Tutorial - Beginning with the Basics

Qlik Sense®
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Qlik Q

Contents

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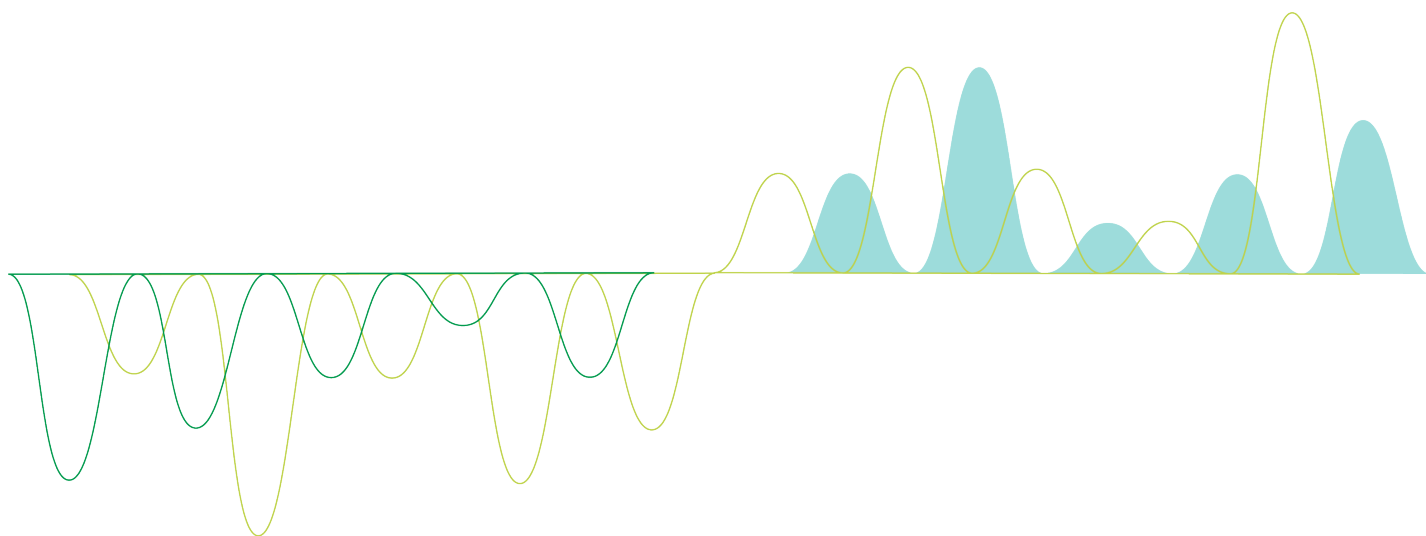
1 Welcome to this tutorial!

Welcome to this beginner's tutorial, which will introduce you to Qlik Sense. Qlik Sense is a software product that is used to extract and present data in an intuitive and easy-to-use interface. You extract data by making selections. When you make a selection, Qlik Sense immediately filters the data and presents all associated items. In this tutorial, you will learn how to work with Qlik Sense as a business user, rather than as a developer. No previous Qlik Sense experience or database knowledge is required. You will be guided through an existing app, focusing on how Qlik Sense works and how to use Qlik Sense.

1.1 About this tutorial

These are some of the subjects in this tutorial:

- How does Qlik Sense work?
- App views
- Measures and dimensions
- Selections

When you have completed the tutorial, you should have a fair understanding of the basics of Qlik Sense and be able to use Qlik Sense to gain insight in your data.

Depending on the Qlik Sense platform that you are using, the screenshots in this tutorial may differ slightly from what you see in Qlik Sense.

1.2 Prerequisites

Before you can start working with Qlik Sense, you need one of the following:

- Access to Qlik Sense Enterprise.
- Qlik Sense Desktop installed on your computer.

You can download Qlik Sense Desktop from www.qlik.com. If you need help with the installation, you can find instructions at help.qlik.com.

1.3 Further reading and resources

- Qlik offers a wide variety of resources when you want to learn more.
- Qlik online help is available.
- Training, including free online courses, is available in the Qlik Continuous Classroom.
- Discussion forums, blogs, and more can be found in Qlik Community.

2   What is Qlik Sense?

Qlik Sense is a data visualization and discovery product that allows you to create flexible, interactive visualizations that lead to meaningful decisions.

2.1   What can you do in Qlik Sense?

Most Business Intelligence (BI) products can help you answer questions that are understood in advance. But what about your follow-up questions? The ones that come after someone reads your report or sees your visualization? With the Qlik Sense associative model, you can answer question after question, moving along your own path to insight. With Qlik Sense you can explore your data freely, learning at each step along the way and coming up with next steps based on earlier findings.

2.2   How does Qlik Sense work?

Qlik Sense responds instantly as you work. Qlik Sense does not require predefined and static reports, and you do not need to depend on others. Just click and learn, while Qlik Sense updates every visualization and view in the app with a newly calculated set of data and visualizations specific to your selections.

Qlik Sense Enterprise

Qlik Sense Enterprise and its underlying platform supports a wide variety of use cases. This includes self-service data visualization to empower users to explore data, guided analytics to align users to a standard business process or workflow, embedded analytics to enhance websites and applications, and custom analytic applications to support specific business processes or use cases. Qlik Sense Enterprise includes the Qlik Analytics Platform.

Qlik Sense Desktop

Qlik Sense Desktop is a Windows application that gives individuals the opportunity to use Qlik Sense and create personalized, interactive data visualizations, reports, and dashboards from multiple data sources with drag-and-drop ease. Its use requires a Qlik Account, you can register at https://qlikid.qlik.com/register

2.3   The app model

The app is at the core of Qlik Sense.

Instead of deploying and managing huge business applications, you can create your own Qlik Sense apps that you can reuse, modify and share with others. The app model helps you ask and answer the next question on your own, without having to go back to an expert for a new report or visualization.

An app consists of one or more sheets containing visualizations. Visualizations are charts, tables and similar representations of your data together with other information. By making selections in your visualizations you can analyze the information to make your own discoveries and gain insights about your data.

2.4   The associative selection model (green/white/gray)

Discovering connections between data sets is one of the fundamental concepts in Qlik Sense. As you click, associated data values are highlighted. Selections are highlighted in green, associated data is represented in white, and excluded (unassociated) data appears in gray. This instant feedback enables you to think of new questions and continue to explore and discover.

2.5   Insight Advisor

Insight Advisor is a suite of features that assists you with Qlik Sense. Insight Advisor helps you create analyses, analyze data, and build an app data model. The following Insight Advisor features are available:

- Insight Advisor Analysis Types
- Insight Advisor Search
- Insight Advisor Chat
- Associative insights
- Chart suggestions
- Recommended associations

Insight Advisor Analysis Types and Insight Advisor Search help you quickly create analyses in apps. Insight Advisor Analysis Types creates charts from the analysis type and data you pick to use in the analysis. Insight Advisor Search uses search-based analysis to create charts based on your searches. As an app creator, Insight Advisor helps you create app content. As a business user using apps for analysis, Insight Advisor helps you create analyses outside of what is in the app sheets.

Insight Advisor Chat provides a chat-based solution for conversational analytics. Insight Advisor Chat enables you to make natural language searches from the hub to apps to which you have access.Insight Advisor Chat then returns relevant visualizations.

Associative insights helps you uncover blind spots and reveal relationships you may have missed. Associative insights compares the contributions of your selections and excluded values against your measures.

Chart suggestions allows you to select data fields when editing a sheet and let Qlik Sense choose the dimensions, measures, and visualization types. The suggested chart adjusts itself based on your changes. You can customize a suggested visualization with a focused set of properties.

Recommended associations Insight Advisor can recommend associations between your data tables in the **Associations** view in **Data manager**. The **Recommended associations** panel lets you view and apply these recommendations.

3   Getting started

3.1   Qlik Sense Enterprise

Placing the tutorial app in a Qlik Sense Enterprise installation

If you are using Qlik Sense Enterprise, you need to ask your system administrator to import the *Beginner's tutorial* app via the QMC and publish it to a stream that you have access to. For example, the default stream, Everyone, that is available to all users.

Opening Qlik Sense Enterprise

If the *Beginner's tutorial* app is published by your system administrator to a stream, for example, Everyone, you are ready to start.

You start Qlik Sense Enterprise by entering the web address of your Qlik Sense Enterprise server in your browser, such as *https://<server name>/hub*. The exact address depends on how Qlik Sense Enterprise has been deployed in your organization.

When Qlik Sense Enterprise has started, you arrive at the hub.

The hub is where you find all your apps. If your system administrator has published the app *Beginner's tutorial* to a stream, you should see it in your hub.

3.2   Qlik Sense Desktop

Placing the tutorial app in the Apps folder in Qlik Sense Desktop

If you are using Qlik Sense Desktop, you need to place the *Beginner's tutorial* app in the *Apps* folder before you can begin this tutorial. Open the folder *Documents* (it is sometimes called *My Documents*.) From there the path to the *Apps* folder is *Qlik\Sense\Apps*.

Opening Qlik Sense Desktop

If Qlik Sense Desktop is installed and the *Beginner's tutorial* app is in the *Apps* folder, you are ready to start.

Start Qlik Sense Desktop from the shortcut on your desktop or through the **Start** menu.

When you start Qlik Sense Desktop, you arrive at the hub. You can close the greeting message.

The hub is where you find all your apps. If you have placed the app *Beginner's tutorial* in the *Apps* folder, you should see it in your hub.

4   Opening the app

Click the *Beginner's tutorial* app. The app overview is opened, and you can see the content of the app.

By default, the app overview shows the sheets of the app. In the *Beginner's tutorial* app there are four sheets, *Dashboard*, *Product Details*, *Customer Details*, and *Customer Location*. You do most of the work in the sheets, especially if you are primarily a business user and not a developer. Click *Dashboard* to open that sheet.

*App overview displaying the sheets of the app.*
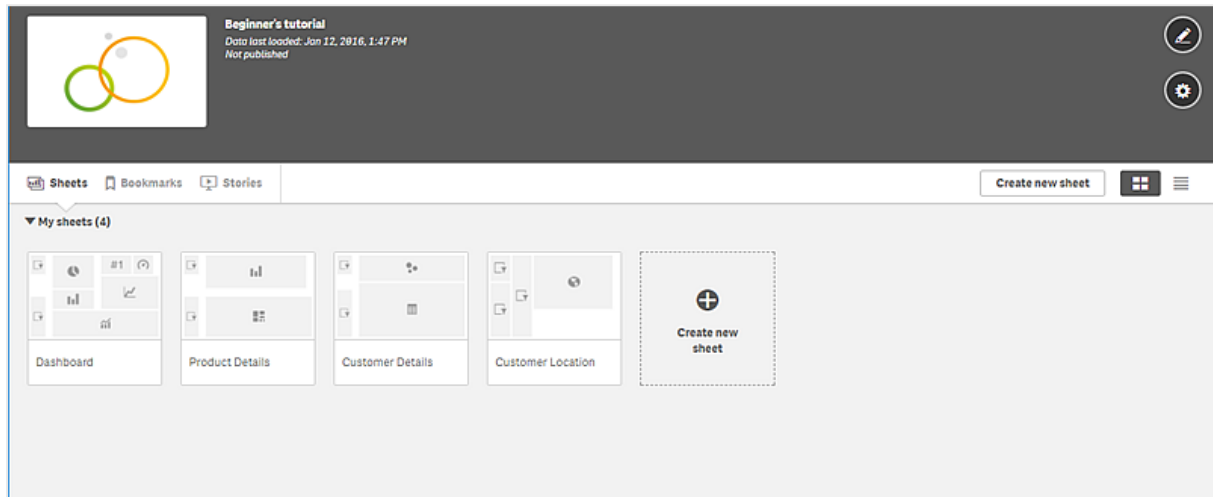
5 Sheet view

Sheets are components of Qlik Sense analytics apps. They present visualizations to app users so they can explore, analyze, and discover data. Sheets can be public or private. This is also where you create, design, and structure the visualizations when you build apps.

The navigation bar contains options for to navigate in your app. The toolbar contains options to navigate your sheets, make and clear selections, and search for data. Insight Advisor is where you can access assisted creation of visualizations and analyses. The sheet is where you interact with the visualizations.

Sheet view in an app
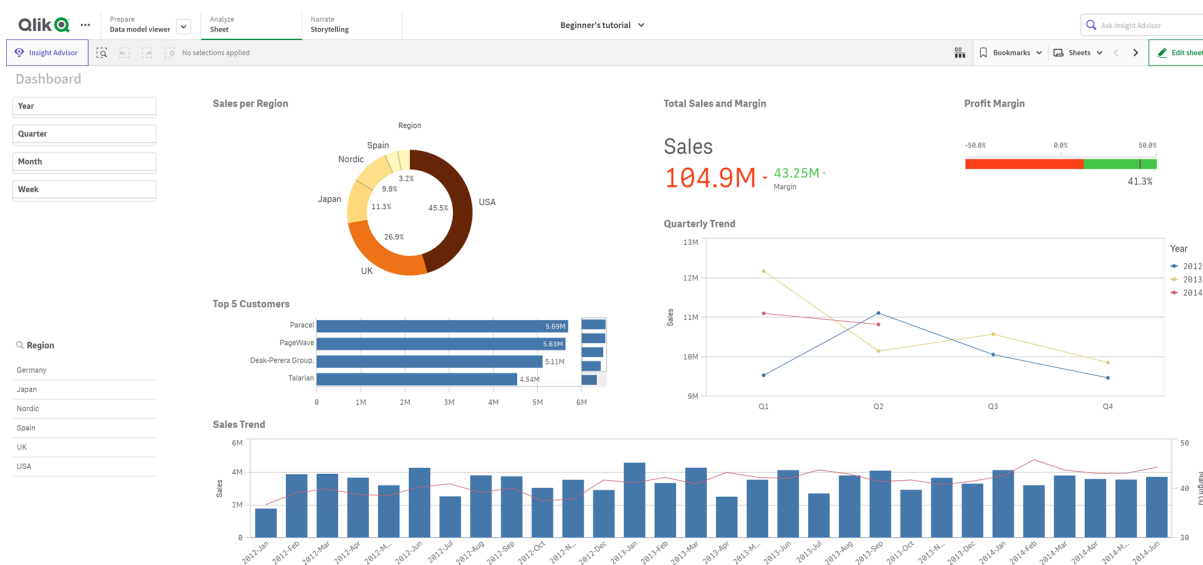
> ⓘ *There is no autosave function in Qlik Sense Desktop. You need to save your work manually by clicking* **Save** *in the toolbar.*

5.1 Toolbar

The toolbar contains options to navigate in your sheet and app. Within the toolbar, the selections bar contains options to make selections in your data and to clear those selections, and to search for data. The selections tool also displays all selections that have been made.
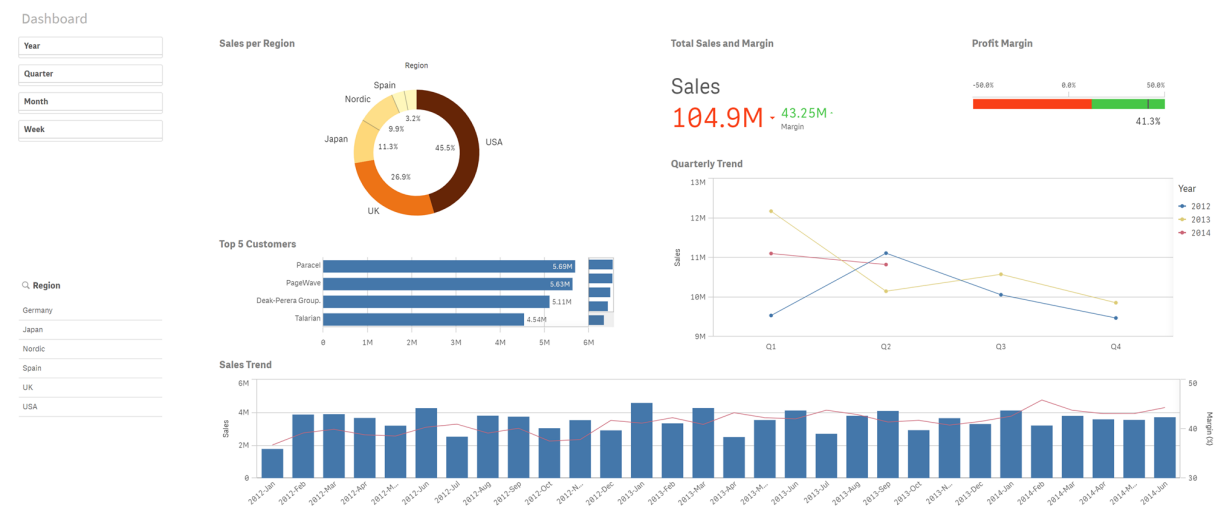
Toolbar in a sheet in analysis mode
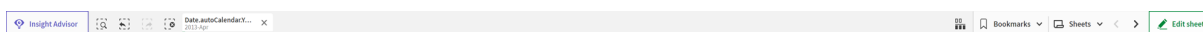
5.2 Sheet

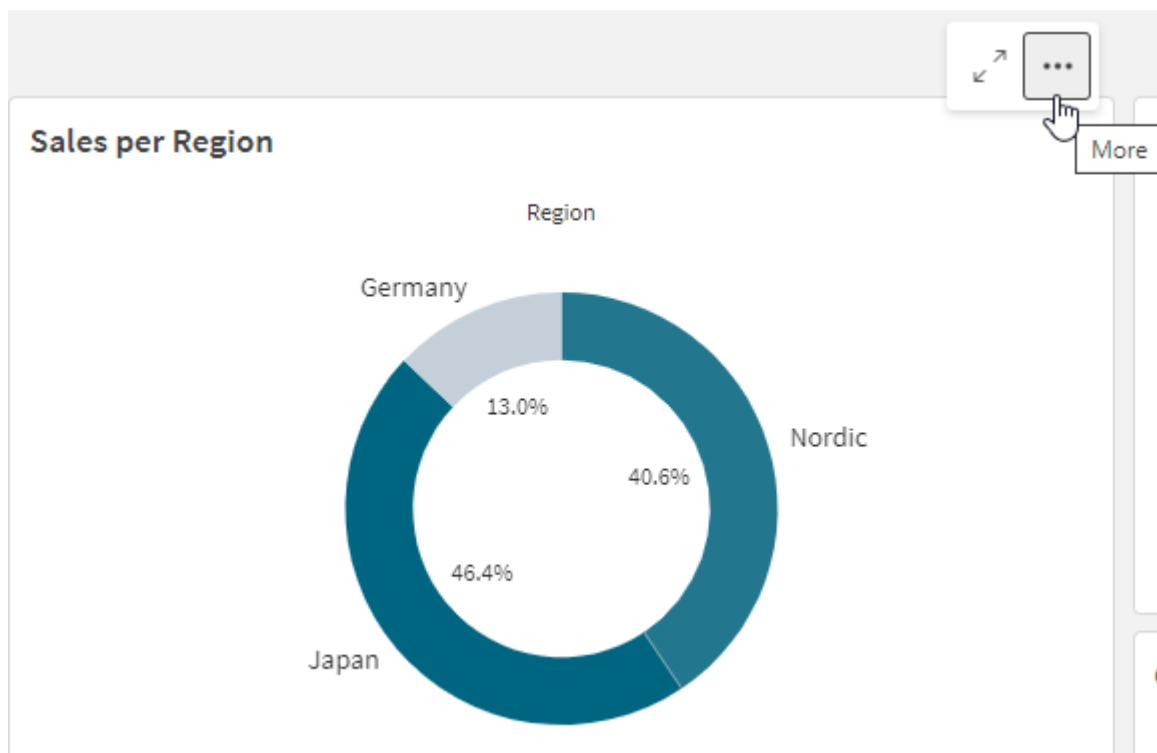The sheet is where you interact with the visualizations.

Sheet in analysis mode

5.3   Options menu

With the options menu, you can take a snapshot of your chart, change certain chart properties in the exploration menu, or view your chart in full screen mode.

Options menu next to a chart

You can open the options menu by:

- Right-clicking on a chart.
- Clicking the hover menu •••.

Menu options will be different depending on:

- Whether you are editing or analyzing (viewing) charts in an app.
- The chart type.
- The privileges that have been assigned to you by your administrator.

Options menu for a chart with hover menu expanded

|	
⤢ Full screen	
⇅ Exploration menu	
⊞ View data	
⊰ Share	▶
🖵 Storytelling snapshots	▶
⬇ Download as...	▶
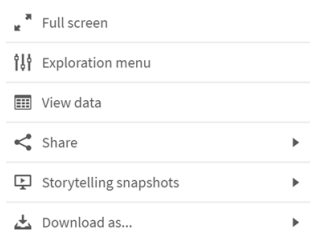
The menu looks different if you have touch screen mode enabled on a supported device. You can toggle touch support on and off by clicking or tapping the navigation button (•••) and using the toggle for 👆 .

5.4   Insight Advisor

Insight Advisor allows you to quickly create new visualizations from the data, helping you find analyses that might not be present in the app. You can access Insight Advisor by clicking **Insight Advisor** or, if you want to use search-based analysis, entering a query into the **Ask Insight Advisor** search bar.

Insight Advisor
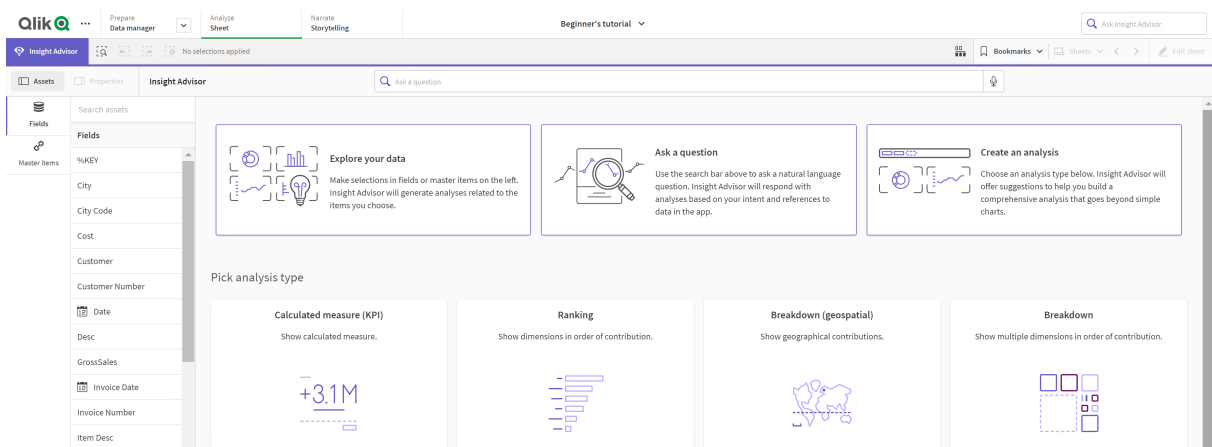
Insight Advisor Analysis Types helps you create charts from a range of possible analysis types. You select the analysis you want to see, the data types that should be used, and Insight Advisor creates charts from your parameters.

Insight Advisor Analysis Types
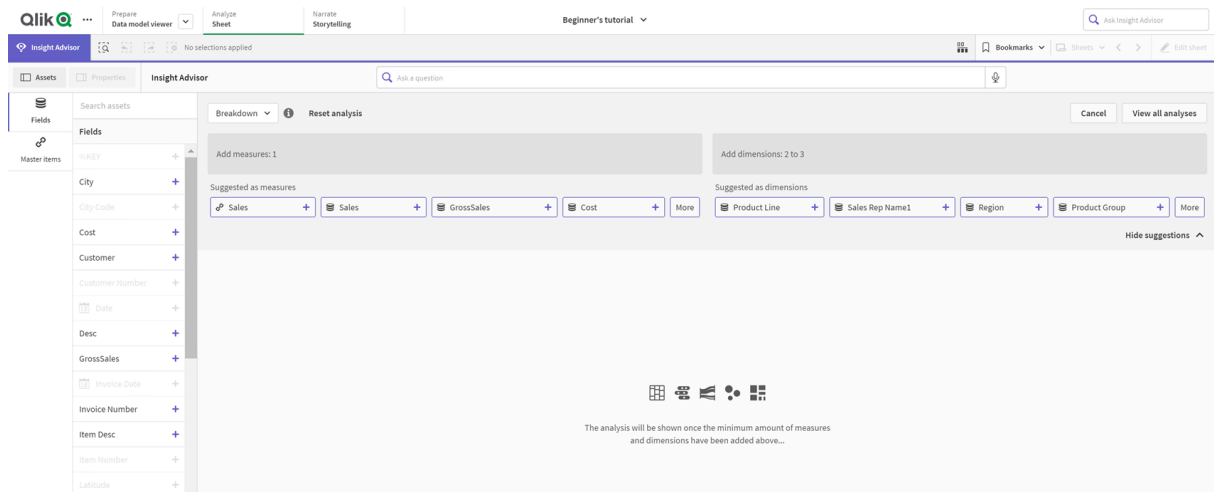
You can make natural language searches with Insight Advisor Search. Insight Advisor queries app data and returns results that match your question. You can also select fields and let Insight Advisor Search create charts.

If your browser is not set to a supported language, English is used.

You can change the language used by Insight Advisor by selecting a language from the **Language** button.

> *Qlik Sense supports English natural language queries.*
>
> *English is used by default for browsers not set to a supported language. The language used for queries can be changed by selecting a new language from the **Language** button. For more information, see* Enabling multi-language natural language queries in Qlik Sense Enterprise on Windows*.*
>
> *If your Qlik Sense deployment includes access to a Qlik Sense SaaS tenant, administrators can enable support for additional languages. For more information on supported languages in Insight Advisor Search, see* Supported languages*.*

Insight Advisor Search
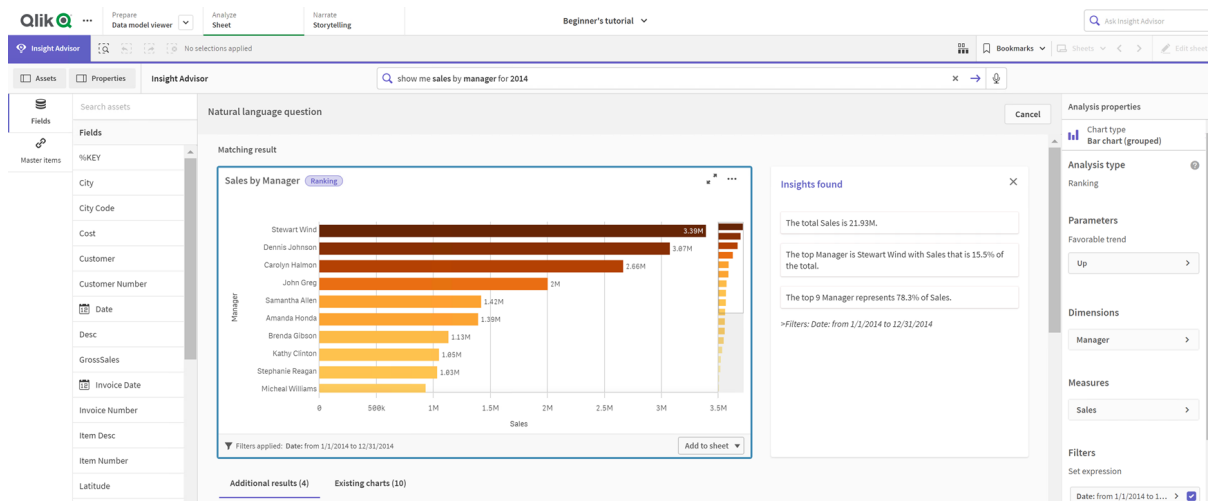
6   Visualizations in the app

Visualizations are charts, extensions, and other objects that visualize your data for exploration in a sheet.

6.1   Measures and dimensions

A visualization consists of at least one measure or one dimension. In most cases a visualization has both, and sometimes more than one dimension or measure.

Dimensions determine how the data in a visualization is grouped. Dimension values often refer to time, place, or category.

Measures are the result of some sort of calculation, often aggregations, such as **Sum**, **Count**, or **Avg** (average).

When dimensions and measures are combined in a visualization, it is possible to see, for example, how many bikes were sold in a certain area during a certain period of time.

6.2   Dashboard visualizations

Different visualizations serve different purposes. The point of a visualization in general is to communicate its data in a quick and meaningful way while remaining 100% accurate.

Dashboard sheet with different visualizations.
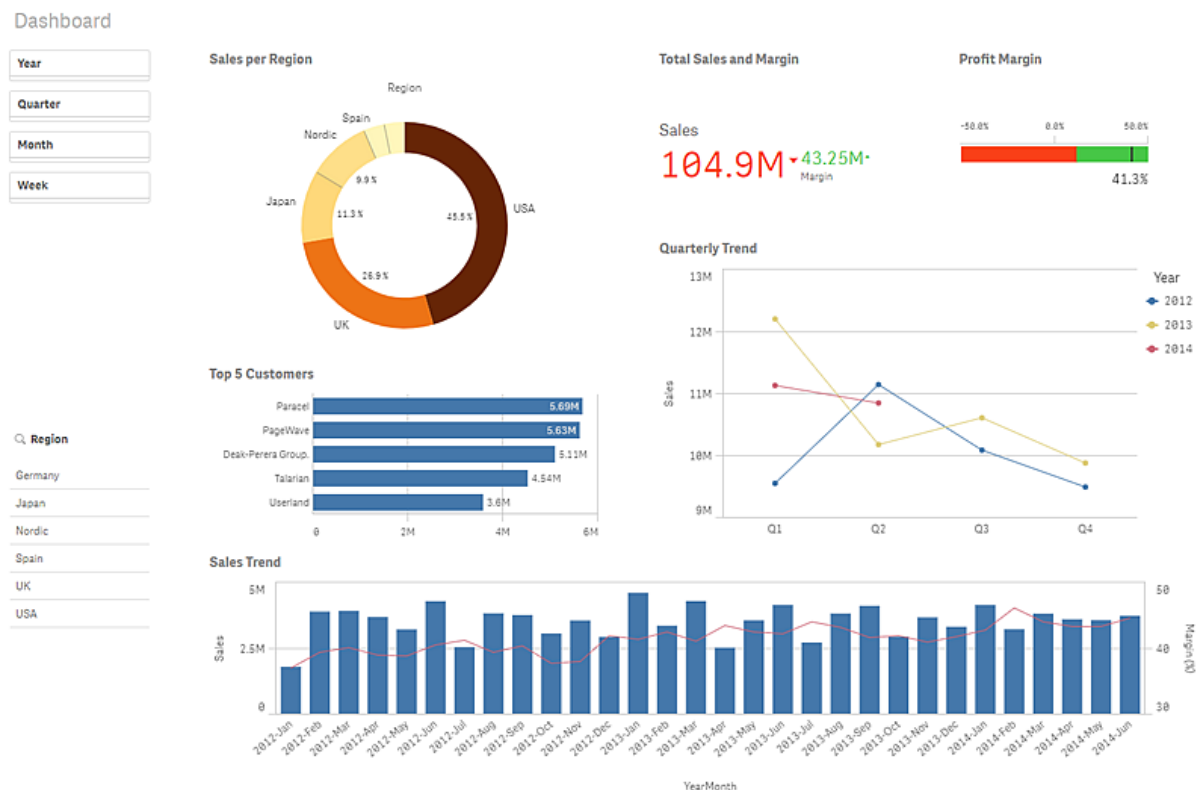
Filter panes

In the sheet *Dashboard*, there are two filter panes to the left: the time filter pane without title and *Region*. They are both filter panes, although they do not look the same. *Region* contains only one dimension, and shows the dimension values in a list. The time filter pane contains four dimensions, and because the space is limited, the lists are all compressed to panes. The purpose of the filter panes is to filter out a limited data set, which you can analyze and explore.

Pie chart

To the right of the time filter pane is a pie chart, *Sales per Region*. Pie charts show the relationship between values, as well as the relation of a single value to the total. Each sector represents a value, and as long as there are a limited number of values (less than 10), you get a good overview of the relative size of the sectors. The values are ordered by size.

Bar chart

Below the pie chart is a bar chart, *Top 5 Customers*. Bar charts are useful when you want to compare multiple values. The bars give information about the relationship between different values. Bars can be grouped or stacked, and be displayed horizontally or vertically.

Combo chart

Beneath the bar chart is a combo chart, *Sales Trend*. Combo charts are usually used for displaying trends with bars and lines in the same visualization. A combo chart is especially useful when you want to combine values that normally are hard to combine, because they have totally different scales. The solution in the combo chart is to have two axes for the measures. In *Sales Trend*, the combo chart combines sales figures (millions of dollars, on the left axis) with margin (percent, on the right axis).

KPI

To the right of the pie chart is a KPI visualization, *Total Sales and Margin*. It can be very useful to track performance. In a KPI visualization, you can show one or two measure values with text labels. You can add conditional colors and symbols to the values.

Gauge

To the right of the KPI visualization is a gauge, *Profit Margin*. A gauge is used to display a single key measure value. In this case it is the profit margin. The colors reinforce the interpretation of the value.

Line chart

The final visualization is a line chart, *Quarterly Trend*. Line charts are often used to show trends, and this chart uses two dimensions, year and quarter that displays the trends for each quarter of the years 2012-2014.

6.3   Product Details visualizations

Do the following:

- In the top right corner, click ❯ to go to the sheet *Product Details*.

Product Details sheet with different visualizations.
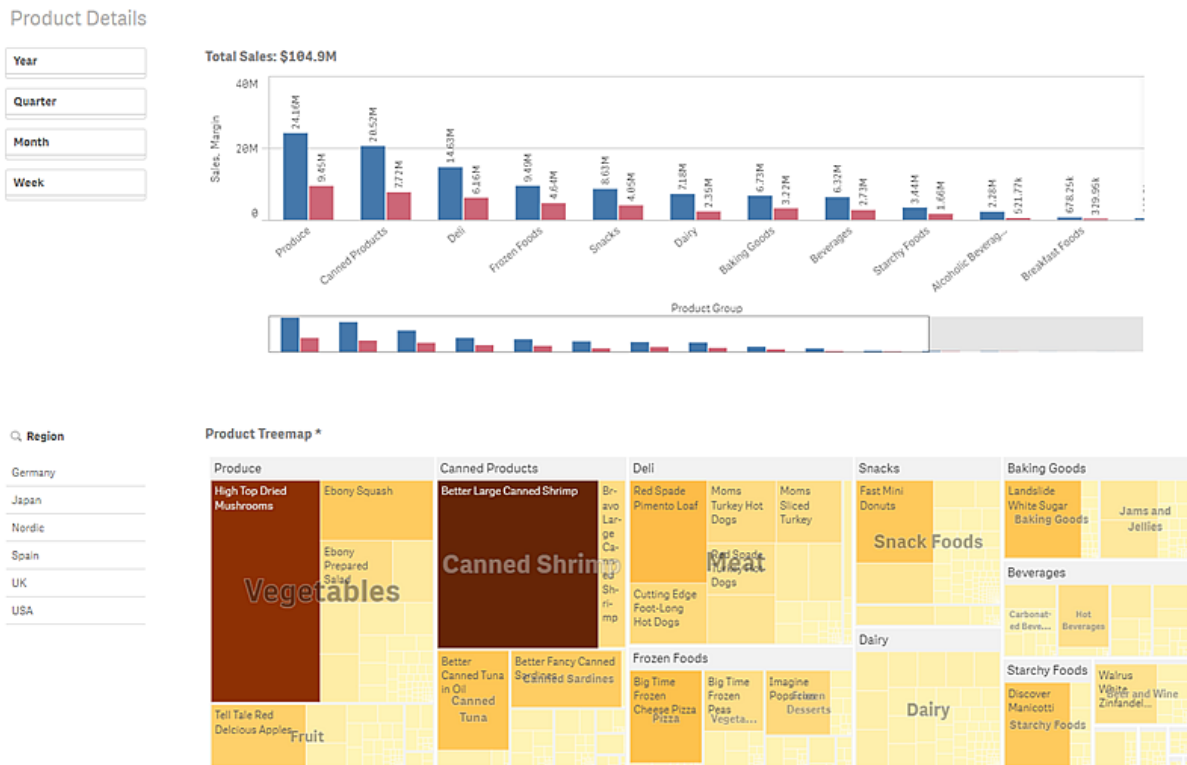
Treemap

The second sheet, *Product Details*, contains one new visualization type compared to the sheet *Dashboard*, and that is the treemap. Treemaps are ideal when you want to display hierarchical data in a limited space. In this treemap the hierarchy consists of the dimensions *Product Group*, *Product Type*, and *Item Desc*. You start at the top level (*Product Group*), and when you make and confirm selections in the treemap you drill down to the next level (*Product Type*) to analyze the more detailed data. The items in the treemap are colored by measure. The darker the color, the higher the measure value.

The screenshot was taken in an app with reduced sheet width. As a consequence, the bar chart does not display all values at the same time. Therefore, it has a mini chart below the bar chart, which shows a miniature of the full chart. The mini chart has a scroll bar that can be used for navigation.

6.4   Customer Details visualizations

Do the following:

- In the top right corner, click ❯ to go to the sheet *Customer Details*.

Customer Details sheet with different visualizations.
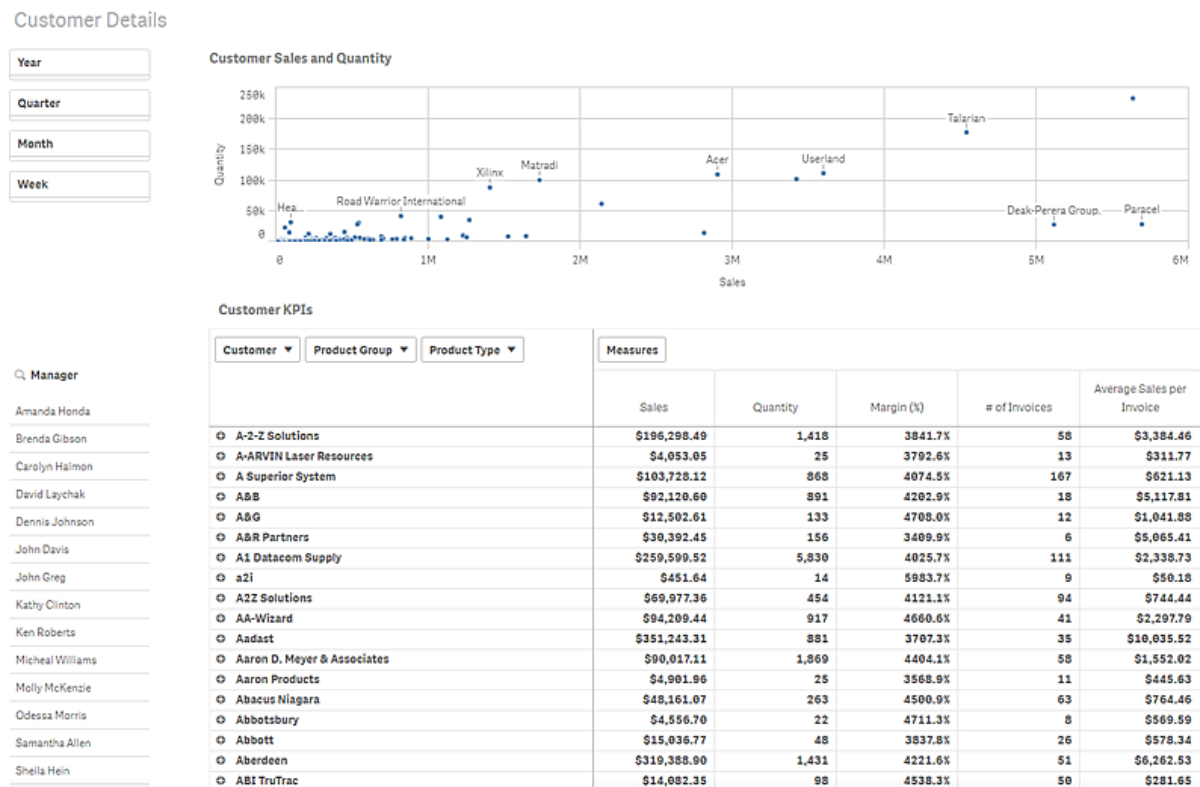
The *Customer Details* sheet has two new visualizations, a scatter plot, *Customer Sales and Quantity*, and a pivot table, *Customer KPIs*.

Scatter plot

With a scatter plot you can find potential relationships between values, and identify values that deviate from a group. The size of the bubbles can be used to show differences in values. In this scatter plot the bubbles show the relationship between sales and quantity, and each bubble is a dimension value: the customer.

Pivot table

The pivot table *Customer KPIs* shows key customer figures. You can rearrange how the data is displayed, and analyze data by multiple dimensions and measures at the same time to get different views of the data.
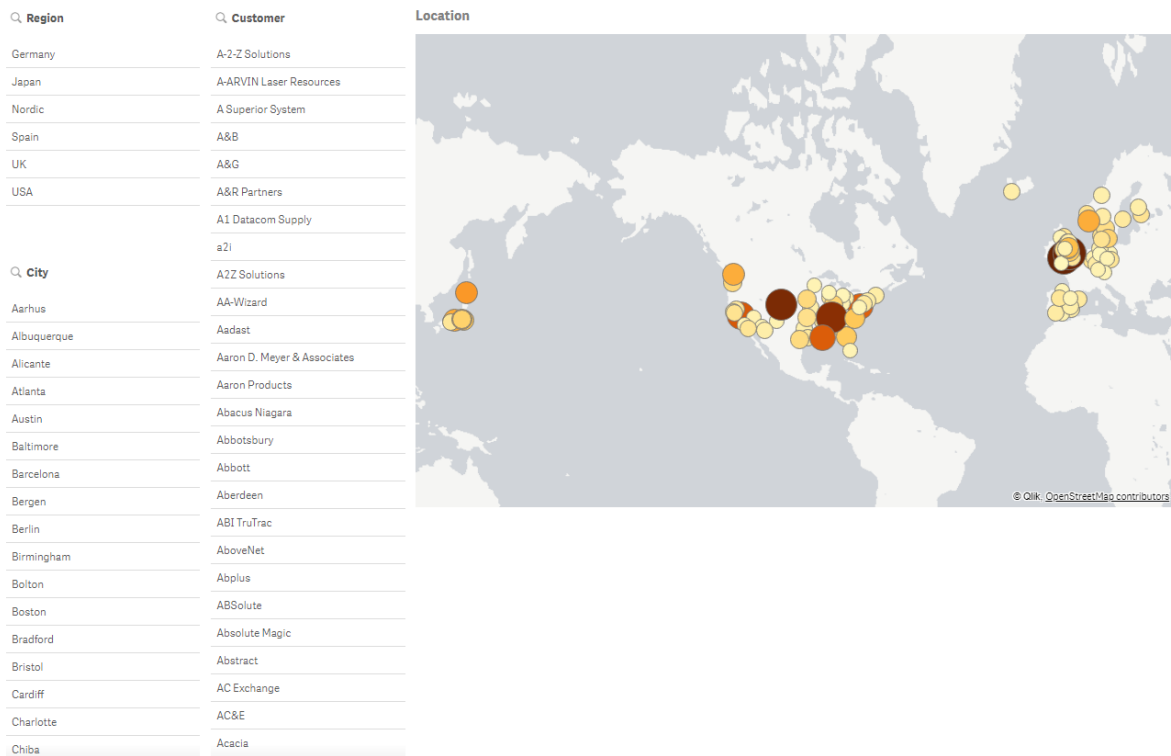
6.5   Customer Location visualizations

Do the following:

• In the top right corner, click ❯ to go to the sheet *Customer Location*.

Customer Location sheet with different visualizations.

Map

The fourth sheet, *Customer Location*, contains three filter panes and one new visualization: a map. In Qlik Sense you can create maps that display data in point layers and area layers. The map we are using in this tutorial contains a point layer. A point layer is created using point coordinates (latitude and longitude) or location names to mark places of interest, for example cities.

Maps can, for example, be used for plotting sales data per region or per location. The map in this tutorial is used to show customer locations. You can filter by *Region*, *City*, or *Customer*. You can also make selections directly in the map by clicking on a point. If you hold down Shift before you make a selection you can select several areas to analyze.

7   Making selections

When you use an app, you make selections to reduce the data set, so that you can focus on particular values. You can make selections in almost all visualizations, and in most cases in many different ways.

You either click or draw to make a selection. When you click, you select one value at a time, when you draw, you select many values at a time. All selection methods are not available for all visualizations, but the variety of options ensures that you always find a smooth way of making selections.

7.1   Click selection

In the following pie chart, the sector *Nordic* has been clicked and is thereby selected. The other values are dimmed. You can confirm the selection by clicking ✔ or by clicking outside the visualization.
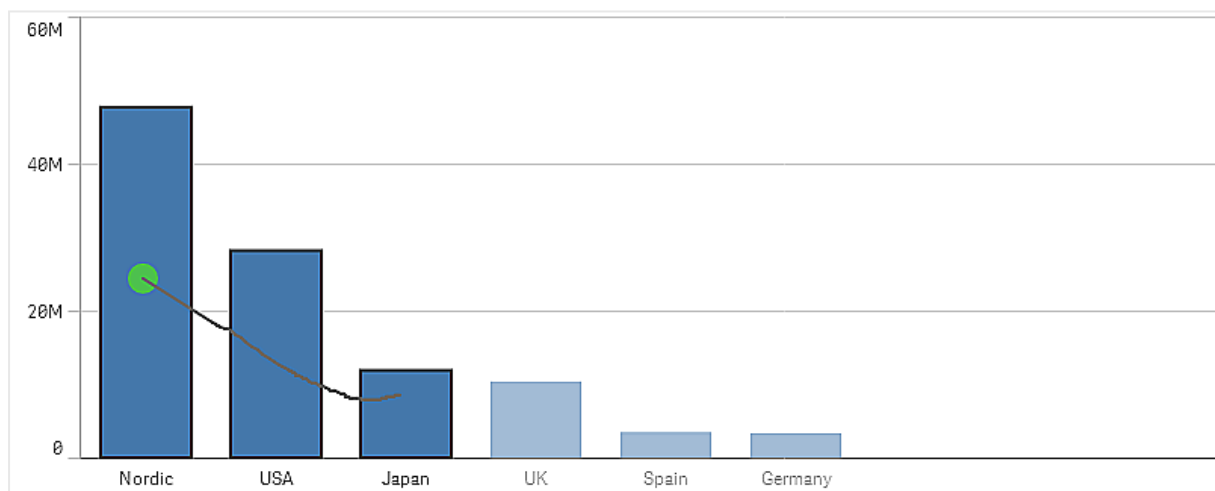
The sector Nordic has been selected
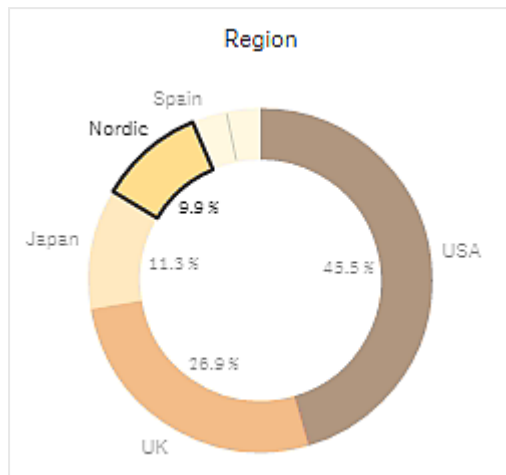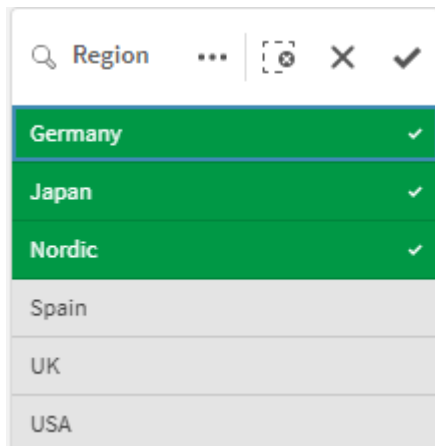
7.2   Draw selection

You can draw a freehand line to select several values at a time. To deselect values, you click them one at a time. To activate draw selection, either click inside the visualization and then click ℘, or hold down Shift while you make your selection.

Bar chart with Nordic, USA and Japan selected

In lists and tables, you can draw across several values to select them.
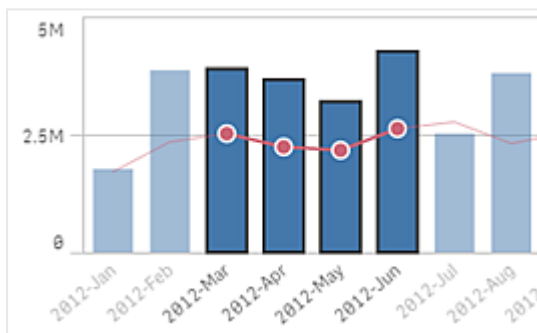
*Region filter pane with Germany, Japan and Nordic selected*

7.3   Range selection

You can make a selection by drawing along the y-axis or the x-axis, just outside the chart. For an axis showing measure values, you are also able to click on the range bubble to enter a specific numeric value.

*Combo chart with selections made with range selection*

Line chart with selections made with range selection
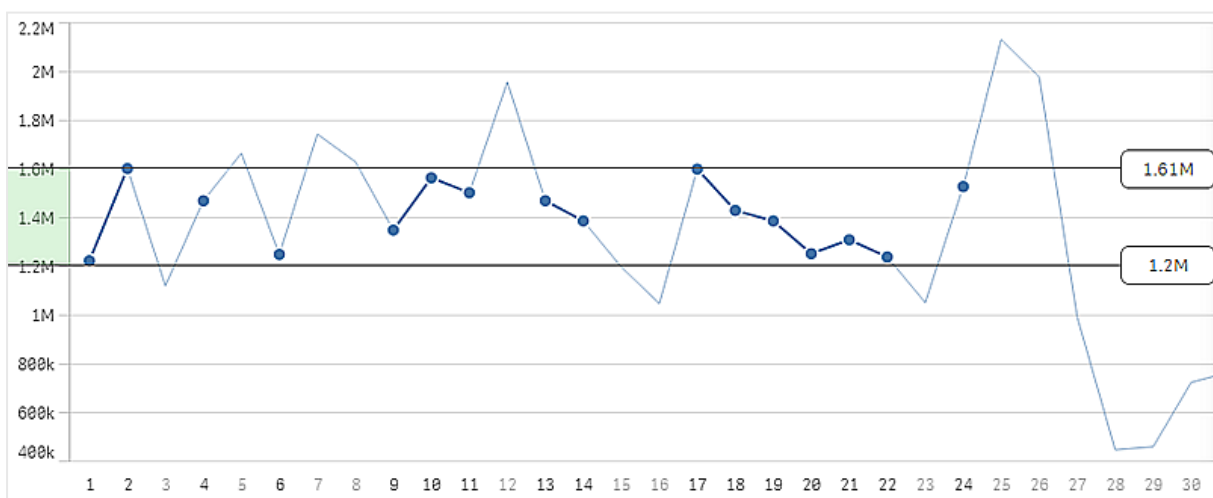
7.4   Lasso selection

You can draw a freehand circle to capture and select data points. To deselect values, you click them one at a time. To activate the lasso selection, either click inside the visualization and then click ℘, or hold down Shift while you make your selection.
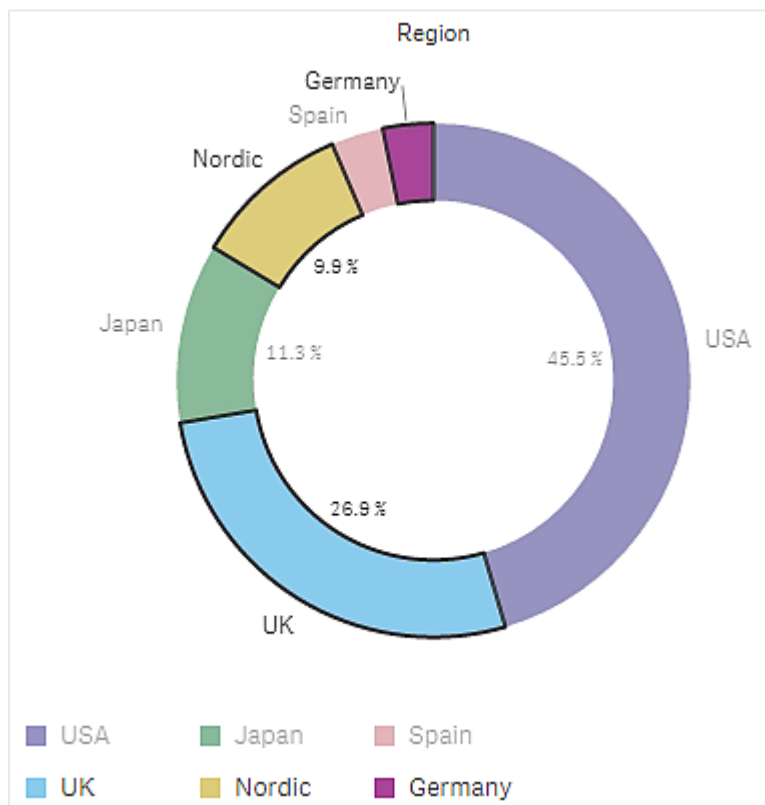
Selection of values made in a scatter plot using lasso selection
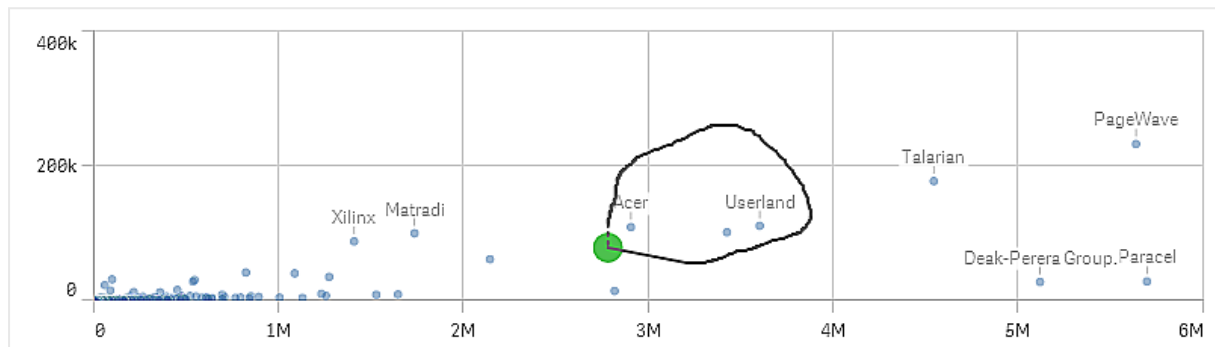
7.5   Legend selection

You can click the legend items to select the values.

Pie chart with sectors Nordic, Germany and UK selected

7.6   Label selection

You can click the dimension labels (in this example, *2012*, *2013*, and *2014*) to select the corresponding value. In the example, the dimension values are grouped so that clicking one of the years for a country automatically selects all the values for that country.

Bar chart with label selection of 2011, 2012, and 2013. Clicking any of the years selects the whole group.
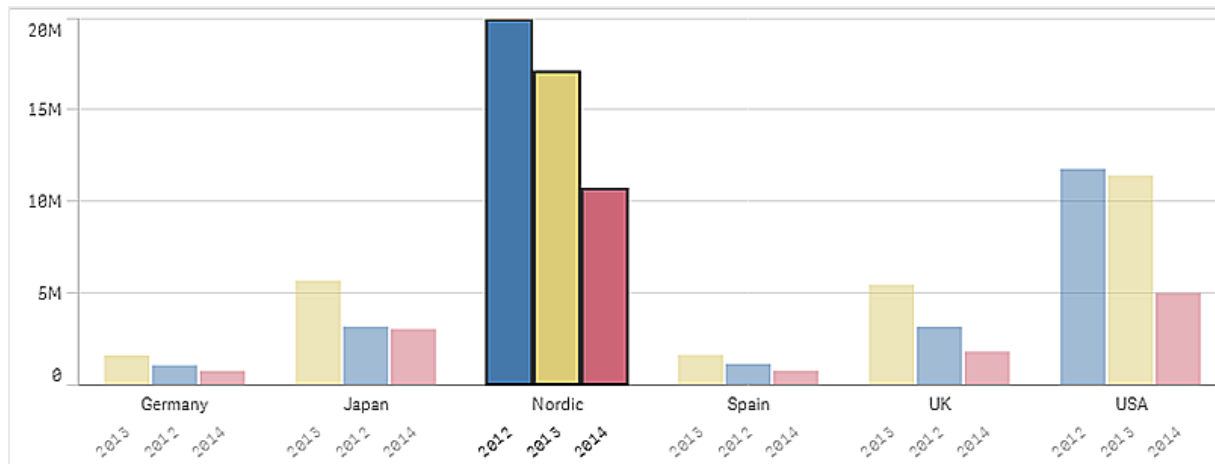
8   Selection states

Now you know how to make selections, but what happens when you make a selection? Selections filter out a subset of the data. Use selections to focus on something you want to know more about.

8.1   Green, white, and gray

When you make selections in filter panes, the colors of the values change accordingly. The characteristic colors are green, white, and gray, and they represent the basic states: selected, possible, and excluded. The excluded values exist in three different variants. In addition to the normal excluded state, there are also the alternative state and the selected excluded state. These will be described later.

Colors that are used for different states

State	Color
Selected	Green, with a check mark as a selection indicator
Possible	White
Alternative	Light gray
Excluded	Dark gray
Selected excluded	Dark gray with a check mark as a selection indicator

The point behind color coding is to bring you additional information. Green indicates what has been selected, white indicates the values that are possible to select, and gray indicates the values that have not been included in your selection. In particular, the gray values can bring you new information about relationships that were not known before. When a value unexpectedly turns gray after a selection it can lead to new insights, for example, that a certain region does not have any sales representatives, or that a product did not sell at all during a whole quarter.

8.2   Making the first selections

Let us make some selections in the app to get an understanding of the different states. But first, go to the sheet *Product Details*. In the top right corner, click 🖵 and select the sheet *Product Details*.

You will compare the sales of a few different product types in Germany and Japan during 2012.

Do the following:

- In the top left filter pane, click *Year* and select *2012* but do not confirm the selection.
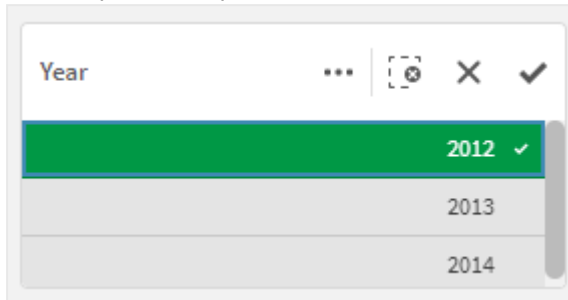
When you click *2012* the value turns green to indicate that it is selected. The two other values, *2013* and *2014*, turn light gray to indicate that they are alternative, which means that they are excluded from the selection. You can select either of the two if you want to change the scope, but by selecting *2012* you want the other years to be excluded, because you only want to see values for *2012*.

As soon as you make a selection, the other visualizations are updated. You do not even have to confirm the selection to see the outcome, a preview is shown immediately. You can undo a selection by clicking ⊗.

After the selection of 2012, the filter pane *Region* does not change. It is still white, indicating that the values are associated and can be selected. The bar chart *Total Sales* is updated to display only the sales for 2012, and, likewise, *Product Treemap* shows the product groups that were sold in 2012. You can see the difference if you click *2012* again to deselect it. When no selection is made, the bar chart and treemap both display the values for all three years, but when *2012* is selected, only the values related to that year are displayed.

Do the following:

1. Make sure *2012* is selected.
   The selections bar above the sheet shows the new selection. More about that later.
2. Still in the time filter pane, click *Quarter* and select *Q1*. Confirm the selection.
   The new selection is added to the selections bar, and the bar chart and treemap are updated.
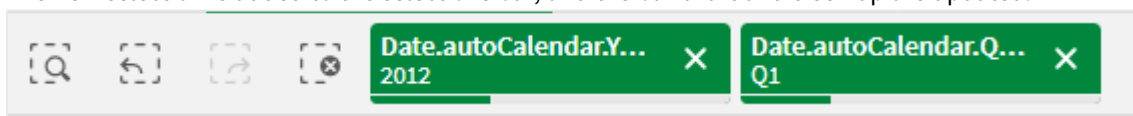
3. So far, you have selected *2012* and *Q1*. Click *Month*.

   You can see that *Jan*, *Feb*, and *Mar* are possible values (white), whereas the other months are excluded. This makes sense, because the possible values are months in the first quarter, which you selected, and you could refine your selection further by selecting one or two of the possible months. Selecting all three would not constitute a new selection, because that is equal to selecting *Q1*, which has already been selected.

4. Click ⊗ to leave *Month* without making any selections.

5. In the selections bar, click ⊗ to clear the selection of *Q1*.

   The selection *2012* should now be the only selection.

8.3   Selecting regions and product types

Let us compare the sales of fresh vegetables in *Germany* and *Japan*.

Do the following:

1. In the *Region* filter pane, select *Germany* and *Japan* and confirm.

2. In the *Product Treemap*, select *Produce* and confirm.

3. In the treemap, select the product type *Vegetables*.

    By selecting *Vegetables* you exclude the other product types, *Fruit*, *Specialty*, and *Packaged Vegetables*, which are part of the same product group *Produce*, but are not fresh vegetables.

    To be able to see the relationship between the two countries, you need to change sheets.

4. In the top right corner, click ❮ to go to the sheet *Dashboard*.

    In the pie chart, *Sales per Region*, you can see that the sales for 2012 is almost exactly twice as big in *Japan* as in *Germany*.

    To instead see the figures for *Specialty*, which is nuts and almonds, do the following:

5. In the selections bar, click *Product Type* to open the list.

6. Deselect *Vegetables* and select *Specialty* instead. Confirm.

    With this selection, *Germany* has the highest sales, and therefore that value is presented first in the pie chart (counting clockwise from 12 o' clock).

    Now that you have changed sheets, there are some other things to notice. The selections in this sheet are exactly the same as the ones in the *Product Details* sheet. Selections are global. This means that when you make a selection in a visualization, the selection is reflected in all related visualizations, no matter what sheet they are on. Consequently, the selections bar looks the same when you move between the different sheets. The selections bar shows all selections regardless of which sheet they were made on.

7. Go to the sheet *Customer Location*.

    You can see that the regions Germany and Japan are still selected, and that these are the only areas showing data in the map *Location*.

8.4   The excluded values

When you deselected *Vegetables* to instead select *Specialty*, the first four values are possible values that can be selected.

When Specialty is selected, some values are alternative (light grey) and some are excluded (dark grey).
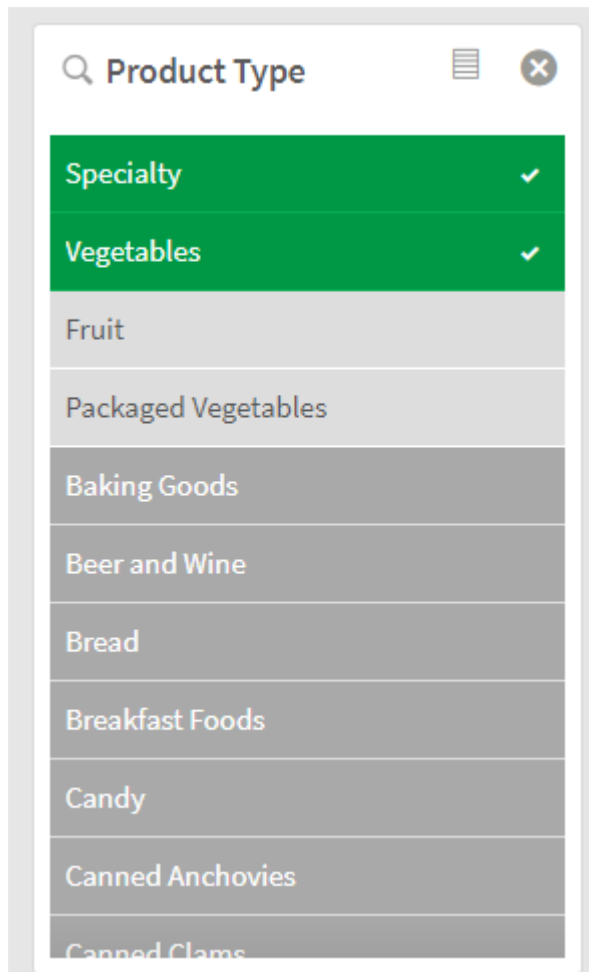
Specialty is selected and the following three values are alternative, that is, they are excluded, but only by the selection of *Specialty*. The values after *Vegetables*, on the other hand, are already excluded by a selection in another list, and are therefore dark gray.

What would happen if you selected the excluded value *Bread*?

Do the following:

- In the selections list for *Product Type*, select *Bread*.

The value is selected (with a check mark) but remains dark gray, that is, it is selected excluded. The selection of *Bread* is not compatible with the already existing selections. But the value is still selected and will become green if the selection that excludes it is cleared or if the product group to which it belongs, is included in the selection.

8.5   Selected excluded values become selected

You can make the excluded value *Bread* become selected by doing one of the following.

- In *Product Group*, select the value *Baking Goods*, which is light gray, alternative.
- In *Product Group*, clear the selection *Produce*.

- In *Product Type*, clear the selection *Specialty*.

8.6   Stepping back in the selection history

What if you want to return to the selection with *Vegetables*? If you remember all the selections, the quickest way is perhaps to make the selections again. But with more complex selections it may be difficult to remember all the selections, and you could easily overlook something. A safer option in that case would be to step back in the selection history.

Selection history options in the selections bar
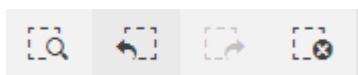
In the selections bar, there are options for stepping back and forward in the selection history. All the selections you have made during this session are stored and you can return to them by using the step back ( ) and step forward ( ) options. It is not until you have stepped back that you can step forward. By default, you are at the last step in the selection history and therefore you cannot step forward, because there is no later step.

8.7   Bookmarks

Bookmarks let you save specific selection states so they can be applied again in an app later and shared with other users. Layout information can be stored in bookmarks, so users can be taken to the correct place in the app when applying the bookmark.

8.8   Thank you!

You have reached the end of this tutorial. You now know the basics of Qlik Sense: how to make selections and interpret the results. When you want to learn more, remember to use the excellent resources mentioned on the welcoming page. If you want to learn how to build an app, download *Qlik Sense Tutorial - Building an app* and get an understanding of all the steps involved in app building.