IBM Cognos Analytics
Version 11.0.0

Dashboards and Stories User Guide

IBM

Contents

Chapter 1. Get started with Dashboards and Stories

IBM® Cognos® Analytics provides dashboards and stories to communicate your insights and analysis. You can assemble a view that contains visualizations such as a graph, chart, plot, table, map, or any other visual representation of data.

Creating a dashboard or story

If you're new to dashboards and stories, review the following steps to understand the general workflow to create a view.

1. Tap ![+], and tap **Dashboard**, or tap **Story**.
2. Select a template. Cognos Analytics provides templates that contain predefined layouts and grid lines for easy arrangement and alignment of the visualizations in a view.
3. Add visualizations to your view in one or more of the following ways:
   - If you know the type of visualization you want to use, select the visualization type and then add columns to it.
   - If you know the data that you want to see, but are not sure about how to present it, tap ![IOIO] and add a source to the **Selected sources** panel. Then, drag columns onto the canvas. Cognos Analytics displays them in the appropriate visualization.
   - Tap ![search], and type a question or a statement. Cognos Analytics creates an appropriate visualization by analyzing the data in the data set to answer the question or intent of the statement.
   - Drag your collected visualizations from the My pins panel to quickly build a story.
4. Limit the data that is displayed by filtering in one or more of the following ways:
   - You can filter individual visualizations or on all visualizations in the view.
   - You can even filter on a column that is not displayed in the visualization by using a context filter.
   - You can select a specific value or a range of values.
5. Enhance your view and draw attention to visualizations by adding media, web pages, images, shapes, and text.
6. Personalize your view by changing the theme. You can choose from default, light, or dark themes. You can also customize specific visualization properties such as fill and border color, and opacity.
7. Create more meaningful or complex visualizations by adding columns to an existing visualization. Drag another column onto a visualization and it changes to match the new data added.
8. You can undo and redo your last actions in succession. The ability to undo and redo previous actions is available until you close the view.
9. Test the view.

Chapter 2. Dashboards

Explore powerful visualizations of your data in IBM Cognos Analytics and discover patterns and relationships that impact your business. Then communicate the insights that you've discovered in a dashboard and share it with others.

Cognos Analytics dashboards: a tutorial

IBM Cognos Analytics integrates reporting, modeling, analysis, dashboards, stories, and event management so you can understand your organization's data, and make effective business decisions.

This tutorial shows you the basics of creating a dashboard.

Scenario for the tutorial

In this tutorial, you're a Human Resources manager who has been given a big project – you'll be leading a new training initiative for your entire global company. You want to better understand where the training budget is currently invested in all areas of the company because at this moment, you just know how it's spent in your area of the company.

Uploading data

Let's start by getting data for the tutorial. There are lots of sample data assets on the IBM Cognos Analytics Community that you can use in IBM Cognos Analytics, including the one that's used in this tutorial.

Procedure

1. Go to Human Resources Training on the Watson Analytics™ Resources page.

   ```
   (https://www.ibm.com/communities/analytics/watson-analytics-blog/human-resources-training/)
   ```

2. Select "IBM_HR_Training 2014-17.csv". Depending on your browser, you may be asked what you want to do with it. Tap **Save**.

3. In Cognos Analytics, tap **Browse**.

   You can also tap the **New** icon and then tap **Upload files**.
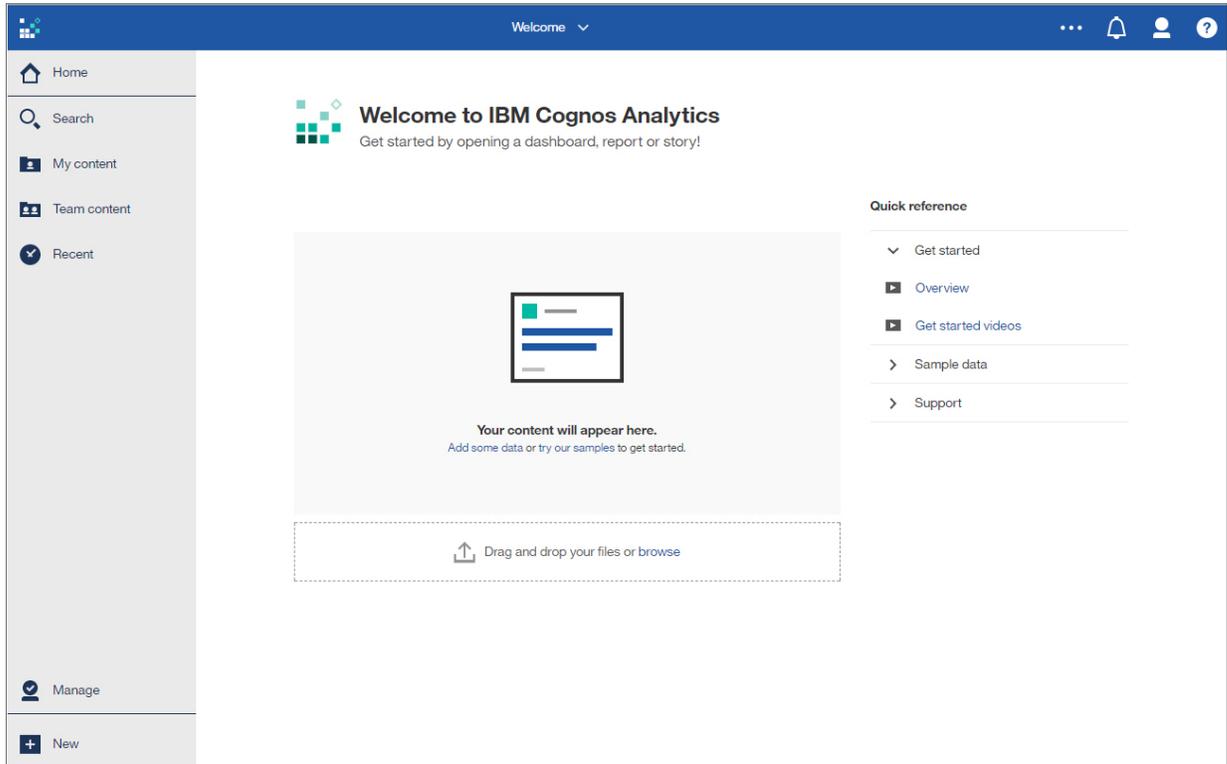
4. Go to where you saved "IBM_HR_Training 2014-17.csv" and select it.

   The data asset appears in the **My content** folder.

   Note: You can refine the data by filtering it or adding calculations or changing the properties. However, we won't refine it in this tutorial.

5. Tap **OK**.

Creating a dashboard

You can explore your data and easily communicate the analysis and insights that you discover.

Procedure

1. On the home page, tap the **New** icon at the bottom of the window.

2. Tap **Dashboard**.

| Report |
| Dashboard |
| Story |
| Data module |
| Upload files |
| New |
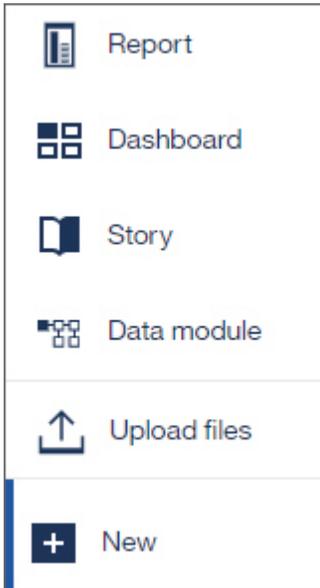
3. You see predefined templates that contain grid lines for easy arrangement and alignment of visualizations and other elements in a dashboard.

   Select the template with 4 panes and then tap **OK**.
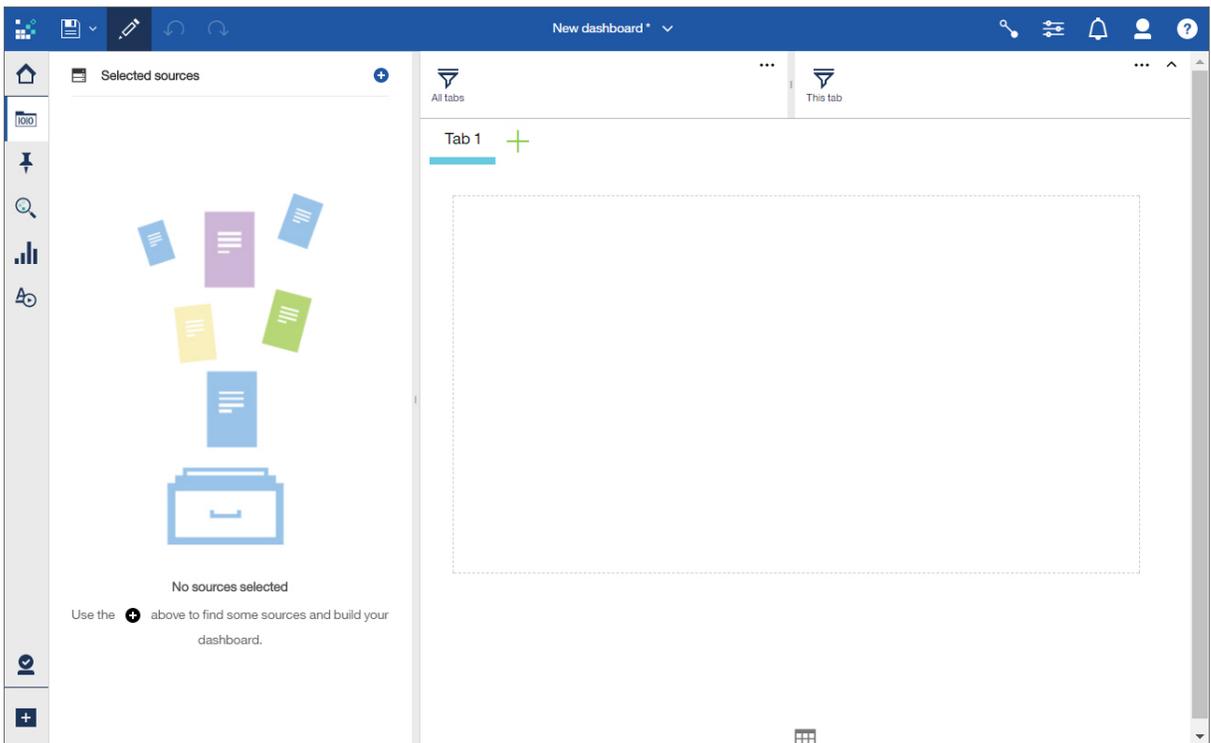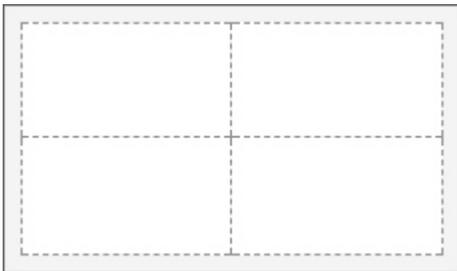
4. Let's add a data asset to this dashboard so that we can explore its data.

a) In the **Data** panel, tap the **Add a source** icon.

b) Go to the **My content** folder and select "IBM_HR_Training_2014-17.csv". Tap **Add**.

c) Expand the data asset to see what's available.

5. Let's explore the data by adding a visualization to the dashboard.

a) Drag "Department" to the top left pane and drop it on the square that appears in the pane.

Drop here to maximize

You now see a list of departments.
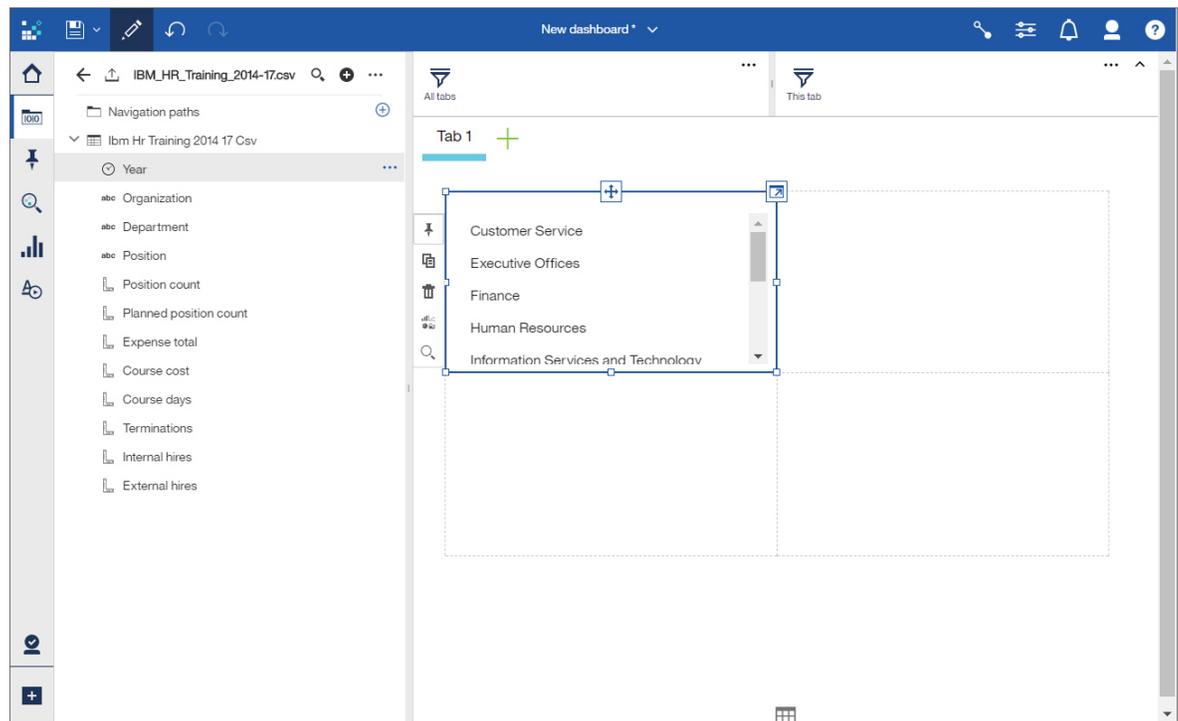
b) Drag "External hires" to the canvas and drop it on the "Department" list. In the column visualization, you see that the Sales departments hire the most external people followed by the Finance departments.
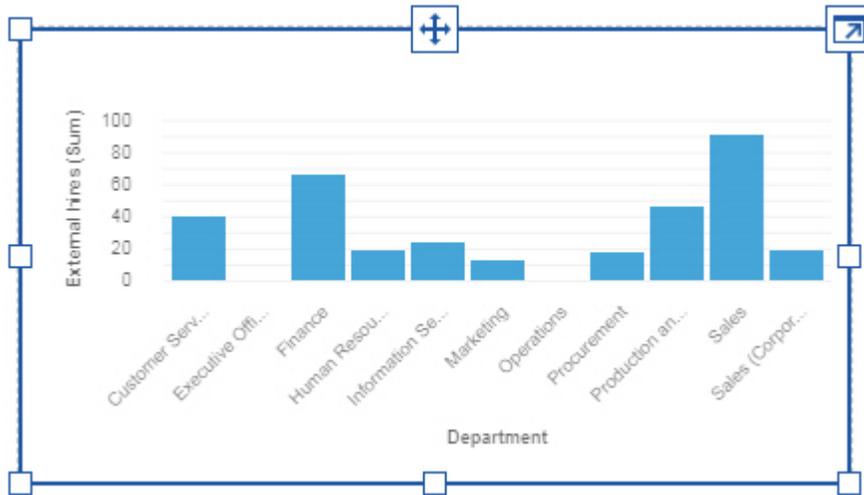
6. Let's change the visualization type.

    a) Tap any white space in the column visualization. A toolbar appears.

    b) Tap the **Change visualization** icon in the toolbar.

    c) Tap the **Packed bubble** icon.

7. Let's add a second visualization, using a different way to create a visualization.

    a) Tap the **Visualizations** icon in the side panel.

    b) Tap the **Tree map** icon.

    An empty tree map is created with empty data slots on the side, indicating where you need to add data.

    c) Tap the **Data** icon.
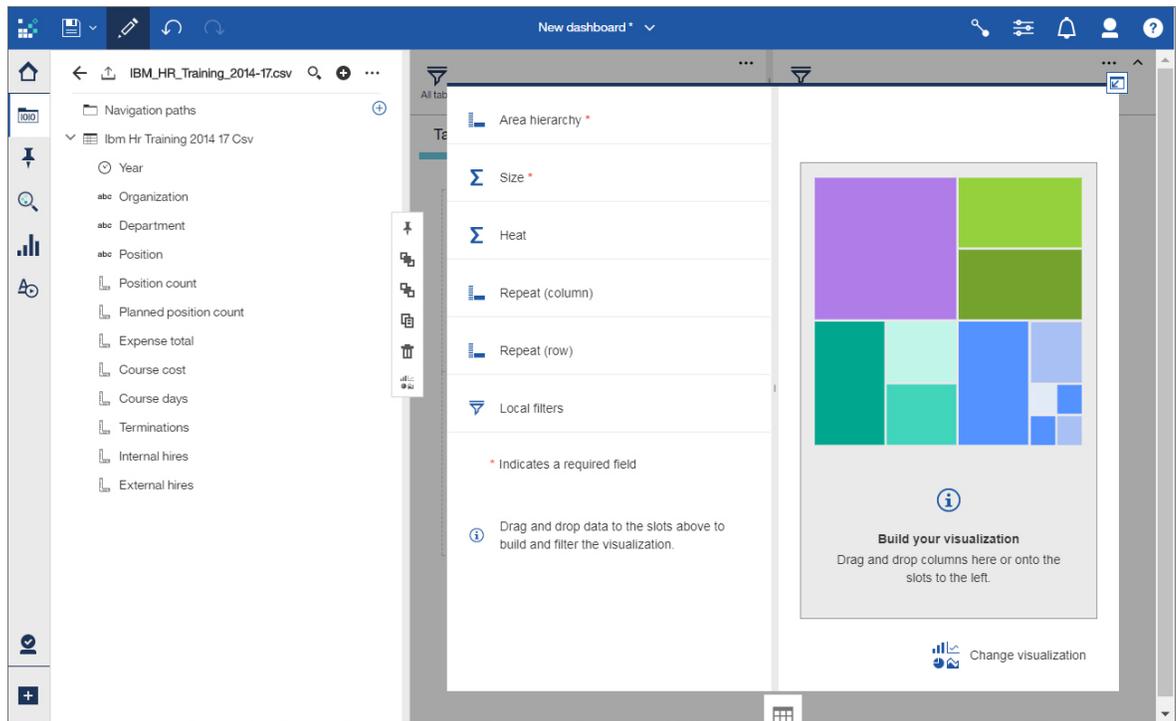
d) Drag "Organization" to the **Area hierarchy** data slot.

e) Drag "Course cost" to the **Size** data slot.

f) Close the visualization. You can also close the **Data** panel if you want more room for the visualizations.
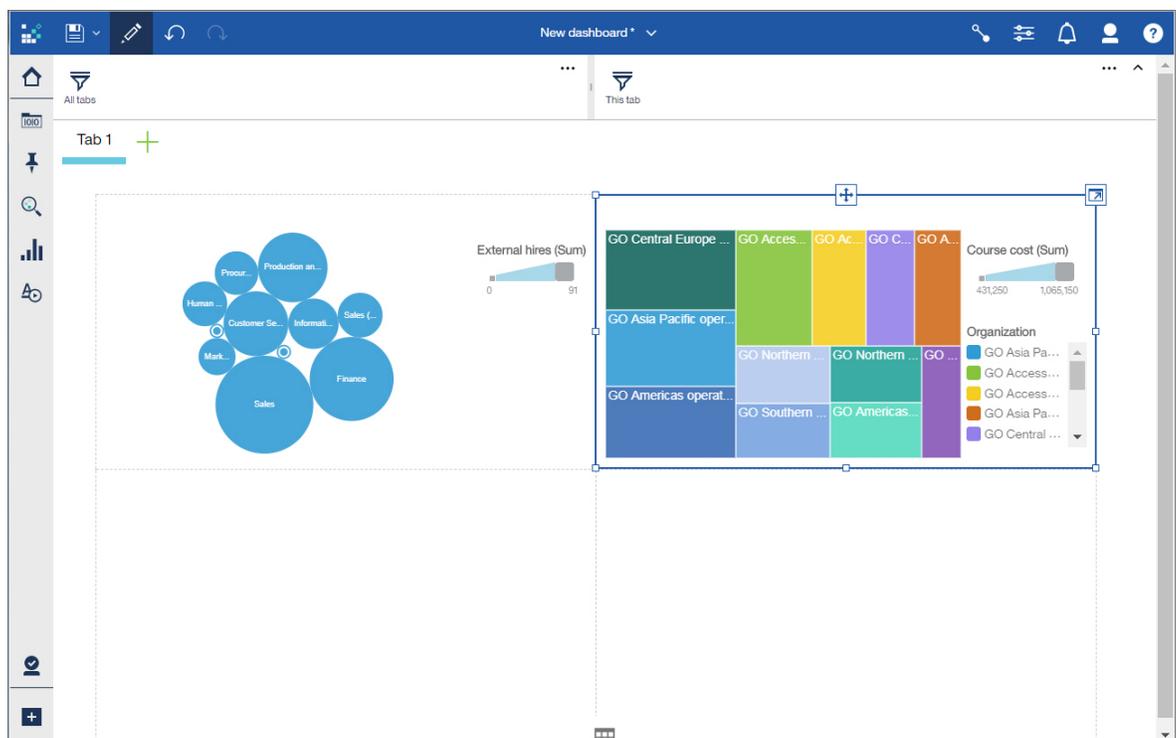
8. Let's hide the legend to have more room for the tree map.

a) Select the tree map visualization.

b) Tap the **Properties** icon.

c) Clear the **Display legend** check box.

Take a look at the visualization. The size of each box in the tree map tells you the amount of training spent by each organization.

9. You have two more panes where you can create more visualizations or add widgets such as text or shapes.

10. Let's add a filter to see the impact of the duration of courses on the visualizations.

a) Tap the **Data** icon.

b) Drag "Course days" to the **This tab** filter area.

c) To define the filter, tap **Course days** in the filter area.
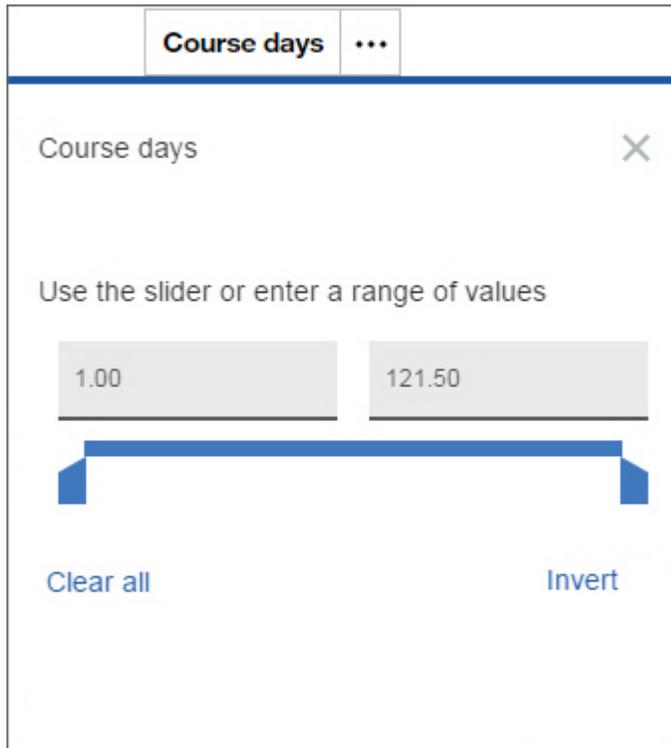
d) Move the slider to show courses with a shorter duration, or type a new end point. We picked 14.5 as the end point but feel free to select a different one. Tap **OK**.
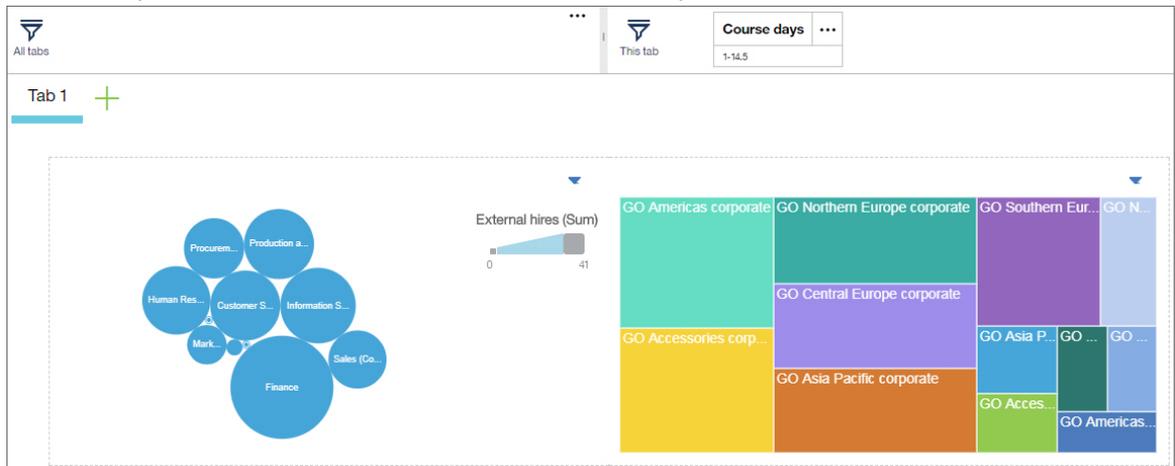
11. Another way to filter data is to select one or more data points in a visualization and see the impact on the other visualizations. Tap "Finance" in the packed bubble visualization.

Take a look at the tree map visualization. It doesn't contain the Department column so it is filtered by the Finance department.
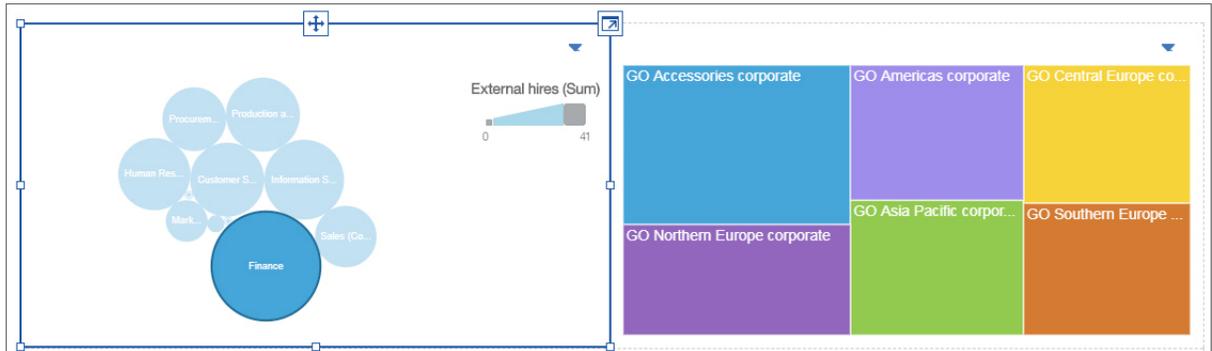
12. Save the dashboard and then use the switcher in the app bar to close it.
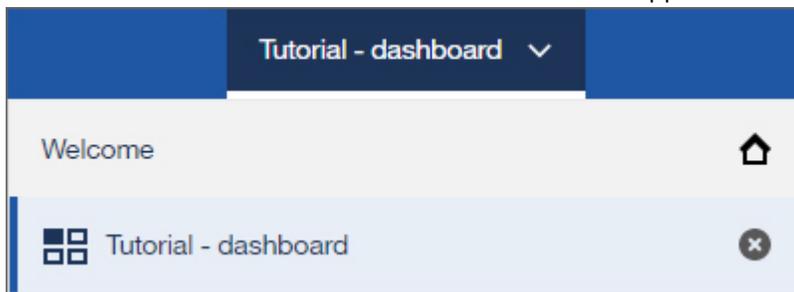
What's next in Cognos Analytics?

Let's recap: you learned how to upload data, you created visualizations that showed you new insights about your data, and you filtered data in several different ways. Now you can start exploring your own data.

What else can you do with the dashboard?

You can enhance the dashboard that you created. Here are a few ideas:

- Use text widgets to annotate the dashboard with descriptions.
- Provide more info by adding media and links to web pages.
- Format the dashboard, such as changing the colors or theme.
- Add images and shapes to add visual appeal.
- Create a story in your dashboard. A story consists of visualizations and an over-time narrative.

Wait, there's more!

There is much more you can do in Cognos Analytics:

- Build sophisticated, multi-page, multi-query reports against multiple databases.
- Use data modeling to access and shape data from data servers or uploaded files.
- Schedule activities.
- Manage content and manage the account.
- And more!

For more info, check out the **Help** menu.
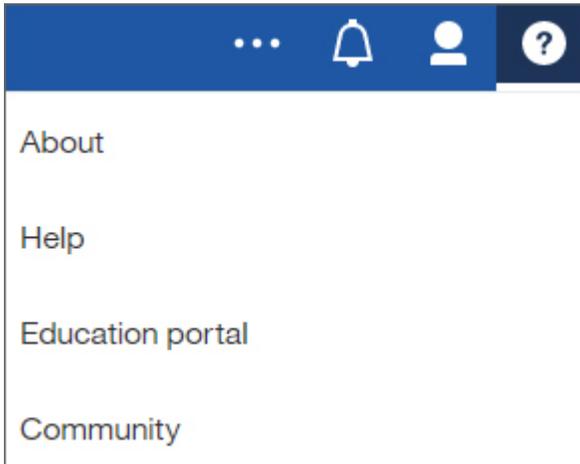
Have fun!

Creating a dashboard

A dashboard helps you to monitor events or activities at a glance by providing key insights and analysis about your data on one or more pages or screens.

Procedure

1. Tap the **New** icon and then tap **Dashboard**.

2. Select a template to use and tap **OK**.

   Predefined templates contain grid lines for easy arrangement and alignment of visualizations and other elements. For example, you can create an infographic to convey information with pictures on one page that you scroll through.

Templates

IBM Cognos Analytics provides templates that contain predefined designs and grid lines for easy arrangement and alignment of the visualizations.

When you choose a template, consider the look that you want and the screen size of the device that will be used.

Freeform

A freeform template uses absolute positioning. The objects retain their size and position, regardless of the screen size of the device that they are being viewed in. For small screen sizes, absolute positioning can increase the need for scrolling because objects are larger than the screen.

Freeform is one large area that is not divided into sections.

Choose freeform if you want visualizations to appear exactly as you size and place them, regardless of the screen size of the device that they are viewed in.

Other templates

The other templates use relative positioning. The objects adjust their size and position, relative to each other, the data they show, and the screen size of the device that they are viewed in.

You can choose from several templates with various designs that divide the canvas into separate sections. When you drag a column to the middle of a section, the resulting visualization maximizes to fill the entire section. When you drag an object around on the canvas, grid lines appear to help you precisely align it.

Choose one of these templates if you want the size and position of visualizations to adjust to fit into the screen size of the device that they are viewed in. The appearance of the dashboard can change depending on the size of the screen that it is viewed in.

Changing the template on a tabbed dashboard

You can change the template while you're assembling a tabbed dashboard. After you change the template, move the objects around to fit.

Before you begin
You cannot change the template if you originally selected the Freeform template.

Procedure

1. On a dashboard, double-click a tab.
2. Tap the **Change template** icon.

3. Select a template.

Creating a visualization in a dashboard

While assembling a dashboard, you may realize that you need another visualization. You can create one in the dashboard.

Procedure

1. Tap the **Data** icon.

   If you don't see the **Data** icon, tap the **Edit or preview** icon.

2. In the **Data** panel, expand the data asset that you want to use.

   If a different data asset is open, tap the **Go back** icon next to the name of the data asset that is open.

3. To create the new visualization, complete one of the following actions:

   • Drag a column onto the canvas.

     IBM Cognos Analytics creates a visualization to match the column. For example, when you add Year or Department, a table is created. Drag in a measure, such as Revenue, and a bar visualization is created.

   • Tap the **Visualizations** icon and select a type. Then add a column to each data slot.

Exporting a dashboard to PDF

`11.0.10` You can create a PDF of your dashboard to print or to share electronically.

Before you begin

Before you export your dashboard to PDF, consider the following points:

- Keep the default print margins in your browser print window.
- What you see on your screen is what you see on the PDF output. For example, a large screen displays more rows in a table than a small screen and this difference is captured in the PDF.
- Ensure that your printer device driver is set to use the maximum resolution.
- Use print preview to see what your PDF looks like before printing.

Tip: To get the best PDF output results, you might need to try a different web browser such as Google Chrome.

About this task

Because each web browser handles printing differently, there are particular settings to select in the print window depending on the browser and operating system that you are using. When you export a dashboard to PDF, refer to the steps at the end of this topic for more details for your specific browser and OS.

Procedure

1. Open a dashboard.
2. On the app bar, tap the more icon.

3. If you don't see the more icon, tap the **Edit or preview** icon to switch to preview mode first.

4. Select **Export to PDF**.
5. Select a page size and orientation, then tap **OK**.

   Important: The Cognos Analytics dialog for page size and orientation is the first step to properly formatting your dashboard to export to PDF. The print window for the browser is where you must ensure that the page size and orientation are properly set.

   The print window for the browser opens.
6. Ensure the settings in the print window for the browser match the **Export to PDF** options that you selected.
   For example, if you selected the **Portrait** orientation in the IBM Cognos Analytics user interface, before you print the PDF, ensure that the print window for your browser is set to **Portrait**.

   Note: If you select the **Tabloid** page size, some browsers label this page size as 11x17.

What to do next

The generated PDF should look like your dashboard. However, you might see some small differences. For detailed instructions for your specific browser and OS, see the following instructions:

Windows 10, Browser: Chrome, Print Destination: Microsoft Print to PDF

Windows 10, Browser: Firefox, Print Destination: Microsoft Print to PDF

Windows 10, Browser: Internet Explorer, Print Destination: Microsoft Print to PDF

Windows 8, Browser: Firefox or Internet Explorer, Print Destination: Adobe Acrobat Print to PDF

macOS or iOS, Browser: Safari

Windows 10, Browser: Chrome, Print Destination: Microsoft Print to PDF
Complete the following steps if you are exporting a dashboard to PDF using Chrome on Windows.

Procedure

1. In the print window for the browser, select the print destination: **Microsoft Print to PDF**.
2. In the **Print** dialog, expand **More settings**.
3. From the **Paper size** list, select the page that matches the **Paper size** you selected from the IBM Cognos Analytics **Export to PDF** dialog. The page orientation is automatically selected.
4. Ensure **Background graphics** is cleared.
5. Click **Print** to export your file to PDF.

Windows 10, Browser: Firefox, Print Destination: Microsoft Print to PDF
Complete the following steps if you are exporting a dashboard to PDF with Firefox on Windows.

Procedure

1. From the Firefox application bar, select the **Open** menu and select **Print**.
2. Tap **Page Setup**.
3. From the **Page Setup** dialog, ensure **Print Background (colors & images)** is selected and **Shrink to fit Page Width** is cleared.

   Note: Do not adjust the default margins in the **Margins & Header/Footer** tab.
4. Click **OK**.
5. On the IBM Cognos Analytics app bar, tap the more icon.
6. If you don't see the more icon, tap the **Edit or preview icon** to switch to preview mode first.
7. Select **Export to PDF**.
8. Select a page size and orientation, then tap **OK**.

   The print window for the browser opens.
9. Select the print destination: Microsoft Print to PDF.
10. From the print window for the browser, tap **Properties**.
11. From the **Microsoft Print to PDF Document Properties** dialog, tap the **Orientation** drop-down and select the value that matches the **Orientation** you selected in the IBM Cognos Analytics **Export to PDF** dialog.
12. Tap **Advanced**.
13. From the **Microsoft Print to PDF Advanced Options** dialog, tap the **Paper Size** drop-down and select the value that matches the **Page size** you selected from the IBM Cognos Analytics **Export to PDF** dialog.
14. Click **OK**.
15. Click **OK** to close the **Microsoft Print to PDF Document Properties** dialog.
16. Click **OK** to export your file to PDF.

Windows 10, Browser: Internet Explorer, Print Destination: Microsoft Print to PDF
Complete the following steps if you are exporting a dashboard to PDF with Internet Explorer on Windows.

Procedure

1. In the print window for the browser, select the print destination: **Microsoft Print to PDF**.
2. From the **Microsoft Print to PDF** dialog, set the page size and orientation to match what you selected in the **Export to PDF** dialog.

3. Click **OK**.

Windows 8, Browser: Firefox or Internet Explorer, Print Destination: Adobe Acrobat Print to PDF
Microsoft Print to PDF is not available with Windows 8 (or older). Therefore, you must install Adobe Acrobat DC or another print driver and add it as one of your print devices.

macOS or iOS, Browser: Safari
Complete the following steps if you are exporting a dashboard to PDF with Safari on macOS or iOS.

Procedure

1. In the print window for the browser, select the page size.

   Note: If you selected the **Tabloid** page size in the IBM Cognos Analytics **Export to PDF** dialog, select 11x17 in the macOS print window.
2. From the print window for the browser, select the **Orientation** you selected in the IBM Cognos Analytics **Export to PDF** dialog.
3. Enable **Print backgrounds**.
4. Enable **Print headers and footers**.
5. From the **PDF** drop-down, select **Save as PDF**.
6. Type a name, select a folder location, and click **Save** to save your PDF.

macOS, Browser: Chrome
Complete the following steps if you are exporting a dashboard with Chrome on macOS.

Procedure

1. In the print window for the browser, enable **Headers and footers**.
2. Enable **Background graphics**.
3. Click **Save**.
4. Type a name, select a folder location, and click **Save** to save your PDF.

macOS, Browser: Firefox
Complete the following steps if you are exporting a dashboard with Firefox on macOS.

Procedure

1. From the print window for the browser, select the page size.

   Note: If you selected the **Tabloid** page size in the IBM Cognos Analytics **Export to PDF** dialog, select 11x17 in the macOS print window.
2. From the print window for the browser, select the **Orientation** you selected in the IBM Cognos Analytics **Export to PDF** dialog.
3. Clear **Ignore Scaling and Shrink to Page Width**.
4. Enable **Print Background Colors**.
5. Enable **Print Background Images**.
6. From the **PDF** drop-down, select **Save as PDF**.
7. Type a name, select a folder location, and click **Save** to save your PDF.

Resetting a dashboard

11.0.12 You can reset your dashboard to revert to the last saved version of the dashboard.

Before you begin

If you don't see the option to reset the dashboard, the dashboard you are viewing was never saved.

To reset all the changes you have applied since you last saved the dashboard, compete the following actions:

Procedure

1. Open a saved dashboard.
2. On the app bar, click the more icon.

   ▪▪▪

3. If you don't see the more icon, click the **Edit or preview** icon to switch to preview mode first.

4. Select **Reset dashboard** and click **OK**.

Creating multilingual dashboards

`11.0.12` You can create a dashboard or story in different languages so that a user can experience a dashboard in their language of choice. This activity is also called localizing your dashboard.

About this task

In the dashboard properties, you'll find a languages section. This section is where you get started by setting a default language and where the different languages for your localized dashboards are displayed.

The localized content can include tab titles, visualization titles, and border colors on visualizations. For text widget properties, changes to font family, font size, style, text color, fill color, and border color can all be captured in a localized dashboard. You can also localize the descriptions in image, media, and web page widgets. In a story, you can localize the scene names and other items.

Users can set the content language in **My preferences**. After you localize a dashboard, a user opens the dashboard and IBM Cognos Analytics matches the content language to the available languages in the **Languages** list. If there is no match, the default language is displayed for the dashboard. For example, if a user's content language is set to French (Canada), when the user opens the dashboard, the languages in the **Languages** list are matched according to the following order:

- French (Canada)
- French
- French (*any country*)
- Default language in the **Languages** list

Users can also select the preferred language for the IBM Cognos Analytics user interface. For more information, see Language settings.

Procedure

1. Open a dashboard.
2. On the app bar, click the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

3. Click **Set default language** and select the language to localize to.
   The first language that you choose becomes the default language and starts your list of languages on the **Dashboard properties** pane. You can set a different language to the default later.
4. In the **Dashboard properties** pane, under **Languages**, click the menu icon ▪▪▪ for the language you want to localize to, and click **Edit translations**.
   You can now translate the dashboard.

5. Localize the default language by translating text widgets, titles on your visualizations, titles on tabs, and so on.

6. Click **Done**.

   Note: If the language is not already added and you click **Done** without making changes to the dashboard, the language is not added to the **Languages** list.

7. Alternatively, download a CSV file that lists all of the text strings in your dashboard that require localization. To do so, click the menu icon ⬚⬚⬚ for the default language, and click **Download**.

   You can send this list to a translator for localization.

   Note: You cannot upload the CSV file. A translated CSV file is a reference for you to manually localize a dashboard.

8. Click **Add another language** and select a language from the list.
   Localize each translatable area that is marked with a translation mode icon.

9. Click **Done**.

10. To change the default language, click the menu icon ⬚⬚⬚ for the language you want to set to the default language, and then click **Set as default**.

11. To switch any language in your **Languages** list to another language, click the menu icon ⬚⬚⬚ for the language you want to switch, and then click **Switch language**.

Results
A localized dashboard opens for users based on the languages in the **Languages** list and the content language set in the user's preferences.

Exploring your data

You can explore the data that is shown in a visualization by using the interactive title, drilling up or down columns, and viewing the details of a data point.

Viewing the underlying data

The data tray shows you all the rows and columns that are available for you to analyze.

Procedure

1. Tap the **Data** icon.

   If you don't see the **Data** icon, tap the **Edit or preview** icon.

2. Review and explore the columns that are available for you to use.

Changing the columns or members in a visualization

You can focus on points that are of interest to you by changing the data that appears in the visualization.

Procedure

1. Select the visualization that you want to work with.

2. In the **Selected sources** panel, expand the data asset that you want to use.

   If a different data asset is open, tap the **Go back** icon next to the name of the data asset that is open.

3. To replace the column, drag a new column to the axis.
   For example, if you have years in one axis and you drop months on top of it, you now see data for months.
4. To remove a column, tap the **Menu** icon and then tap **Remove column**.

Selecting columns from a different data asset

You can use data from more than one data asset in your dashboard. Each visualization must use data from a single data asset. You cannot use data from multiple data assets in the same visualization.

Procedure

1. In the **Selected sources** panel, tap the **Add a source** icon.

If you don't see the **Add a source** icon, tap the **Go back** icon next to the name of the data asset that is open.

2. Find and select the data asset that you want to use.
3. Now you can drag items from the new data asset to the canvas of your dashboard.

Drilling up and down in your data

Explore your data at different levels to gain a broader perspective or a more detailed view.

Note: When you drill back up after drilling down, you may lose filters that are applied. For example, you create a filter to include the data for sales regions of the USA and Canada. You drill down on Florida. When you drill up again, the analysis no longer includes Canada in its scope.

Procedure

1. Right-click a label in the visualization.
2. To see more details, tap the **Drill down** icon.

3. To gain a different or broader perspective, tap the **Navigate** icon and select another column to explore.

Working with a data point

You can view details, select, or perform actions on a data point.

About this task
You can work with an individual data point in different ways:

- You can view its details. Sometimes you want to see the data for one specific part of a visualization. For example, a bar visualization shows you the monthly sales revenue for each country that you sell in. The bar for the UK in January shows you the proportional share for the UK but not the revenue number.

- You can select it. This allows you to see the data point highlighted in all related visualizations in the current tab of the dashboard.

- You can perform actions on it. For example, you can keep or exclude it in the visualization, drill down into it, sort it, or filter it.

Procedure

1. To view the details of a data point, such as a bar, slice, or bubble, hover over it.

   A tooltip appears, showing information about the data point.
2. To select the data point, click it.
3. To perform actions on the data point, right-click on it.

   A tooltip appears with details about the data point. At the bottom of the tooltip, action buttons appear.

Relinking data source connections

You can relink a dashboard to the same source or to a different source directly from the dashboard.

About this task

For example, your visualizations are linked to a source called "Sales Data". You can relink your visualizations to an updated "Sales Data" source or to a different source called "Regional Sales Data". If the same column appears in both sources, the visualization is updated automatically. If the columns don't match, the visualization will indicate that a field is missing. To fix this, expand the visualization and manually update the columns.

Note: When you relink a data source and there are multiple data source connections and data source signons associated with your credentials, a prompt asks you to resolve the ambiguous connections.

To switch the data source connection while you are authoring a dashboard or story, use **Relink** in the Selected sources panel.

Procedure

1. Open the Selected sources panel.
2. Tap the **More** icon beside a data source.

3. Tap **Relink** and browse to the data source that you want to use.

Resolving ambiguous data source connections

When you open a dashboard or story and there are multiple data source connections and data source sign-ons associated with your credentials, a prompt asks you to resolve the ambiguous connections.

Procedure

When prompted, select a connection to use for your data source, and click **OK**.

If your connection also has an ambiguous sign-on, you will get prompted twice; one prompt for the connection and then a second prompt for the sign-on.

Zooming in and out

Sometimes you want to zoom in on a visualization to see the details, such as in a large bar visualization. For the visualizations that support zoom, use the scroll button on your mouse or the icons in the visualization to zoom in and out.

Procedure

To zoom in or out, use the wheel on your mouse.

Results

When you have a column visualization that shows the results for all years, you can zoom in and pan on the year you want to investigate on.
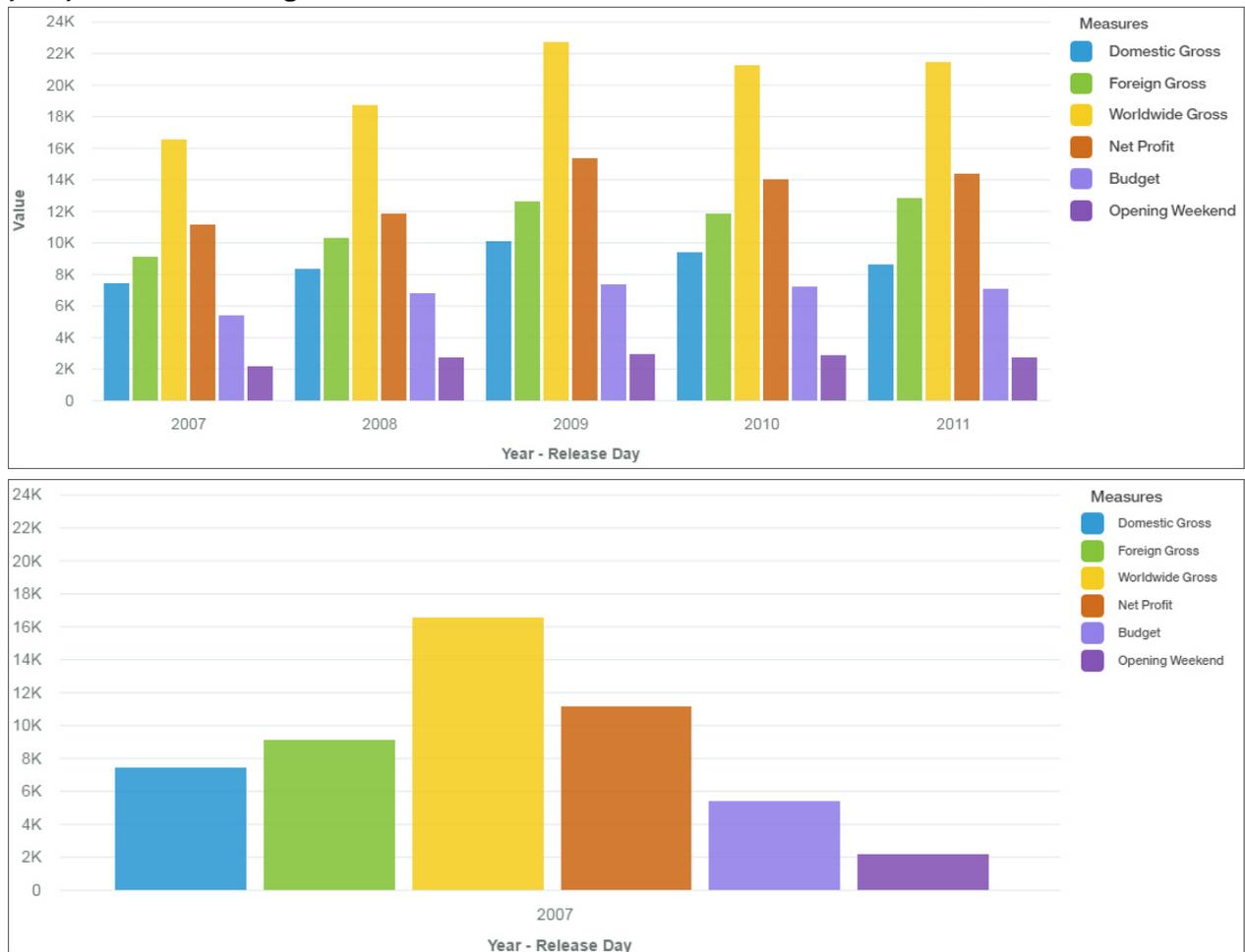
Visualizations

You can change the visualization type or change the columns that are used in the visualization.

Using a different visualization type

Visualizations communicate comparisons, relationships, and trends. They emphasize and clarify numbers. To choose a visualization type, consider what you want the visualization to illustrate and what will appeal to the audience for the visualization.

Procedure

1. Select the visualization that you want to work with.
2. Tap the **Change visualization** icon in the toolbar.

3. Tap the visualization type that you want to use.

   Take a look at how each visualization type communicates data differently. For example, use a bar, column, or line visualization to compare a set of values. Use a line or area visualization to track relationships. Use a tree map or pie visualization to see the parts of a whole.

4. If you select a visualization type that requires different data slots to be used, add a column to each empty data slot that has an asterisk (*) in it.

Column

Use a column visualization to compare values by one or more columns, such as sales for products or sales for products each month.

Column visualizations use vertical data markers that are arranged in groups to compare individual values. Use column visualizations to compare discrete data or show trends over time.

A column visualization shows change over a specific time period or can compare and contrast two or more columns in a time period or over time. If there are so many bars that the labels are impossible to read, filter the data to focus on a subset of the data or use a tree map.

For example, revenue for each product line is grouped by quarter, which emphasizes performance in each quarter.

Stacked column

Use a stacked column visualization to compare the proportional contributions for each item to the total, such as sales for products and sales for products each month.

A stacked column visualization can show change over a specific time period or can compare the proportional contributions for each item to the total. If there are so many bars that the labels are impossible to read, filter the data to focus on a subset of the data or use a tree map.
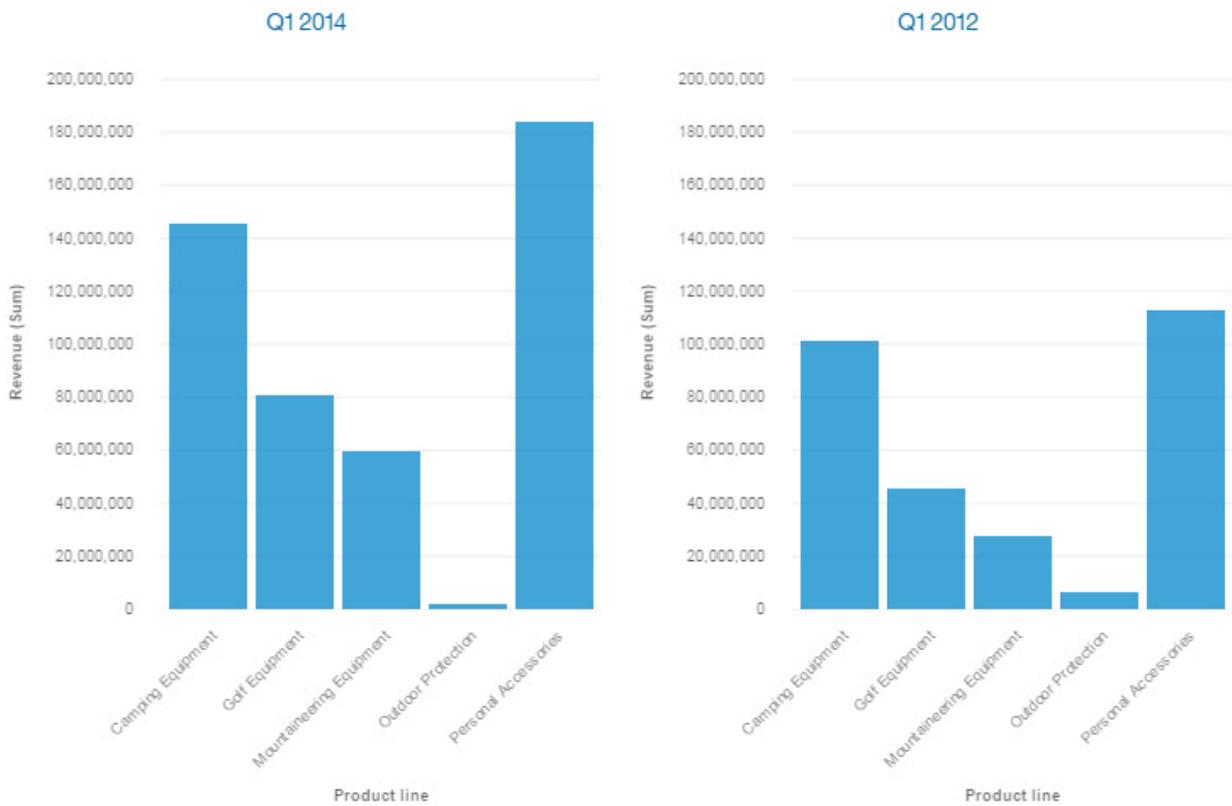
Bar

Use a bar visualization to compare values by one or more columns, such as sales for products or sales for products each month.

Bar visualizations use horizontal data markers that are arranged in groups to compare individual values. You can use bar visualizations to compare discrete data or to show trends over time.

A bar visualization can show change over a specific time period or can compare and contrast two or more columns in a time period or over time. If there are so many bars that the labels are impossible to read, filter the data to focus on a subset of the data or use a tree map.
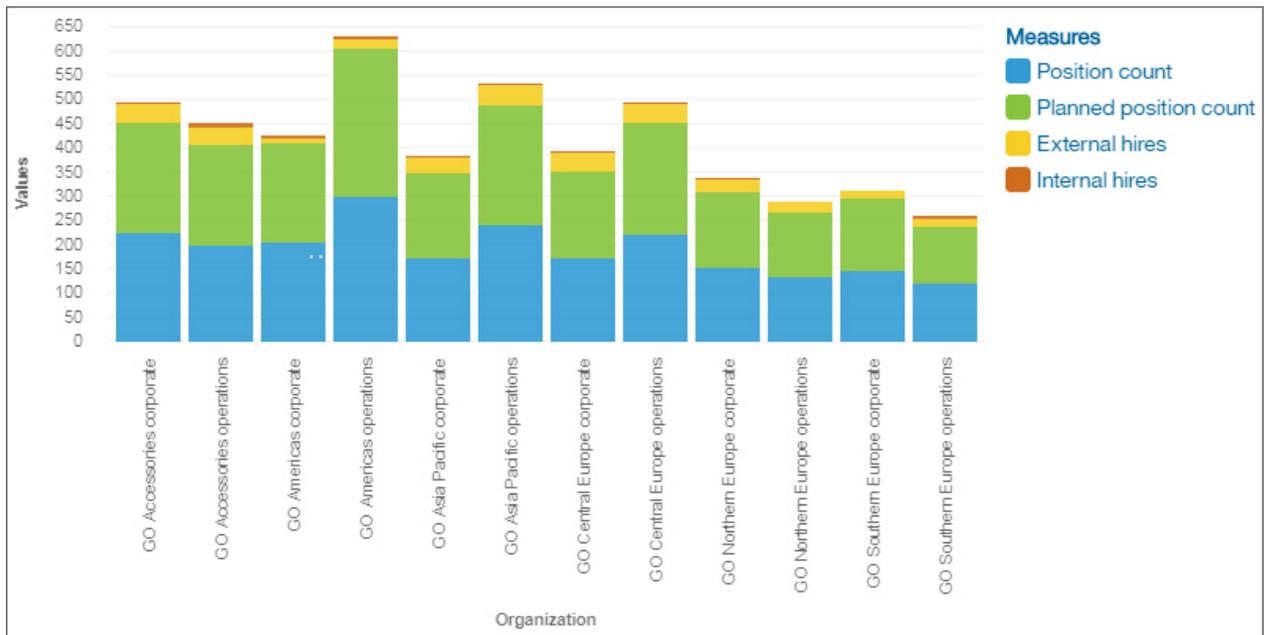

Stacked bar

Use a stacked bar visualization to compare the proportional contributions for each item to the total, such as sales for products and sales for products each month.

A stacked bar visualization can show change over a specific time period or compare the proportional contributions for each item to the total. If there are so many bars that the labels are impossible to read, filter the data to focus on a subset of the data or use a tree map.
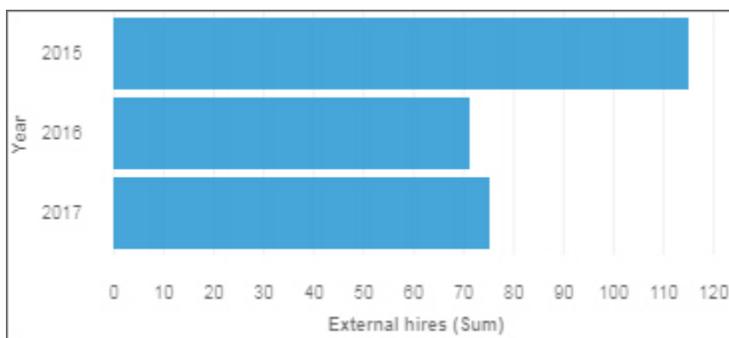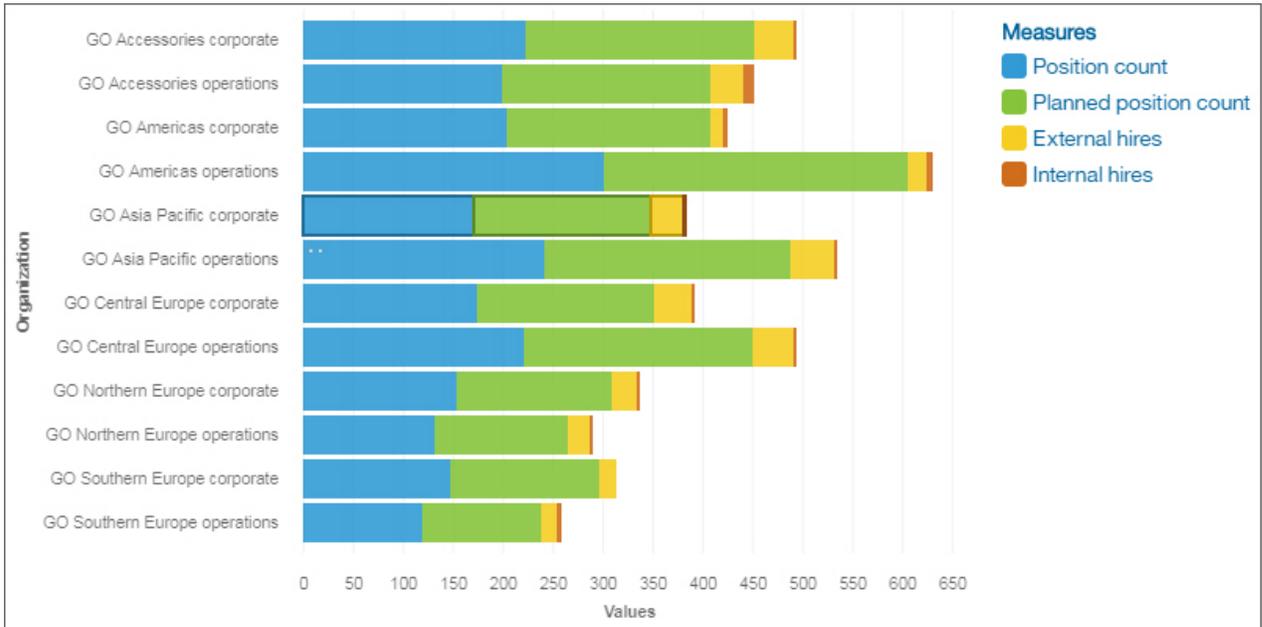
Bubble

Use a bubble visualization to show relationships among columns that contain numeric values, such as revenue and profit.

A bubble visualization uses data points and bubbles to plot measures anywhere along a scale. One measure is plotted along each axis. The size of the bubble represents a third measure. Use bubble visualizations to represent financial data or any data where measure values are related.

The bubbles are in different sizes and colors. The x-axis represents one measure. The y-axis represents another measure, and the size of the bubbles represents the third measure.

For example, this bubble visualization shows external hires and internal hires for each department.
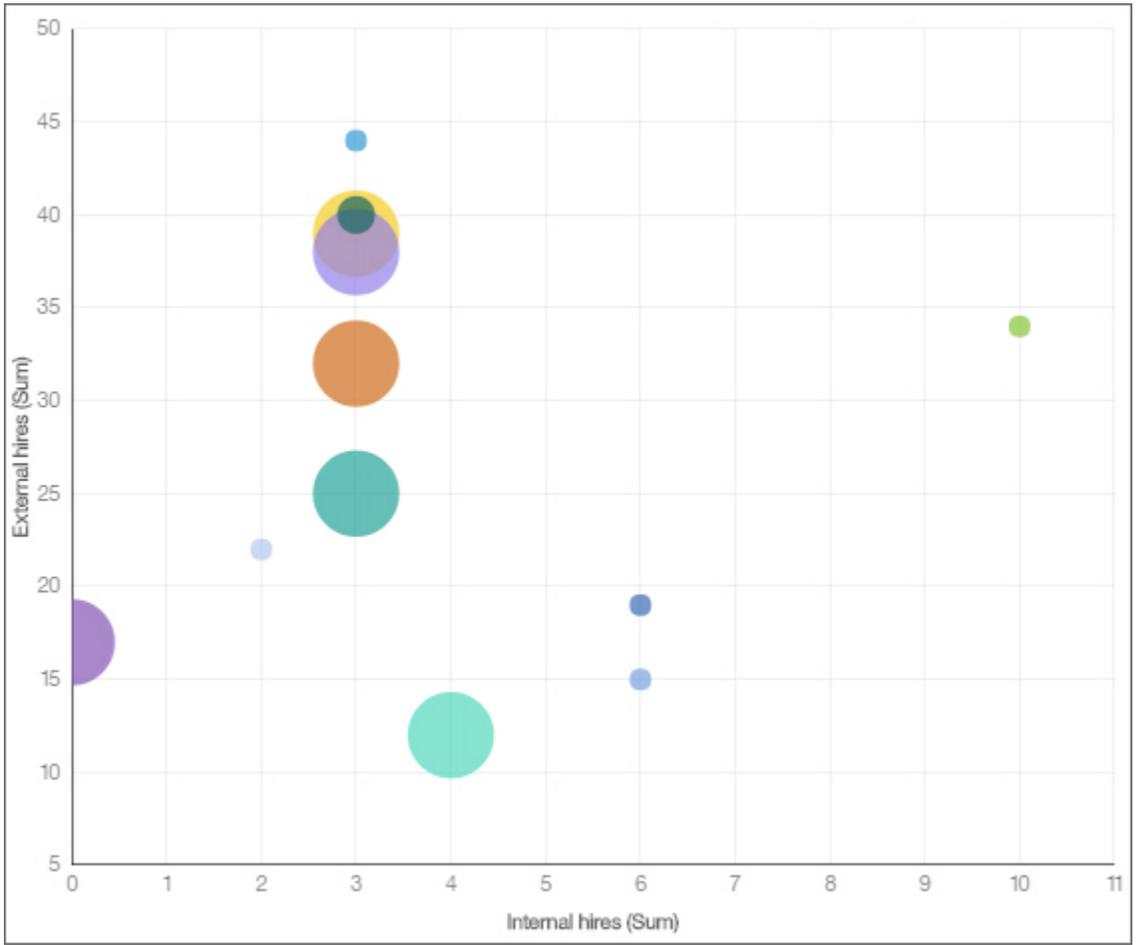
Packed bubble

Use a packed bubble visualization when you want to show relationships among columns that contain numeric values, such as revenue. It is similar to the bubble visualization but the bubbles are tightly packed instead of spread over a grid. A packed bubble visualization shows a large amount of data in a small space.

The bubbles are in different sizes and colors.

For example, this packed bubble visualization shows external hires by department. Each bubble is a different department. The size of each bubble is determined by the number of external hires for that department.
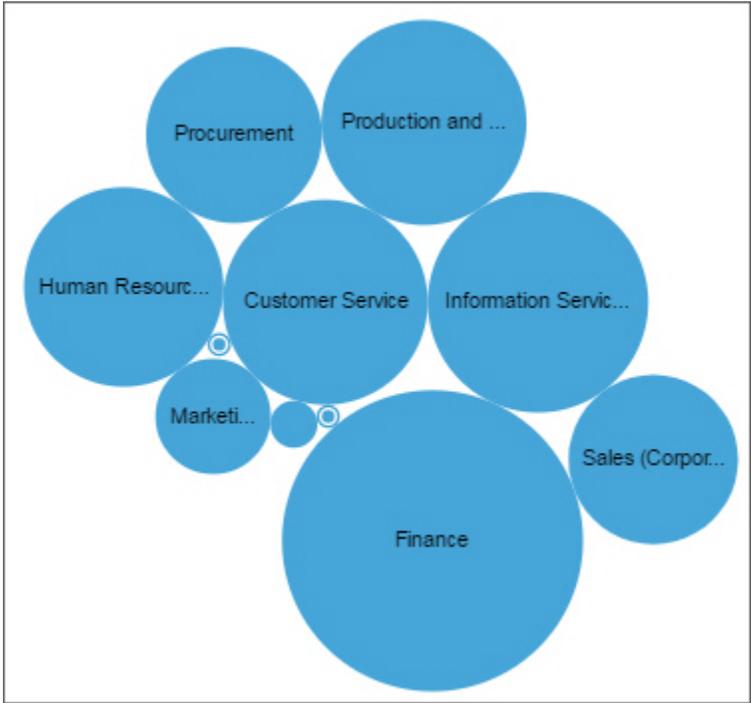
Line

Use a line visualization to show trends over time.

A line visualization can compare trends and cycles, infer relationships between variables, or show how a single variable is performing over time.

For an effective line visualization, use a time column in the x-axis, such as years, quarters, months, or days. If the x-axis shows something else, such as Canada, Netherlands, UK, and US, use a bar or column visualization.

For example, this line visualization shows the trend in course costs by department over year.
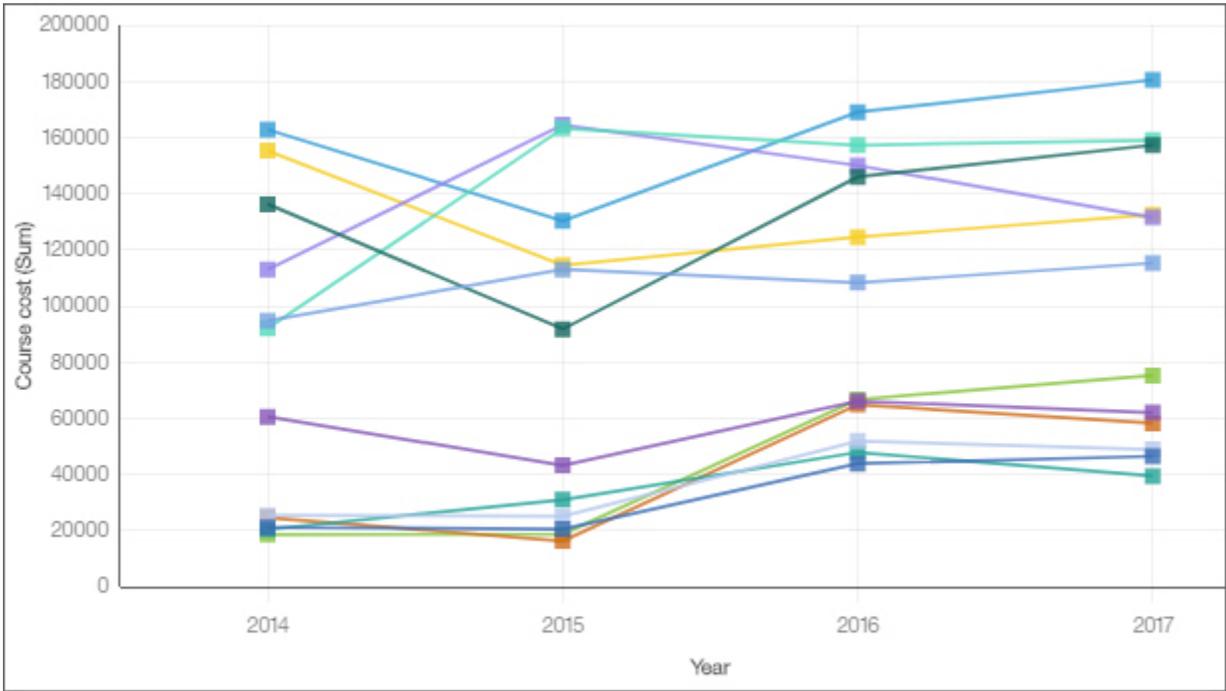
Line and column
Use a line and column visualization to highlight relationships between multiple data series by combining bars and lines with one visualization.

For example, this line and column visualization shows the relationship between course cost and expense totals by department.
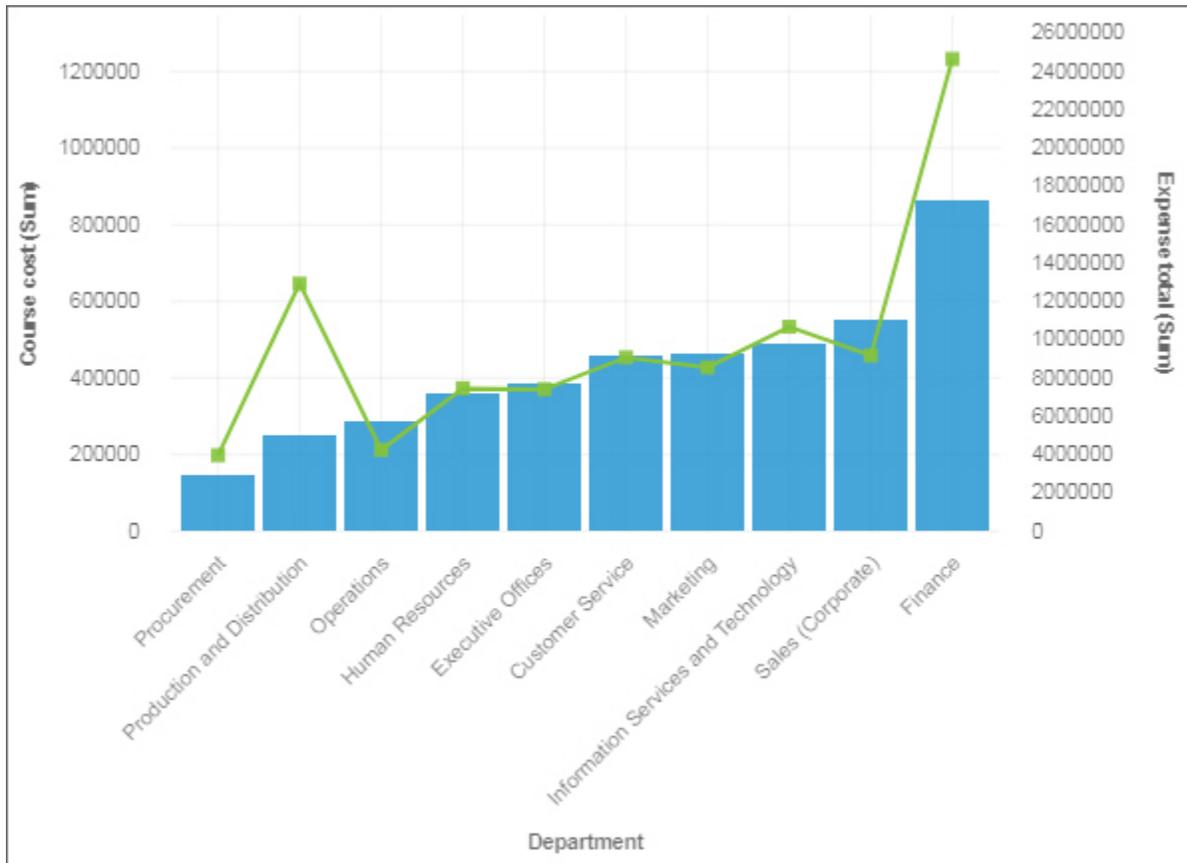
List
Use a list visualization to create an overview the data in a hierarchical way.

Another use of the list visualization is to create filter widget. The next example show how you can use the list visualization as a filter widget.
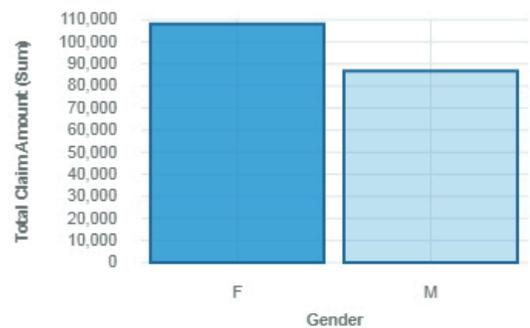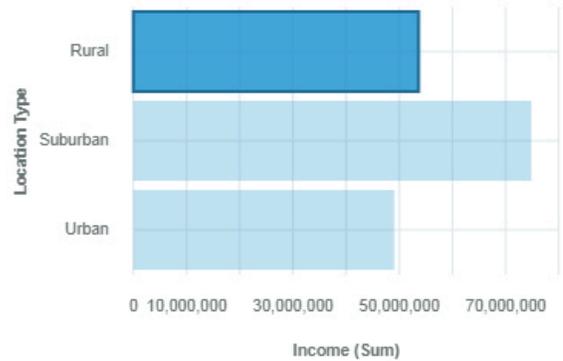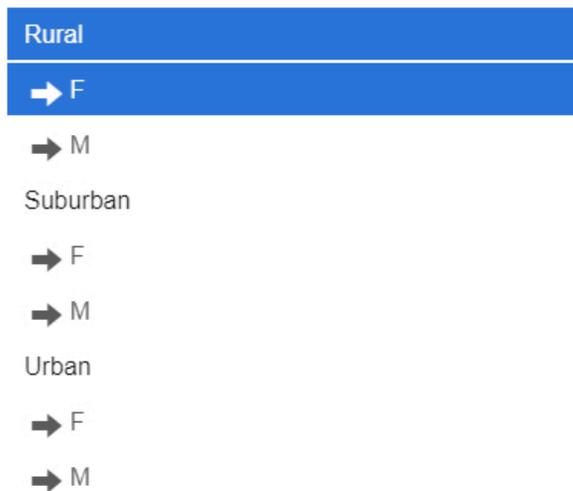
Point

Use a point visualization to show trends over time.

A point visualization can compare trends and cycles, infer relationships between variables, or show how a single variable is performing over time.

A point visualization is like a line chart without the connecting lines.

For an effective line visualization, the x-axis should show time, such as years, quarters, months, or days. If the x-axis shows something else, such as Canada, Netherlands, UK, and US, use a bar visualization.

Data values are plotted vertically.

For example, this line visualization shows revenue over quarter by order method type. Web orders have grown dramatically over this period.
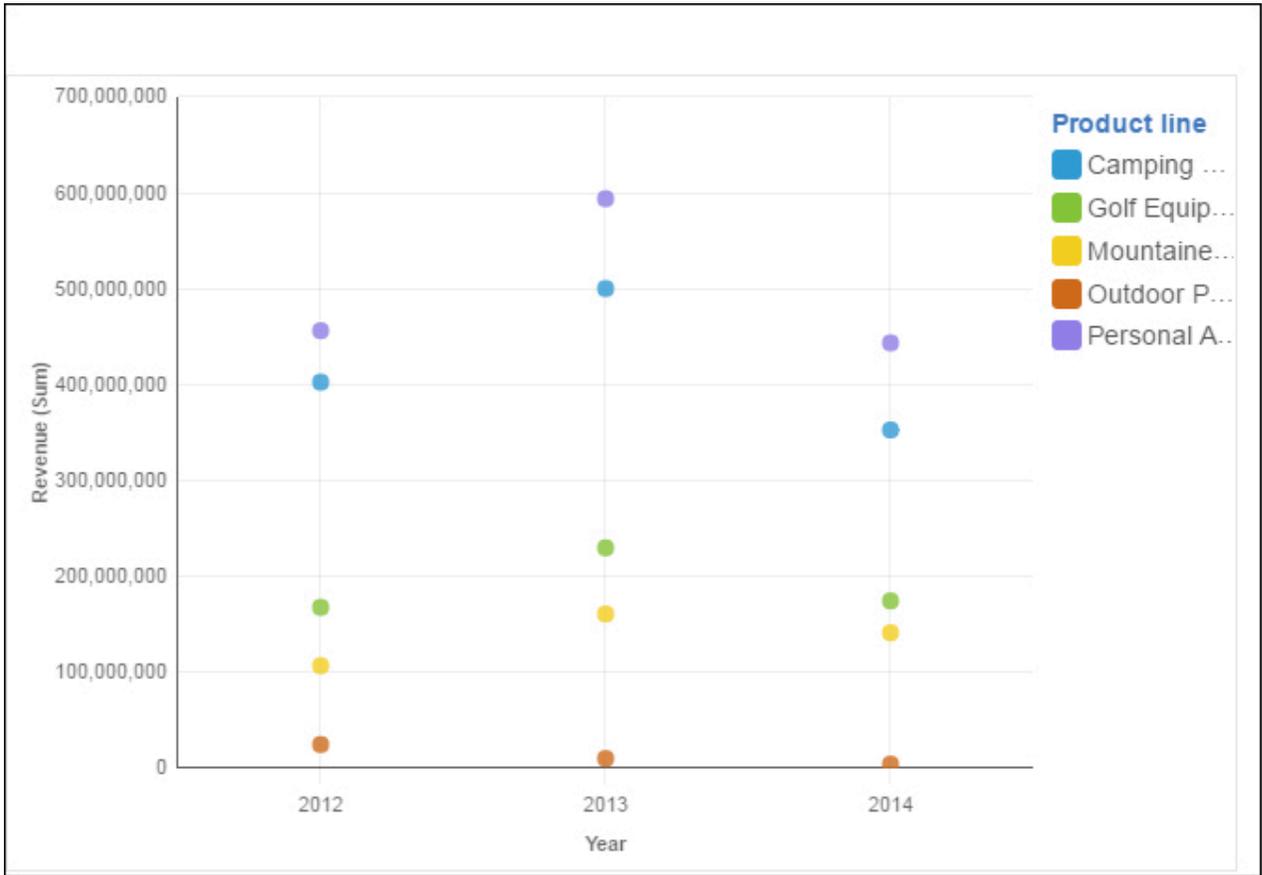
Area
Use an area visualization to emphasize the magnitude of change over time.

Area charts are like line charts, but the areas below the lines are filled with colors or patterns. Stacked charts are useful for comparing proportional contributions in a category. They plot the relative value that each data series contributes to the total.

Because an area visualization stacks the results for each column or item, the total of all results is easily seen.

For example, an area visualization is excellent for looking at revenue over time across several products.

For example, this area visualization shows the number of external hires for each department over year. Because the area visualization stacks the results, you see the totals for each year.
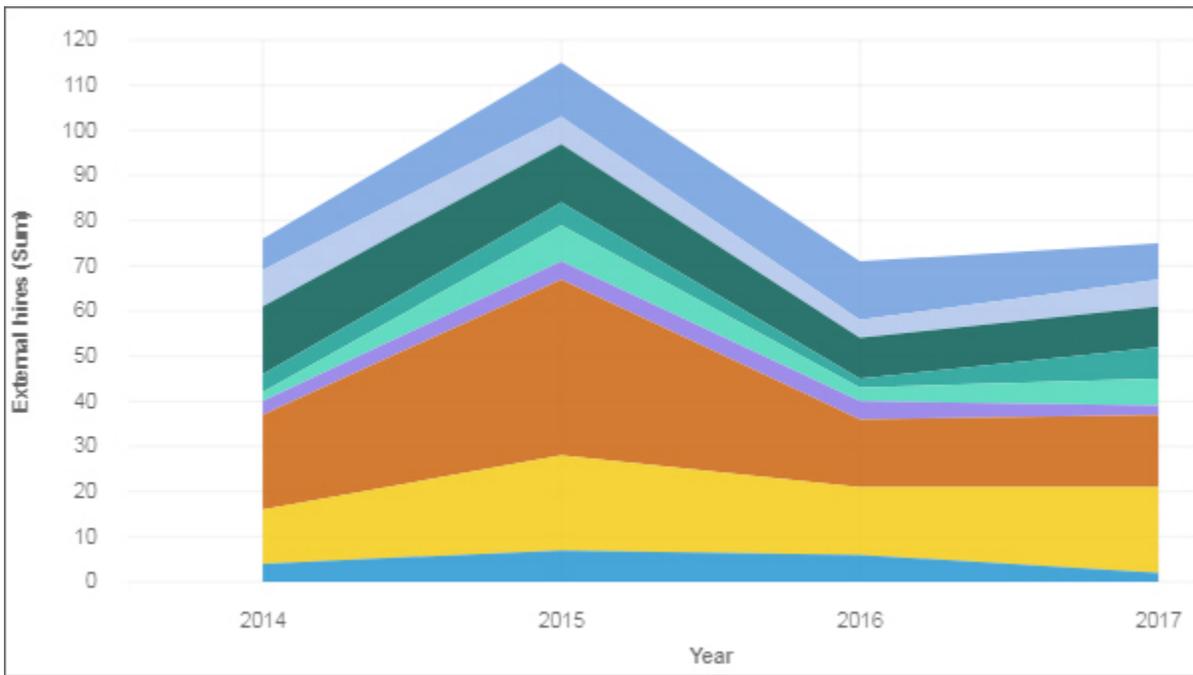
Pie

Use a pie visualization to highlight proportions. Each slice shows the relative relationship of each part to the whole.

For example, this pie visualization shows the number of course days for each department.
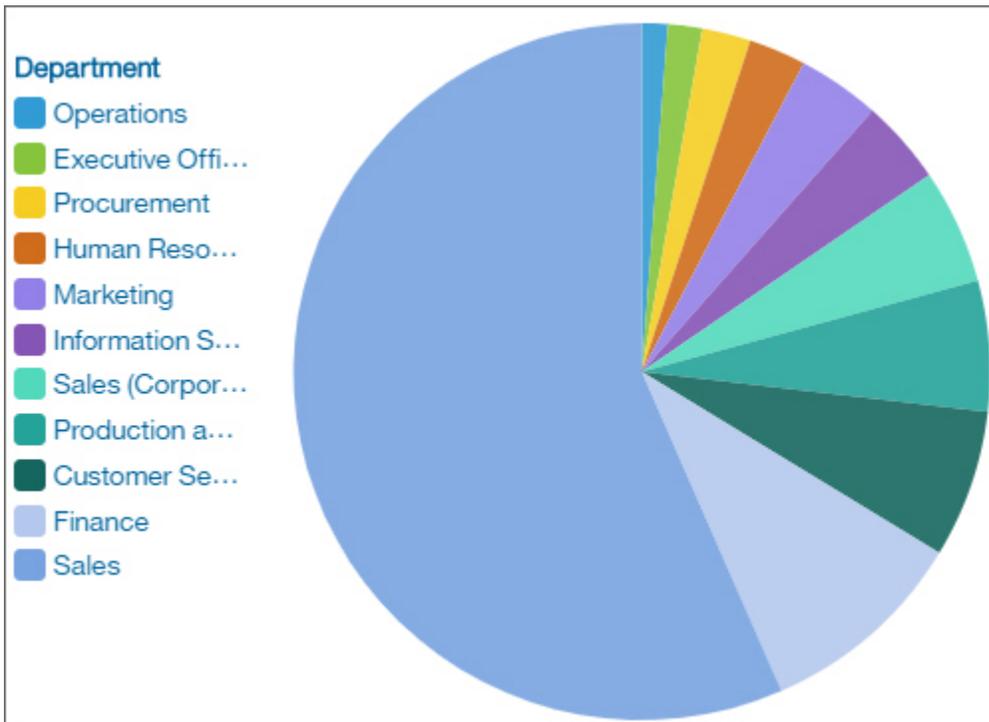
Tree map

Use a tree map visualization to identify patterns and exceptions in a large, complex data asset.

Tree maps show relationships among large numbers of components by using size and color coding in a set of nested rectangles.

A tree map that is colored by category identifies the level 1 category by color. The sizes of the rectangles represent the values. In a tree map that is colored by value, the sizes of the rectangles represent one of the values and the color represents a second set of values. Do not use data that includes negative numbers. A tree map ignores negative numbers.

Many data assets have a hierarchical structure. For example, you have data about the profit margin of food items in a grocery store. Under the general category of fruit, there is a category for citrus fruit. Various citrus fruits are listed, such as grapefruit, orange, and lemon. A tree map tells you how each citrus fruit is performing when compared to each other and to other types of food.

For example, this tree map visualization shows course cost by organization.
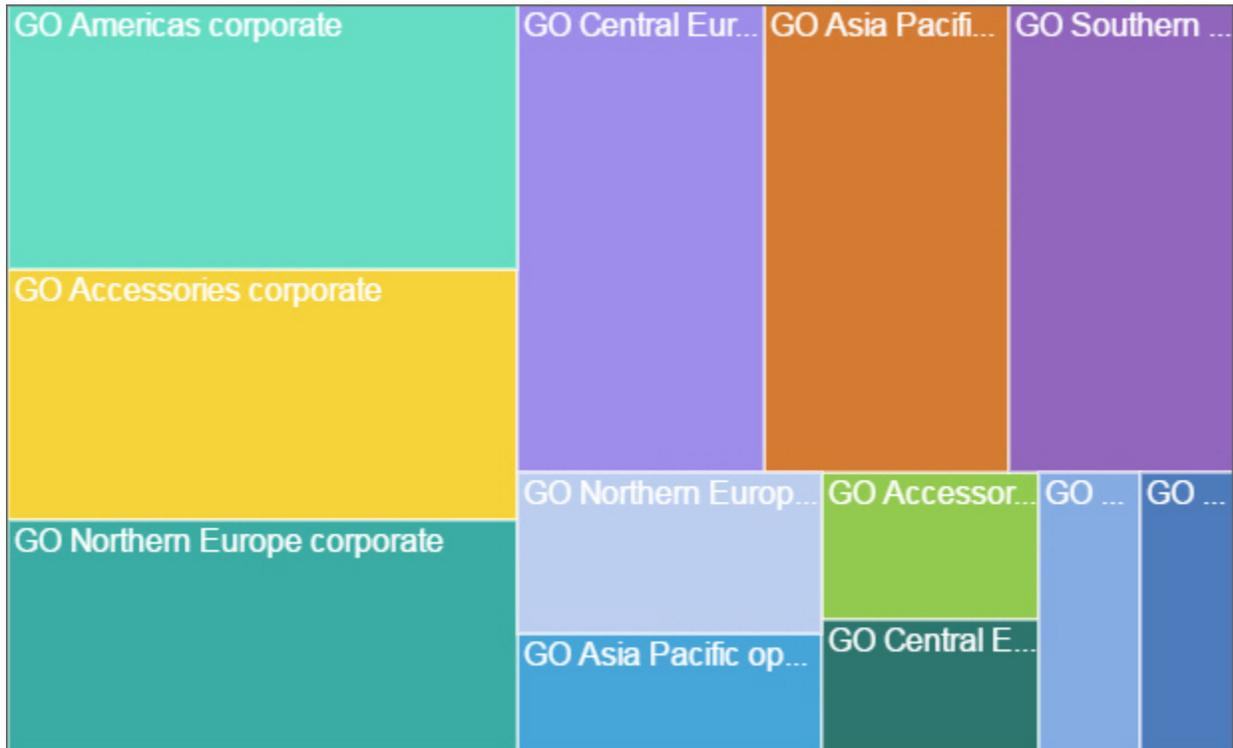
To deselect a box that you've selected, Ctrl+click the selected box.

Table
Use a table to show detailed information from your database, such as product lists and customer lists. A table shows data in rows and columns. Each column shows all the values for a data item in the database or a calculation based on data items in the database.

For example, this table shows the course cost for each department.

Department	Course cost
Customer Service	459,250
Executive Offices	384,000
Finance	863,750
Human Resources	361,250
Information Services and Technology	491,750
Marketing	465,750
Operations	288,000
Procurement	146,250
Production and Distribution	249,450
Sales	4,056,000
Sales (Corporate)	549,550
Summary	8,315,000

Adding more columns to a table

You can focus on points that are of interest to you by adding more data to the visualization.

1. Drag another column to the data slot where you want additional data.
2. Drop the column beside the existing column.

Hierarchy

Use a hierarchy when you want to see the data in rows and columns.

For example, this hierarchy shows product types.

Binoculars
Climbing Accessories
Cooking Gear
Eyewear
First Aid
Golf Accessories
Insect Repellents
Irons
Knives
Lanterns
Navigation
Packs
Putters

Summary

Use a summary visualization when you want to see the total for a measure or the count for a categorical column.

For example, this summary visualization shows total revenue for all product types.

$3,772,422,965.13
Revenue (Sum)

For example, this summary visualization shows the number of departments in your organization.

11

Department (Count distinct)

Radial bar

In a radial bar visualization, each bar appears in a circle with longer bars that represent larger values. Hover over a bar to see the details about it, such as the exact value represented by the bar. Each bar starts at 12 noon and goes in a clockwise direction for positive values and counterclockwise for negative values.

Radial visualizations, also known as dial charts or speedometer charts, show information as reading on a dial. The radial bar visualization is valid only with one category.

For example, this radial bar visualization shows the position count by department. Production and Sales have the highest position counts.
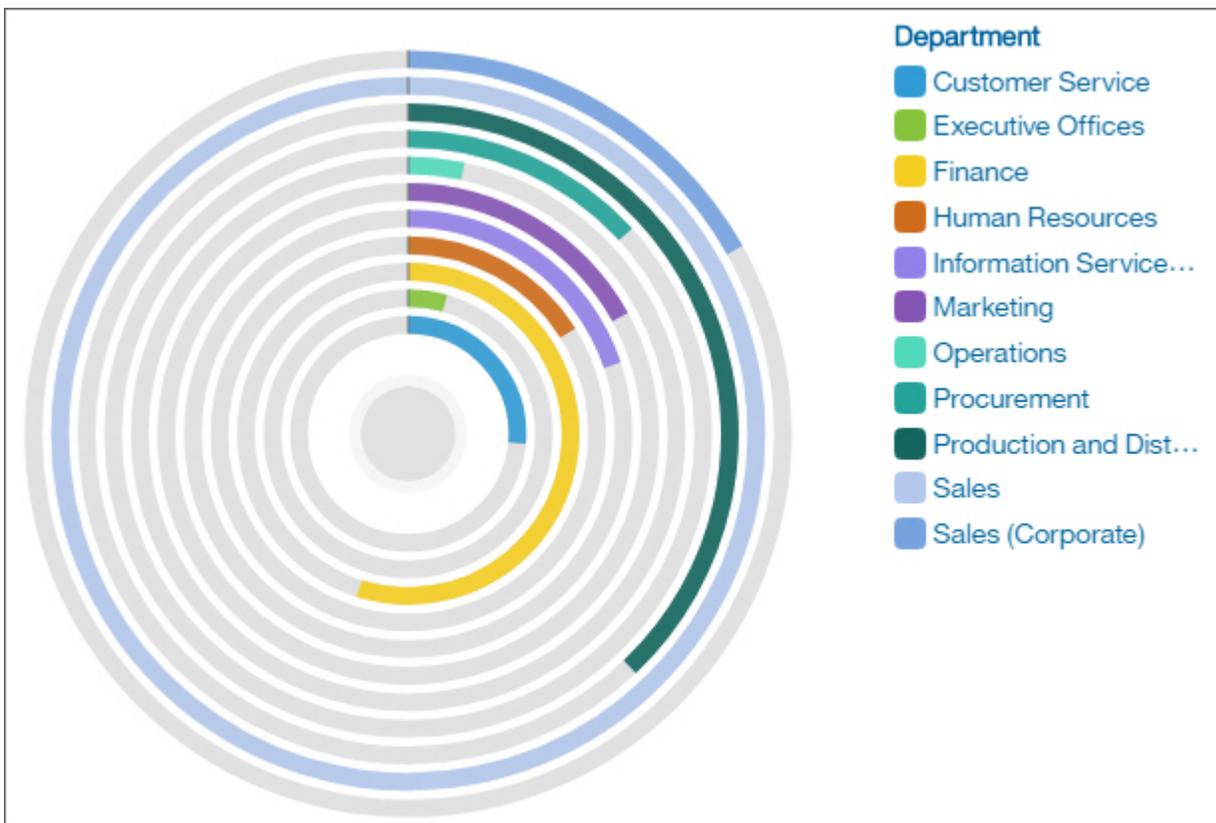
Scatter

Scatter visualizations use data points to plot two measures anywhere along a scale, not only at regular tick marks.

Scatter visualizations are useful for exploring correlations between different sets of data.

The following example shows the correlation between revenue and gross profit for each product type.
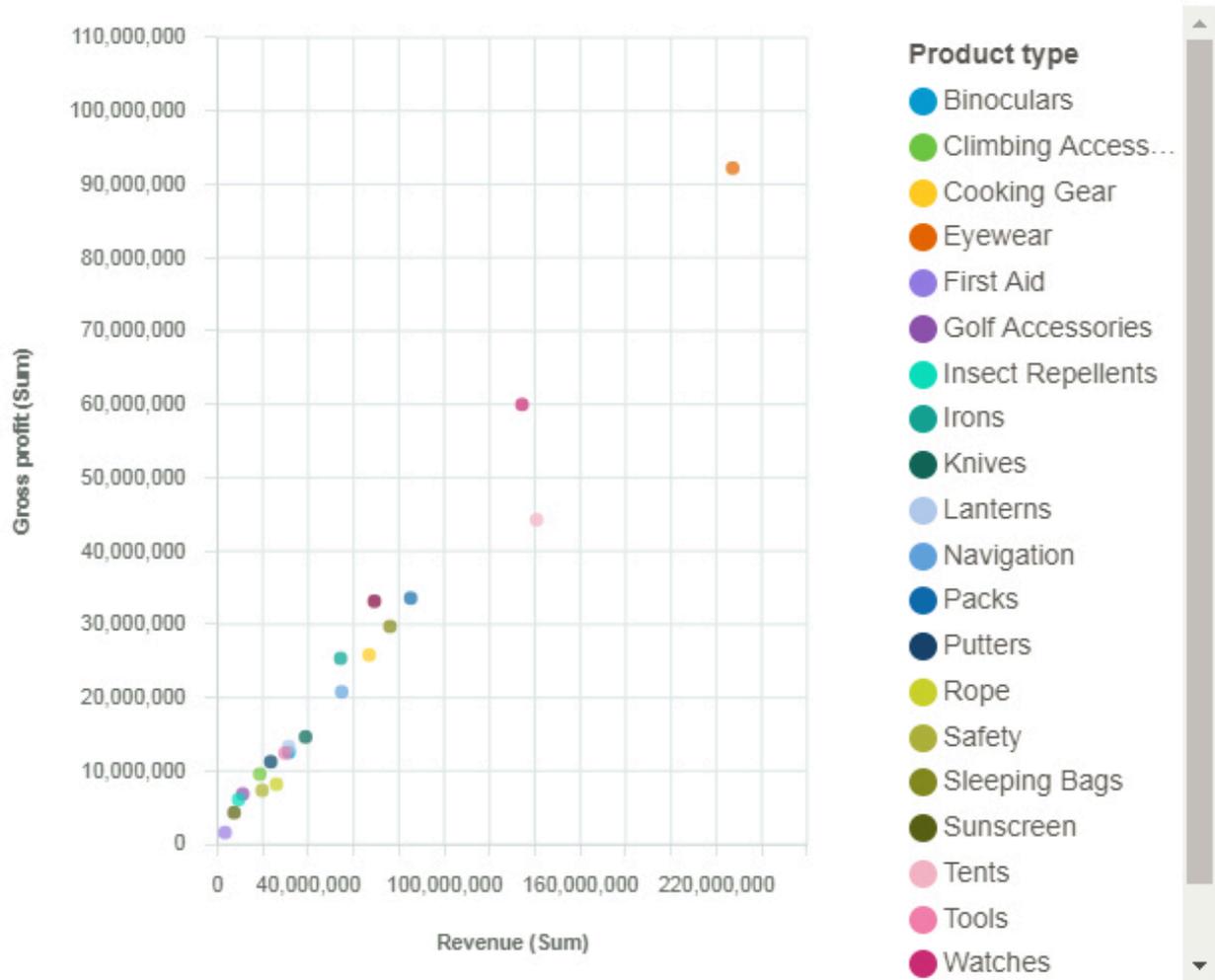
Word cloud

Use a word cloud visualization when you want to see a text-based visualization of a given column. The text height represents the scale. The name itself is the different members of the column.

Tip: The data asset should contain at least 15 columns and at least 100 rows to create an effective word cloud.

For example, this word cloud visualization shows revenue for all product types. The Eyewear product type brings in the most revenue.
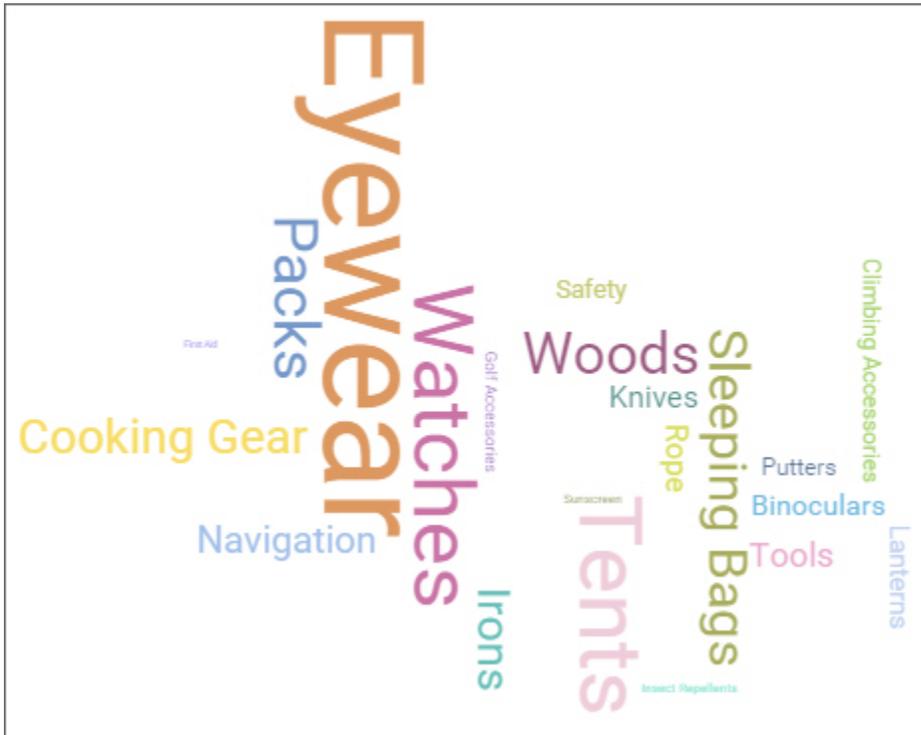
Network

Use a network visualization when you want to see the connections among columns in your data asset. A network visualization is a good choice to show connections, networks, and points of intersection.

Network visualizations display a set of nodes, represented by symbols, and links, represented by paths, to show the relationship between entities or items.

Use the **From** and **To** data slots to define the relationship that you want to investigate.

For example, this network visualization shows which positions are in each department.

Heat map

Use a heat map visualization to visualize the relationship between columns and you want it to be represented in a matrix type view.

A heat map visualization uses color and intensity of the color to show the relationship between two columns.

For example, this heat map visualization shows the planned position count for each position by year.
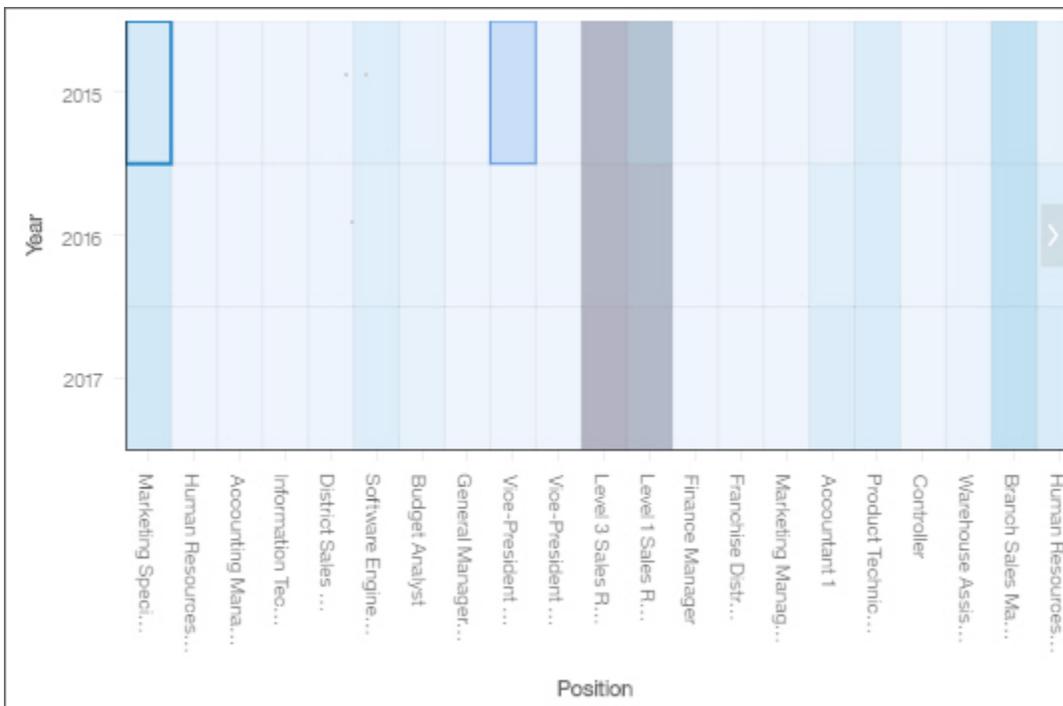
Data player
Use a data player to see an animation of the impact of a column on the other visualizations.

Highlighting conditionally formatted data with color

Conditional formatting allows you to see the distribution of your data and highlight exceptional data points by using color in your table or crosstab visualizations. For example, you might want to highlight low sales numbers in red, or use green to highlight sales numbers over a certain threshold.

Procedure

1. Open a table or crosstab visualization.

2. Drag the measure that you want to highlight to the **Color** data slot.
3. Close the visualization.

4. To edit the conditional formatting, tap the visualization, then tap .

   Use the sliders at the bottom of the visualization.

   - You can add a handle to add another color category. You can display up to five color categories on your slider. To add a handle, tap the canvas under the slider close to where you want the new handle to appear.

   - You can manually expand the range of values on the slider. Tap the first or last handle on the slider and drag it outside the current range. The values on the slider will increase.

   - You can remove a handle from the slider. To do so, right-click the handle and tap the **Delete** icon.

5. To use a different color palette, or to change the order of the colors on the palette, select the visualization, tap the **Properties** icon and then tap the **Details** tab.

Showing data as points in a visualization

Use the Points data slot to show the data for each of the values in a column as a point in the visualization.

Procedure

1. Open a visualization that has a **Points** data slot.

2. Drag the measure that you want to show the points for to the **Points** data slot.
3. Close the visualization.

Showing data as sizable points in a visualization

Use the Size data slot to include the values of a column by setting the size of each point in the visualization.

Procedure

1. Open a visualization that has a **Size** data slot.

2. Drag the measure that you want to show the points for to the **Size** data slot.
3. Close the visualization.

Repeating a visualization by row or column

You can repeat a visualization for each member of a specified row or column.

For example, you have a pie visualization that shows the proportion of internal hires by department.
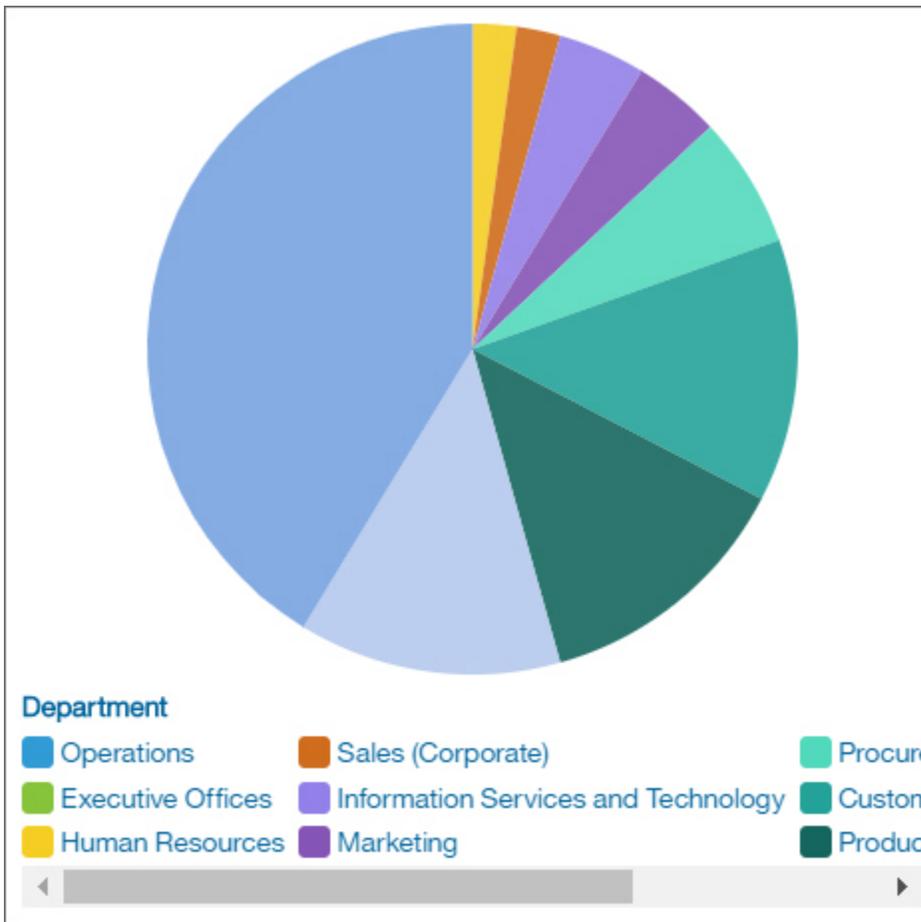
Adding "Year" to the **Repeat (row)** data slot replaces the single visualization with a visualization for each year.
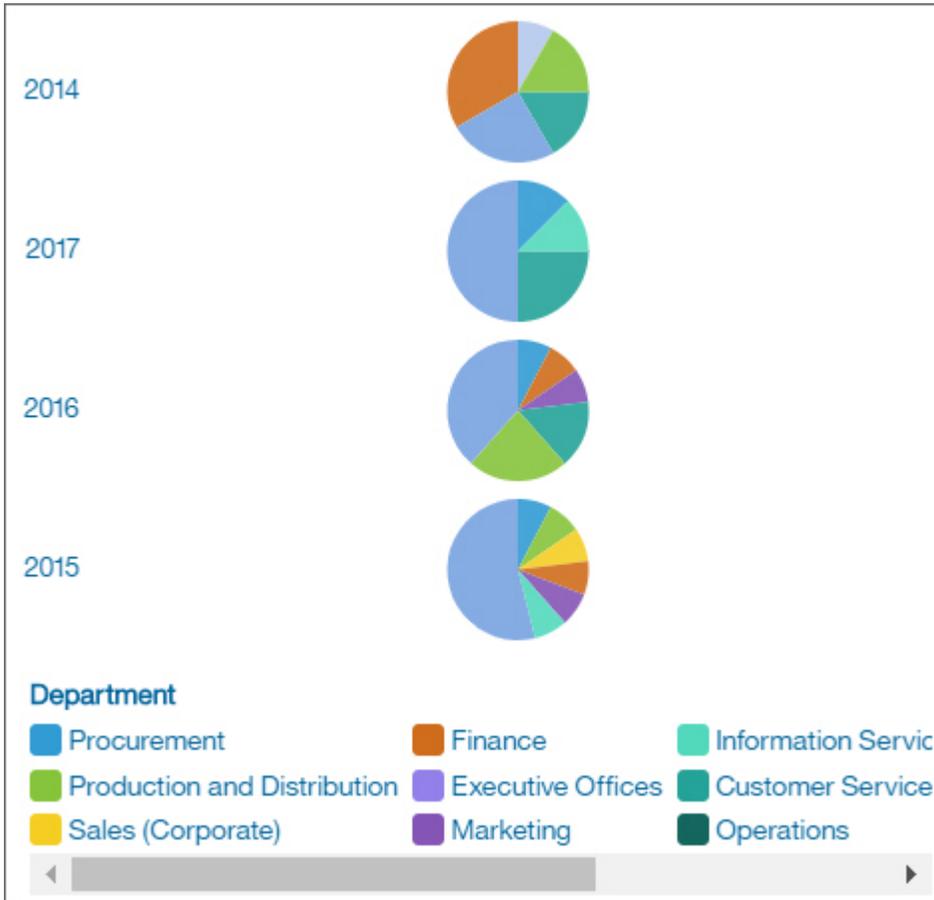
Procedure

1. To repeat the visualization vertically, drag a column to the **Repeat (column)** data slot.

   Note: There is a limit of 20 visualizations that can be shown. Use a filter if you want to control which members of the column appear in the repeating visualizations.

2. To repeat the visualization vertically, drag a column to the **Repeat (row)** data slot.

Setting a timer to automatically refresh a visualization

You can set a timer in individual visualizations to seconds, minutes, or hours to indicate how often you want the item to automatically refresh.

Procedure

1. Tap the visualization or object.
2. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

3. In the **Details** tab, select the **Refresh automatically** check box and set the refresh frequency to seconds, minutes, or hours.

Adding a title to a visualization

Add clarity by adding a title to any visualization.

Procedure

1. Tap the visualization or object.
2. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

3. In the **General** tab, select the **Show title** check box and enter the title in the visualization.

   Tip: By default, the **Show title** check box is not selected.

Limiting data to top or bottom values in a dashboard visualization

You want to focus your visualization on the items of greatest significance to your business question. For example, you want to identify your top 100 customers and what that group of customers is worth.

You can limit the data to the top or bottom values of a set. Limiting keeps the amount of data that is shown in the work area small, even when you use large data sources.

You can define a top or bottom rule by specifying:

- A number, such as the 10 top or bottom performing sales people.
- A percentage, such as customers who contribute to the top 10% of overall revenue.

If the selected set contains a filter, then the top or bottom rule applies only to the included values. For example, if you apply a filter to show only retailers with revenue greater than 1.000.000 dollars, the bottom rule applies to the lowest values within those results.

You can filter a set of members to show only those members at the top or bottom and base the filter on the measure you are using.

Procedure

1. Tap the **Edit or preview** icon.

2. Expand the visualization.

3. Select a column, click the **More** icon [...], and click **Top or bottom**.
4. Select whether to filter the **Top count**, **Top %**, **Bottom count**, or **Bottom %** values.
5. In the **By** field, specify a member that you want to use for the top or bottom filtering.

   Note: If individual data points have the same value, then the visualization shows all these values even if you specified a limit of, for example, 10 values.

Using maps

Maps help you to do geographic analysis of data by using locations such as states, regions, and postal codes.

Over 235,000 administrative boundaries and over 220,000 zip and postal codes in over 245 countries are supported.

Note: For a complete list of supported locations, follow these steps:

1. Go to the Box folder at https://ibm.ent.box.com/s/6pa2xaagt9e0v8ngl6noyiil9d70r2rv.
2. Click the **Mapping** folder.
3. View an archive, for example:

- IBM CA 11 Admin Boundary Types and Post Regions.xlsx

  This spreadsheet contains the types of administrative and postal boundaries by country.
- IBM CA 11 R9 Named Administrative Boundaries.xlsx

  This spreadsheet contains the names of the administrative boundaries by country.

Data is mapped by matching the location name on the map with a location in your data.

Dashboards have a limit of plotting or mapping a maximum of 3000 data points on any visualization.

Adding a map to a dashboard

When you use a map in a dashboard, you can show data for one location measure, either as a filled region, a point, or both.

Before you begin

You must have access to the IBM Cognos samples. This procedure uses the IBM Cognos GO Sales sample data. If your administrator installed these samples, they are in **Team content** > **Samples** > **Models** > **GO Sales (query)**.

About this task

This procedure shows you how to create a map that shows revenue by region and gross profit as points.

Note: Other names for a map are *polygon*, *filled region*, and *choropleth*.

Procedure

Create the map and add revenue by region.

1. Click **New** and then click **Dashboard**.
2. Leave the default values in the **Select a template** window and click **OK**.
3. In the left pane, click the **Visualizations** icon , and then click the **Map** icon.
4. In the left pane, click **Sources**, and then click **Add a Source**.
5. Click **Team content** > **Samples** > **Models** > **GO Sales (query)** and click **Add**.
6. Expand **GO Sales (query)** > **go_sales** > **Sales (query)** > **Sales**, and drag **Revenue** to the **Location color** data slot.
7. Expand **Branch** and drag **City** to the **Locations** data slot.
   The map is populated and a yellow triangle displays in the upper right corner of the map.

   Tip: Zoom in and zoom out of the map to see more or less detail. Click and drag to move around the map.
8. Click the yellow triangle.
   A window displays the unresolved locations information. There are two types of unresolved locations: ambiguous region and unrecognized location. To resolve the first problem, add categories to refine the locations. For example, add **Province or state** and **Country** to the **Location** data slot. To resolve the second problem, cleanse your data by renaming the locations.
9. To add points to the map, drag measures to the **Point size** and **Point color** data slots.
10. Save the dashboard when you're done.

Using latitude and longitude locations in a map

When you use a map in a dashboard, you can show data for multiple layers: regions, points, and latitude/longitude locations.

Before you begin

To use latitude/longitude locations in your map, use a data source that contains latitude and longitude data. For example:

Table 1: Example table with latitude and longitude data				
City	**Longitude**	**Latitude**	**Rating**	**Surveys**
Antwerp	4.402771	51.260197	7	30.000
Brussels	4.355607	50.878899	9	76.000

At the top of the data slot pane, click the down arrow and select **Latitude/Longitude**.

Note: The format of the longitude and latitude data must be as follows: Lat 51.260197 , Long 4.402771. The format 51° 26' 01.97'' N , 4° 40' 2.771'' E is not supported.

Procedure

1. Click **New** and then click **Dashboard**.
2. Leave the default values in the **Select a template** window and click **OK**.
3. In the left pane, click the **Visualizations** icon , and then click the **Map** icon.
4. In the left pane, click **Sources**, and then click **Add a Source**. Select a data source that contains longitude and latitude data.
5. In the visualization, expand and select **Longitude/Longitude**.
6. In the left pane, expand your data items and drag latitude and longitude to the **Latitude** and **Longitude** data slots.
7. Drag City to the **Label** data slot. The latitude, longitude, name of the city appears when you hover over the data points.
8. Drag rating to the **Size** data slot and drag Surveys to the **Color** data slot.

Setting up Mapbox to work with IBM Cognos Analytics
IBM Cognos Analytics supports the use of custom polygons in partnership with Mapbox.

Create a free Mapbox account with 5 GB of space. When you have created your Mapbox account, upload your geoJSON custom polygon file to Mapbox as a tileset. A tileset is a compiled set of geoJSON that is optimized to render fast on a browser. For more information, see https://www.mapbox.com/pricing/.

If your geoJSON is less than 5 MB, then you can edit the geoJSON directly as a data set in Mapbox. After you edit the geoJSON files, export them into a tileset.

Make sure that each polygon has at least one uniquely identifying property as a string value.

Custom polygons in formats such as .shp and KML can be converted to geoJSON, by using for example QGIS.

Retrieving the necessary data from Mapbox

When you have your tileset that is created in Mapbox, copy the following three keys from the tileset page:

- MapID
- Layer name
- Unique identifier

You need these keys when you want to use Mapbox data in you map visualization.

For more information, see Using custom point or region information from Mapbox in a map visualization in a dashboard and Using custom point or region information from Mapbox in a map visualization in a report.

For more information, see *Using custom point or region information from Mapbox in a map visualization in a report* in the *IBM Cognos Analytics Dashboards and Stories user guide* and Using custom point or region information from Mapbox in a map visualization in a report.

Best practices

- For increased performance and to make sure that polygons appear at zoom level 0 (world view), compress geoJSON files to less than 10 MB. A tool that can compress geoJSON files is http://mapshaper.org/.

  If your geoJSON files are larger than 10 MB, then Mapbox sets the default zoom to not start at worldview 0. If you want to manually change the zoom extents, there are few ways to do so:

  – Tippecanoe APIs, which are available on Linux and Apple MacOs.
  – Download Mapbox studio classic on your Microsoft Windows computer and change the minimum and maximum zoom levels.

  For more information, see https://www.mapbox.com/help/adjust-tileset-zoom-extent/.

- To ensure that auto-zoom works in IBM Cognos Analytics - Reporting set the unique polygon identifier as a string value.

- If you work with custom polygons in small areas, for example at postcode level, turning off auto zoom after the initial data loads. This results in a better experience when you filter because the map does not reset zoom and zoom in multiple times.

- Keep the Mapbox keys confidential.

Example of custom regions
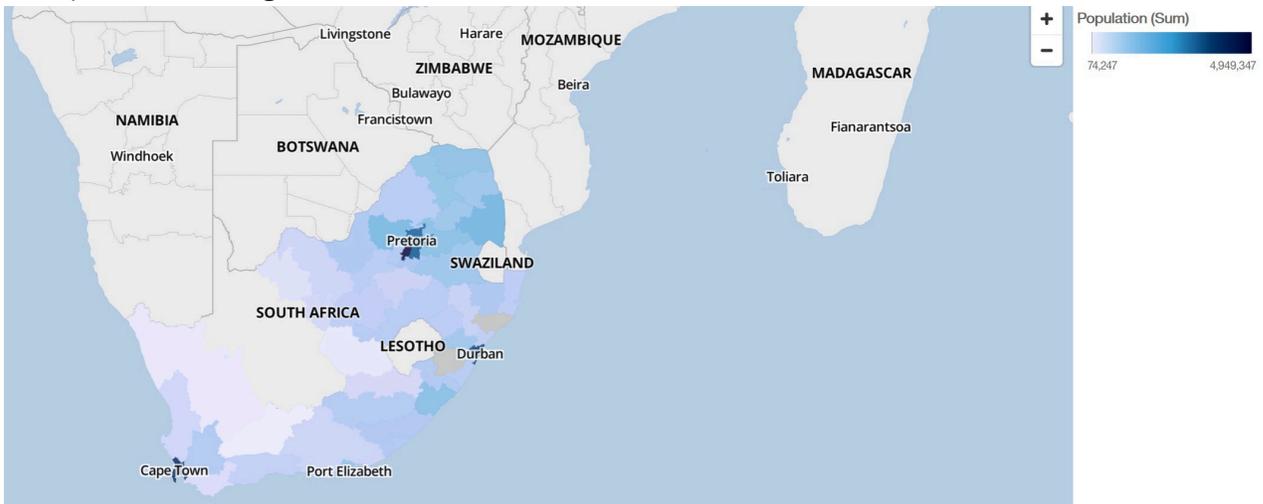
Example of custom points
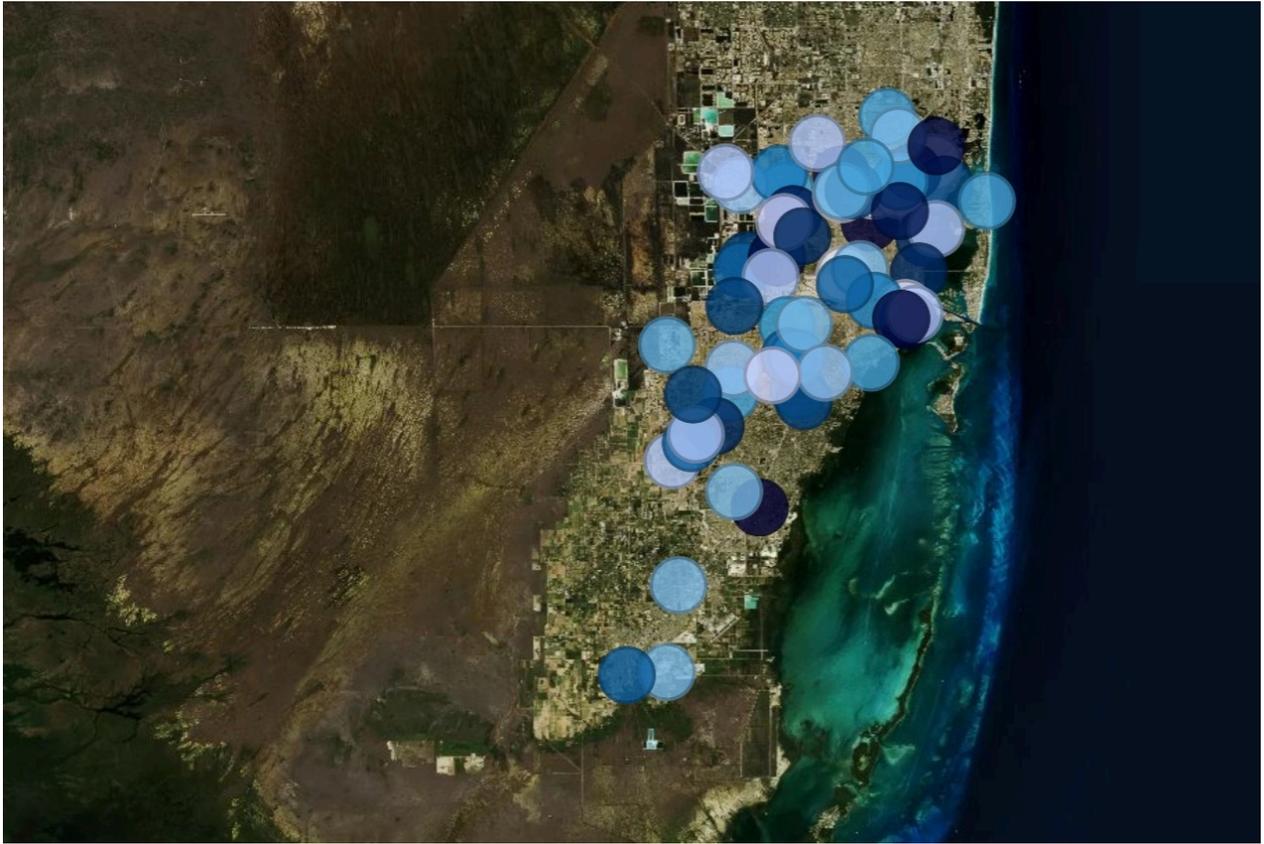
Using custom point or region information from Mapbox in a map visualization in a dashboard

When you use a map in a dashboard, you can use custom point or region information from Mapbox in a map. You can use an extra layer on a map to display additional information. For example, a time-zone layer.

Before you begin

To use the vector maps from Mapbox as location measures in your map visualization, use a data source that contains region or point data. An example of a table with point or region data is the following table:

Table 2: Table with point and region data				
City	**Population**	**Timezone**	**Timezone offset**	**TZ**
Andorra la Vella	20430	Europe/Andorra	1	UTC+01:00
Abu Dhabi	603492	Asia/Dubai	4	UTC+04:00

The tileset that Mapbox generates has the following properties:

- Custom map ID
- Custom layer name
- Custom property name

Procedure

1. Create a Mapbox account.
2. Upload your geoJSON file to Mapbox.

   Important: Before you upload any geoJSON file, ensure that its polygon properties do not contain any sensitive information.

3. In Mapbox, create a tileset based on the geoJSON file.

4. In IBM Cognos Analytics click **New** and then click **Dashboard**.
5. Leave the default values in the **Select a template** window and click **OK**.
6. In the left pane, click the **Visualizations** icon , and then click the **Map** icon.
7. In the left pane, click **Sources**, and then click **Add a Source**. Select a data source that contains that contains region or point data.
8. In the visualization, expand and select .

   - **Regions**, if you want to use region data from Mapbox.
   - **Points**, if you want to use point data from Mapbox.

9. In the left pane, expand your data items and drag either point or region data to the **Location** data slot.
10. **Note:** Make sure you use the correct casing for the Mapbox properties.

    Depending on whether you want to use Mapbox region or point data, specify the following properties. These properties are part of the Mapbox map. You must obtain the values of the properties from the Mapbox map creator.

    From the **Properties** pane under **REGIONS**, specify the following properties:

Option	Description
Region custom map id	The Mapbox unique map ID.
Region custom layer name	The layer name that is used in the Mapbox map.
Region custom property name	The custom property name that you want to use from the Map box map.

From the **Properties** pane under **POINTS**, specify the following properties:

Option	Description
Point custom map id	The Mapbox unique map ID.
Point custom layer name	The layer name that is used in the Mapbox map.
Point custom property name	The custom property name that you want to use from the Map box map.

11. Drag measurable data to the **Location color** data slot.
    For example, use population.

Example

An example of a map visualization with a region layer that shows the population for each time-zone. The layout of the time-zones is defined in a Mapbox map.

Sharing visualizations

You can communicate your results with anyone outside of IBM Cognos Analytics.

Sharing visualizations through a link
You can share direct access to a dashboard or story by using a URL link. The recipient of the link must be a valid IBM Cognos Analytics user in the same account and have permission to access the related data.

Procedure

1. Go to the **My content** folder.
2. Tap **More** beside the dashboard or story that you want a link for.
3. Tap the **Share** icon .
4. Copy the link and paste it into another application.

   For example, send the link by email to another user.

Setting up drill-through

Using drill-through, you can navigate from a visualization in a dashboard or a story to a related report while retaining the original context of the visualization.

For example, you examine revenue by product line in a visualization in your dashboard. If drill-through is defined for your visualization, you can navigate to a report that shows the revenue by product line for the past four years.

To enable drill-through for a visualization, you create one or more drill-through definitions that link the visualization to related target reports. The drill-through definitions can be shared with all visualizations in the dashboard that use the same source or can be specific to an individual visualization.

When you drill through from a visualization, the dashboard determines the context to be applied for each of the columns in the drill-through definition:

- If a column value is selected in the visualization or in another visualization on the same tab, using the same data source and within the same event group, this value is passed to the drill-through definition.
- If a column has a local filter defined in the visualization, but no selection in any visualization on the same tab, with the same data source and event group, the local filter is passed to the drill-through definition.
- A local filter on another visualization is never passed as part of the context of a drill-through definition.
- If a column has no value selected in any visualization on the same tab, with the same data source and event group, or a local filter of the visualization, the context for a column is the combination of the **All tabs** and **This tab** filters.
- If a measure column is assigned a source in a drill-through target, the value of the column is ignored. When you drill through to the target, you are prompted for a value for the associated prompt.

There are some restrictions on the context passed to a drill-through definition:

- If the prompt of a target report is a range filter and multiple column values are selected in the visualization, only the first value is passed to the target report.
- An exclude filter in a visualization is never passed as context to a drill-through.
- If a dashboard drill-through does not provide the value for a parameter in a target report, the value is obtained from the global parameter with the same name as the parameter, if one exists.

Adding a drill-through definition
A drill-through definition in a visualization links the visualization with a related target report. One visualization can have multiple drill-through definitions.

About this task

When creating drill-through definitions for visualizations with filters, the filter values affect the context that is passed to the target report in the following ways:

- If you use a column with a range filter as a drill-through source, the range is passed to the target report.
- If you use an **Include** condition, all of the values included in the filter are passed to the target report.
- If you use an **Exclude** condition, none of the values in the filter are passed to the target report.

Procedure

1. Select the visualization that you want to work with.

2. In the toolbar, tap the **Drill-through** icon.

3. Tap **Add new drill-through**.

   If you don't see the **Add new drill-through** icon, tap the **Edit or preview** icon on the app bar first.

4. From the **Team content** folder, browse to the target report that you want to drill through to.

a) If the drill-through target report has prompts, use the drop-down lists to associate the columns from your visualization to the prompts in the target report. A filter must have at least one value selected before the associated column is displayed in the list of possible source columns.

b) If the drill-through target report does not have prompts, continue to create the drill-through definition. However, the target report will not receive any context from the visualization.

5. Select the check box to add the drill-through definition to all visualizations in your dashboard or story that use the same data source.

When you are done, use the switcher on the app bar to return to your dashboard or story.

Results

You can now drill through from your visualization to the target report. To do so, tap one or more columns in your visualization and tap the **Drill-through** icon in the toolbar.

Editing a drill-through definition

You can modify drill-through definitions in a visualization.

About this task

You can modify the drill-through definition in a visualization in the following ways:

- Change the name of the drill-through definition.

  By default, the target report name is used as the drill-through definition name.
- Assign different columns from the visualization to the target.
- Add another drill-through definition.
- Delete the drill-through definition.

Procedure

1. Select the visualization that uses a drill-through definition that you want to edit.

2. Tap the **Drill-through** icon in the toolbar.

3. Tap **Manage**.

   If you don't see the **Manage** link, tap the **Edit or preview** icon on the app bar first.

4. To edit the drill-through definition name, or to assign different columns from the visualization to the target, tap the **Edit** icon beside the name of the target.

   a) In the dialog box that appears, to edit the name of the drill-through definition, place your cursor beside the title and tap the edit icon that appears.

   b) To assign a different column from the visualization to the drill-through target, select a different column from the data column list.

   c) To add another drill-through target report, tap **Add another drill-through definition**.

5. To delete the drill-through definition, tap the **Delete** icon beside the name of its target.

6. Tap **OK** and tap **Apply**.

Widgets

You can add widgets such as text, media, web pages, images, and shapes.

Adding text

Reinforce your analysis by adding text to your dashboards and stories. For example, you can highlight key points shown in a visualization and provide background info.

Procedure

1. Tap the **Widgets** icon.

   If you don't see the **Widgets** icon, tap the **Edit or preview** icon first.

2. If you want to position the widget yourself, drag the **Text** icon to the canvas. If you want the widget to fill the next available pane in the template, tap the **Text** icon.

3. Type in the text box and then tap away from it.
4. To format the text, double-click the text and change one or more of the following properties:

   - Font
   - Font size
   - Color
   - Alignment
   - Style, such as bold, underline, or italic

Adding images and shapes

Improve the look and feel of your dashboards and stories by adding images and shapes.

Procedure

1. Tap the **Widgets** icon.

   If you don't see the **Widgets** icon, tap the **Edit or preview** icon.

2. To add an image from the **Widgets** tab, complete the following actions:

   a) If you want to position the image widget yourself, drag the **Image** icon to the canvas. If you want the widget to fill the next available pane in the template, tap the **Image** icon.

   b) Enter the URL, and press **Enter** to save it.

   Note these requirements for images:

   - Use one of the following formats for images: JPEG, JPG, GIF, PNG
   - Use HTTP or HTTPS (secure HTTP) format. URLs are validated for format only; you must ensure that the link is valid.

3. If your administrator has customized the **Widgets** panel with additional images:
   a) Select the **Image library** tab.
   b) Click an image to add it to your dashboard.
4. To add a shape, complete one of the following actions:
   - If you want to position the shape yourself, drag the shape that you want to the canvas.
   - If you want the shape to fill the next available pane in the template, tap the icon for the shape.

Adding web pages

Add action by embedding web pages in your dashboards and stories.

Procedure

1. Tap the **Widgets** icon.

If you don't see the **Widgets** icon, tap the **Edit or preview** icon.

2. If you want to position the web page widget yourself, drag the **Webpage** icon to the canvas. If you want the widget to fill the next available pane in the template, tap the **Web page** icon.

3. Enter the URL, and press **Enter** to save it.

Note these requirements for web pages:

- Specify the URL in HTTPS (secure HTTP) format because of the security requirements of web browsers.
- Check that the target web site allows being embedded in another application. For example, you can't embed Twitter.com.

Adding video or audio

Add action by embedding media, such as video or audio, in your dashboards and stories.

Procedure

1. Tap the **Widgets** icon.

If you don't see the **Widgets** icon, tap the **Edit or preview** icon.

2. If you want to position the media widget yourself, drag the **Media** icon to the canvas. If you want the widget to fill the next available pane in the template, tap the **Media** icon.

3. Enter the URL, and press **Enter** to save it.

Note these requirements for media:

- Use one of the following formats for media: YouTube URLs, MP4, MP3, AAC, M4A
- Specify the URL in HTTPS (secure HTTP) format because of the security requirements of web browsers.

- To play videos that are on YouTube, tap the **Preview** icon . You don't need to tap this icon to play videos that are in MP4 format.

Changing web pages, media, and images

To change which web page, media, or image, modify the URL that points to its location.

Procedure

1. Tap the **Edit or preview** icon.

2. Select the web page, media, or image that you want to work with.
3. Tap the **Properties** icon.

4. Type or paste the new URL.

Filters

Focus on one area of your data or to see the impact of one column. For example, you can see the impact of the duration of courses on the cost of courses by department and organization.

Filtering data in one visualization

There are several ways that you can filter the data in a visualization. You can keep or exclude a few data points in the visualization. You can use the data tray to filter the data in several columns and the columns are not required to be in the visualization. You can also add a local filter to filter a column or to define a filter condition.

Procedure

1. If you want to keep or exclude a few data points in the visualization, complete the following actions:
   a) Tap the data point that you want to keep or exclude. Use Ctrl+click to select several data points. You can select data points in the visualization, on the legend, or in the axis.
   b) To show only the selected data points, tap the **Keep** icon.

   All other data points are excluded from the visualization.
   c) To hide the selected data points, tap the **Exclude** icon.

2. If you want to filter the data in one or more columns, complete the following actions:
   a) Tap the **Open data tray** icon at the bottom of the canvas.

   If you don't see the **Open data tray** icon, tap the **Edit or preview** icon.

   b) Tap a column heading in the data tray.
   c) Tap **Filter**.

d) Specify what will be filtered on.

- If the column contains numeric data, use the sliders or enter a range of values to filter on.
- If the column is a hierarchy, expand the levels in the hierarchy and select the members or levels that you want. For example, select 2017 and each quarter in 2016.
- If the column has the data type of date, time, or timestamp (also known as datetime), select before, after, or between for the dates to include in the filter.
- If the column contains text, tap one or more members to filter on. Or you can add a filter condition. With a filter condition, you have the following options: **Equals**, **Contains**, **Begins with**, **Ends with**, **Does not equal**, **Does not contain**, **Does not begin with**, and **Does not end with**.

e) If you want to select many values, select the ones that you don't want and tap **Invert**.

f) To apply the filter, tap **OK**.

3. If you want to define a filter condition or filter a column in a visualization, complete the following actions:

a) Open a visualization.

If you don't see this icon, tap the **Edit or preview** icon.

b) Tap the **Data** icon and expand the data asset that you want to use.

c) Drag a column into the **Local filters** box.

d) Select the members that you want to use in the filter or add a filter condition.

If you decide to add a filter condition, you have the following options: **Equals**, **Contains**, **Begins with**, **Ends with**, **Does not equal**, **Does not contain**, **Does not begin with**, and **Does not end with**.

e) If you want to select many values, select the ones that you don't want and tap **Invert**.

f) To apply the filter, tap **OK**.

4. Close the visualization.

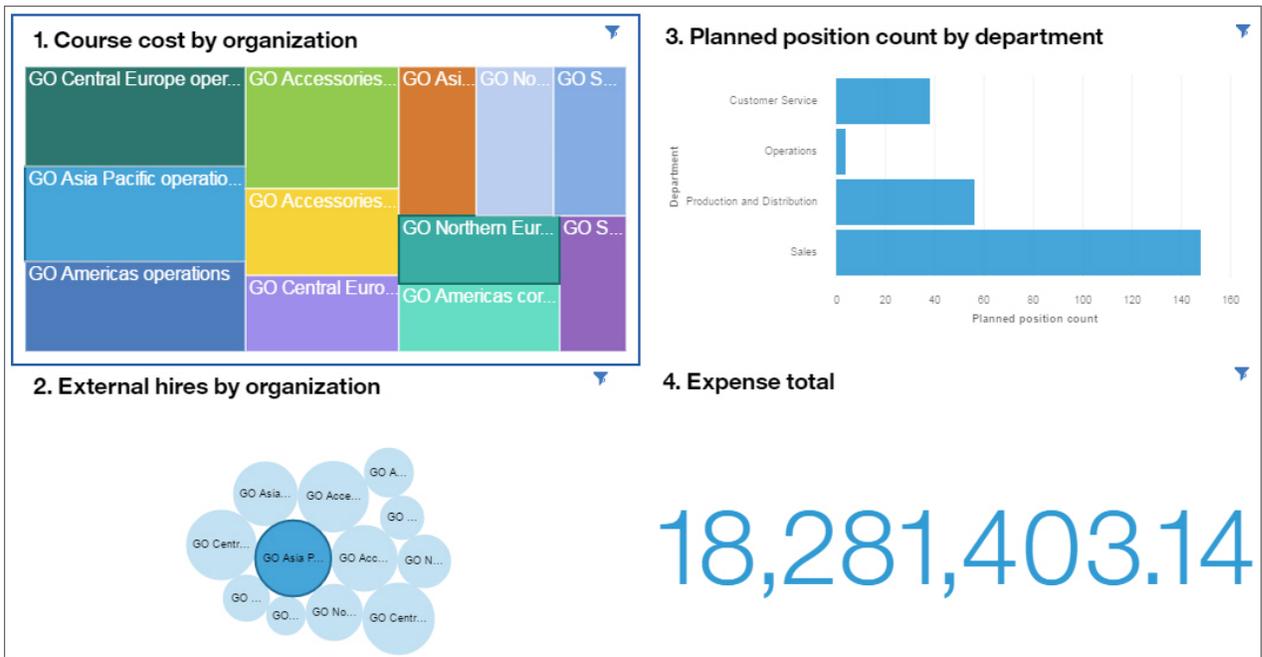## Highlighting data points across visualizations

You can select one or more data points in one visualization and see these data points highlighted in all related visualizations in the current tab of the dashboard or story. Visualizations are related if they use the same data asset. If a visualization doesn't contain the data points, its data is filtered for the selected data points. A data point can be an element in the visualization, such as a bar or bubble, or an axis label, or a column or member in the legend.

About this task

For example, you have several visualizations on the same tab. The first one shows the breakdown of course costs by organization. The second one shows how many external people were hired in each organization. The third one shows how many positions each department plans to add. The fourth one shows the total for the expenses.
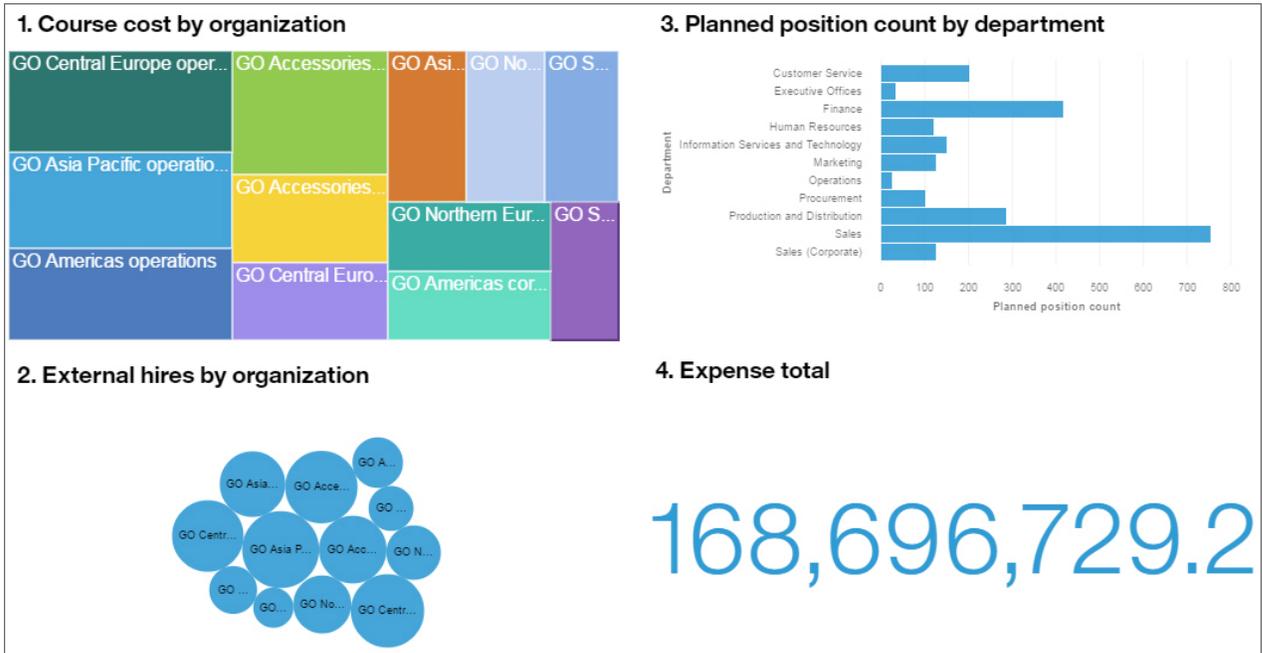
You select the "GO Asia Pacific operations" box in the first visualization. "GO Asia Pacific operations" is immediately highlighted in the second visualization. The data in the third and fourth visualizations are filtered to show only the departments in the "GO Asia Pacific operations" organization and a filter icon is added to these visualizations.

Procedure

1. Tap the data point that you want to highlight. To select multiple data points, touch and hold (Ctrl+click) each additional data point.

   The data points are highlighted in each visualization that contains them. Other related visualizations that do not contain the data points are filtered and a filter icon is added to the visualizations. To see info about the current filter, tap the **Filter** icon in the visualization.

If a column is in the **Repeat (row)** or the **Repeat (column)** data slot for a tree map visualization, you cannot select one of its members and see it highlighted in all related visualizations. For example, a tree map includes the Year column in the **Repeat (row)** data slot and a bar visualization includes the Year column in one of the axes. You can highlight a specific year by selecting it in the bar visualization and that year will be highlighted in the tree map but you cannot select a year in the tree map.

2. To remove the highlighting, tap in the background of the visualization.

Adding a filter widget

You can add a column to the canvas and use it as a widget for filtering data. This type of filter is known as a *context filter*.

Procedure

1. In the **Data** panel, expand the data asset to see its contents.

If you don't see the list of data assets, tap the **Edit or preview** icon.

2. Drag the column that you want to use as the filter widget to the canvas of the dashboard or story.

You can also add a column from the **This tab** filter area as a filter widget. Tap the **Menu** icon and tap **Add to canvas**.

3. Filter the data in the visualizations.

- If the column contains distinct values, select the values that you want to use in the filter widget.
- If the column is a hierarchy, expand the levels in the hierarchy and select the members or levels that you want. For example, select 2017 and each quarter in 2016.
- If the column has the data type of date, time, or timestamp (also known as datetime), select before, after, or between for the dates to include in the filter.

Keeping or excluding data points in a visualization

You can keep or exclude specific data points in a visualization. For example, an outlier makes it hard to see the other data points in the visualization.

Procedure

1. Select the discovery that you want to work with.
2. Right-click a data point in the visualization or in the legend. Use Ctrl+click to select several data points.
3. To display only the selected data points, tap **Keep**.
   The filter is applied to that visualization only. All other data points are excluded from the visualization.
4. To hide the selected data points, tap **Exclude**.
   The filter is applied to that visualization only.
5. To remove the **Keep** or **Exclude** filter, right-click the column on the axis and tap **Select items**. For example, if you excluded one year, you right-click the Year column on the axis.

Disconnecting visualizations and filter widgets

By default, visualizations and filter widgets communicate with each other. When you highlight a data point in one visualization or filter widget, you filter the data in all other visualizations or filter widgets that use

the same data. Sometimes you want to keep one or more visualizations not change when you highlight a data point elsewhere.

You can see what's connected, create new connections, disable connections, and create new groups of connections. To view and modify widget connections, there must be at least two visualizations or filter widgets on the canvas.

Procedure

1. On the app bar, tap the **View widget connection** icon.

   Matching numbers on the visualizations and filter widgets mean that they are connected to each other. The visualizations and filter widget must come from the same source to be connected.
2. Tap a visualization or filter widget with a number shown in the middle.
3. To disconnect a visualization or filter widget from all others on the canvas, tap the **Break all links** icon.

4. To create a new connection, tap the **Create new connection** icon.

5. To add a visualization or filter widget to an existing group of connections, tap the **Add to an existing connection** icon and select the connection.

6. To stop working with the widget connections, tap the **View widget connections** icon again.

Filtering data in the current tab

You can filter the data that appears in all visualizations that use the selected data asset in the current tab of the dashboard or story.

If you add the same column to the **All tabs** filter and to the **This tab** filter, the members that you pick in the **All tabs** filter are applied to the **This tab** filter. For example, you add the Year column to both filters. You filter **All tabs** to show 2015, 2016, and 2017. The **This tab** filter will show only these years and you can filter the years further.

You cannot drag a column between the **All tabs** and **This tab** filter areas.

Procedure

1. In the **Data** panel, expand the data asset to see its contents.

   If you don't see the list of data assets, tap the **Edit or preview** icon.

2. Drag one or more columns to the **This tab** filter area. You can change the order of columns that have been added to the filter.

   Tip: Any selections made in the current tab are cleared when applying any filter in the **This Tab** filter area by selecting a subset of values.
3. To define the filter, tap the column in the **This tab** filter area.

   - If the column contains distinct values, select the member or members that you want to filter on.
   - If the column contains continuous values, use the slider to select a range of values to filter on. You can also tap the start or end points of the range and enter a number.

- If the column is a hierarchy, expand the levels in the hierarchy and select the members or levels that you want. For example, select 2017 and each quarter in 2016.
- If the column has the data type of date, time, or timestamp (also known as datetime), select before, after, or between for the dates to include in the filter.

4. Tap **OK**.

Filtering data in all tabs

You can add a filter to apply to all visualizations that use the selected data asset in all tabs of your dashboard. Infographics don't have multiple tabs.

If you add the same column to the **All tabs** filter and to the **This tab** filter, the members that you pick in the **All tabs** filter are applied to the **This tab** filter. For example, you add the Year column to both filters. You filter **All tabs** to show 2015, 2016, and 2017. The **This tab** filter will show only these years and you can filter the years further.

You cannot drag a column between the **All tabs** and **This tab** filter areas.

Procedure

1. In the **Data** panel, expand the data asset to see its contents.

   If you don't see the list of data assets, tap the **Edit or preview** icon.

2. Drag one or more columns to the **All tabs** filter area. You can change the order of columns that have been added to the filter.

   Tip: Any selections made in all tabs are cleared when applying any filter in the **All Tabs** filter area by selecting a subset of values.

3. To define the filter, tap the column in the **All tabs** filter area.

   - If the column contains distinct values, select the member or members that you want to filter on.
   - If the column contains continuous values, use the slider to select a range of values to filter on. You can also tap the start or end points of the range and enter a number.
   - If the column is a hierarchy, expand the levels in the hierarchy and select the members or levels that you want. For example, select 2017 and each quarter in 2016.
   - If the column has the data type of date, time, or timestamp (also known as datetime), select before, after, or between for the dates to include in the filter.

4. Tap **OK**.

Clearing filters

You can quickly clear the values that you've filtered on and select new values for a dashboard or story.

Procedure

1. To clear the values that you filtered on in the **This tab** filter area, tap the **Menu** icon in the **This tab** filter area and tap **Clear all filters**.

   If you don't see the **Menu** icon, tap the **Edit or preview** icon.

2. To clear the values that you filtered on in the **All tabs** filter area, tap the **Menu** icon in the **All tabs** filter area and tap **Clear all filters**.

[...]

3. To clear the values that you selected in a filter widget, tap the **Menu** icon in the filter widget and tap **Clear all**. Then tap **Apply**.

[...]

Removing filters

You can delete filters from dashboards, stories, or from a visualization.

Procedure

1. To remove filters from the **This tab** filter area, complete one of the following actions:
   - To remove one column from the filter area, tap the **Menu** icon for that column and tap **Delete filter**.

     [...]
   - To remove all columns, tap the **Menu** icon in the **This tab** filter area and tap **Delete all filters**.
2. To remove filters from the **All tabs** filter area, complete one of the following actions:
   - To remove one column from the filter area, tap the **Menu** icon for that column and tap **Delete filter**.

     [...]
   - To remove all columns, tap the **Menu** icon in the **All tabs** filter area and tap **Delete all filters**.
3. To remove the filter from one visualization, complete the following actions:
   a) Tap the **Filter** icon in the visualization.

   b) Tap the **Delete filter** icon.

4. To remove the filter from the data tray, complete the following actions:
   a) Tap the **Filter** icon next to the column heading in the data tray.

   b) Tap **Filter**.
   c) Tap **Clear all**.
   d) Tap **OK**.

Sorting

You can sort data in ascending or descending order. You can sort the data in either the x-axis or y-axis, depending on what type of data is in an axis.

Sorting in numerical order

Understand how different items are ranked by sorting the data from the lowest number to the highest or from the highest number to the lowest. For example, you want to see the profit margin for each product line from the least profitable to the most profitable.

Procedure

1. Touch and hold, or right-click, the axis label of the column that you want to sort.

   You can sort the data in either the x-axis or y-axis, depending on what type of data is in an axis.
2. Tap the **Sort** icon.

3. Select how you want to sort the data:

- **Sort ascending**
- **Sort descending**

4. To return to the default sort order, select **Auto (none)**.

Sorting in alphabetical order

Organize the data by sorting it into alphabetical order. For example, you want to see employees in alphabetical order. Only columns that are categorical can be sorted by label. Numeric columns, such as revenue, are sorted by value.

Procedure

1. Touch and hold, or right-click, the axis label of the column that you want to sort.

    You can sort the data in either the x-axis or y-axis, depending on what type of data is in an axis.

2. Tap the **Sort** icon.

3. Select how you want to sort the data:

    - **Sort ascending**
    - **Sort descending**

4. To return to the default sort order, select **Auto (none)**.

Calculations

Calculations are important to help you solve problems and make decisions.

Creating column calculations for all visualizations

Calculations that are based on columns can help you define the relationships between items of interest. For example, create calculations such as variance and variance percentage in a cost-benefit analysis to help you compare costs to revenues and actual sales to projected sales. When you create a calculation, it is added as a column in the data tray. You can add the calculation to all visualizations.

About this task

There are two types of calculations: stand-alone calculations and embedded calculations.

Stand-alone calculations

Stand-alone calculations are made using fields from different tables. The default aggregation rule is "Calculated", which forces the order of operations as follows:

1. Aggregate the individual measures.

2. Apply Calculation formula.

Stand-alone calculations appear in the data tree outside the tables, as they reference fields from many tables. Stand-alone calculations must be created from the data tree.

Stand-alone calculation
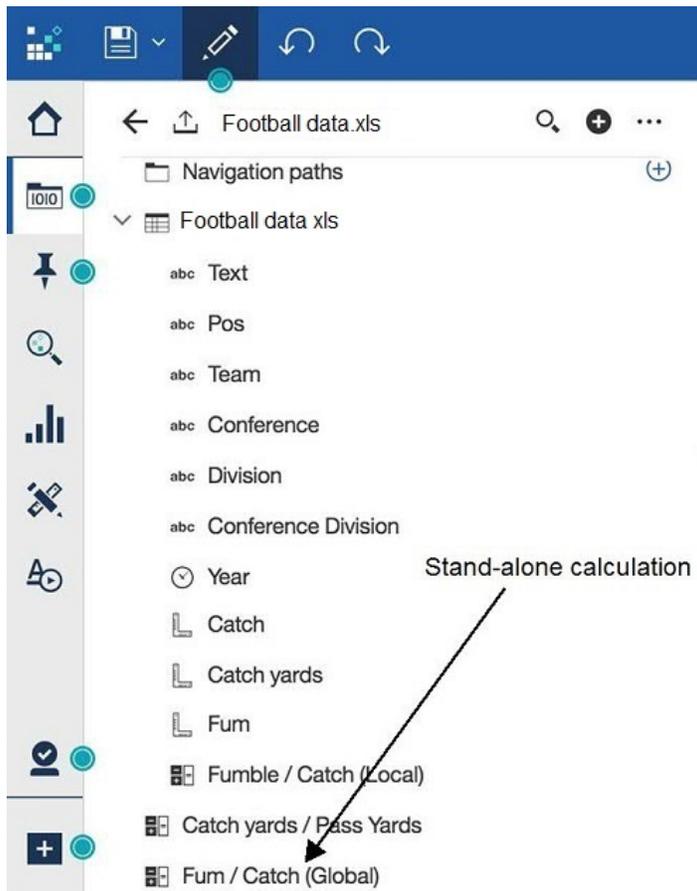
Embedded calculations

Embedded calculations are made using only items from within the same table. The default aggregation rule is "Total", which forces the order of operations as follows:

1. Apply Calculation formula.
2. Aggregate the individual measures.

Embedded calculations appear in the data tree inside their home table, as a column. Embedded calculations must be created from the grid, but they can be edited from the data tree or grid. Since grids are not supported in Framework Manager packages, embedded calculations cannot be created with these package sources.

Embedded calculation
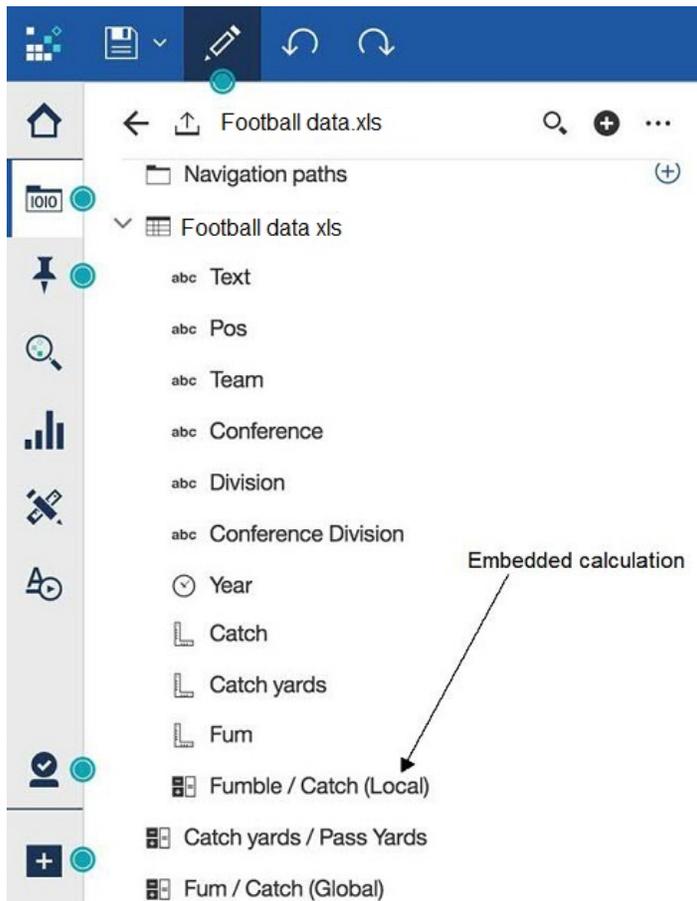
Procedure

1. In a dashboard or model set, tap the **Sources** icon on the data tray.

   If you don't see the **Sources** icon, tap the **Edit or preview** icon.

2. In the **Selected sources** panel, expand the data asset that you want to use.

   If a different data asset is open, tap the **Go back** icon next to the name of the data asset that is open.

3. Select a column that you want to base your calculation on and tap the menu icon ⠿ and then tap **Create calculation**.
   The **Create calculation** panel appears.

4. In the **Column name** panel, specify the name of the calculation.

5. Select an operator from the menu. You can use these mathematical operations: addition (+), subtraction (-), multiplication (x), division (/), percentage (%), or percentage change (% change).

6. Tap **Constant** and enter a number.

7. To create an advanced calculation, tap **Use calculation editor**.

   Tip: For more information, see Using the calculation editor.

8. Tap **Create**.

Results

Stand-alone calculations are added at the root level of the data tree.

Embedded calculations appear in the grid and in the data tree (within the table context).

What to do next

To edit the calculation later, complete these steps:

1. In the data tray, select a calculation that you want to edit and tap the menu icon ⋯ and then tap **Edit calculation**.

2. Edit the calculation in the calculation panel.

3. Tap **OK**.

To delete the calculation later, complete these steps:

1. In the data tray, select a calculation that you want to delete and tap the menu icon ⋯ and then tap **Edit calculation**.

2. Tap the **Remove** icon.

Using the calculation editor

Use the calculation editor to define your own expression.

About this task

Custom calculations can be created at the data module level or at the table level. The module-level calculations can reference columns from multiple tables.

For information about the functions that you can use to define your expressions, see Using the expression editor.

Procedure

1. Follow the steps to create a column calculation.
2. In the **Create calculation** panel, tap **Use calculation editor**.
   The **Create calculation** panel appears.

3. In the **Expression** panel, define the expression for your calculation, and specify a name for it.

   • To enter a function for your expression, type the first character of the function name, and select the function from the drop-down list of suggested functions.

   • To add table columns to your expression, drag-and-drop one or more columns from the data module tree to the expression editor panel. The column name is added where you place the cursor in the expression editor.

     Tip: You can also double-click the column in the data module tree, and the column name appears in the expression editor.

4. Click **Validate** to check if the expression is valid.

5. After successful validation, click **OK**.

Results

If you created your calculation at the data module level, the calculation is added after the last table in the data module tree. If you created your calculation at the table level, the calculation is added at the end of

the list of columns in the table. To view the expression for the calculation, open the calculation properties panel, and click on the expression that is shown for the **Expression** property.

Formatting

You can customize a dashboard, story, or visualization by changing its visual properties.

Working with the legend

A legend is a key to the items in the visualization. The legend appears if there's a column in the **Color** data slot or **Size by** data slot.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. To change the location of the legend, select a location from the **Legend position** box.
4. To hide the legend, clear the **Display legend** check box.

Changing colors

You can change colors in the entire dashboard or story, in a visualization, or in widgets that you added to a dashboard or story.

- For the dashboard or story, you can change the visual theme and the background color.
- For visualizations, you can change the color palette, the color used in the elements (such as bars, bubbles, or lines), the fill color, and the border color. You can also make the visualizations more transparent or opaque.
- For shape and text widgets, you can make the widget more transparent or opaque, change the fill color, and change the border color.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. For the entire dashboard or story, ensure that nothing else has focus by tapping the background, away from any visualization or object and complete one or more of the following actions in the **General** tab:

What to change	Actions
The theme of the entire dashboard or story	Under **Visual themes** select a different theme.
The background color of the entire dashboard or story	Tap **Background color** and select a new color.

3. For visualizations, tap the visualization that you want to work with and complete one or more of the following actions:

What to change	Actions
The color palette used in a visualization	In the **Details** tab, tap **Color palette** and select a new palette. Optionally, tap **Heat palette** to change the heat scale order.
The color of the elements of a visualization (such as bars, bubbles, or lines) if the visualization does not use the **Color** data slot	In the **Details** tab, tap **Element color** and select a new color.
How transparent or opaque a visualization is	In the **General** tab, move the **Opacity** slider.
The fill color for a visualization	In the **General** tab, tap **Fill color** and select a new color.
The border color for a visualization	In the **General** tab, tap **Border color** and select a new color.

4. For shape and text widgets that you added to the dashboard or story, select the widget that you want to work with and complete one or more of the following actions in the **General** tab:

What to change	Actions
How transparent or opaque a shape or text is	Move the **Opacity** slider.
The fill color for a shape or text	Tap **Fill color** and select a new color.
The border color for a shape or text	Tap **Border color** and select a new color.

Changing the axis

You can change the axis by rotating the axis labels, adjusting the scale of the axes to include or exclude zero, and showing or hiding the names of columns that appear in the axis titles.

Procedure

1. Tap the **Properties** icon.

If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. Complete one or more of the following actions:

Goal	Actions
Rotate the axis labels.	Select the **Show labels vertically** check box.
Exclude the zero from the axis scale.	Clear the **Show zero origin** check box.
Hide the column headings in both axes.	Clear the **Show axis titles** check box.
Hide the column heading in the axis that shows measures, such as revenue, quantity sold, or profit.	Clear the **Show value axis title** check box.
Hide the column heading in the axis that shows items, such as years, products, or customers.	Clear the **Show item axis title** check box.

Improving the visibility of labels

You can change the visibility of the labels in some visualizations, by adding a shadow or changing the contrast.

Procedure

1. Tap the **Properties** icon.

    If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. Complete one or more of the following actions:

Goal	Actions
Increase the contrast of the labels	Select the **Contrast label color** check box.
Add a shadow to the labels	Select the **Label shadow** check box.

Adding labels in the visualization

You can add labels to the visualization itself so that you can easily see the data for each data point.

Procedure

1. Tap the **Properties** icon.

    If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. Ensure that the **Show value labels** check box is selected.
4. From the **Value label format** box, select **Value**, **Percentage of category**, or **Percentage of color**.

Changing the label orientation

You can change the orientation of the labels on the horizontal axis in some visualizations.

Procedure

1. Tap the **Properties** icon.

    If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. Select an orientation from the **Item axis label orientation** menu.

Orientation	Meaning
Automatic	The best label orientation is determined for you, based on available space.
Horizontal	The label orientation is horizontal.
Vertical	The label orientation is vertical.
Rotate 45 degrees	The label orientation is rotated 45 degrees clock-wise.
Stagger	The labels are arranged of two lines in a horizontal way.

Connecting data points with smooth lines

You can show data points connected by smooth curves in an area, line and column, or line visualization.

Procedure

1. Select the area, line and column, or line visualization that you want to work with.
2. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

3. Tap the **Details** tab.
4. To connect the data points by smooth curves, select the **Smooth lines** check box.

Using a different symbol

You can change which symbol is used in a line and column visualization or a line visualization.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. If you need to show symbols, select the **Show markers** check box.
4. From the **Symbol shape** box, select a different symbol for the marker.

Changing the size or color of bubbles

A bubble visualization shows relationships among columns that contain numeric values. The bubbles appear in different sizes and colors based on the values in specified columns.

Procedure

1. To specify the size of the bubbles, do one of the following actions:
   - To make all bubbles the same size, remove the column that appears in the **Size** data slot.
   - To make the bubbles different sizes based on a column, add a column to the **Size** data slot.

2. To change the color of the bubbles, add a column to the **Color** data slot or change which column is used.

Changing the orientation of a word cloud

The word cloud visualization can be shown horizontal, vertical, angled, both horizontal and vertical, or any.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. Select the orientation that you want from the **Word orientation** box.

Showing or hiding grid lines

You can show or hide the grid lines that appear in the background of some visualizations.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. Tap the **Details** tab.
3. To hide the grid lines, clear the **Show grid lines** check box. To show them, select the **Show grid lines** check box.

Working with objects

You can work with objects, such as visualizations and widgets, that are on the canvas.

Procedure

1. Select the object that you want to work with.

   If you don't see icons for the object, tap the **Edit or preview** icon.

2. Complete one or more of the following actions:

Goal	Actions
Group objects	Select several objects and tap the **Group** icon.
Ungroup objects	Select the group and tap the **Ungroup** icon.

Goal	Actions
Layer objects	To place the object behind other objects, tap the **Send to back** icon. To place the object on top of the other objects, tap the **Bring to front** icon.
Move objects	Tap and hold the **Move** icon and drag the object to its new location.
Duplicate objects	Tap the **Duplicate** icon and then move the object to a new location.
Resize objects	Drag one of the squares on the border of the object.
Delete objects	Tap the **Delete** icon.

Data properties

You can adjust the appearance of data in an asset, such as how it is aggregated or what the column headings are. If you want these changes to affect all assets, you must make them in the data asset itself.

Changing how data is aggregated

You can change how numeric data is summarized or aggregated. IBM Cognos Analytics assigns a default aggregation type to numerical columns when a data asset is imported. For example, the default aggregation for a column called "Age" is average. The default aggregation for column called "Revenue" is sum. When you use a column in a visualization, the default aggregation is used.

Procedure

1. Tap the **Data** icon.

   If you don't see the **Data** icon, tap the **Edit or preview** icon.

2. In the **Data** panel, tap the **Menu** icon for the column that you want to modify, and tap **Properties**.

3. Tap **Aggregate**, and choose another method:

   Total
   The total value for the selected column.

   Average
   The average value of the selected column.

Minimum
The lowest value in the column.

Maximum
The highest value in the column.

Count
How many rows are in the selected column. Blanks are not included in the count but duplicates are included. For example, if a city appears in 10 rows, it is counted each time that it appears.

Count distinct
How many unique rows are in the selected column. Duplicate rows are counted once. For example, if a city appears in 10 rows, it is counted only the first time that it appears.

Editing column headings

You can make column headings more descriptive and meaningful to you. The new column headings appear only in the current asset. To change the column headings for all assets, change them in the data asset.

Procedure

1. Tap the **Data** icon.

   If you don't see the **Data** icon, tap the **Edit or preview** icon.

2. In the **Data** panel, tap the **Menu** icon for the column that you want to modify, and tap **Properties**.

3. In the **Label** box, enter a new column heading.

Enabling data caching

You can enable data caching to improve performance. This is especially useful when multiple users access the same saved dashboard or story at the same time.

Before you begin

The **automatic** setting for this feature only applies if you are using a Framework Manager package for your dashboard or story.

Procedure

1. Tap the **Properties** icon.

   If you don't see the **Properties** icon, tap the **Edit or preview** icon.

2. For the entire dashboard or story, ensure that nothing else has focus by tapping the background, away from any visualization or object.

3. In the **General** tab, select an option from the **Data cache** menu.

Data cache option	Meaning
Automatic	This is the default. This setting only applies if you are using a Framework Manager package. The data is cached or not cached according to how the modeler setup the Framework Manager package.
On	This setting overrides the caching option in the data module or package, set by the modeler. **Note:** Uploaded files and data sets do not get cached, even if this feature is set to **On**. **Note:** When the property **Refresh automatically** is enabled on a visualization, data caching will not occur for that visualization. The data is cached and reused when you make changes to the dashboard. When you edit an existing dashboard, cached data is reused if your edits do not require additional data to be retrieved from a data server. For example, a simple filter can be applied locally on existing cached data. This can improve performance especially if, for example, there are multiple users accessing the same saved dashboard or story.
Off	This setting overrides the caching option in the data module or package, set by the modeler. The data query is sent to the server for each data change you perform on a dashboard or story. Fresh data is always returned.

Troubleshooting data caching
`11.0.12` When you open an older dashboard in the current release of IBM Cognos Analytics, the data caching feature will not work until you save the dashboard.

Chapter 3. Stories

`11.0.4` A story is a type of view that contains a set of scenes that are displayed in sequence over time.

Stories are similar to dashboards because they also use visualizations to share your insights. Stories differ from dashboards because they provide an over-time narrative and can convey a conclusion or recommendation.

For example, each slide in a story contains an analysis, insight, or piece of information that is revealed as the viewer runs a slide show. The slides build upon each other until the final slide, which provides a conclusion or summary. You can also create the effect of animation by having visualizations and objects appear and disappear during a scene in a story.

You can use the following techniques to assemble a story:

- Reuse visualizations from your collection of pins
- Create new visualizations from your data by selecting columns from a data set
- Change the timeline of a scene to create an animation effect
- Add text, media, web pages, images, and shapes
- Change how objects enter or exit a scene by setting the following animation properties:
  - Slide in and slide out
  - Fade in and fade out
  - Scale in and scale out
  - Shrink in and expand out
  - Pivot in and pivot out

Assembling a story

You can quickly assemble a story by reusing analysis, insights, and visualizations, that you set aside in your collection of pins. You can also add new visualizations, media, web pages, images, shapes, and text to your story. Types of stories include slide show and guided journey.

Procedure

1. Tap **New** ![+], and tap **Story**.
2. Under **Story**, select one of the following story types:

   Slide show
   Tells a story through a series of slides or scenes.

   Guided journey
   Guides an audience on a journey that starts out as the full picture of the story and then pans and zooms into the details across the canvas.

3. Tap the layout that you want to use.
4. Tap **OK**.

   The template with a blank canvas opens and the scene selector ![book icon] at the bottom of the window contains one or more empty scenes.

5. Add data items and visualizations in the following ways:

Action	How to do it
Reuse visualizations from your collection of pins	On the top bar, tap and drag an item from your collection in the My pins panel.
Select a visualization type	On the side bar, tap and then tap a visualization type. Add columns to the visualization as described in the following sections.
Select a column from the data tray	Drag a column heading from the headings that are displayed in the data tray. **Tip:** If columns are not displayed, select a column from the source list as described in the following row.
Select a column from the source list	On the side bar, tap , and add a source. Drag a column from the list that is displayed. To add a source to your **My content** folder, tap and upload a file.
Select multiple columns from the source list	On the side bar, tap . Touch and hold multiple columns (Ctrl +click multiple columns), and then tap **Add**.
Select a column from a different source list	On the Selected sources list, tap . Add or search for a source. Drag a column from the list that is displayed.
Perform simple calculations on two measures and create a new column	On the side bar, tap , and then add a source. Touch and hold two measures (Ctrl+click two measures). Tap beside one of the measures and tap . Perform your calculation and drag the new calculation column from the bottom of the list.
Have Cognos Analytics create a visualization based on a question or a statement	On the side bar, tap . Type a question or statement into the **What do you want to see?** field. Visualizations for each data set are displayed. Tap a data set and then tap **Use**.

If you added a column, Cognos Analytics chooses the visualization type based on the type of column. You can change the visualization type later.

6. To add a title to a scene, tap and then tap .

7. To add media, web pages, images, shapes, and text see "Widgets" on page 49.

8. To add another scene to the view, tap .

9. To move an object from one scene to another, drag the object to the new scene in the scene selector.

10. To change the order of scenes, in the scene selector, drag a scene to the new position.

11. To delete a scene, tap and then tap .

12. To duplicate a scene, tap , and then tap .

13. To change the template on a scene, tap , and then tap .

Changing the timeline of a scene

You can create the effect of animation by making visualizations and other objects appear and disappear during a scene.

About this task

By default, all objects in a scene are visible for the full duration of the scene. To make an object appear and disappear, you change the start time and end time that the object is visible anywhere along the timeline. The default duration for a scene is five seconds, which you can change.

The time scrubber is a timer with a red line that indicates a point in time in the scene. You can drag the time scrubber along the timeline to jump to a specific time in the scene.

Procedure

1. Open the story and tap on the top bar. The scene selector at the bottom of the window contains the scenes in the story.

2. Tap in the upper-right corner of a scene. At the bottom of the window, a timeline is displayed for each visualization or object in the scene.

3. To change the timing of an object, drag the start and end points of its timeline. If an object that you know exists in the scene appears to be missing from the scene, it's because the time scrubber is at a point in the scene at which the object is not visible. Slide the time scrubber along the timeline until the object appears.

4. To change the order of objects in a scene, tap and drag timelines up and down to reorder them. You can also tap and drag timelines from side to side.

5. To change the granularity of the timeline, tap , , or .

6. Test the scene in any of the following ways:

   - At the bottom of the window, tap .

   - Slide the time scrubber along the timeline to see what the scene looks like at a specific point in time.

7. To close the timeline and return to the scene selector, tap .

What to do next

You can change the title on the timeline for media, web pages, and images. See, "Changing a timeline title for media, web pages, and images" on page 73.

If you want to test all of the scenes in a story, perform "Testing a story or a scene" on page 75.

Changing a timeline title for media, web pages, and images

`11.0.6` When you are working with the timeline for a scene, you can give useful titles to media, web page, and image objects. This makes it easier to understand which objects you are working with in a timeline.

Procedure

1. Tap .

2. Tap a media, web page, or image object.

3. Tap .

4. Under the details for the object, type a title in the title field, then tap away from it.

Adding extra animation effects

`11.0.6` You can control how visualizations and other objects enter and exit a scene in your story.

About this task

Animate visualizations and other objects by selecting from the following properties:

- Slide in and slide out
- Fade in and fade out
- Scale in and scale out
- Shrink in and expand out
- Pivot in and pivot out

Procedure

1. Tap , and tap the scene with the visualization you want to animate.

2. Tap the visualization, tap , and then tap **Animation**.

3. From the lists, select animation effects for your visualization.

   If you select the slide animation effect, you can also choose the direction for the effect.

4. Tap in the upper-right corner of the scene with the visualization you added animation effects to.

5. Ensure animated object timelines do not start at 0:00 nor end at the very end of the scene. Otherwise, the entrance and exit animations you selected will not appear in your story.

Highlighting data

`11.0.8` You can highlight specific data in your story while still showing the context of where that data appears.

About this task

Indicate the data you want to highlight and when you want the highlights to appear. For example, build a scene that displays a highlighted bar in a chart and dims all the other bars. You can have multiple highlights for a single visualization and across multiple visualizations.

Highlighting data has the same effect as when you manually click on a data item. If the data item is visible on your visualizations, it will be highlighted and if the data item is not visible on your visualizations, then the highlight you added to the timeline is treated as a filter.

Procedure

1. Open the timeline for a scene.

   Tip: For more information, see "Changing the timeline of a scene" on page 73.

2. Tap the slider for the visualization you want to highlight data on at the time on the timeline you want the highlight to occur.

3. Tap , select a data category from the list, then select the specific data to highlight.

4. Tap to see the effect.

5. Drag along the slider to a point in time in the scene.

6. Tap to edit or delete the highlight.

Playing all scenes to the end and/or in a continuous loop

11.0.8 You can set your story to play through all the scenes to the end or keep playing in a continuous loop.

About this task

Use the playback options to control if your scenes require a presenter to manually play each scene, or if the scenes will play through unattended, or in a continuous loop.

Note: A presenter has to press play to start a story even when **Play all scenes** is enabled.

Procedure

1. Open the story and tap .
2. To play through all the scenes to the end after you tap the play button, enable the **Play all scenes** option.
3. To play all the scenes in a continuous loop, enable both **Play all scenes** and **Loop**.
4. If you want to test all the scenes in a story, perform "Testing a story or a scene" on page 75.

Testing a story or a scene

After you've assembled a story or a scene within a story, you can test it to see how it will look to someone who is viewing it. You also want to ensure that the visualizations appear and disappear at the correct time during the scene.

About this task

If you're testing a scene within a story, ensure that the scene that you are testing has focus in the window. If you're testing a story, focus can be on any scene in the story.

Procedure

1. To start testing a story or scene, tap on the top bar.

2. Switch to full screen mode by tapping .

3. Tap and to jump from scene to scene.

Tip: If the control menu at the bottom of the window disappears, tap anywhere in the window to re-enable it.

4. To move through a scene, tap , , , and .

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