual_Revenue

Einstein is here to help

Prediction Settings

SELECTED OBJECT
 Account
Account

PREDICTED FIELD
Annual Revenue
AnnualRevenue - Currency(18, 0)

Here's how we store your prediction results.
The results of your prediction need to be stored somewhere. That somewhere is a new custom field on each record. For example, if you're predicting how many invoices

[Back](#)  [Next](#)

Review your prediction settings carefully! After you build your prediction, you can't make changes to it. If anything looks wrong at this point, click Back until you get to the page with the settings you want to tweak. Then click Next to get to this page again. When you're ready, click

Build Prediction.

The screenshot shows the Einstein Prediction Builder interface. At the top, it says "Einstein Prediction Builder". Below that, a section titled "Does everything look good?" contains two informational boxes:

- Info:** After you click Build Prediction, Einstein gets busy evaluating your data and making predictions. You can't make any changes to your prediction until Einstein finishes this process. It can take up to 24 hours.
- Warning:** Numeric data type predictions are in beta.

Below these are sections for "Name" and "Object".

PREDICTION NAME	PREDICTION API NAME
Annual Revenue Prediction	Annual_Revenue_Prediction

Object:

PREDICTED OBJECT	DATA SEGMENT

On the right side, there's a sidebar titled "Einstein is here to help" featuring a cartoon Einstein character. It includes a "Data Checker" section with status for "Example records (400 minimum)" and "Records to predict". A "Check Data" button is also present. Below this is a section titled "What happens next?" with descriptive text about the prediction scorecard and enablement options.

At the bottom, there are "Back" and "Build Prediction" buttons, along with a progress bar consisting of several blue circles connected by lines.

Click Done when you're finished reading the celebration page. Check back later to find your prediction's scorecard, which you can review and then decide whether to enable your prediction.

Create and Share the Sales Analytics App

Follow these steps to create Sales Analytics and start uncovering the value of your Salesforce data.

REQUIRED USER PERMISSIONS

USER PERMISSIONS NEEDED

To create and manage Analytics apps: Manage Analytics Templated Apps

Edit Analytics Dataflows

For rapid app creation, choose Basic creation, which uses default settings to create Sales Analytics. To set up Sales Analytics according to your team's specific Sales Cloud analytics requirements, choose Custom creation.

If you use the Sales Cloud [Collaborative Forecasts](#) feature to store quota data, the data is automatically available to Sales Analytics. If you track quotas outside of Salesforce, you need to upload a quotas .CSV to include quotas in Sales Analytics dashboards. See [Collaborative Forecasting and Quotas Data in Sales Analytics](#).

1. Log in to Salesforce and open Analytics Studio. In Salesforce Classic, select **Analytics** Studio from the Lightning Platform menu (top right of the Salesforce window). In Lightning Experience, click the app launcher , then click the **Analytics Studio** tile.
2. Click **Create**, select **App**, select **Sales Analytics**, and then click **Continue** to open the configuration wizard. *If you've created an app before:* Choose between creating a brand new app or creating an app based on settings from a previously-created app. Click **Continue**. Sales Analytics runs a compatibility check against your org to be sure it includes the data to successfully create the app's datasets and dashboards. If it doesn't, follow the instructions in the error message to add the required data and start the app creation process again.
3. Once the org compatibility check succeeds, click **Looks good, next**.
4. Choose between using preselected standard settings or custom settings to set up your app. Select **Basic** to set up your app quickly based on standard settings determined by the org compatibility check. The standard settings include collaborative forecasting if you use the Sales Cloud Collaborative Forecasts feature. Select **Custom** to open the configuration wizard, which you use to make your own, custom settings to reflect the way you and others on your team want to view data. For details about using the configuration wizard, see Customize Sales Analytics with the Configuration Wizard.
5. If you choose **Basic**: You're almost done. Click **Looks good, next**, and skip to Step 9.
6. If you choose **Custom**: Click **Looks good, next**. The wizard asks you to choose Salesforce objects to add to Sales Analytics. It then takes you through a set of questions about how you prefer to view data. Go to Customize Sales Analytics with the Configuration Wizard for complete instructions on how to use the wizard.
7. Give your app a name that's easily recognizable to others in your company and click **Create**. That starts a dataflow that creates the app and its assets (which include a dataflow definition file, datasets, and dashboards).
8. Before it creates your app, Sales Analytics checks to see that the Analytics Cloud Integration User has access to all fields in Salesforce you'd like your app to use. The check happens in the background, and if it succeeds, the app creates successfully. If it fails, you see an error that says the Integration User does not have access to specific fields. If you receive that error, here's what to do:
 1. In Salesforce Setup, go to Manage Users, then Profiles.
 2. Open the profile for the Analytics Cloud Integration User.
 3. Scroll down to Field Level Security and click **View** next to the objects indicated in the error message.
 4. Check **Read Access** for the fields indicated in the error message.
 5. Refresh your browser cache, and click **Create** again.
9. The app creation process can take a few minutes. You can check the status of the dataflow: Open the Analytics Home page, click the gear menu at the upper right of the page, and select Data Manager. From pulldown menu, select Dataflow View and look for your app.
10. Now that you've created the app, share it with users in your organization. You can only share it with users who have the Use Analytics Templatized Apps and Access Sales Cloud Analytics Templates and Apps permissions enabled. (For more about Sales Analytics app permissions, see Set Up Salesforce Permissions for the Sales App). To share the app, roll your cursor over the icon for the app and click **Share**. Next, type in the names of team members, click **Add**, and click **Save**.

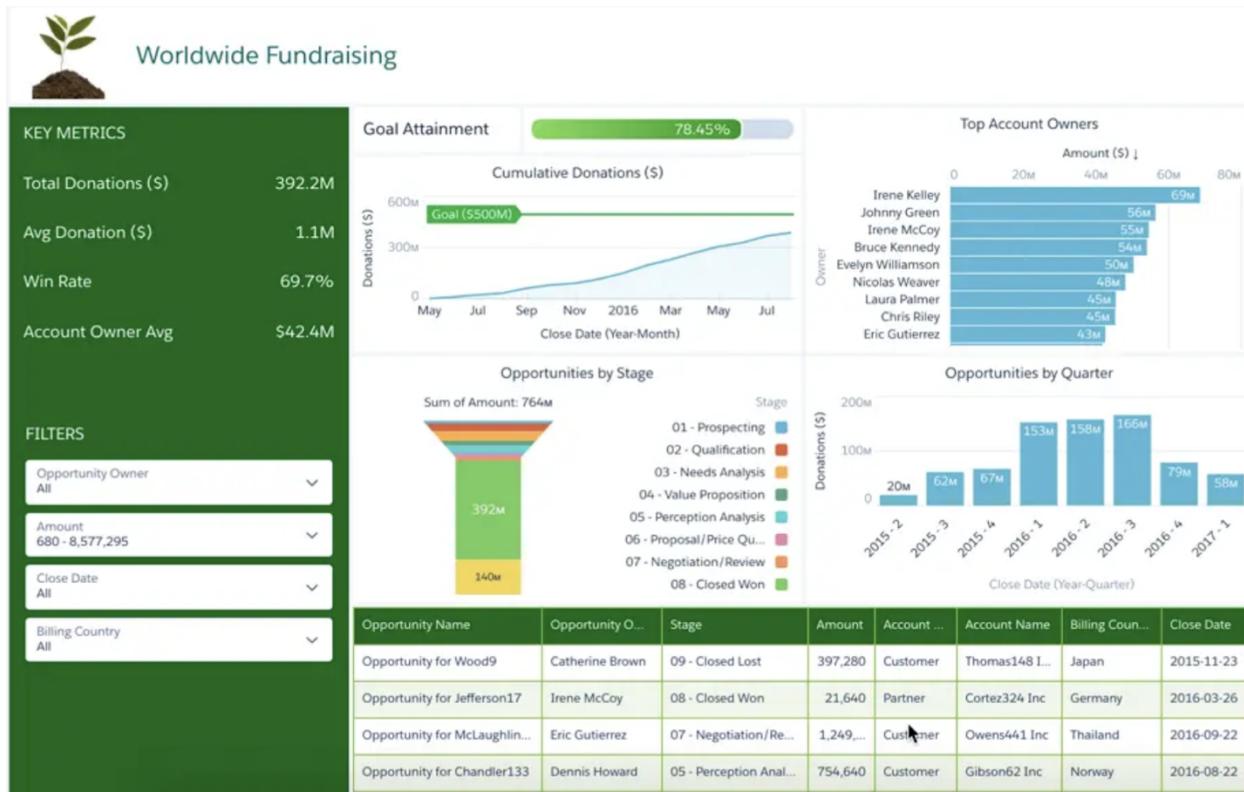
Demo

- 1. Building an Advanced Sales Dashboard**
- 2. Einstein Prediction Builder to Predict Restaurant No Shows**

Demo 1 : Building an Advanced Sales Dashboard

Case :

- ABC Seeds is a nonprofit organization that provides funding to build schools in poverty-stricken areas around the world. They hired you as their Salesforce admin to help build a system to track fundraising.
- A few months ago, the program director came to you asking if she can see metrics about donations, donors, and account owners in a single place. So, after getting everyone going with Salesforce's Nonprofit Success Pack, you quickly threw together the Worldwide Fundraising dashboard. The director took one look at it and was impressed. She then asked you to share it with the fundraising team, which you did.
- But the director came into your office this morning and said, "We love your dashboard, but there's so much on it that we're having trouble reading it. I'm afraid a few account owners overlooked some huge potential donors. Maybe as much as a few million dollars we could have raised just last month." Yikes!
- After brainstorming some ideas, you and your program director agreed to make the following enhancements.



- Clarify the data:** Make large potential donations jump off the page by automatically highlighting opportunities worth more than \$1 million.
- Make data actionable:** Show high (and lower) performing members of the team by grouping them into high, medium, and low performer buckets. That way, the director can quickly see whose achievements to call out, and who needs coaching.
- Make data contextual:** Help business users quickly zero in on key metrics and trends that impact donations by reorganizing the dashboard into smaller, more focused chunks. We don't want to miss any more large donations, right?
- Set benchmarks:** Quickly identify how the team's doing by showing how each account owner's performance compares to the average. Account owners are responsible for managing all donor accounts, including both individual and corporate donors.

Part 1: Highlight Key Insights with Conditional Formatting

1. Make Data Do the Talking with Conditional Highlights

- Dashboards can be chock-full of insights. With so much information to take in, it can be easy for users to miss something. Thankfully, there's a way to assure they don't.

Conditional formatting can help you draw users' attention by dynamically highlighting specific information in tables, charts, and number widgets.

- To address the program director's concern about information being overlooked, you decide to add conditional formatting. You'll use it to bucket account owners in high, middle, and low performers and call attention to large donations.

In the original dashboard, you sorted the list of account owners by how much money they added to the donation pipeline to identify top performers. In the new version, let's categorize them visually into three buckets with conditional formatting: top, middle, and low performers.

- Go to the Worldwide Fundraising In Progress dashboard. It should still be in edit mode.
- Select the Top Account Owners widget.
- In the widget properties, scroll down to the Conditional Formatting section and expand it.

The screenshot shows a Tableau dashboard in edit mode. On the left, there are two visualizations: a bar chart titled "Top Account Owners" and a bar chart titled "Opportunities by Quarter".

The "Top Account Owners" chart displays the amount of money added by various account owners. The data is as follows:

Owner	Amount (\$)
Irene Kelley	69M
Johnny Green	56M
Irene McCoy	55M
Bruce Kennedy	54M
Evelyn William...	50M
Nicolas Weaver	48M
Laura Palmer	45M
Chris Riley	45M
Eric Gutierrez	43M

The "Opportunities by Quarter" chart displays donations over time. The data is as follows:

Close Date (Year-Quarter)	Donations (\$)
2015-2	20M
2015-3	62M
2015-4	67M
2016-1	153M
2016-2	158M
2016-3	166M
2016-4	79M
2017-1	58M

On the right, the "Widget" properties panel is open, showing various configuration steps. The "Conditional Formatting" section is highlighted with a red box. It contains instructions on how to apply conditional formatting and a dropdown menu set to "None".

1. In the Apply Conditional Formatting To field, select Sum of Amount.



Note

You can color a measure's value using a gradient or bins. Gradient is selected by default. Let's use bins to clearly distinguish the three buckets of performers.

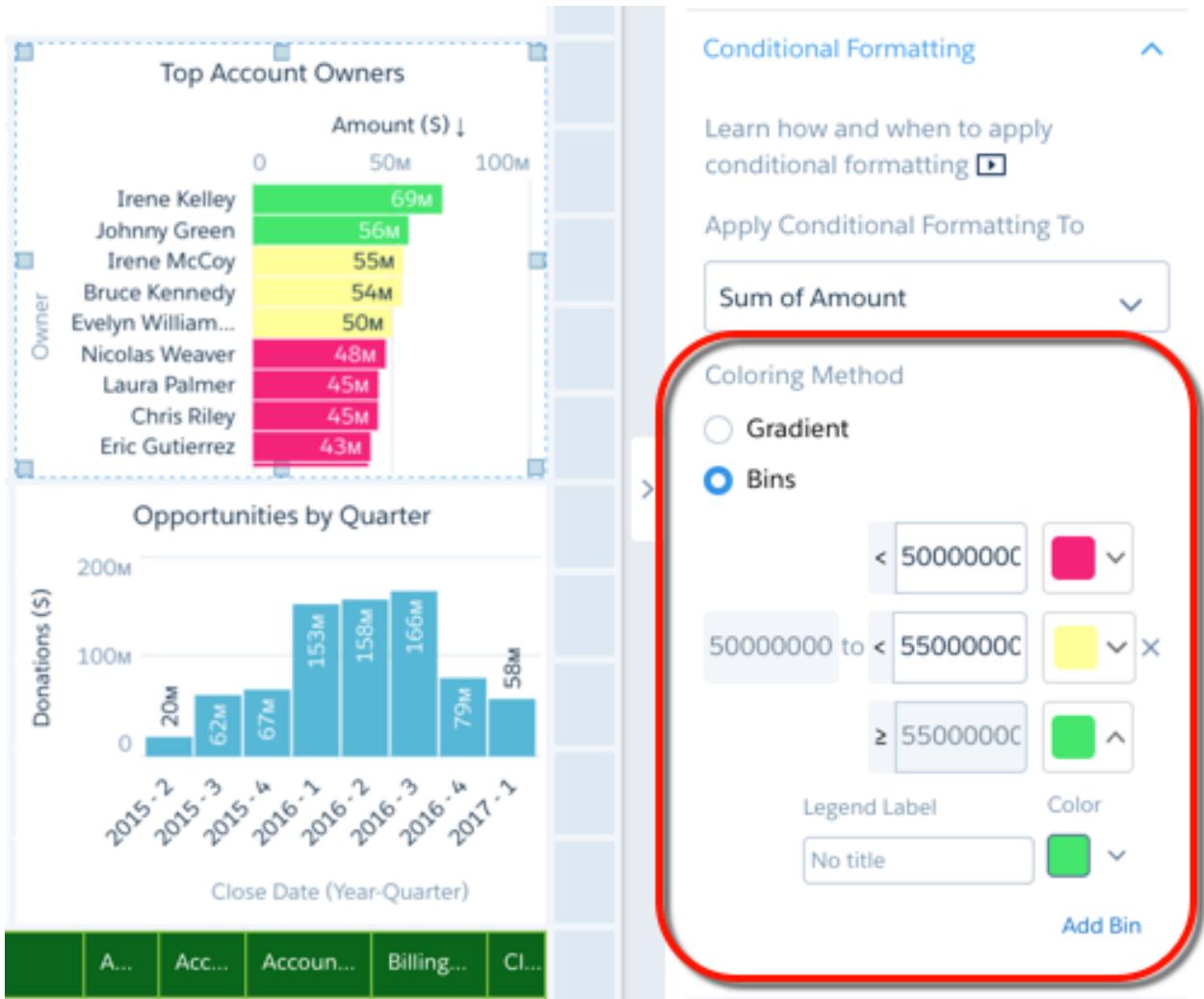
1. Select Bins.
1. To create a third bin, click Add Bin.
1. Set the following value and color for each bin.



Tip

When you enter values, don't include commas. You can choose any shade when selecting a color.

Bin	Value	Color
Low Performer	< 50000000	Red
Middle Performer	50000000 to < 55000000	Yellow
Top Performer	>5500000	Green



1. Save the dashboard.

Nice work. Now the ABC Seed director can easily see which account owners to congratulate and which to offer assistance. In the next section, you call attention to the large donation opportunities in the table so they don't slip through the cracks.

2. Let's Call Out Large Donations

Time to bring extra attention to large donation opportunities.

- At the bottom of the dashboard, select the table widget.
- In the widget properties pane on the right, select the Column tab.
- In Choose Column, select Opportunity Name.
- Expand the Conditional Formatting section, and click Add Rule.
- Base the coloring on the amount by selecting Amount in the Reference Column.
- In Coloring Method, select Is Greater Than Or Equal To.
- Enter 1000000 as the value. Again, don't enter commas within the value.
- Set the background color to green.

Conditional Formatting

X

Apply to this Column

Opportunity Name

Reference Column

Amount

Condition

Is Greater Than Or Equal To

1000000



Text Color



Background Color



Cancel

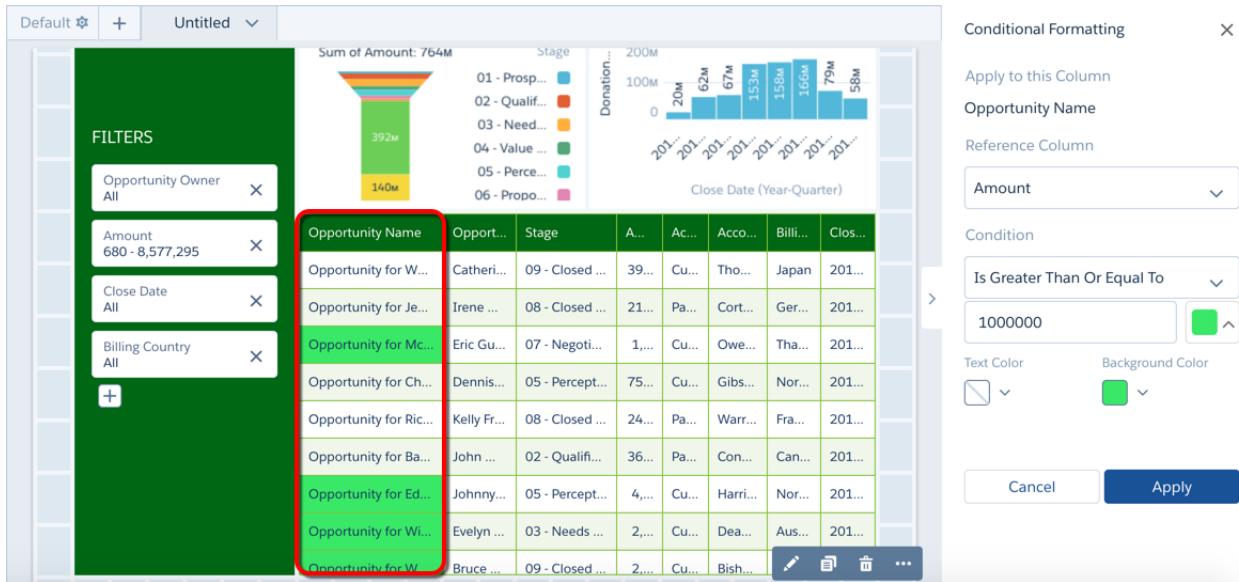
Apply

9.

10. Click Apply.

11. Save your dashboard.

Now, large donation opportunities are highlighted in green, making them easy to see.



Part 2: Engage Users with Animated Pages

In Analytics, you can break up dashboards into multiple pages, each with a specific focus and audience.

Pages offer some useful capabilities. When you split dashboard content into multiple pages, the dashboard renders faster because each page has fewer widgets. You can reuse widgets across pages in the same dashboard so that you only have to create them once. And when you navigate between pages, you'll witness some really neat animation. You might add pages just for the animation alone.

Next on your agenda is to break up the Worldwide Fundraising In Progress dashboard so that it's not so overloaded. You apply some best practices while breaking the content into separate pages.

1. Create the Donations Page

First, let's help the team focus on donations with a Donations page. So that we don't lose any existing work, let's make the current page our master page. To create the Donations page, we clone the Master page and remove any widgets that we don't need. You can save a lot of time by cloning pages instead of creating pages and their widgets from scratch.

1. Go to the Worldwide Fundraising In Progress dashboard. It should still be in edit mode.
2. Click the dropdown next to the Untitled tab, select Rename, change the page name to Master, and click Apply.

The screenshot shows a Master page with a green sidebar containing key metrics. The main area includes a title with a plant icon, a goal attainment bar, and a cumulative donations chart. A dropdown menu is open, and the 'Clone' option is highlighted and circled in red.

1. To clone the Master page, click the dropdown next to the Master tab and select **Clone**.

The screenshot shows the cloned Master page. It has a different title and sidebar metrics compared to the original, but the main area and dropdown menu are identical to the original Master page, with the 'Clone' option still highlighted and circled in red.

1. Rename the cloned page to Donations.

Great! Now you have two pages: Master and Donations. Currently, you're viewing the Donations page.

1. Delete all widgets from the Donations page except the following widgets.
 1. Container widget with the dashboard title and company logo that goes horizontal across the top
 2. Container widget with the key metrics and global filter panel widget—the vertical column on the left
 3. Table widget
1. The Donations page should look like this.

Opportunity Name	Opportuni...	Stage	Amount	Accoun...	Accoun...	Billing ...	Close Date
Opportunity for Wood9	Catherine ...	09 - Closed Lost	397,280	Custo...	Thoma...	Japan	2015-11-23
Opportunity for Jeffer...	Irene McC....	08 - Closed Won	21,640	Partner	Cortez3...	Germany	2016-03-26
Opportunity for McLa...	Eric Gutier...	07 - Negotiatio...	1,249,0...	Custo...	Owens...	Thailand	2016-09-22
Opportunity for Chan...	Dennis Ho...	05 - Perceptio...	754,640	Custo...	Gibson...	Norway	2016-08-22

1. Because the deleted widgets still exist on the Master page, they aren't deleted permanently from your dashboard. Later, you add a few of them back to the Donations page.

1. Add a 16x6 container widget to the right of the Key Metrics container, directly below the Worldwide Fundraising title widget. Do this by selecting , dragging it into place, and then resizing it.

The screenshot shows a dashboard interface with the following components:

- Header:** Default, +, Master, Donations.
- Section 1 (Left):**
 - KEY METRICS:**
 - Total Donations (\$) 392.2M
 - Avg Donation (\$) 1.1M
 - Win Rate 69.7%
 - Account Owner Avg \$42.4M
 - FILTERS:**
 - Opportunity Owner All
 - Amount 680 - 8,577,295
 - Close Date All
 - Billing Country All
 - + (Add filter button)
- Section 2 (Right):**
 - Leaderboard Table:**

Opportunity Name	Opportuni...	Stage	Amount	Accoun...	Accoun...	Billing ...	Close Date
Opportunity for Wood9	Catherine ...	09 - Closed Lost	397,280	Custo...	Thoma...	Japan	2015-11-23
Opportunity for Jeffer...	Irene McC...	08 - Closed Won	21,640	Partner	Cortez3...	Germany	2016-03-26
Opportunity for McLa...	Eric Gutier...	07 - Negotiatio...	1,249,0...	Custo...	Owens...	Thailand	2016-09-22
Opportunity for Chan...	Dennis Ho...	05 - Perceptio...	754,640	Custo...	Gibson...		
 - Actions:** Move/Add, Edit, Delete.

Red annotations are present: a red arrow points from the 'Account Owner Avg' metric to the first column of the leaderboard; a red double-headed arrow spans the width of the first two columns of the leaderboard; a red number '16' is placed above the first column of the leaderboard; and a red number '6' is placed to the right of the second column of the leaderboard.

1. We're going to reuse this container widget for each page to ensure we have similar size pages for an animation effect.
1. Add a Leaderboard link widget by completing the following tasks.
 1. Add a 16x1 link widget () below the container widget and set the link name to Leaderboard.

Default + Master Donations WIDGET

Text Style	Setting
Color	<p>Text Style </p> <p>Color </p> <p>Custom </p>
Size	20
Alignment	Left

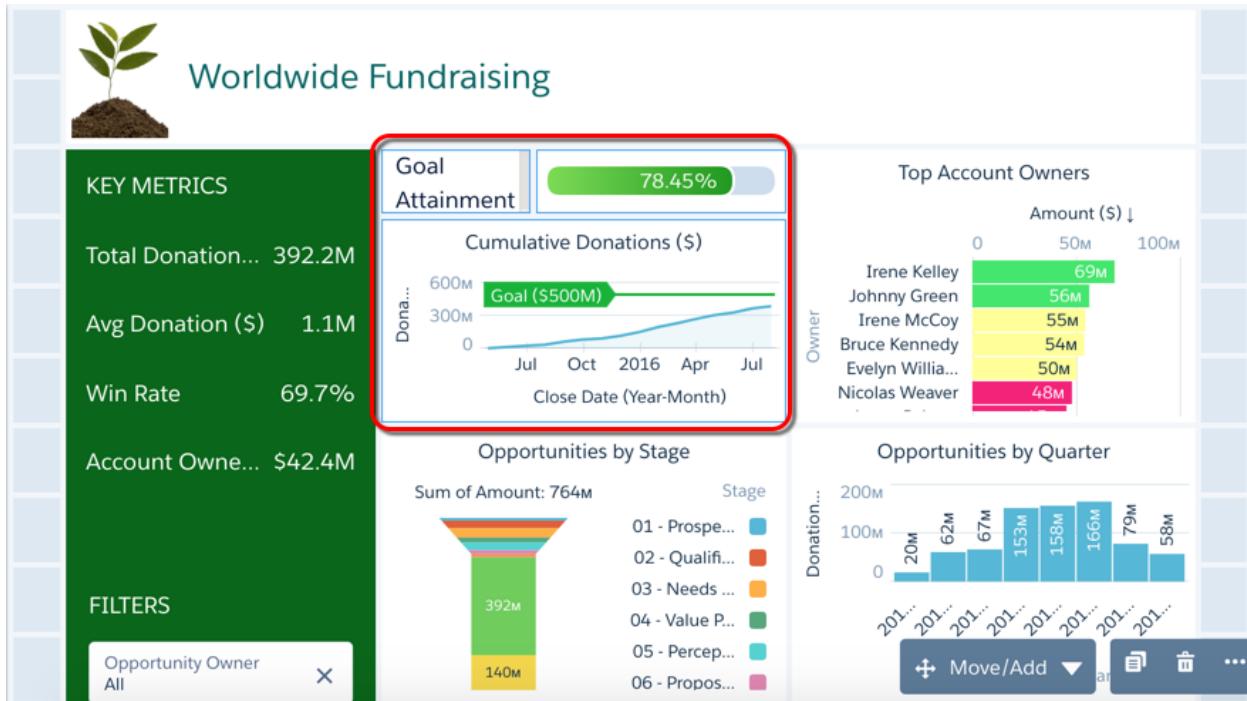
- To quickly create two more link widgets, select the Leaderboard link widget, and click the Copy Widget button () twice.

Two copies of the Leaderboard link widget appear at the bottom of the dashboard.

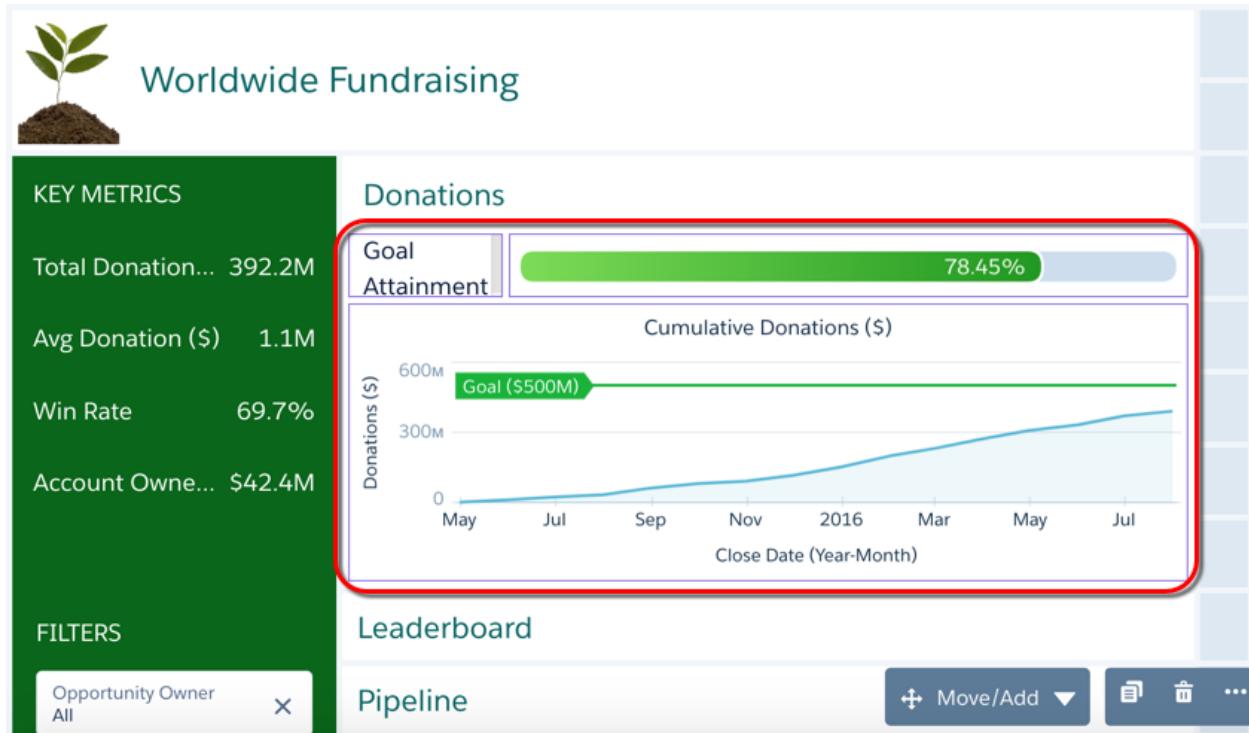
- Name the last two link widgets Donations and Pipeline.
- Place the Donations link widget at the top of the empty container widget.
- Move the Pipeline link widget directly below the Leaderboard widget.
- Save the dashboard.

The screenshot shows a Salesforce dashboard titled "Worldwide Fundraising". On the left, there's a sidebar with a green background. It features a small icon of a plant growing out of soil at the top. Below it, the title "Worldwide Fundraising" is displayed. Under the title, there's a section labeled "KEY METRICS" containing four items: "Total Donation..." (392.2M), "Avg Donation (\$)" (1.1M), "Win Rate" (69.7%), and "Account Owne..." (\$42.4M). Below the metrics is a "FILTERS" section with a dropdown menu set to "Opportunity Owner All". To the right of the sidebar, there's a main content area with three tabs: "Leaderboard" (which is selected and highlighted in blue), "Pipeline" (which is disabled and grayed out), and "Donations" (which is also disabled and grayed out). At the bottom right of the content area, there's a toolbar with several icons: a plus sign for "Move/Add", a pencil for edit, a copy symbol, and a trash can for delete.

- Click the Master tab, and then select all the following widgets on that page.
 - Goal Attainment text widget
 - Flat gauge chart
 - Cumulative Donations chart
- To select multiple widgets, hold down Ctrl for Windows or Cmd for Mac while making your selections.



1. Add the three selected widgets to the Donations page.
 1. With the three widgets selected, click Move/Add at the bottom of the page.
 2. Click Add to Page.
 3. Select the Donations page as the destination.
 4. Select Apply.
1. The widgets are added to the bottom of the Donations page, which now opens.
 1. In the Donations page, move the newly added widgets into the container widget (under the Donations link widget), and then stretch them to the right to fit.



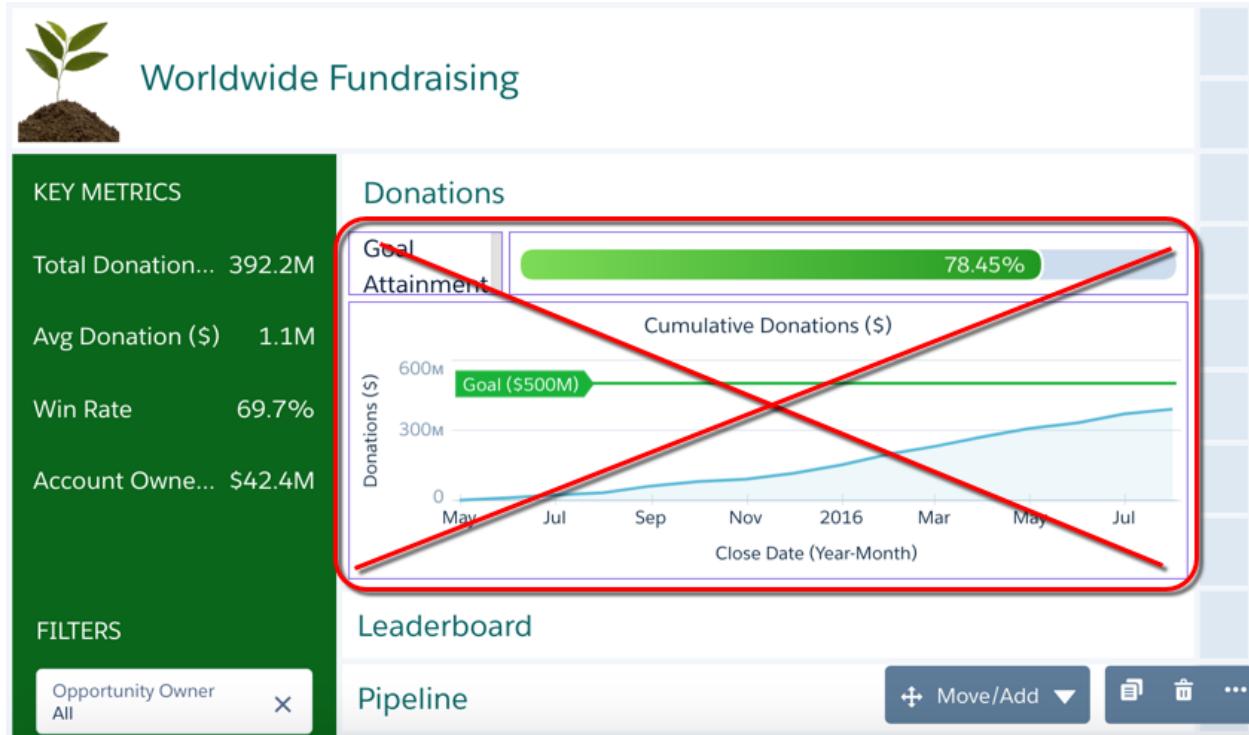
1. Save the dashboard.

Nice work. You now have two pages: one with all the widgets and another specific to donations. The Donations link widget serves as the title for the area inside the container widget. Next, let's build the Leaderboard page to evaluate account owner performance. We'll use the Leaderboard link widget as the title for the container widget on this page.

2. Create the Leaderboard Page

To analyze account owners and compare their performance with others, let's create a leaderboard. A Leaderboard page can rank account owners. If the director would like to spark some friendly competition, account owners can use this board to see who's the top performer. To build the page, we clone the Donations page, remove the donation widgets, and then add the Top Account Owners chart from the Master page.

1. Clone the Donations page and call it Leaderboard.
2. In the Leaderboard page, remove the three donations widgets, but keep the Donations link widget.



1. Move the container widget down one row.



Tip

To move the other widgets out of the way, press **Shift** while moving the container.

The screenshot shows a dashboard titled "Worldwide Fundraising". On the left, there's a green sidebar with "KEY METRICS" containing four items: "Total Donation..." (392.2M), "Avg Donation (\$)" (1.1M), "Win Rate" (69.7%), and "Account Owne..." (\$42.4M). Below this is a "FILTERS" section with a dropdown set to "Opportunity Owner All". To the right is a main area with a "Donations" link widget, which has a red arrow pointing down to its title. At the bottom right of the dashboard are edit and delete icons.

1. Move the Donations link widget up one row, just above the container widget.

The screenshot shows the same dashboard after the "Donations" link widget has been moved. It is now positioned directly above the "Leaderboard" container, just below the "Key Metrics" section. The rest of the dashboard layout remains the same, with the green sidebar and the "Leaderboard" section at the bottom.

1. Move the Leaderboard link widget to top of the container widget to serve as its

The screenshot shows the Worldwide Fundraising dashboard. The top navigation bar includes tabs for Default, Master, Donations, and Leaderb... (which is currently selected). The main content area features a green sidebar on the left with 'KEY METRICS' and 'FILTERS'. The main panel contains sections for 'Donations' and 'Pipeline'. A 'Leaderboard' link widget is positioned within the 'Donations' section. The bottom right corner of the dashboard has a toolbar with icons for Move/Add, Edit, Delete, and More.

1. To close the gap, move the Pipeline link widget and table up one row.
1. Add Top Account Owners chart from the Master page to the Leaderboard page and expand it to fit inside the container.

The screenshot shows the Worldwide Fundraising dashboard after modifications. The 'Leaderb...' tab is still selected in the top navigation. The 'Leaderboard' link widget is now at the top of the main content area. The 'Top Account Owners' chart, which was previously on the Master page, has been moved here and is displayed prominently. The chart lists owners and their donation amounts, with Irene Kelley at the top. The 'Pipeline' link widget and its table have been moved up one row. The bottom right toolbar remains the same.

Owner	Amount (\$)
Irene Kelley	69M
Johnny Green	56M
Irene McCoy	55M
Bruce Kennedy	54M
Evelyn Williamson	50M
Nicolas Weaver	48M
Laura Palmer	45M
Chris Riley	45M
Eric Gutierrez	43M

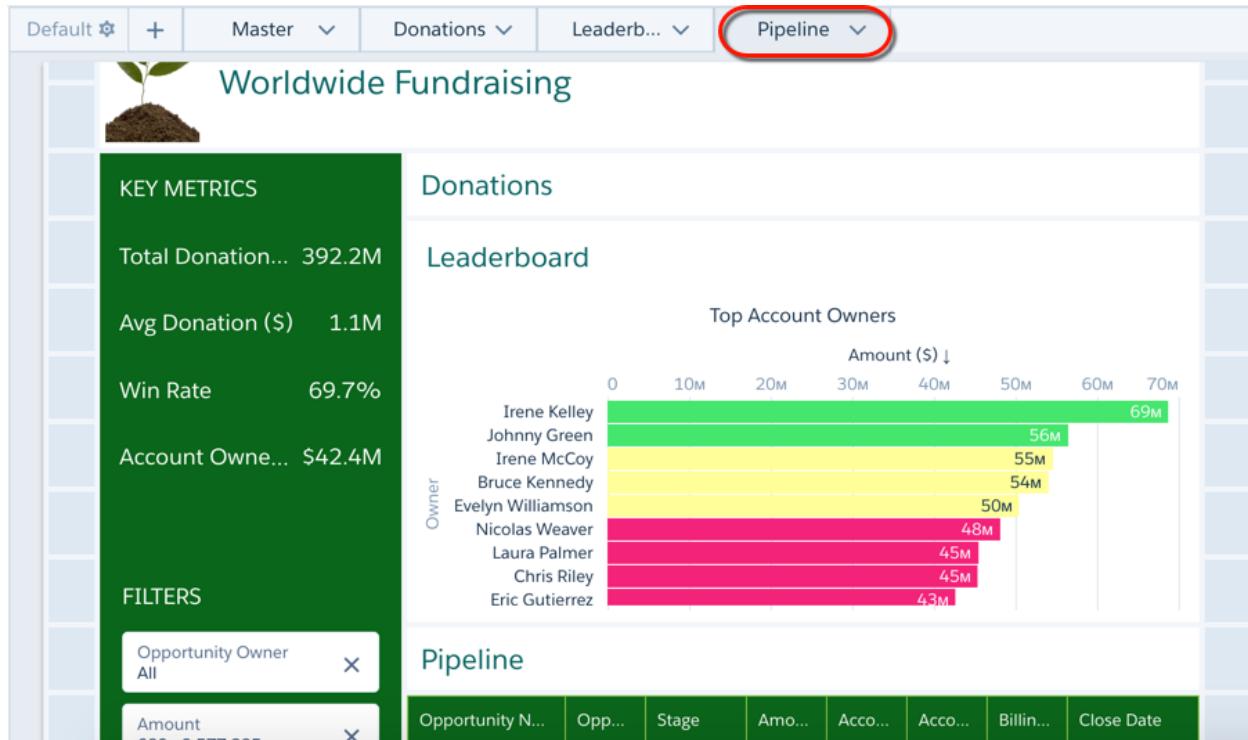
1. Save the dashboard.

Great—now you have the Leaderboard page! Next, you finish by creating a Pipeline page. With each step in the process, you make it easier for the team to get value from the dashboard.

3.Create the Pipeline Page

Using the same process, create the Pipeline page by cloning the Leaderboard page, remove the existing chart and add the pipeline charts.

1. Clone the Leaderboard page and name the new page Pipeline.



1. Remove the Top Account Owners chart.
1. Move the container widget down one row.

The screenshot shows a dashboard titled "Worldwide Fundraising". On the left, there's a sidebar with "KEY METRICS" containing "Total Donation..." (392.2M), "Avg Donation (\$)" (1.1M), "Win Rate" (69.7%), and "Account Owne..." (\$42.4M). Below that is a "FILTERS" section with dropdowns for "Opportunity Owner" (All) and "Amount" (680 - 8,577,295). The main area has tabs for "Donations" and "Leaderb...". A red arrow points to the "Leaderboard" section within a grid. At the bottom right are buttons for "Move/Add", "Edit", "Save", and "Delete".

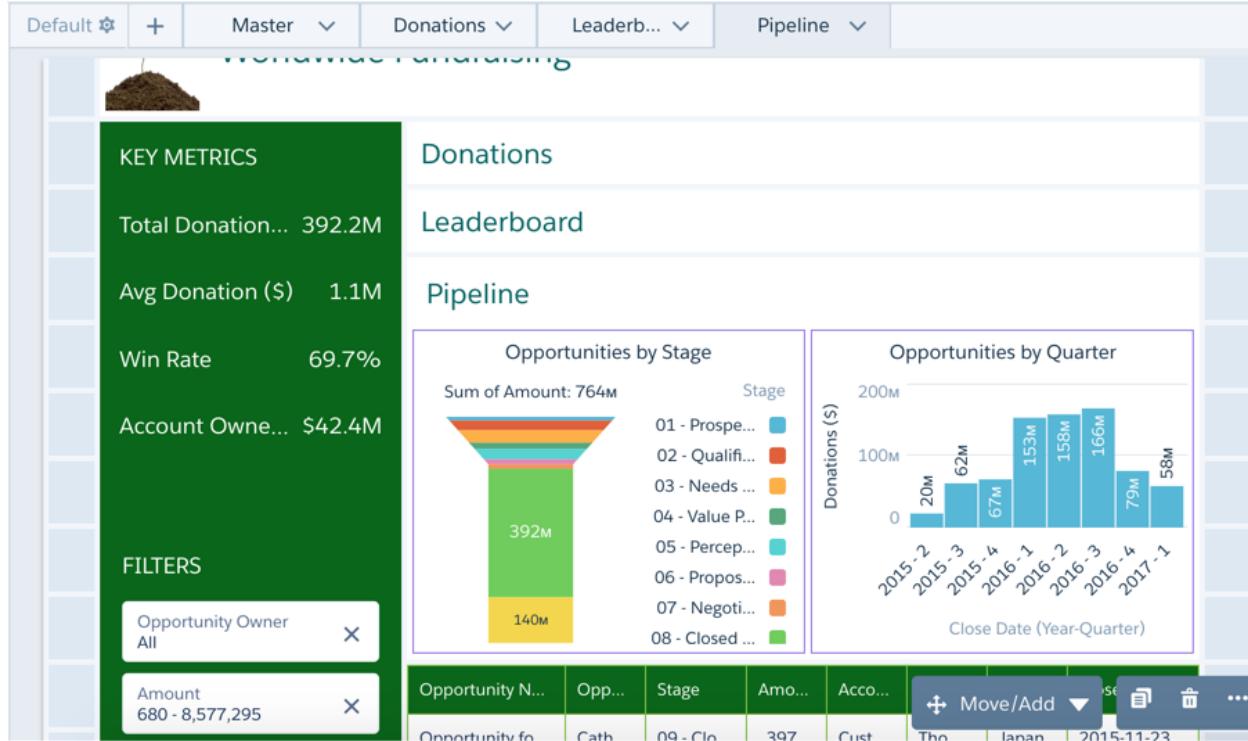
1. Move the Leaderboard widget up one row, above the container widget.
1. Place the Pipeline link widget at the top of the container.

The screenshot shows the dashboard after reordering. The "Leaderboard" section is now positioned above the container grid. The "Pipeline" link has been moved to the top of the container. The rest of the interface remains the same, with the sidebar, filters, and other tabs visible.

1. Move the table up one row to close the gap.

- Add Opportunities by Stage and Opportunities by Quarter charts from the Master page to the Pipeline page.

- Place them in the container widget and resize them to fit.



- Save your dashboard.

Click, click, click—simple. You're done with the Pipeline page! Now you just need to build a way for users to navigate between pages. Let's take care of that now.

4. Make Analytics Fun with Animation

You can use a Navigation widget to allow users to toggle between pages. But to create custom links and a cool, dynamic accordion effect, let's use the link widgets we created.

In the Donations page, connect the Leaderboard link widget to the Leaderboard page by modifying the link widget properties.

- In the Donations page, select the Leaderboard link widget.
- In the Link To field in the widget properties, select Page in Layout and in the Page field, select Leaderboard.

This screenshot shows a dashboard interface with several tabs at the top: Default, Master, Donations, Leaderb..., and Pipeline. The Master tab is selected. The main content area is titled 'Worldwide Fundraising' and features a 'KEY METRICS' card with four items: Total... 392.2M, Avg D... 1.1M, Win ... 69.7%, and Acc... \$42.4M. Below this is a 'FILTERS' section with an 'Opportu...' dropdown. The 'Donations' section contains a chart titled 'Cumulative Donations (\$)' showing a blue line graph with a green shaded area representing the goal. A red arrow points from the 'Leaderboard' link in the 'Pipeline' section of the dashboard to a 'Link To' configuration panel on the right. This panel has a dropdown set to 'Page in Layout' with 'Page' and 'Leaderboard' options. Other settings like 'Text' and 'Widget Style' are also visible.

1. Similarly, connect the Pipeline link widget to the Pipeline page.
1. Then, connect the Donations link widget to the Donations page.



Tip

Why do we need to connect the Donations link if we are already on the Donations page? That's because the link widget is reused on the Leaderboard and Pipeline pages. We need to link those pages back to the Donations page.

1. Save the dashboard.
1. To test out the links, click , and then click the Donations, Leaderboard, or Pipeline links. Notice how the sections expand and collapse as you select each one—that's the accordion effect!

1. Click to continue editing the dashboard.

When you first open a multi page dashboard, by default, the dashboard shows the first page. In this case, it's Master. We don't want users to see the Master page since all of its content is now available on the other pages. Let's move the Master page from the first position so that the Donations page opens by default.

1. Click the dropdown next to Master, and click Move Right. Repeat this step two more times to make Master the last tab.

Because the Donations page appears first when you open a dashboard and there's no link to the Master page, users can't access the Master page while viewing the dashboard. Neat trick, right?

1. Save the dashboard.

Excellent! Instead of creating three separate dashboards, we used three pages, which allowed us to reuse widgets. We used similar layouts on the pages to create a neat accordion effect that shows and hides widgets.

What's next? The director wants a way to quickly compare each account owner against the team's average performance. Head to the next step to learn how to accomplish this task.

Part 3: Use Bindings to Compare Data

Based on the binding, you can use an input step to determine an output, which can either be another step's results or the setting for a widget property.

The value provided by the input step is based on the binding type.

There are two types of bindings: selection binding and result binding.

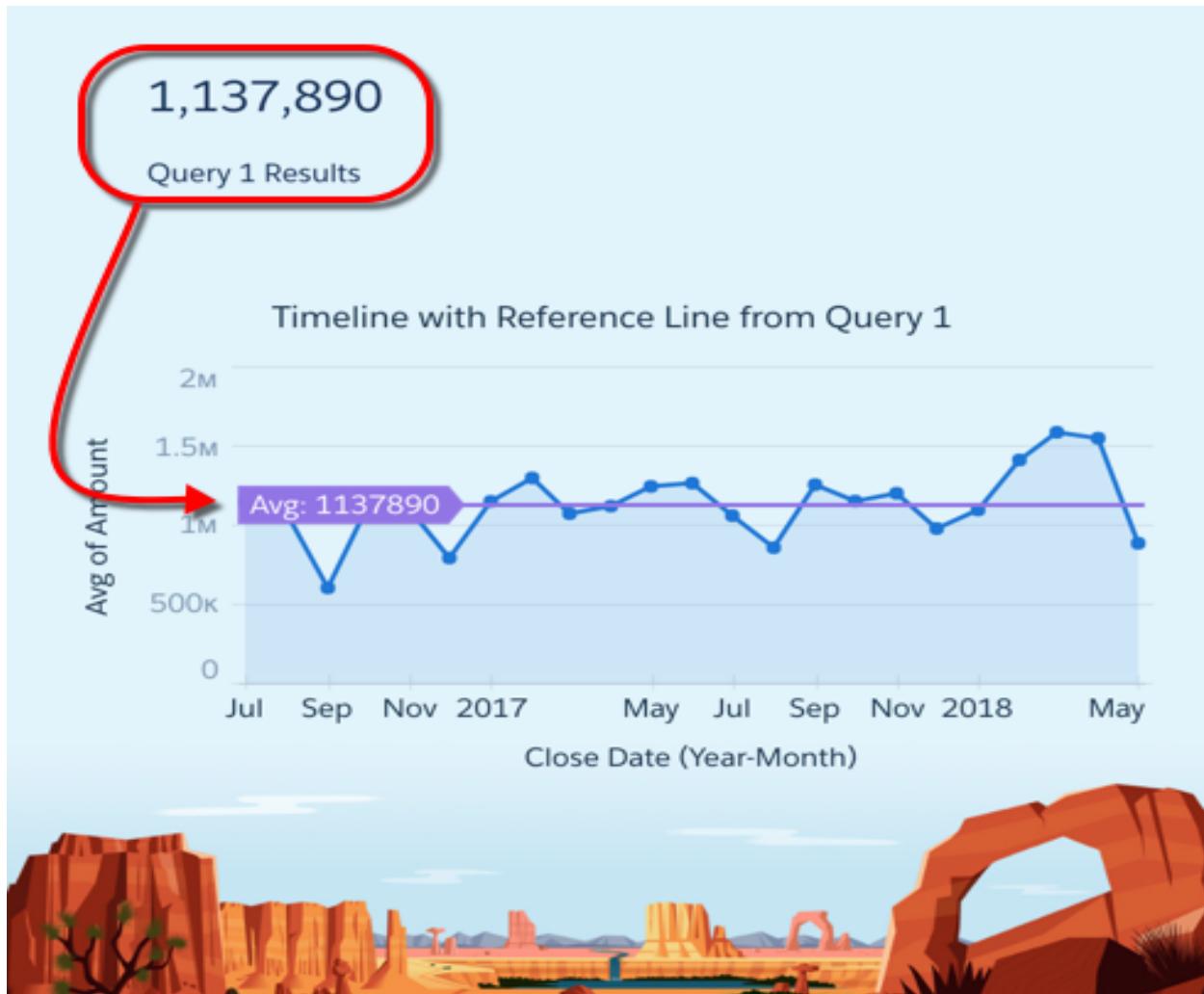
1. **Selection binding:** returns the selections in the input step to the output component. Selection bindings are interaction-driven, where the result is evaluated each time the user makes a selection in the dashboard. For example, when a user selects the Top 5 toggle, a chart shows the top 5 accounts.
2. **Result binding** uses the result of the input step to update the output component. For instance, think of a chart that displays an average reference line based on a calculation from another step.

Top 5

Top 20

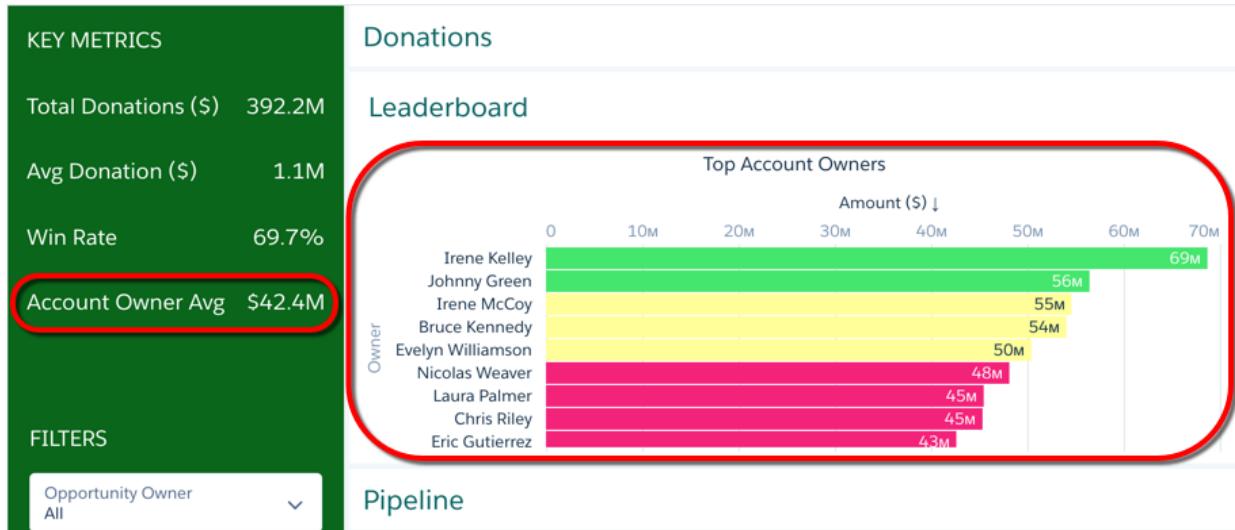
All





1. Compare Account Owners Against the Average

The Top Account Owners chart shows large differences in total opportunity amount per account owner. To determine how each account owner compares against the team's average, let's add a reference line that represents the average. It just so happens that the Account Owner Avg number widget, found on the left column of the dashboard, already calculates the average. So let's share the results between widgets!



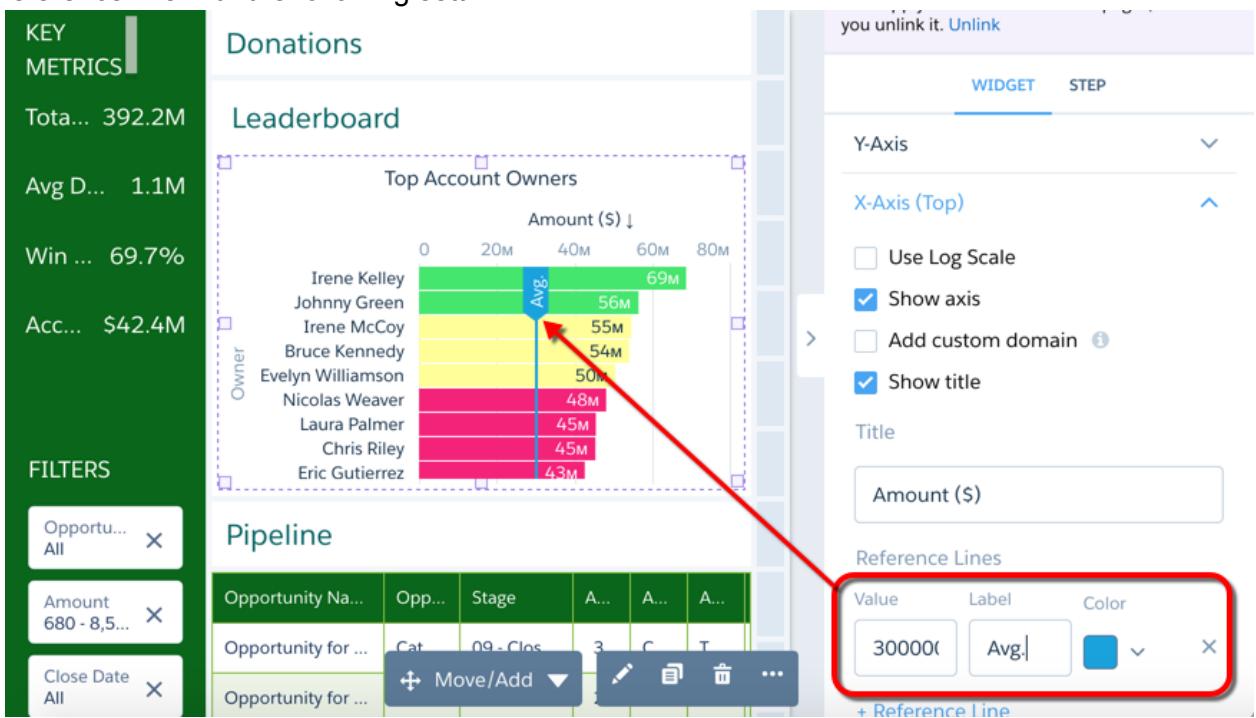
To show the average as a reference line on the chart, we have to bind the step results from the Account Owner Avg widget to the Top Account Owners chart. But before we can add the binding, we need to know the expected JSON first. (Bindings require you to modify the dashboard JSON.)

2.Determine the Expected JSON Structure

Let's start by creating a reference line with a fixed value. Later, we can replace the fixed value with a dynamic one—the binding.

1. Open the Leaderboard page.
2. Select the Top Account Owners chart widget. Add a reference line based on a fixed value, 30 million. Set label to Avg.

- In the X-Axis (Top) section of the widget properties, click + Reference Line, and add reference line with the following settings:



- Save the dashboard.

The chart now shows the reference line at 30 million.

3.Replace the Fixed Value with the Result Binding

To dynamically set the reference line based on the account owner's average, use a result binding to replace the hardcoded value (30,000,000) with the calculated average in the Account Owner Avg widget.

- Find the step ID of the input step, the one associated with the Account Owner Avg widget.
 - Select the Account Owner Avg widget under KEY METRICS.
 - Click the Step tab in the right pane.
 - Take note of the ID at the top of the right pane. In this case, it's Account_Owner_1. We need to reference this input step by its ID in the binding.

This widget exists on multiple pages. Changes here apply to instances on other pages, unless you unlink it. [Unlink](#)

WIDGET **STEP**

Step Properties

ID **Account_Owner_1**

Display Label **Account_Owner_1**

Filtering

Apply global filters

Apply filters from faceting [?](#)

1. Select the Top Account Owners widget and take note of the widget ID. We need the widget ID to locate the widget in the dashboard JSON. We'll add the binding to the reference line defined in this widget's properties in the dashboard JSON.
- In this example, the widget ID is `chart_3`.

This widget exists on multiple pages. Changes here apply to instances on other pages, unless you unlink it. [Unlink](#)

WIDGET **STEP**

General

ID **chart_3**

Chart Type

Title **Top Account Owners**

Title Font Size **14**

Subtitle

1. To view the dashboard JSON, press **Ctrl+e** for Windows or **Cmd+e** for Mac.
1. Search the JSON for `30000000`. To open the search bar, press **Ctrl+f** for Windows or **Cmd+f** for Mac.

Worldwide Fundraising - In Progress

```
3001 },
3002     "showActionMenu": true,
3003     "measureAxis2": {
3004         "sqrtScale": false,
3005         "showTitle": true,
3006         "showAxis": true,
3007         "title": "",
3008         "customDomain": {
3009             "showDomain": false
3010         }
3011     },
3012     "measureAxis1": {
3013         "sqrtScale": false,
3014         "showTitle": true,
3015         "showAxis": true,
3016         "referenceLines": [
3017             {
3018                 "color": "rgb(0, 161, 224)",
3019                 "label": "Avg.",
3020                 "value": 30000000
3021             }
3022         ],
3023         "title": "Amount ($)",
3024         "customDomain": {
3025             "showDomain": false
3026         }
3027     },
3028     "theme": "wave",
3029     "step": "Opportunity_Owner_1",
3030     "dimensionAxis": {
3031         ...
3032     }
3033 }
```

1. If scroll up, you'll see that this value is set for the widget with ID chart_3—this is the Top Account Owners widget.

1. Replace 30000000 with the following binding.

1. `"{{cell(Account_Owner_1.result, 0, \"C\").asString()}}"`

1. Copy

```
"referenceLines": [
    {
        "color": "rgb(0, 161, 224)",
        "label": "Avg.",
        "value": "{{cell(Account_Owner_1.result, 0, \"C\").asString()}}"
    }
],
```

1. Let's review this binding for a moment, shall we? As you may already have figured out, this binding returns the average total opportunity amount per account owner from the Account Owner Avg widget.

o `.result` specifies that this is a result binding (as opposed to a selection binding).

- o `cell(Account_Owner_1.result, 0, \"C\")` returns the result from the `Account_Owner_1` step. Specifically, the `cell` data selection function returns a single cell of data, located at row 1 (row with index 0), column C from the step results.



1.

Tip

To preview a cell's value, view the step's results in tabular form in the SAQL editor. Looking at the results of the `Account_Owner_1` step query, you can see the value of the cell at row 1, column C—this value is the account owner's average.

Learn how to write and edit SAQL queries [»](#)

[Add New Dataset](#) [Run Query](#)

```

1 q = load "DTC_Opportunity_SAMPLE";
2 result = group q by all;
3 result = foreach result generate sum(q.'Amount') as 'A', unique(q.'Account_Owner') as 'B';
4 result = foreach result generate 'A', 'B', A/B as 'C';
5 result = limit result 2000;

```

#	A	B	C
1	763524132	18	42418007.333333336

1. Press **Cmd+E** or **Ctrl+E** to view the update in the dashboard. In the Leaderboard page, notice that the Avg reference line in the Top Account Owners widget moved from \$30 million to around \$42 million.



1. To ensure the average doesn't change when users make selections in global filters or widgets that cause faceting, select the **Account Owner Avg** widget, select the **Step** tab in the

right pane, and verify that the **Apply global filters** and **Apply filters from faceting** step properties are deselected.

1. Save the dashboard, but this time, rename it to Worldwide Fundraising Final.

Wrap Up

At the next monthly All Hands, the program director shared the new version of the Worldwide Fundraising dashboard with ABC Seeds team. The director clicked through the dynamic pages that you added, showing off each page's insights. While showing the Leaderboard, she congratulated the top account owners for generating a healthy donation pipeline—Irene and Johnny clearly standing out. As soon as the director opened the Donations page, the room immediately cheered. The \$500 million goal is within reach. Time for ABC Seeds to determine which new schools to fund next!

When you can get these reactions within seconds of opening a dashboard, you know you've built an effective solution that's easy to read.

Demo 2 : Einstein Prediction Builder to Predict Restaurant No Shows

Case:

- You've always managed to keep Pizzaiolo Marco ahead of the curve. When business started taking off and expanding, you began using Salesforce to manage online reservations. You recently learned that the Salesforce AI platform, Einstein, has a key new feature for solving your reservation no-show problem.
- Einstein Prediction Builder lets you make predictions about almost any field in Salesforce with just a few clicks. Then you can use the predictions to power a workflow, focus your efforts, and work smarter. No models. No algorithms. And, best of all, no code. Point. Click. Predict.
- Einstein Prediction Builder helps to predict the likelihood that customers show up for a reservation, so you can prioritize which customers to call for confirmation. Then you can schedule restaurant staff appropriately, fill more seats, and make more diners happy.

[Sign up PreConfigured Environment](#)

Part 1: Create a Formula Field to Predict

You've got your special Trailhead Playground. Now let's look at it more closely. In Object Manager, you can see that it has:

- Reservation, a custom object. Each Reservation record represents a customer's reservation at one of Pizzaiolo Marco's restaurants.
- Status, a picklist field on the Reservation object with options that include:
 - Completed
 - No Show
 - Upcoming

You want to predict the likelihood that customers will be a no-show. In a nutshell, you want to know which reservations are likely to eventually have: Status = "No Show." Einstein Prediction Builder can answer your questions in a yes/no format: "Is this customer's reservation likely to result in a No Show? Yes or no?" That means you need to provide your historical data in the same yes/no format. In Salesforce, that's a checkbox field. So let's create a custom formula checkbox field for No Show.

1. From Setup, click **Object Manager**.
2. Search for and click **Reservation**.
3. Click **Fields & Relationships**.
4. Click **New**.

- Select the **Formula** data type, then click **Next**.

Reservation **New Custom Field** Help for this Page 

Step 1. Choose the field type **Step 1**

Next **Cancel**

Specify the type of information that the custom field will contain.

Data Type

<input type="radio"/> None Selected <input type="radio"/> Auto Number <input checked="" type="radio"/> Formula <input type="radio"/> Roll-Up Summary i	Select one of the data types below. A system-generated sequence number that uses a display format you define. The number is automatically incremented for each new record. A read-only field that derives its value from a formula expression you define. The formula field is updated when any of the source fields change. A read-only field that displays the sum, minimum, or maximum value of a field in a related list or the record count of all records listed in a related list.
---	--

- For the Field Label, enter **No Show** and select **Checkbox** for the return type. Then click **Next**.

Reservation **New Custom Field** Help for this Page 

Step 2. Choose output type **Step 2 of 5**

Previous **Next** **Cancel**

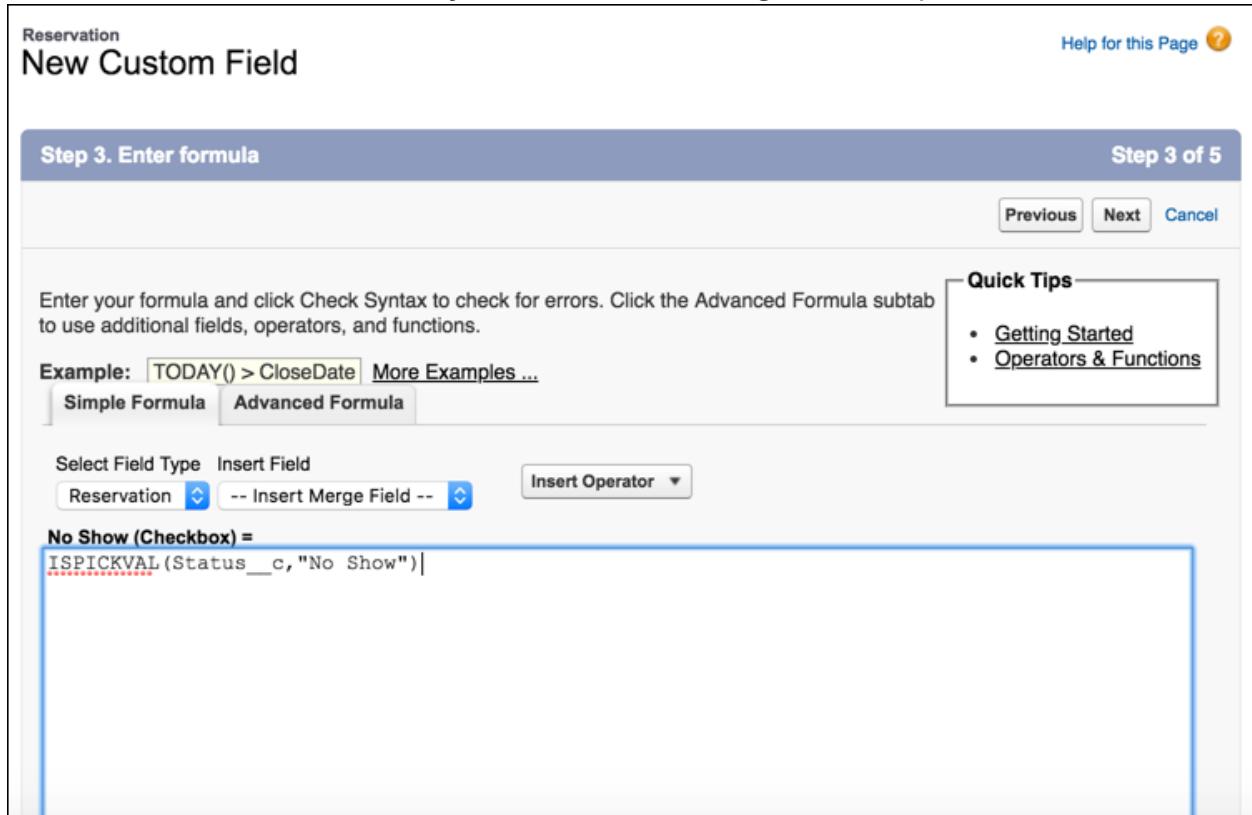
Field Label No Show	Field Name No_Show i
--	---

Formula Return Type

<input type="radio"/> None Selected <input checked="" type="radio"/> Checkbox <input type="radio"/> Currency <input type="radio"/> Date <input type="radio"/> Date/Time <input type="radio"/> Number <input type="radio"/> Percent	Select one of the data types below. Calculate a boolean value Example: <code>TODAY() > CloseDate</code> Calculate a dollar or other currency amount and automatically format the field as a currency amount. Example: <code>Gross Margin = Amount - Cost_c</code> Calculate a date, for example, by adding or subtracting days to other dates. Example: <code>Reminder Date = CloseDate - 7</code> Calculate a date/time, for example, by adding a number of hours or days to another date/time. Example: <code>Next = NOW() + 1</code> Calculate a numeric value. Example: <code>Fahrenheit = 1.8 * Celsius_c + 32</code> Calculate a percent and automatically add the percent sign to the number. Example: <code>Discount = (Amount - Discounted_Amount_c) / Amount</code>
---	--

- Enter this formula in the No Show (Checkbox) field on the Simple Formula tab, and click **Next**.
- `ISPICKVAL(Status_c, "No Show")`

9. Copy
10. This formula will return a True value if the reservation resulted in a no-show, and a False value otherwise. That's just what we're looking for in our prediction.



The screenshot shows the 'New Custom Field' setup page in Salesforce. The title bar says 'Reservation New Custom Field'. The top navigation bar includes 'Help for this Page' and tabs for 'Step 3 of 5', 'Previous', 'Next', and 'Cancel'. The main area is titled 'Step 3. Enter formula'. It contains instructions: 'Enter your formula and click Check Syntax to check for errors. Click the Advanced Formula subtab to use additional fields, operators, and functions.' Below this is an 'Example:' section with a button for 'More Examples ...'. There are two tabs: 'Simple Formula' (selected) and 'Advanced Formula'. Underneath are buttons for 'Select Field Type' (set to 'Reservation'), 'Insert Field', 'Insert Operator' (with a dropdown menu), and 'Insert Merge Field' (with a dropdown menu). The formula input field contains the text: `No Show (Checkbox) =
ISPICKVAL(Status__c, "No Show")`. To the right of the formula input is a 'Quick Tips' box with links to 'Getting Started' and 'Operators & Functions'.

11. Leave the default options for field-level security and the following page, clicking **Next**, then **Save**.

Part 2: Enrich Your Prediction

Since you are building a prediction on the Reservation object, you need to add the previous no-show data onto that object for Einstein Prediction Builder to consider it. Fortunately, this is pretty simple.

First you create a custom Roll-Up Summary field called “Previous No Shows” on the Contact object.

1. From Setup, click **Object Manager**.
2. Search for and click **Contact**.
3. Click **Fields & Relationships**.
4. Click **New**.

5. Select the **Roll-Up Summary** data type, then click **Next**.

Contact
New Custom Field

Help for this Page ?

Step 1. Choose the field type

Step 1

Next Cancel

Specify the type of information that the custom field will contain.

Data Type

None Selected Select one of the data types below.

Auto Number A system-generated sequence number that uses a display format you define. The number is automatically incremented for each new record.

Formula A read-only field that derives its value from a formula expression you define. The formula field is updated when any of the source fields change.

Roll-Up Summary A read-only field that displays the sum, minimum, or maximum value of a field in a related list or the record count of all records listed in a related list.

Lookup Relationship Creates a relationship that links this object to another object. The relationship field allows users to click on a lookup icon to select a value from a popup list. The other object is the source of the values in the list.

External Lookup Relationship Creates a relationship that links this object to an external object whose data is stored outside the Salesforce org.

6. For the Field Label, enter Previous No Shows and click **Next**.
7. For Summarized Object, select **Reservations**.
8. Select **COUNT**.
9. Select **Only records meeting certain criteria should be included in the calculation**.

10. In Filter Criteria, for Field, select **No Show**. For Operator, select **Equals**. For Value, enter True. Click **Next**.

Step 3. Define the summary calculation Step 3 of 5

Previous Next Cancel

Select Object to Summarize

Master Object Contact
Summarized Object Reservations

Select Roll-Up Type

COUNT (radio button selected)
SUM
MIN
MAX

Field to Aggregate --None--

Filter Criteria

All records should be included in the calculation
Only records meeting certain criteria should be included in the calculation (radio button selected)

Field	Operator	Value	AND
No Show	equals	True	AND
--None--	--None--		AND

11. Click **Next** to accept the default settings for field-level security, then click **Save**.

Add Previous No Shows to Your Prediction

Next, you create a custom Previous No Shows field on the Reservation object so that Einstein Prediction Builder can see this information when making its prediction about Reservations.

1. From Setup, click **Object Manager**.
2. Search for and click **Reservation**.
3. Click **Fields & Relationships**.
4. Click **New**.
5. Select the **Formula** data type, then click **Next**.

Step 1. Choose the field type

Step 1

[Next](#) [Cancel](#)

Specify the type of information that the custom field will contain.

Data Type

None Selected Select one of the data types below.

Auto Number A system-generated sequence number that uses a display format you define. The number is automatically incremented for each new record.

Formula A read-only field that derives its value from a formula expression you define. The formula field is updated when any of the source fields change.

Roll-Up Summary (i) A read-only field that displays the sum, minimum, or maximum value of a field in a related list or the record count of all records listed in a related list.

1. For Field Label, enter Previous No Shows. Select Number for the return type, and select 0 for decimal places. Click **Next**.

[Previous](#) [Next](#) [Cancel](#)

Field Label	Previous No Shows
Field Name	Previous_No_Shows <small>(i)</small>

Formula Return Type

None Selected Select one of the data types below.

Checkbox Calculate a boolean value
Example: `TODAY() > CloseDate`

Currency Calculate a dollar or other currency amount and automatically format the field as a currency amount.
Example: `Gross Margin = Amount - Cost_c`

Date Calculate a date, for example, by adding or subtracting days to other dates.
Example: `Reminder Date = CloseDate - 7`

Date/Time Calculate a date/time, for example, by adding a number of hours or days to another date/time.
Example: `Next = NOW() + 1`

Number Calculate a numeric value.
Example: `Fahrenheit = 1.8 * Celsius_c + 32`

Percent Calculate a percent and automatically add the percent sign to the number.
Example: `Discount = (Amount - Discounted_Amount_c) / Amount`

Text Create a text string, for example, by concatenating other text fields.
Example: `Full Name = LastName & ", " & FirstName`

Time BETA Calculate a time, for example, by adding a number of hours to another time.
Example: `Next = TIMEVALUE(NOW()) + 1`

Options

Decimal Places	0	<small>(i)</small>
Example: 999		

1. Click the **Advanced Formula** tab and click **Insert Field**.

Step 3. Enter formula

Step 3 of 5

Previous Next Cancel

Enter your formula and click Check Syntax to check for errors. Click the Advanced Formula subtab to use additional fields, operators, and functions.

Example: Fahrenheit = 1.8 * Celsius_c + 32 [More Examples ...](#)

[Simple Formula](#) [Advanced Formula](#)

Quick Tips

- [Getting Started](#)
- [Operators & Functions](#)

Insert Field [Insert Operator ▾](#)

Previous No Shows (Number) =

Functions

-- All Function Category

ABS
ADDMONTHS
AND
BEGINS
BLANKVALUE
BR

[Insert Selected Function](#)

1. With the Reservation object selected, click **Contact >**.
1. Select **Previous No Shows** and click **Insert**.

Insert Field

Select a field, then click Insert. Labels followed by a ">" indicate that there are more fields available.

Reservation > \$Api > \$Organization > \$Profile > \$System > \$User > \$UserRole >	Contact Contact > Contact Name Created By > Created By ID Created Date Homeowner Last Activity Date Last Modified By >	Phone Previous No Shows Reports To > Reports To ID Rewards Member Salutation Title Total Reservations Total Spent	You have selected: Contact__r.Previous_No_Shows_c Type: Number API Name: Contact__r.Previous_No_Shows_c Insert
---	--	---	--

Close

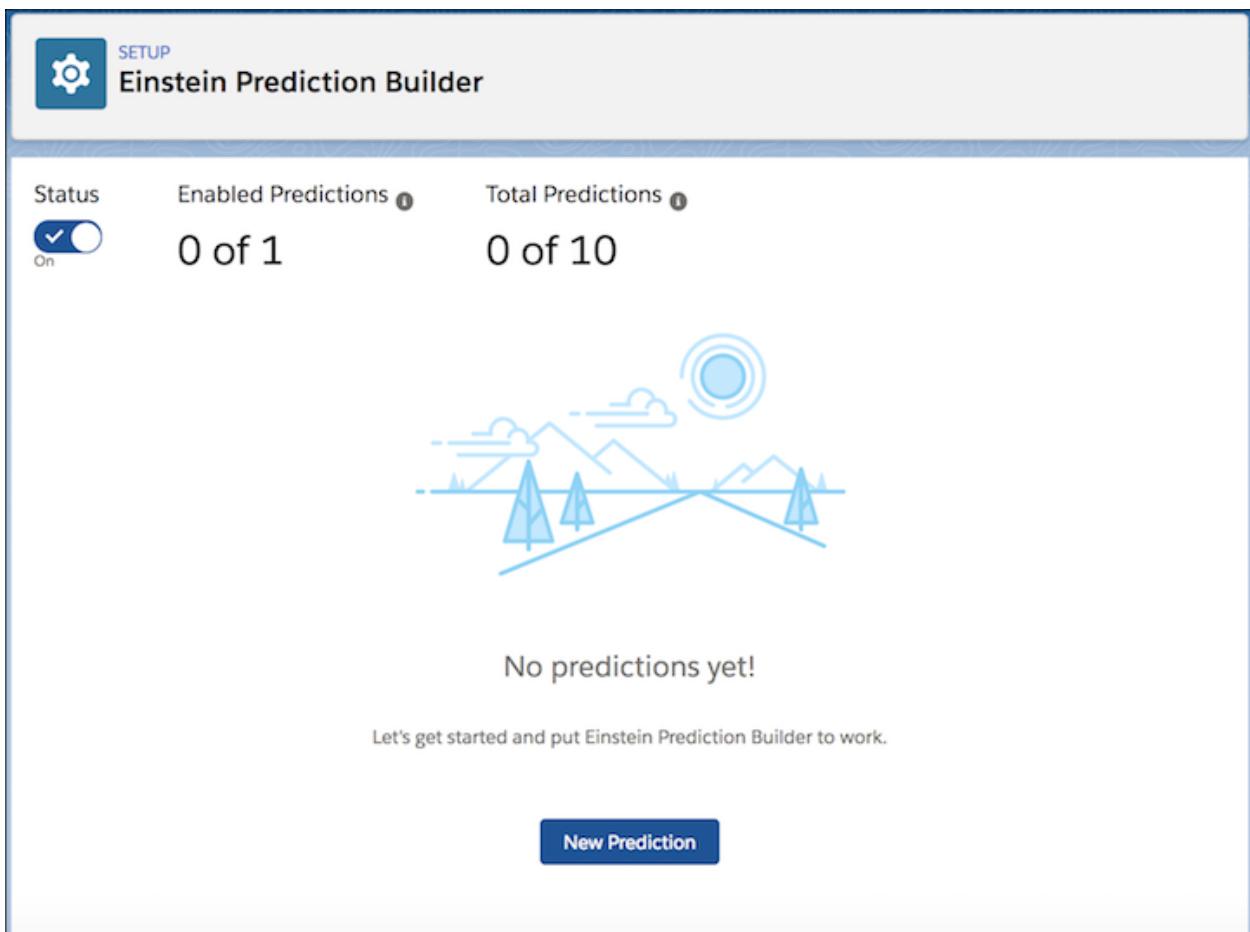
1. Then click **Next**, **Next**, and **Save**.

Great, You've added previous no-shows to your prediction.

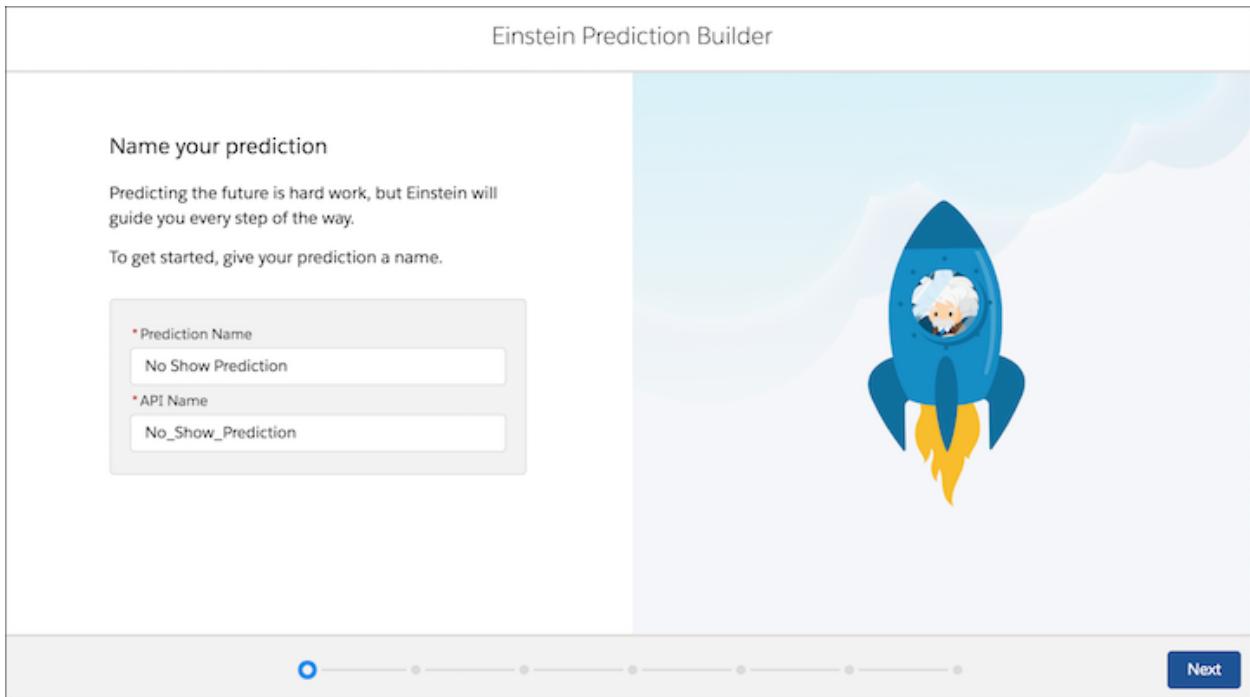
Part 3: Build a Prediction

You created the custom formula field that you want to predict. You created fields to enrich your prediction. Now it's time to tell Einstein to build your prediction.

1. From Setup, enter Einstein Prediction Builder in the Quick Find box and select **Einstein Prediction Builder**. Or, click **Get Started** on the Einstein Prediction Builder tile.
2. If this is the first time you're using Einstein Prediction Builder in this special new org, you'll also need to click **Get Started** on the splash page.
3. Click **New Prediction**



4. Name your prediction No Show Prediction. The API Name field auto-populates based on your label. Click **Next**.



1. Search for and select the **Reservation** object. Leave the default option to not focus on a segment. To make sure you have enough records in your dataset for Einstein to make a prediction, click **Check Data** in the Data Checker. Record count looks good?

C

1. Search for and select the **No Show** formula field that you created earlier. This is the field that you want to predict.

1. Einstein needs to know which records to use as examples. You want to use past reservations, so it's known whether they were no-shows or not. Select the **Status** field, the **Does not equal** operator, and the **Upcoming** value. Click **Check Data** to make sure your example set has enough records and the field you're predicting has enough true and false values. (Data Checker shows "0 Records to predict" but don't worry! That's just because you're working in a simulated environment. After you build your prediction and verify this step, lots of records will have predicted values.) Looks good? Click **Next**.

Einstein Prediction Builder

Select a field to predict

Set rules to define which records you want to use as examples.

Search

No Show

Which records should Einstein use as examples?

Object	Field	Operator	Value
1 Reservation	Status	Does not equal	Upcomirv

+ Add Row

All of the conditions are met (AND)
 Any of the conditions are met (OR)
 Customize the logic

Einstein is here to help

Data Checker

- ✓ 1000 Example records (400 minimum)
- ✓ 711 False (100 minimum)
- ✓ 289 True (100 minimum)
- ✓ 0 Records to predict

Record count looks good!

Check Data

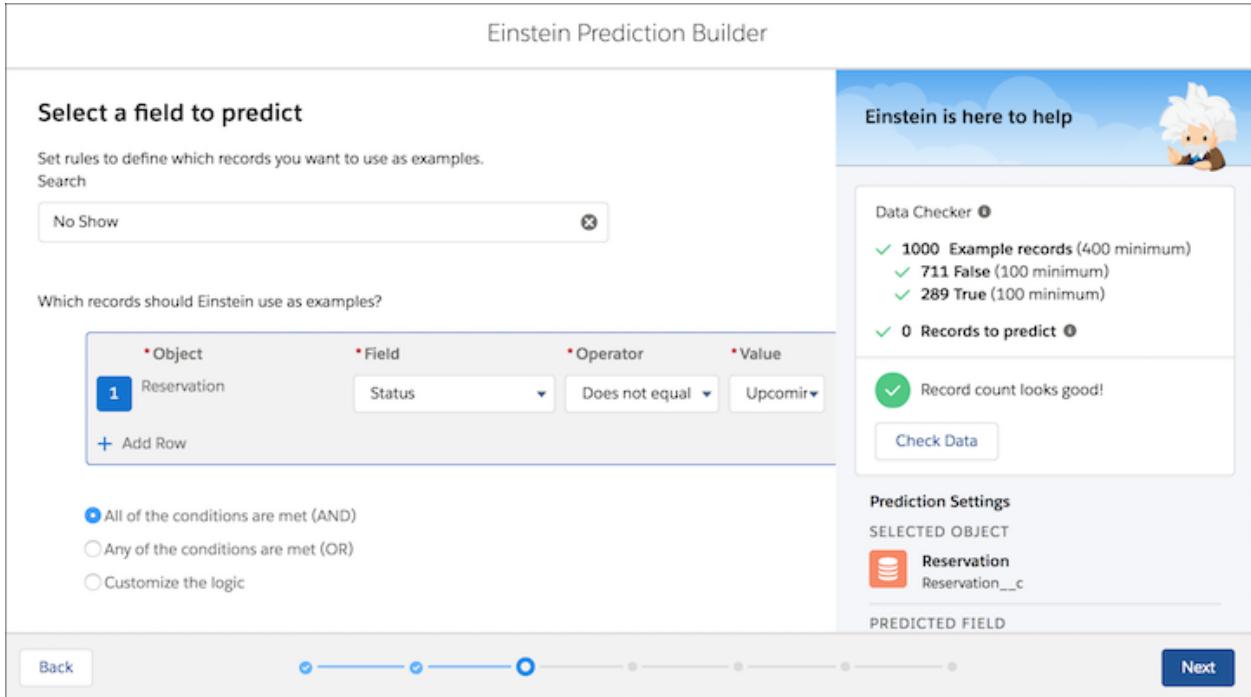
Prediction Settings

SELECTED OBJECT
Reservation
Reservation__c

PREDICTED FIELD

Back

Next



1. Review the fields for Einstein to analyze to make a prediction. In this case, leave all the fields selected. Click **Next**.

Einstein Prediction Builder

What fields should Einstein base your prediction on?

Object: Reservation · 18 of 18 fields selected

Search

FIELD LABEL	FIELD NAME	DATA TYPE
<input checked="" type="checkbox"/> Contact	Contact__c	Master-Detail(Contact)
<input checked="" type="checkbox"/> Contact Name	Contact_Name__c	Formula (Text)
<input checked="" type="checkbox"/> Created By	CreatedById	Lookup(User)
<input checked="" type="checkbox"/> Homeowner	Homeowner__c	Formula (Checkbox)
<input checked="" type="checkbox"/> Last Modified By	LastModifiedById	Lookup(User)
<input checked="" type="checkbox"/> MailingCity	MailingCity__c	Formula (Text)
<input checked="" type="checkbox"/> MailingState	MailingState__c	Formula (Text)
<input checked="" type="checkbox"/> Marital Status	Marital_Status__c	Formula (Text)
<input checked="" type="checkbox"/> Occupation	Occupation__c	Formula (Text)
<input checked="" type="checkbox"/> Party Size	Party_Size__c	Number(18, 0)
<input checked="" type="checkbox"/> Previous No Shows	Previous_No_Shows__c	Formula (Number)
<input checked="" type="checkbox"/> Reservation Month	Reservation_Month__c	Formula (Text)

Back
Next

Einstein is here to help

Prediction Settings

SELECTED OBJECT

 **Reservation**
Reservation

PREDICTED FIELD

No Show
No_Show__c - Formula (Checkbox)

How do I decide which fields to select or deselect?

Most fields can be used to create your prediction. However, there are various reasons you might want to exclude a field. If you know a field is not currently being used in your organization, it shouldn't be used in your predictions! You might also have fields that could add bias into your model, like gender or ethnicity. Finally, if you have fields

1. Now name the field where Einstein saves your prediction. Enter Predicted No Show for the Field Label. Press Tab to populate the field name and click **Next**.

Einstein Prediction Builder

Name the custom field that stores your results

We create a custom field for you that stores your prediction results. You get to name it whatever you like. Prediction results are stored in this field on each Reservation__c record.

* Field Label
Predicted No Show

* Field Name
Predicted_No_Show



Einstein is here to help

Prediction Settings
SELECTED OBJECT
 Reservation Reservation__c

PREDICTED FIELD
No Show
No_Show__c - Formula (Checkbox)

Here's how we store your prediction results.
The results of your prediction need to be stored somewhere. That somewhere is a new custom field on each record. For example, if you're predicting how many invoices will be paid on time, you might have a "Likelihood of Timely Payment" field to store the predicted value for each invoice. We create the field for you, but you can name it whatever you want.

Back

Next

- Review your selections. To make a change, use the **Back** button. Click **Check Data** one final time to make sure Einstein can build a prediction based on the way you've set everything up. Once you're satisfied with your selections, click **Build Prediction**. On the next page, click **Done**.

Einstein Prediction Builder

Does everything look good?

Info After you click Build Prediction, Einstein gets busy evaluating your data and making predictions. You can't make any changes to your prediction until Einstein finishes this process. It can take up to 24 hours.

Name
PREDICTION NAME PREDICTION API NAME
No Show Prediction No_Show_Prediction

Object
PREDICTED OBJECT DATA SEGMENT
 Reservation All Data

Prediction



Einstein is here to help

Data Checker
✓ 1000 Example records (400 minimum)
✓ 711 False (100 minimum)
✓ 289 True (100 minimum)
✓ 0 Records to predict

✓ Record count looks good!

Check Data

What happens next?
When Einstein is done building your prediction, you'll get a scorecard telling you how accurate the prediction is likely to be. Then, you decide whether to turn it on to start saving predictions to records. Or, go back and tweak your prediction settings if

Back

Build Prediction

1. It takes a few hours for Einstein to analyze your data and start making predictions. It seems a lot faster in this project, though, because we're doing some magic behind the scenes so you can proceed.

Part 4: View Predictions

Since it takes a little time for Einstein to evaluate your data and start making predictions, we've already built a prediction for you so you can see what it looks like. Now you can create a list view to display your predictions. The list view makes it easy to prioritize your confirmation calls.



1. Click  and select **Reservations**.
2. Click **Reservations** in the navigation bar. Now you're looking at a list of all your reservations. Let's make a list of only those you need to call to confirm.
3. Click  and select **New** to create a list view.
4. For List Name, enter Call to Confirm.
5. Select **All users can see this list view** and click **Save**.
6. Click  again and choose **Select Fields to Display**. In the Available Fields list, select these fields and use the right arrow to move them to the Visible Fields list.
 - o Contact
 - o Predicted No Show
 - o Status
7. Click **Save**.
8. If you don't see a Filters panel, click the filter icon  to display it. Click **Add Filter**.
9. For Field, select **Status**. For Operator, select **equals**, and for Value, select **Upcoming**. Click **Done** and **Save**. Now you see a list of all your upcoming reservations.
10. Let's narrow it further to see only those we want to call to confirm. Click **Add Filter** again.
11. For Field, select **Predicted No Show**. For Operator, select **greater or equal**. Enter 20 for the Value. Click **Done**.
12. In the Filters panel, click **Save**. Now you have a list of your riskiest reservations. Grab an espresso and start calling!

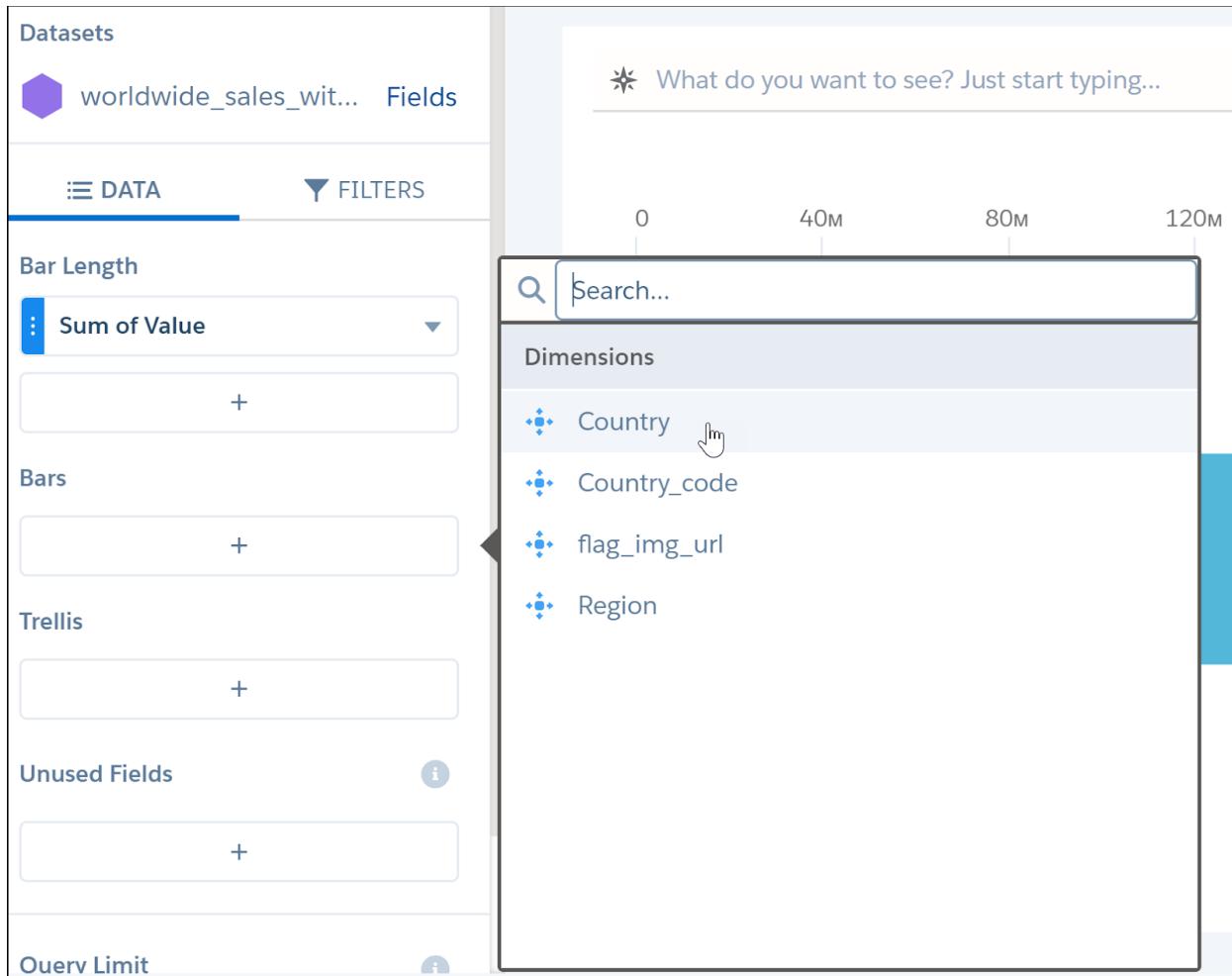
To recap, in just a few steps, you let Einstein evaluate your reservations data and predict the likelihood that a reservation will be a no-show. Then you used those predictions to power a workflow that ultimately helps you fill more seats, increase efficiency, and work smarter.

Optional Demo 3: Adding User defined Images to Charts

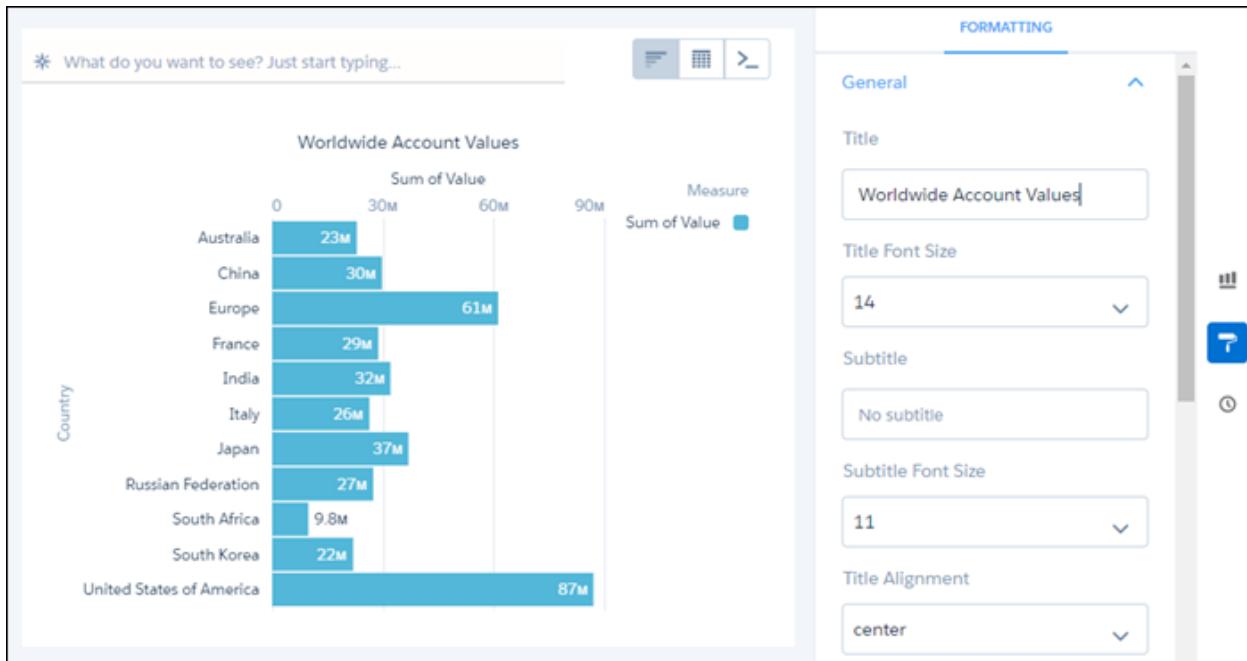
1. Under Bar Length, click Count of Rows, and select Sum, then Value to change the chart to display Sum of Value.

The screenshot shows a data visualization interface with a sidebar on the left and a main configuration area on the right. In the sidebar, under 'Datasets', there is a purple hexagonal icon labeled 'worldwide_sales_wit... Fields'. Below this are sections for 'DATA' (selected) and 'FILTERS'. In the 'Bar Length' section, a dropdown menu is open over a button labeled 'Count of Rows'. The dropdown menu has a search bar at the top with placeholder text 'Search...'. Below the search bar is a list of measures: 'Sum' (highlighted in grey), 'Count', 'Average', 'Maximum', 'Minimum', and 'Unique'. To the right of the dropdown, there is a list of fields: 'Measures' (highlighted in grey), 'Accounts', and 'Value'. A hand cursor is shown pointing at the 'Value' field. The main configuration area on the right shows numerical scales for '0', '1', '2', and '3'.

1. Under Bars, click , then select Country to group your chart by country.



1. Click  to open Chart formatting properties, and then enter a title: WORLDWIDE ACCOUNT VALUES for a title.



1. Click  to go to SAQL mode.
1. Add ,first('flag_img_url') as 'flag_img_url' to the foreach statement.
1. Click Run Query.
1. You should see a new column (flag_img_url) with the URLs for each flag.

Query

```

1 q = load "worldwide_sales_with_flags2";
2 q = group q by 'Country';
3 q = foreach q generate 'Country' as 'Country', sum('Value') as 'sum_Value' , first('flag_img_url') as 'flag_img_url';
4 q = order q by 'Country' asc;
5 q = limit q 2000;
    
```

Run Query

Country	flag_img_url	Sum of Value
Australia	https://gs0.salesforce.com/force.com/file-asset/fl...	22,930,651
China	https://gs0.salesforce.com/force.com/file-asset/fl...	29,754,009
Europe	https://gs0.salesforce.com/force.com/file-asset/fl...	61,238,042
France	https://gs0.salesforce.com/force.com/file-asset/fl...	28,746,829

Note : You could use any non-grouping SAQL function that preserves the URLs as strings, not just first().

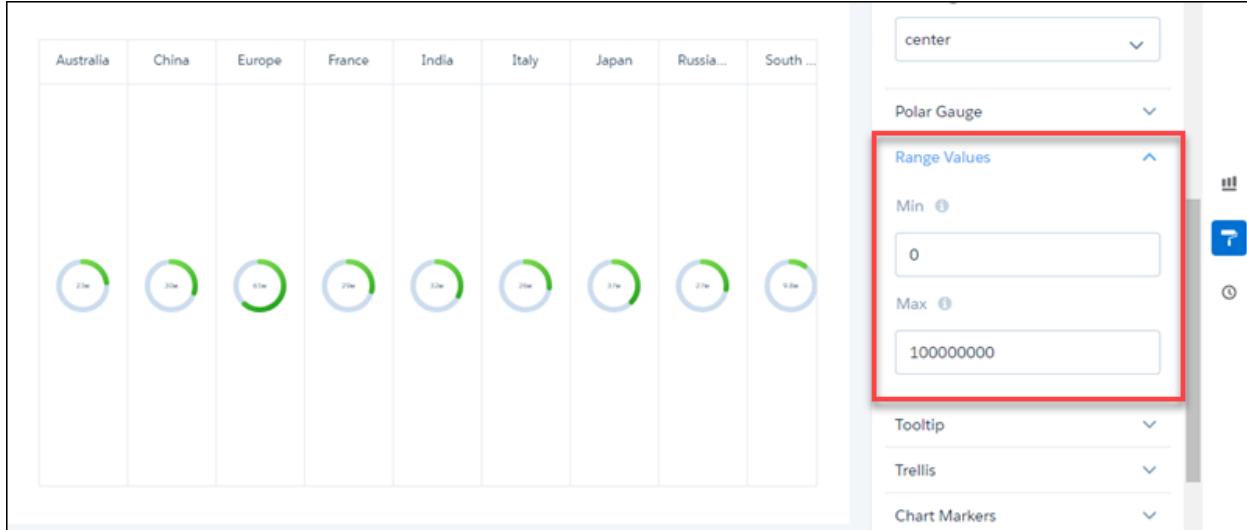
1. Click  to open the chart menu.

2. From the Gauges category, select Polar Gauge.



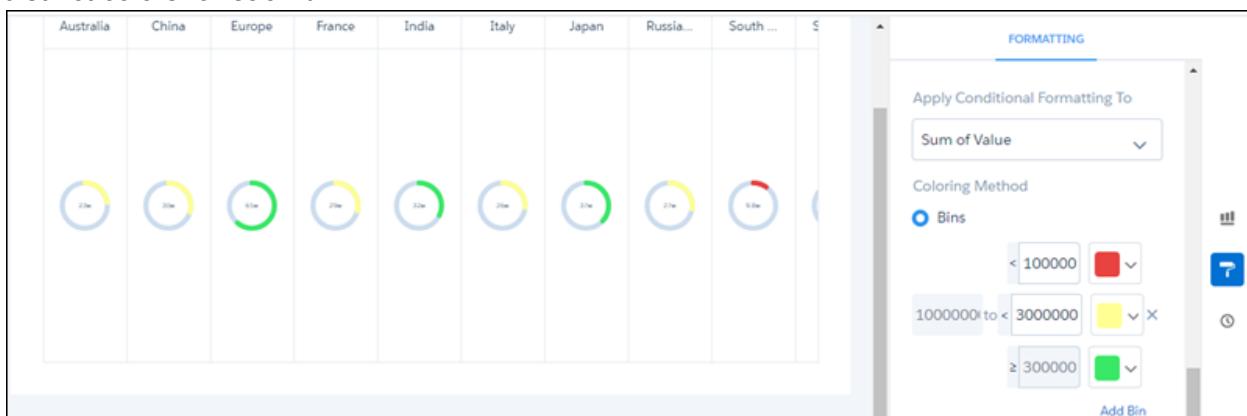
3. Click  and then Range Values and enter (or copy and paste) the following values:

1. Min: 0
2. Max: 100000000



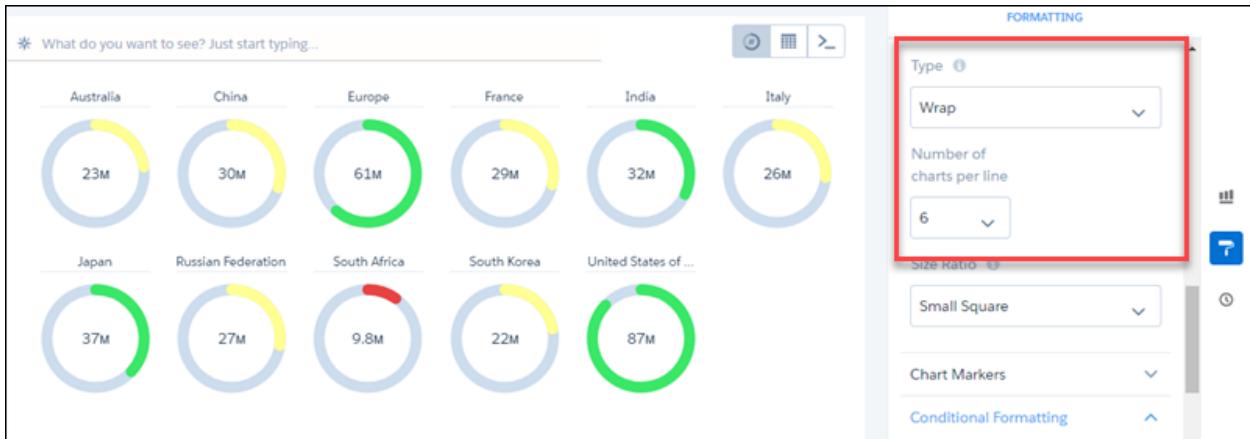
1. Click Conditional Formatting and and select Sum of Value as the column for setting the conditional formats.

1. Add 3 bins as follows < than 10000000, 10000000 to 30000000, and >30000000. Select distinct colors for each bin.



1. Click Trellis to open that panel, then set the following values:

1. Type: Wrap
2. Number of charts per line: 6



- 1.
1. Click Polar Gauge and select Use Icons.



- 1.
1. Click  and confirm the following values:
1. Title: worldwide_sales_with_flags , App: My Private App

END
