Workshop **Qlik**® Sense

(Qlik® Sense Desktop version 3.2)

Build Your First Qlik Sense application

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Introduction

Qlik® Sense – The Next Generation of Visual Analytics

Qlik Sense is a next-generation self-service data visualization application that empowers people to easily create a range of flexible, interactive visualizations that drive exploration and discovery using one's intuition. With the proven QIX Associative Data Indexing engine at its core, Qlik Sense delivers:

- A cutting-edge self-service visualization and discovery experience
- Associative exploration and smart search
- Advanced data visualization
- User-driven, drag-and-drop creation
- Collaboration and storytelling
- Unsurpassed mobility
- Best-of-breed custom development
- Powerful data integration
- Governed enterprise capabilities and performance

Qlik Sense Product Editions

Qlik Sense Desktop	Qlik Cloud	Qlik Sense Enterprise
- Installed, standalone Windows version of Qlik Sense - Includes all user experience capabilities for consumption and creation of visualizations - Local file sharing - Export to Qlik Sense Cloud, - Free download, no limits on apps or sharing restrictions	- Qlik's new platform for multiple cloud services - Upload visualization apps created with Qlik Sense Desktop or create them from scratch loading data files (Excel files, txt, csv, etc.) - Fully interactive search and exploration. - Web-based, supports access on any device including mobile devices	- Full version of Qlik Sense - On premise and private cloud deployment - All user experience capabilities in a single unified client - Collaboration and mobility capabilities - Best-of-breed API developer experience - Robust set of enterprise capabilities - Token based license model

Workshop Objectives

This workshop is designed to introduce you to Qlik Sense and provide step-by-step introductions on how to build your first Qlik Sense application. The application that we will be building within this workshop will look like the below image and it will help answer questions around specific KPI's such as but not limited to:

- How many customers do we have in various countries?
- What do our sales look like across all the cities/countries we sell our product into?
- What does our sales performance look like over time?
- What are our most profitable products?
- Which geographic locations have the highest concentration of sales?
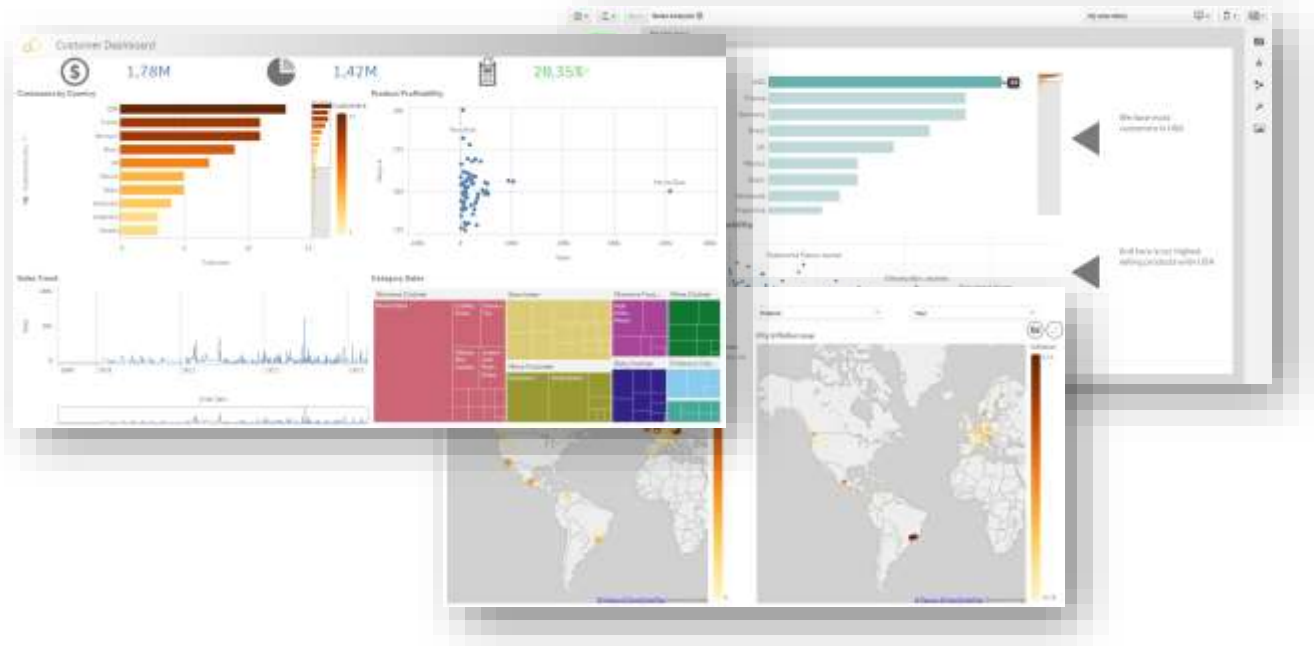
**Mobility for consumption and creation of existing and new applications is supported via the Qlik Sense Server environment. For the purposes of this workshop, we will be working with the standalone Qlik Sense Desktop environment.

Workshop Pre-Requisites

- o Windows 7 x64 or newer
- o Qlik Sense Desktop 3.2 (will be provided if missing)
- o Microsoft.Net 4.6 or later (will be provided if missing)
- o Administrative access to Windows to be able to install components
- o Register a Qlik account on http://www.qlik.com/us/try-or-buy/download-qlik-sense

Manual Setup

1. To get started, copy and extract the **QlikSenseWorkshop.zip** or the extracted package within a USB stick. Within the zip file, you will see the following materials:
   - Apps
   - Data
   - Images
   - Qlik Sense Desktop Workshop (v3.2).pdf
   - Qlik_Sense_Desktop_setup.exe
   - XXXXXXXXXXXXXXXX-x86-x64-AllOS-ENU.exe
2. Install the free version of Qlik Sense Desktop will be used in this workshop.
   a. To download Qlik Sense Desktop, go to: http://www.qlik.com/try-or-buy/download-qlik-sense and follow the instructions to register, download, and install.
   b. Install using the provided **Qlik_Sense_Desktop_setup.exe** installation file
2. Navigate to the **Documents\Qlik\Sense** folder and view the contents. Some of these folders are where you will copy the workshop files.
3. Copy the QVF file in the **/apps** folder from the ZIP file and place it under **Documents\Qlik\Sense\Apps**
4. Copy the Excel files within the **/data** folder from the ZIP file and place under **Documents\Qlik\Sense\MyData**
   - Note that the **MyData** folder does not exist by default and needs to be manually created.
5. Copy the image files within the **/images** folder from the ZIP file and place them under **"..\Documents\Qlik\Sense\Content\Default\Workshop"**.
   - Note that the 'Workshop' folder does not exist by default and needs to be manually created.   For the images to appear, close and reopen Qlik Sense.
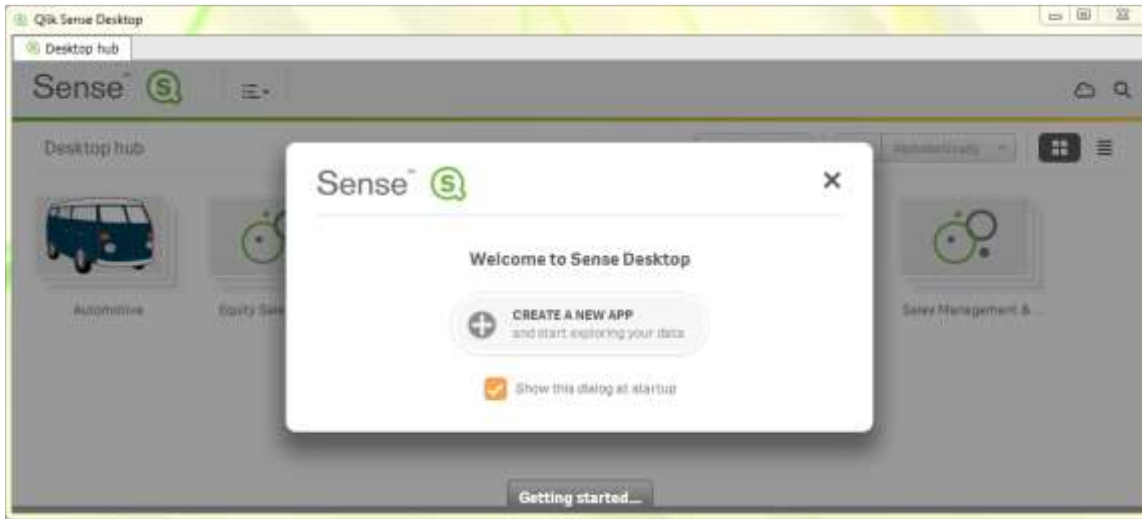
You will be using these files during the workshop.

![Qlik logo]

Part 1: Preview the Finished Application

EXERCISE 1

In this first section, you will preview the finished Qlik Sense application and learn how to interact with it.

1. Open Qlik Sense Desktop. Go to Start > Programs > Qlik Sense > Qlik Sense Desktop, or search for Qlik Sense.


In the background, you will see the Qlik Sense Desktop Hub. This contains all of your Qlik Sense applications.

2. From the Qlik Sense Hub, open the application titled "**Qlik Sense Workshop**" by clicking on it

3. Click on the **Associative Model** tab.

Filter Your Data

4. Click on the different filters and notice the interactivity and associations among the data.

Green denotes that a value has been selected, white shows the associative values, and gray shows where there's no values for these given selections. It's also possible to select grayed out values and inverted selections using *Select Excluded* function. This type of interactive analysis is at the heart of Qlik and this allows you to drive new insights and make new discoveries.
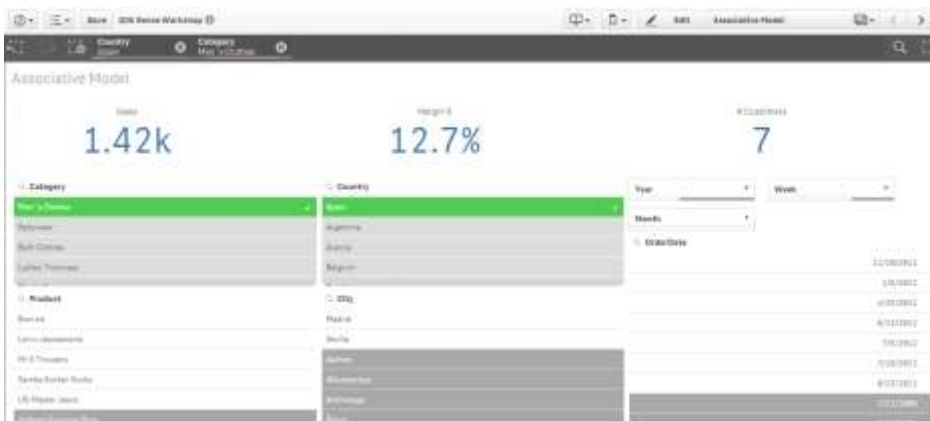
5. In the top left click on the '**Clear all Selections'** button to remove your selections ( ).

Interact With Your Data

6. Click the top right hand drop-down that currently says 'Associative Model'.

7. Click on the **Sales Dashboard** sheet

8. In the chart entitled '# **Customers by Country'**, click on the horizontal bar 'USA' to filter for that value. Notice how all of the other visuals on the sheet update.
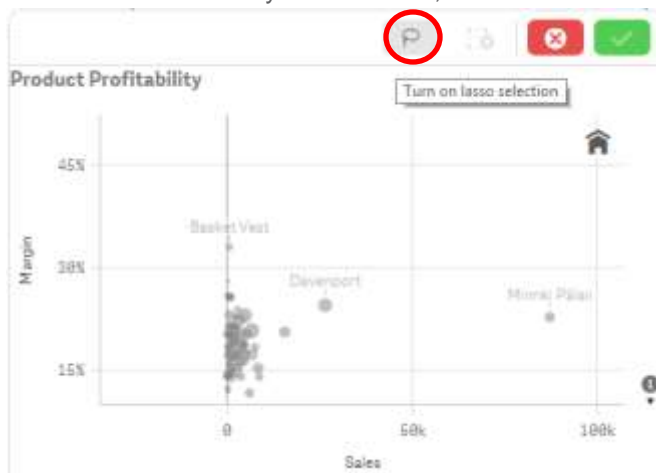

In addition to a single selection, multiple selections can be made by highlighting multiple values in both axes of the chart. It's also possible to select in a bar chart by dragging the cursor against the axis.
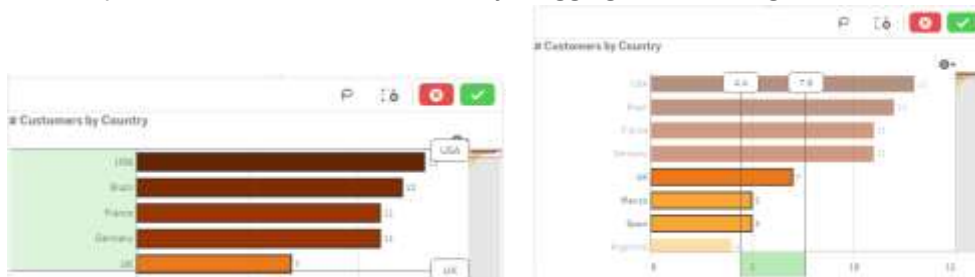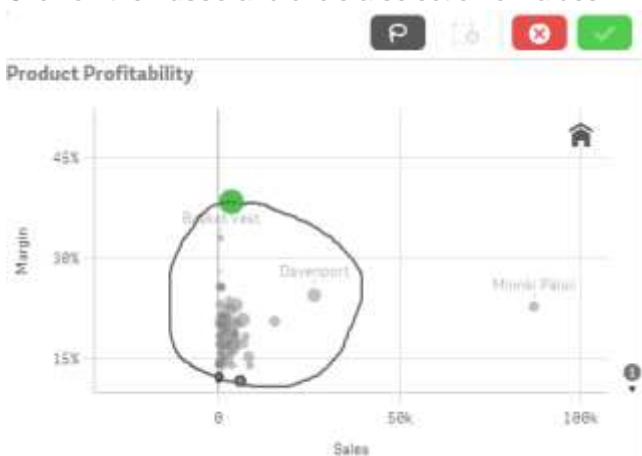
9. On Product Profitability **Scatter Plot**, click on the chart and notice the **lasso** button.
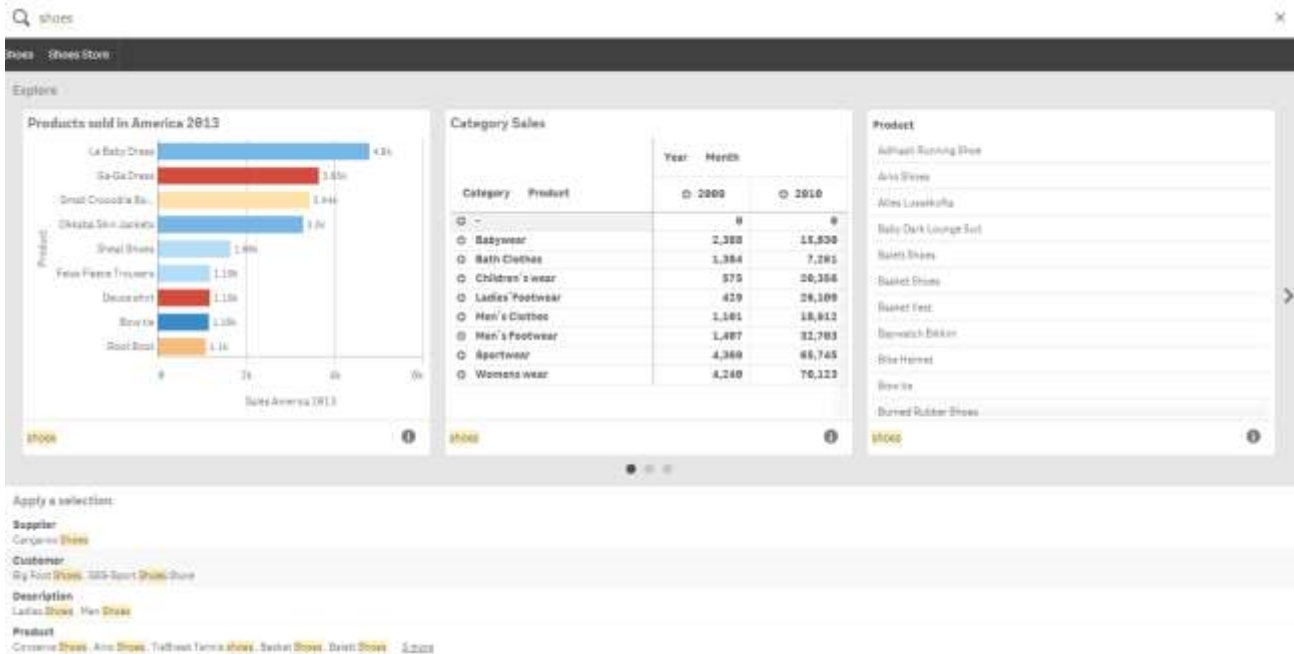

10. Click on the **Lasso** and circle a selection of values.

Qlik Q

Visual Search

1. In the top right corner, click on the **Search** icon. [Q icon]

2. Type in **Shoes**. Notice all data fields and charts that meet that requirement are presented.

3. Click one of these search results and notice the application update.

4. In the top right hand corner, click on the **global selector** icon. [icon]. The global selector allows you to filter on any value that appears in your data set. Check **Show fields** and click on a few values. Click back on the global selector icon to see these filters applied.
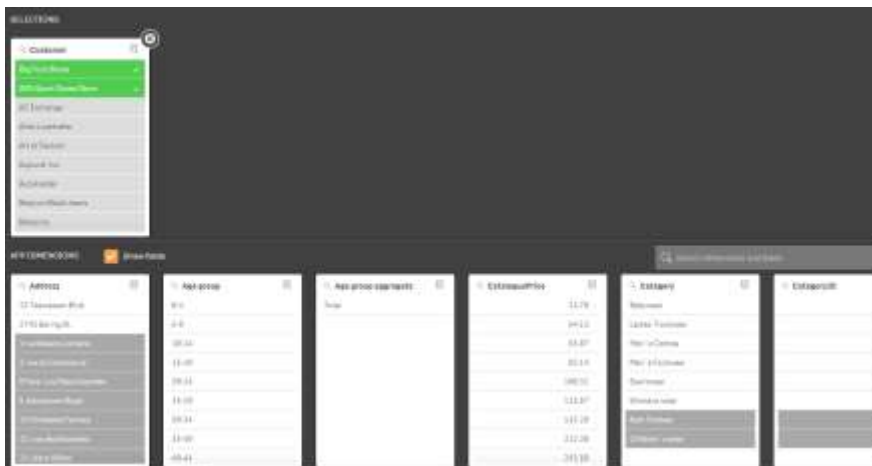
5. Clear all selections. [icon]

6. You can also do more complex searches, such as:

    a. In the top right corner, click on the **Search** icon. 🔍

    b. Type **babywear joan 2012** notice how Sense makes the suggestion to select Joan Callins and even the year.

    c. This is part of the *Visual Search* capabilities. Select the first suggestion in the list in the gray bar to see all babywear sold by **Joan Callins** in **2012**.

7. Clear all selections and do not save the changes.

![Qlik logo]

Part 2: Connect to Data and Build a Simple Application

EXERCISE 2

In this first section, you will build a simple Qlik Sense application based on multiple data sources and produce a few simple visuals to answer a few key questions. Throughout the exercise, you will aim to answer specific business questions in the data.

Create a New Qlik Sense Application

1. From the Start Menu, select Start > Programs > Qlik Sense Desktop.
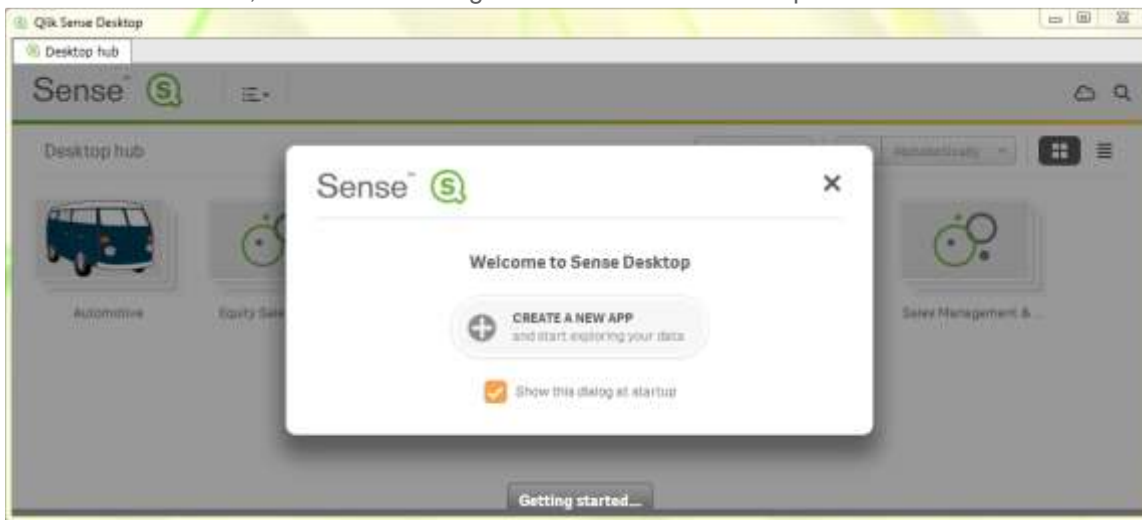
In the background, you will see the Qlik Sense Desktop Hub. This contains all of your Qlik Sense applications.

2. Click **Create a New App** and provide a name such as <u>**Sales Analysis.**</u>

3. Once the app has been created, click **Open app**.

Create a data-model and load data

Before you can create visuals, you will need to provide Qlik Sense with data. To quickly load data, you can use the **Data manager**. You add data by dragging-and-dropping the data files into your Qlik Sense Desktop Window.

Get started adding data to your app.

Add data
Add data from a file, a
database or Qlik DataMarket.

Data load editor
Load data from files or
databases, and perform data
transformation with the data
load script.
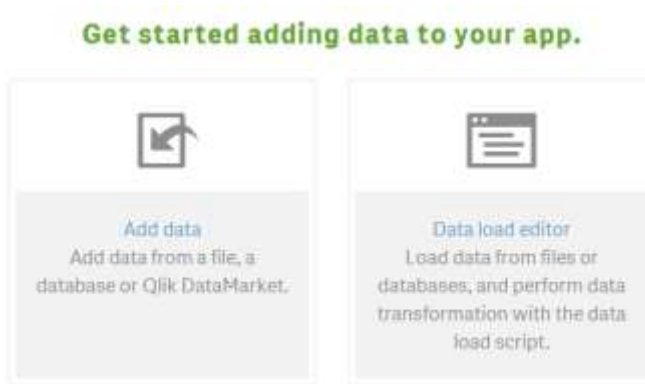
- The **Data manager** is where you add, associate and manage data from your data sources, or from **Qlik DataMarket**, so that you can use it in your app. You get an overview of all data tables in the app, whether you added those using **Add data**, or loaded them with the data load script. Each table is displayed with the table name, the number of data fields, and the name of the data source.
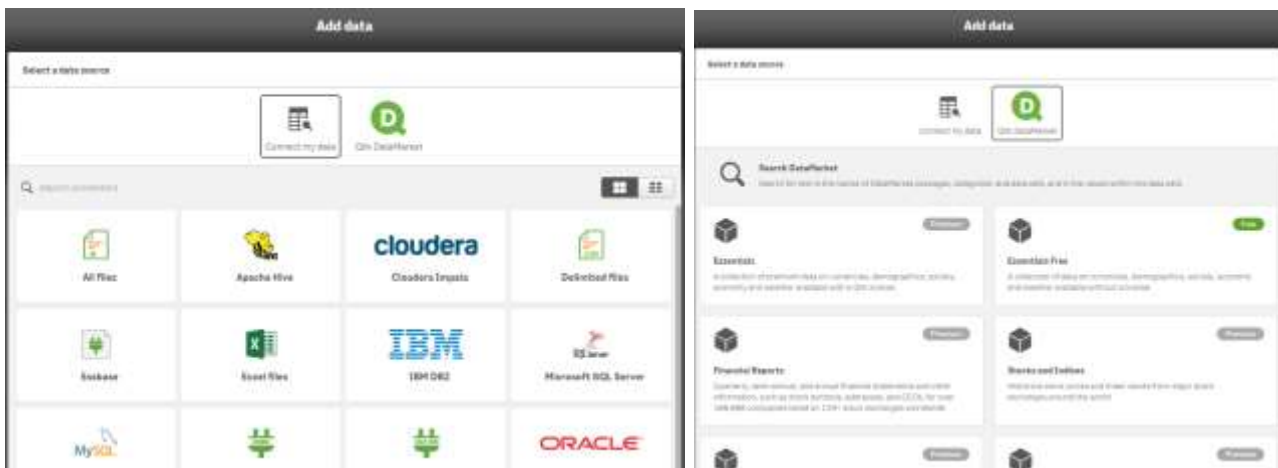

- The *Data load editor* gives users the ability to perform complex SQL and logic transformations at a script level. The user has complete control over all aspects of data loading and all the rich ETL functionality of the Qlik Sense engine.

Steps:

1. Locate the **Customers.xlsx** from the *Documents\Qlik\Sense\MyData* folder (see pg 6 for location).

2. **Drag-and-drop** the **Customers.xlsx** file directly on to Qlik Sense Desktop window as shown below.
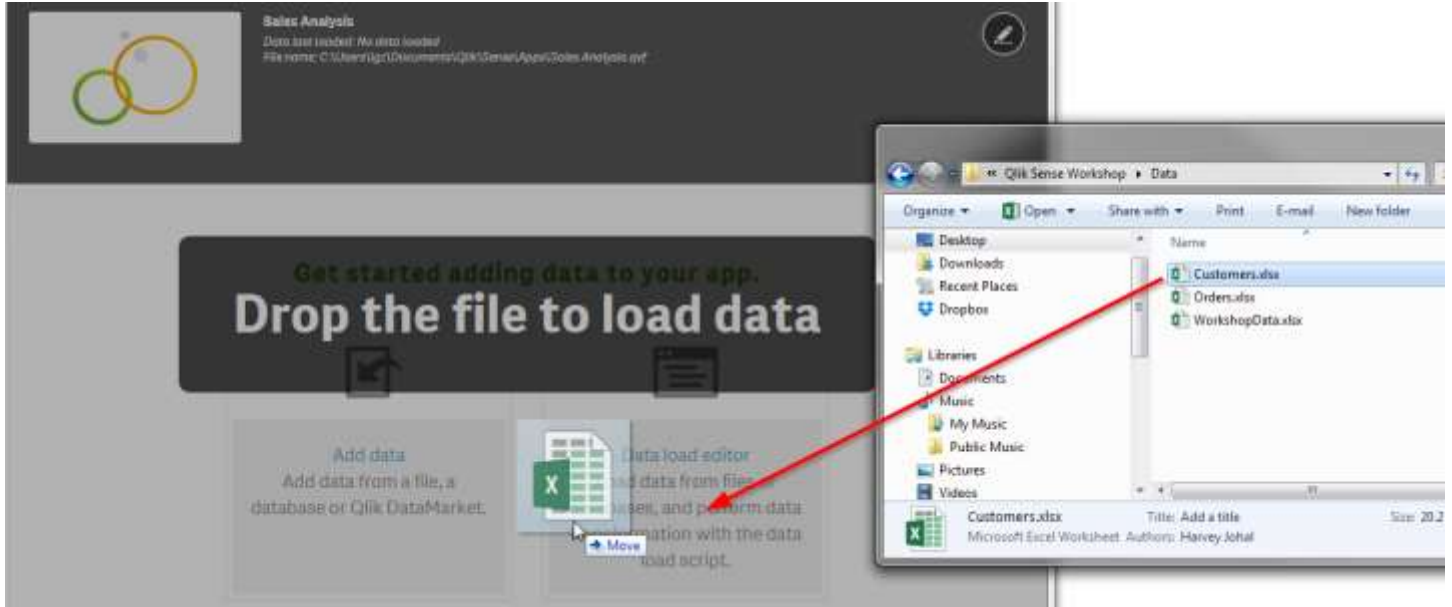

3. You will now see the '**Select data**' dialog. This dialog lets us select which fields to load, set a header size, select tables, and more.
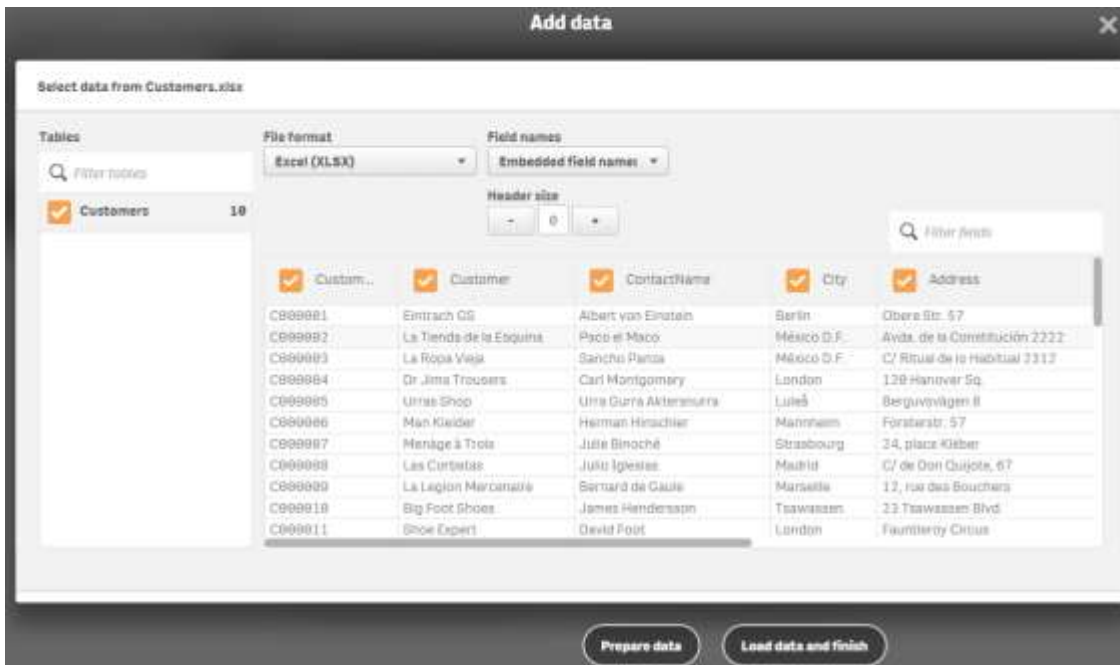

The data shown on this dialog is the data from the Excel worksheet 'Customers'. The 'Fields' are the columns from the spreadsheet. If we didn't want to load some of the fields we could just untick the boxes by the fields we don't want to load. For now, we'll load in the whole data file.

4. Click **Prepare data**.

5. Let's add the Orders data by dragging and dropping the **Orders.xlsx** file located under
   *Documents\Qlik\Sense\MyData*.
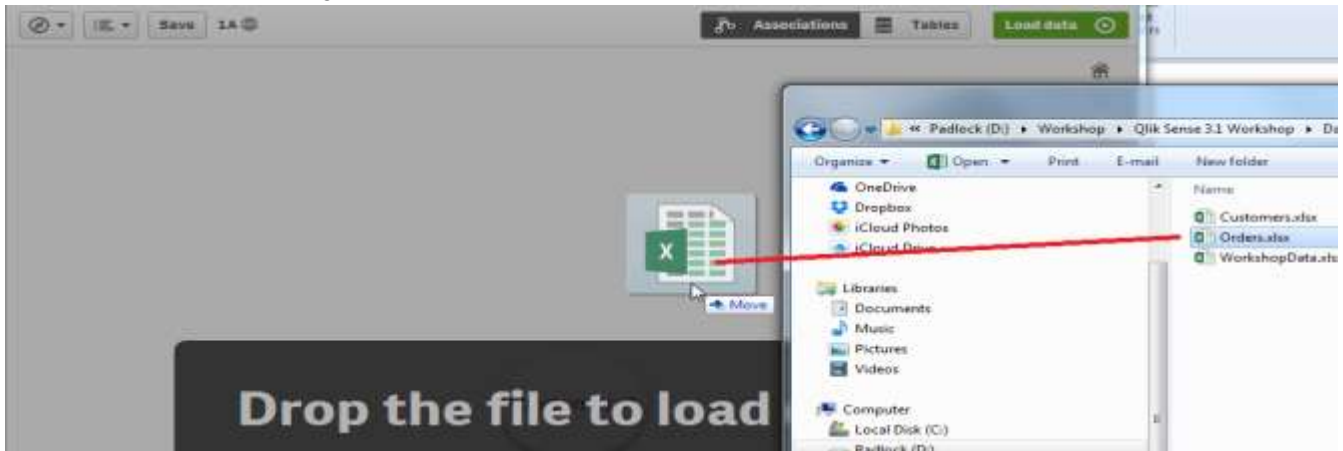
6. The '**Select data**' dialog appears with the Orders table. Click **Prepare data**.

7. Click on **Tables** button up in the right corner.
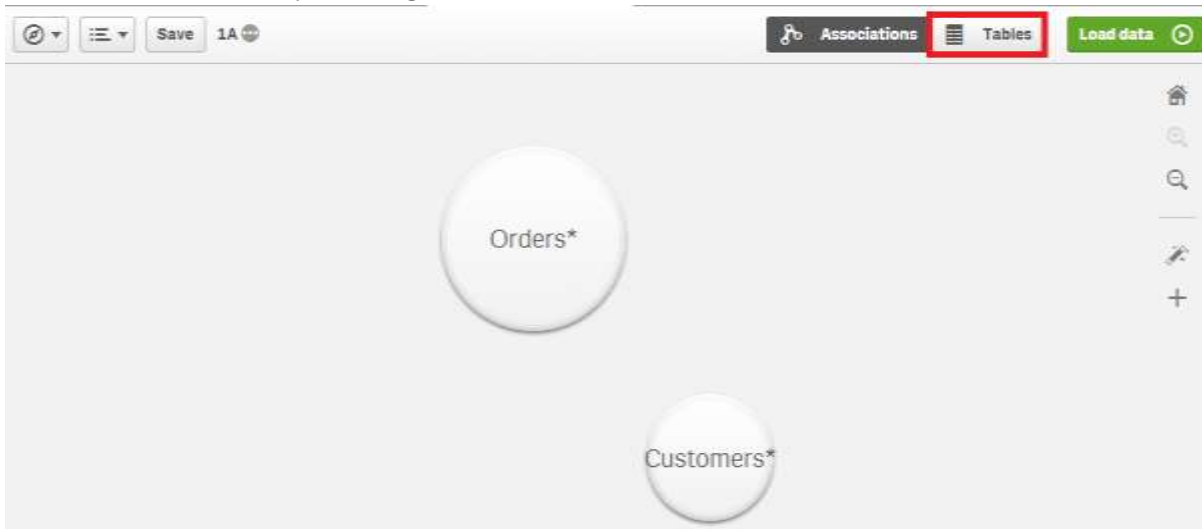
Now both tables are in status "***Pending add***" to be added to the app in the next reload. But before this is done you

can edit the tables. Select the **Orders** table and click on the **Edit** icon ✎ this will open edit mode for selected table.
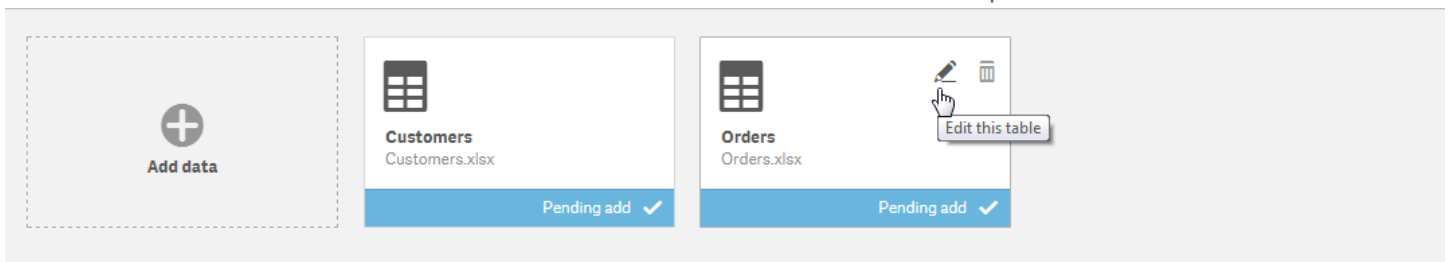
8. In this window you can rename the fields or specify the field types. Notice how Qlik Sense identifies the data types, such as Date, this will create related date fields (year, month, week..) automatically.
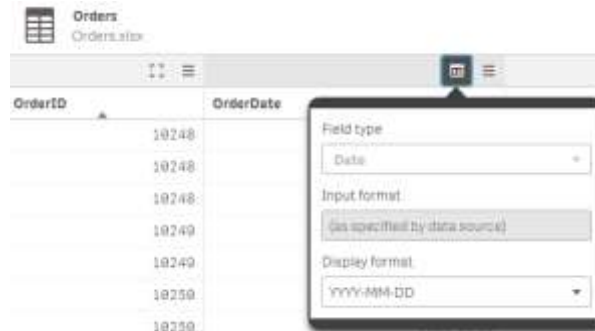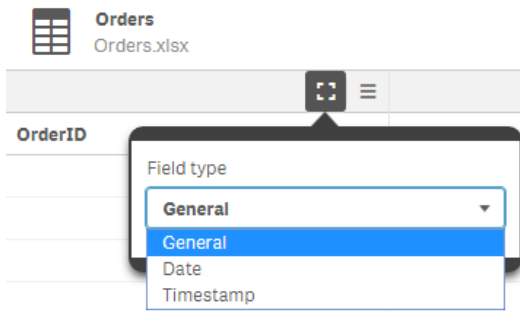
Create a calculated field

1. Now we will create a new calculated field, **Margin,** in this table. Click **Add field > Calculated field**.

2. A new panel on the right opens to create the calculated field.
   Type **Margin** in the Name input box, then create the expression as follows:
   - In the Fields list, select the **Sales** field.
   - In the Operators list, select the **–(subtract)** operator
   - In the Field list, select the **Costs** field.
   - The expression should be Sales-Costs
   - Click **Create**. The new calculated **Margin** field appears in the table.

3. Click on the X or center pen icon to close the table edit mode.

Analyze and create data associations

Now let's analyze and create relationships between the tables we have added. In Qlik terms this is called creating associations between tables.

1. Click the ![Associations] button on the upper right. This will open a data profiling wizard that will help to associate fields between different tables and data sources, this to create an associated data model. This is a prerequisite for later analytics across all the data sets.

2. In Associations we can see two bubbles one for each table, the bubble size represents the data volume.

3. Using the cursor **select and hold** on the *Orders* bubble. Notice that the Customers bubble turns green, indicating that a field match has been identified between Orders and Customers tables. Now drag the Orders bubble onto Customers and release cursor, the two tables will "stick" together.
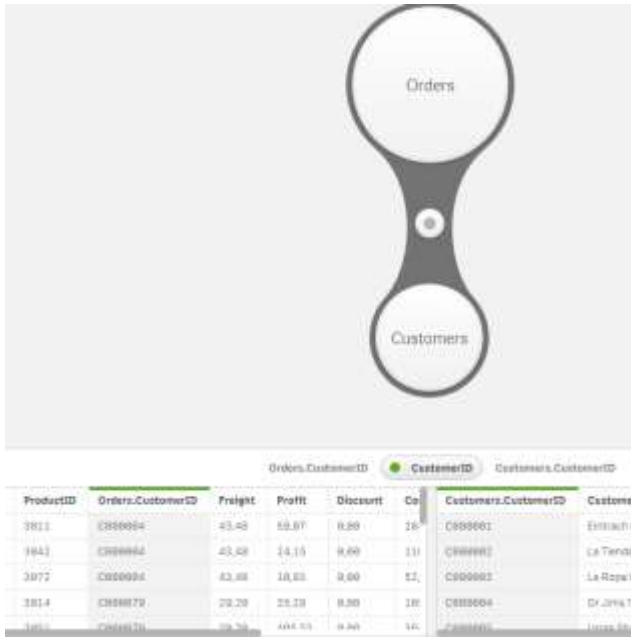
The identified and associated field between the tables is presented in green, in our case *CustomerID*.

4. Let's now load the two tables by clicking **Load data** ▶ in the top right corner.

5. The Load data dialog informs the load was successful. Click **Close**. You have just associated two tables and loaded them into a Qlik Sense application.

Load More Data from More Tables

6. Drag-and-drop the **WorkShopData.xlsx** file (stored under *Documents\Qlik\Sense\MyData)* directly on to Qlik Sense Desktop window to continue adding data.

7. On the left side of the screen, select **all of the worksheets** (*Products, Suppliers*) representing multiple tables.
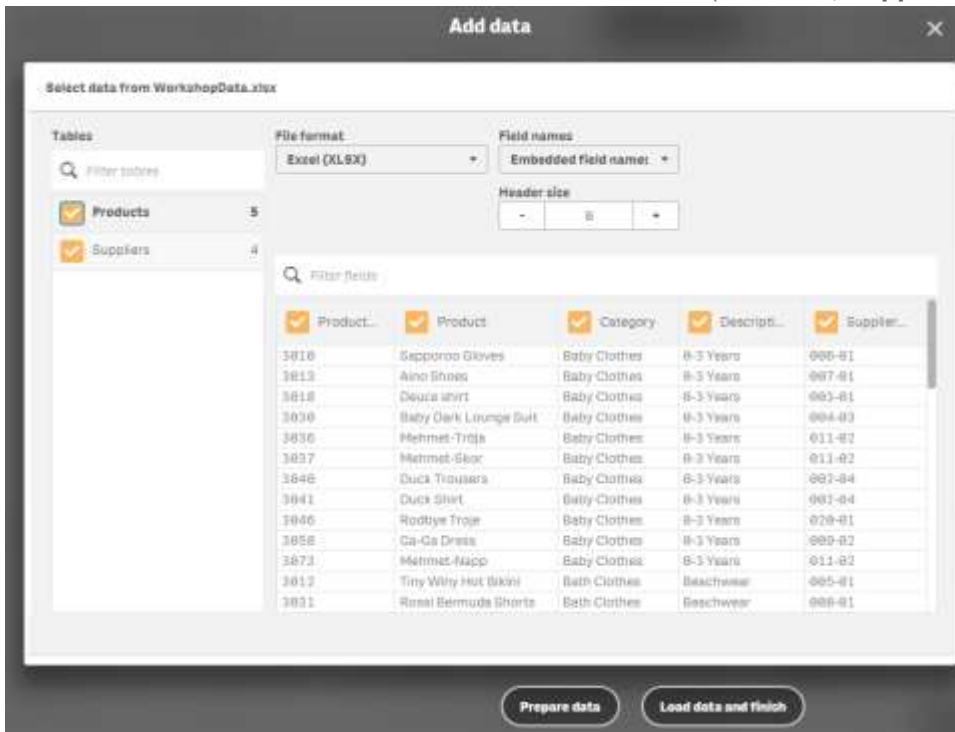
8. Click **Prepare data**. The two tables appears as new bubbles.

9. Select and hold *Products* table and drag onto recommended green (Orders) bubble, associated field is *ProductID*.
10. Do the same with *Suppliers*, notice that we have a green recommendation to *Products.* Green means a probable match against *Products* we will connect to this one.
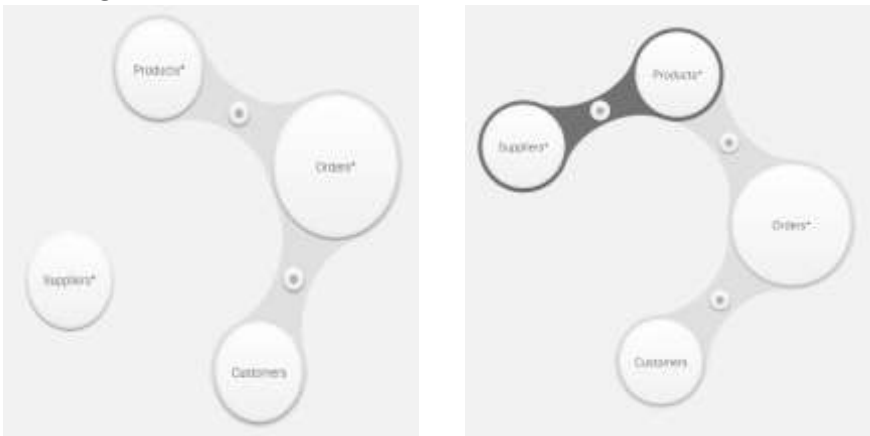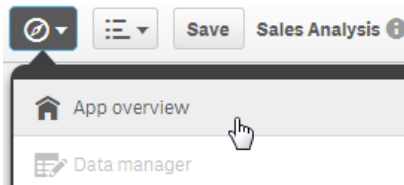

**11.** Load in data by pressing Load data icon and **Close**

EXERCISE 3

Question to Answer: Which Country Has the Most Customers?

Now that you have loaded the data, you want to start to explore it. The easiest place to start is to try to answer a specific question, such as identifying which countries have the most customers.
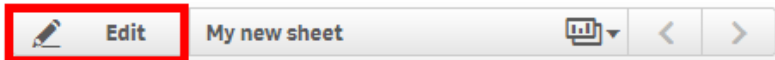
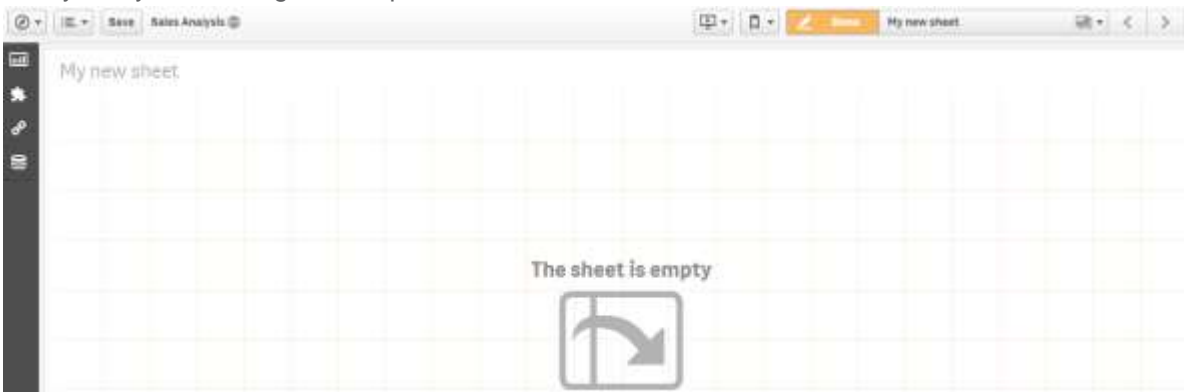1. Open the **App Overview** from the navigation menu.
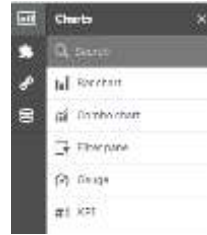

2. Click on **My new sheet**.
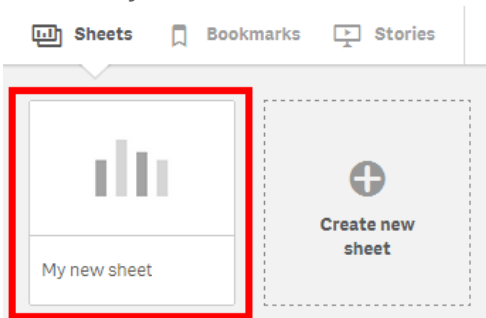
3. The sheet opens. Click the **Edit** button on the top right corner to activate the edit mode.

4. The Assets panel that appears on the left hand menu includes charts, custom objects, master library a reusable library that you can drag-and-drop onto the Canvas, and last loaded fields.

|	
Charts: A listing of different visuals that are supported	
Custom Objects: Contains Extensions as well as available widget libraries. Both extensions and widgets can be downloaded via branch.qlik.com	
Master Items: Reusable objects (Dimensions, Measures, and Visualizations) that you can reuse throughout the application. As we go through the workshop, you will see how this can save a lot of time and effort to avoid building the same or similar calculations and visuals each time. At this point, you have not created any Master items, so this menu will be blank.	
Fields: Containing all fields that have been loaded, theses can be dragged into the application	
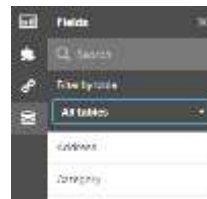
Create Your First Visual

1. In the **Objects** section on the left, select the **Charts** tab and drag-and-drop a **bar chart** onto the canvas. From here you can either click to add data elements, like dimensions and measures, or you can drag-and-drop them in.
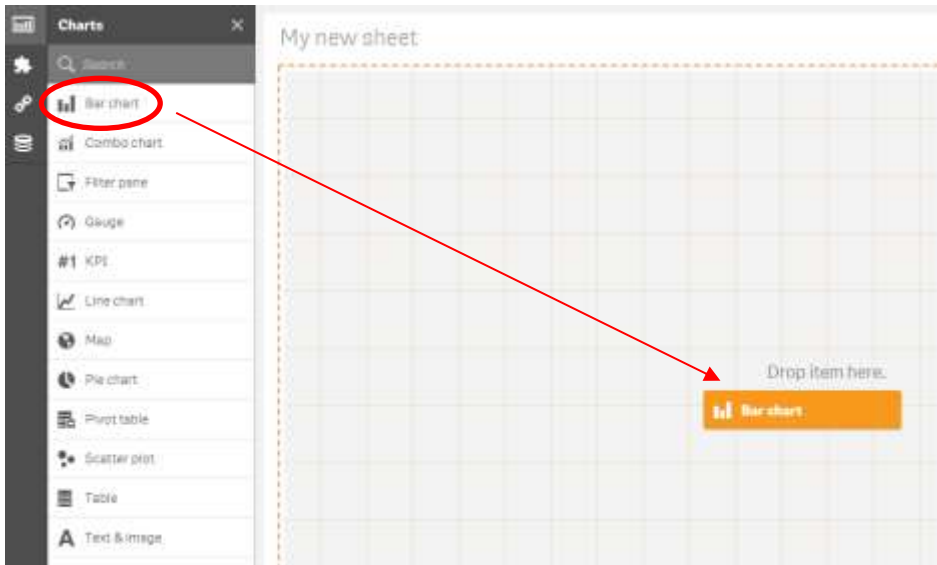
2. Click **Add Dimension** and select **CustomerCountry**.

3. Click **Add Measure**. In the search box, type in **Customer,** select **Customer** from the filtered list, and then select **Count(Customer)**

.

When a measure is added, you can define to use a set of common aggregations on how you want to calculate these fields. A more flexible expression editor is also available to create more complex or compound calculations. More on this later.

4. The following visual will now appear.
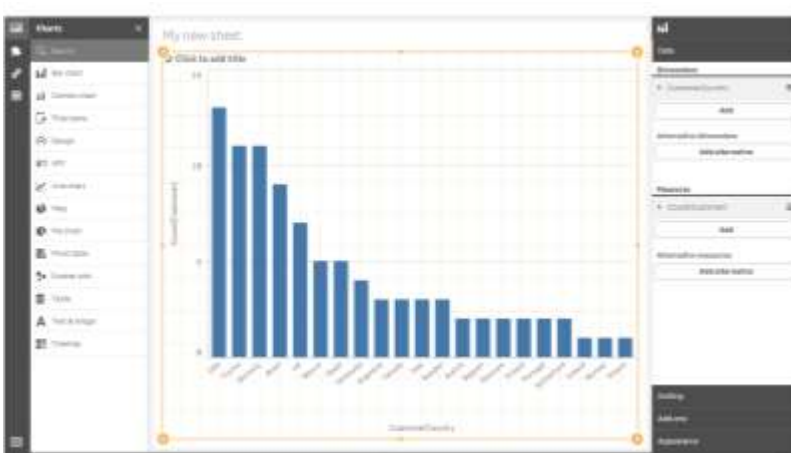
5. **Properties Pane**: On the right-hand side, a properties pane will be shown. The properties pane allows you to control the behavior, formatting, and appearance of the visual.
From the right-hand menu, expand *Count(Customer)* arrow ▶ under **Measures** and change the label from **Count([Customers])** to **Customers**. This allows you to put more usable names on the visual.


6. Click on **Appearance > Presentation** and change the orientation from Vertical to **Horizontal**. Based on the type of data being presented, this different orientation may allow you to better visualize the data.

7. To color the bars by measure, From the **Fields** section, drag-and-drop **Customer** onto the Bar chart as **Color by**, then choose **By measure**, and last choose **Count(Customer)**. Ensure the 'drop zone' encompasses the entire scatter plot or else Customer will be dropped next to the chart as a filter object. If this happens use the undo button at the bottom.
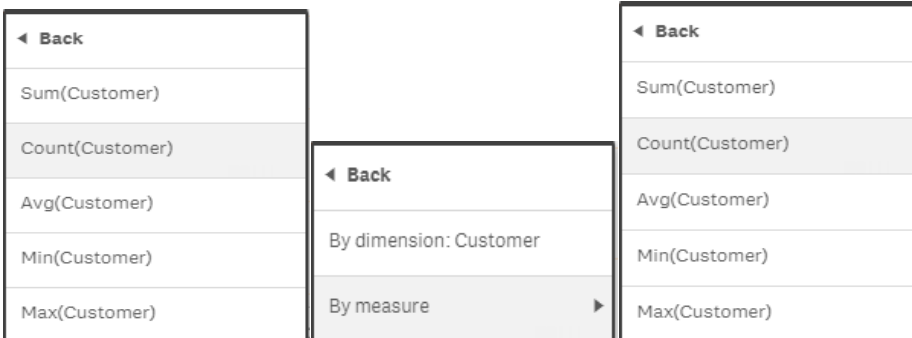
8. Put the proper labels on your visual to better depict what question you are looking to answer. To do this, click on the Title and provide a name: **Customers by Country**
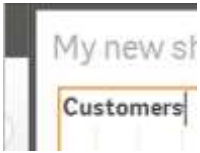

9. Your visual should now look as follows:

With just a few clicks, you were able to identify all of your customers by countries and you can see that the USA have most customers.

10. Click the **Save** button in the top left to save your work but leave the sheet open.

![Qlik logo]

Create alternative dimensions

Alternative dimensions are an easy way to flip between multiple dimensions and measures within the same graph.

1. Add the fields **City**, **Division** and **Category** (case sensitive) as Alternative dimensions under the right **Data > Alternative dimensions** menu
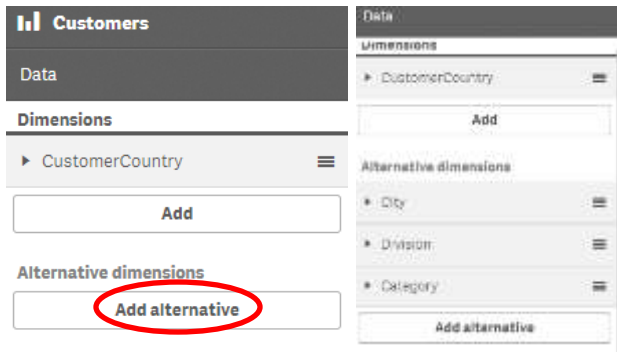
2. Exit the Edit mode by clicking Done.

3. A user can easily change dimension by clicking on the label. In Qlik Sense enterprise a user might not even have security access to change settings.
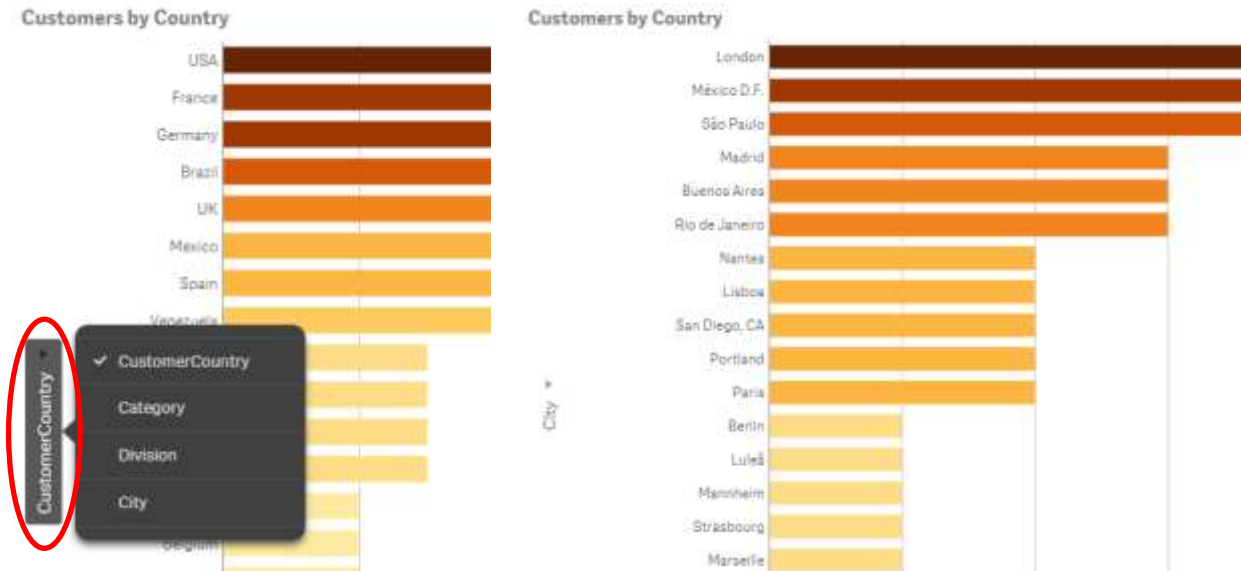
*In the example above we changed from CustomerCountry to City dimension*

Create a Scatter Plot

Question to Answer: Which Product Has the Highest Sales? Which Product is the Most Profitable?

To answer this specific question, you are going to want to visualize your data with two measures or calculated values.

1. From the left-hand pane, select a **Scatter plot** and drag it to the right part of the bar chart. You will see a drop zone that's split in the middle
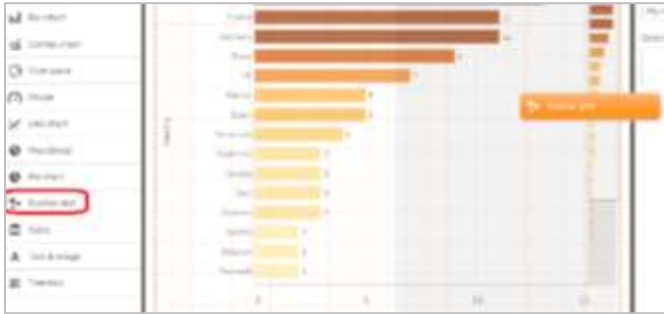

2. From the **Fields** section, drag-and-drop **Product** onto the Scatter Plot as a dimension. Ensure the 'drop zone' encompasses the entire scatter plot or else Product will be dropped next to the chart as a filter object. If this happens use the undo button at the bottom

3. From the **Fields** section, drag **Sales** onto the chart and select **Add as measure > Sum**. The chart object should look like this so far:

4. From the right-hand Properties pane under **Measure**, press **Add** and click on the *fx* button to open the full expression editor.
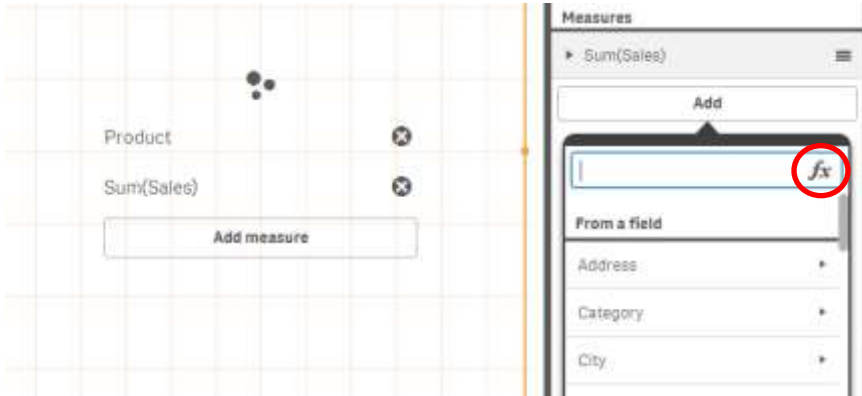

5. From the right hand select, do the following:
   - Select **Profit** under the Field dropdown and select **Sum** from Aggregation and click **Insert**.
   - Type in **/** to denote a division function
   - Select **Sales** under the Field dropdown and select **Sum** from Aggregation and click **Insert**.
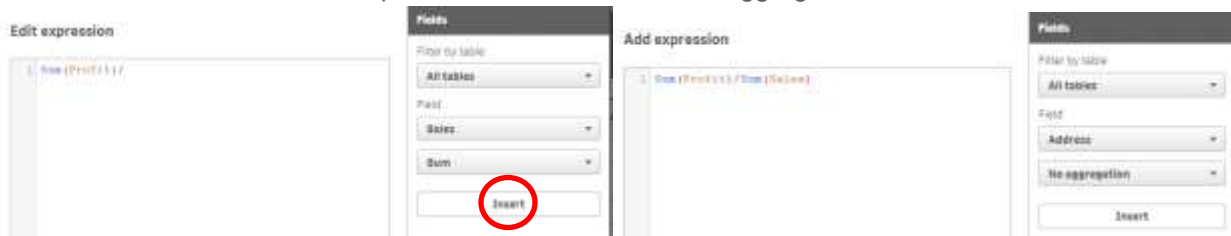
The expression should look as follows: *Sum(Profit)/Sum(Sales)*

6. Click **Apply.** The visual should now look as follows:

![Qlik logo]
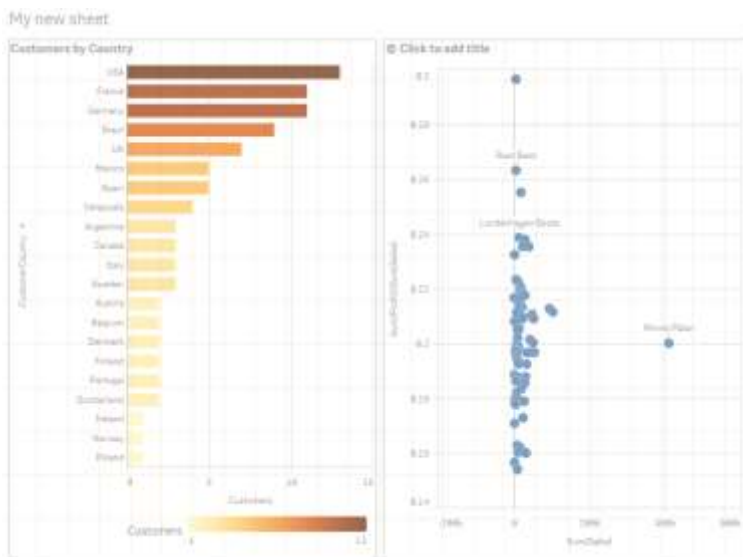
7. In the Properties pane, the labels for the measure by default show as expressions. Adjust the labels and other settings as follows:
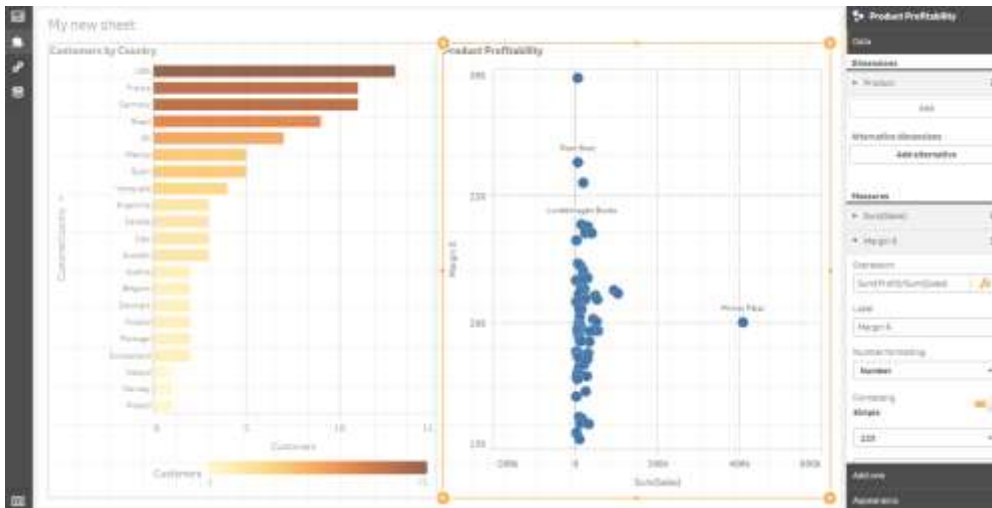
- Measures > Sum(Sales) > Label: **Sales**
- Measures > Sum(Profit)/Sum(Sales) > Label: **Margin %**
- Measures > Sum(Profit)/Sum(Sales) > Number formatting: **Number**
- Select Formatting Simple -> **12%**

- Give the chart a Title by clicking in top left corner: **Product Profitability**


8. Your visual should now look as follows:

To view an expanded screen you can toggle the hide/show panel ![icon] in the bottom right corner of the screen

9. Click **Done** to go into exploration mode. You can now very easily identify your highest selling product as well as your most profitable ones. **Interact with the Application**

10. **Save** the app.

11. Click on **USA** in the bar chart and see the interactivity.
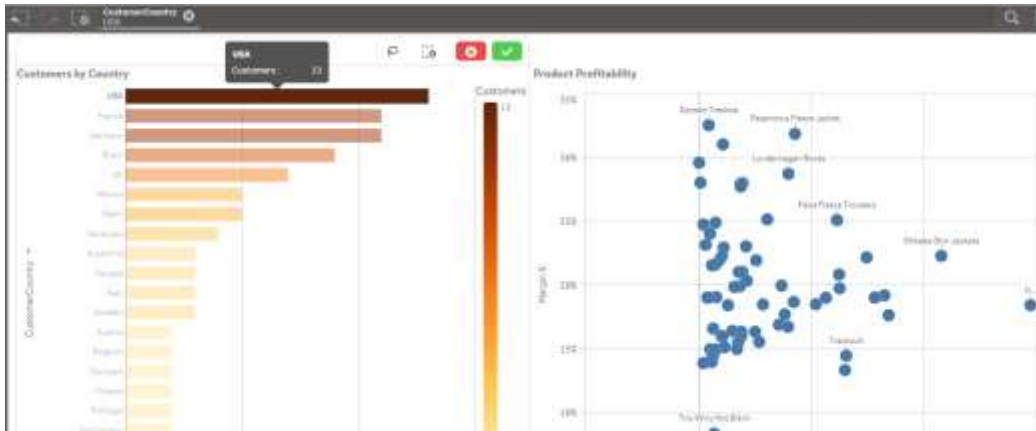
12. **Visual Search**. From the top right menu, click on the Search icon ![Q] and type in *berlin*. Available data as well as graphs associated with Berlin is in the search results. Now search for *Minnki*, notice that *Pälsi* pre-populated as it's a unique record.
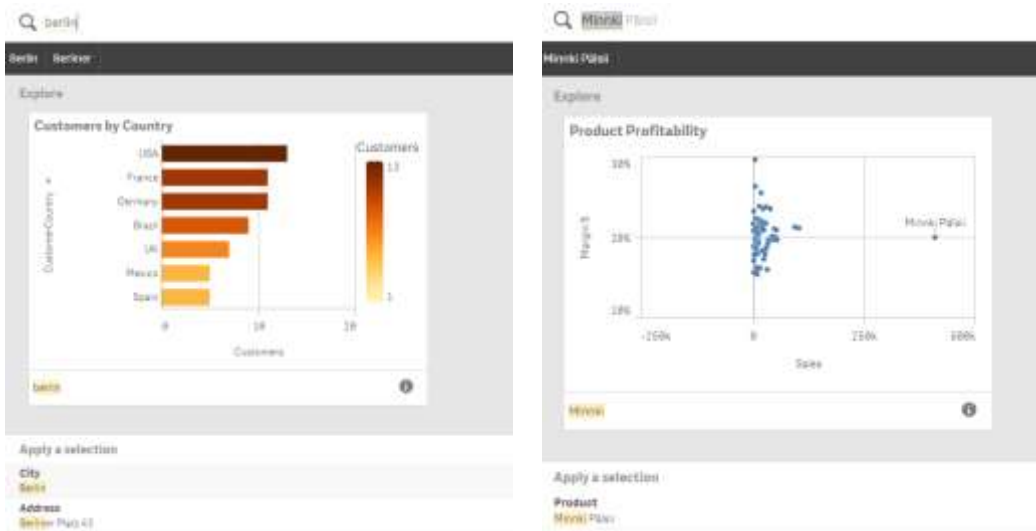
The associative and search characteristics of the Qlik platform are all still available. However, Qlik Sense provides a new **Visual Search** experience as well as a more user friendly interface. The same core Qlik engine is being leverage to provide rapid performance and an associative experience among this data.
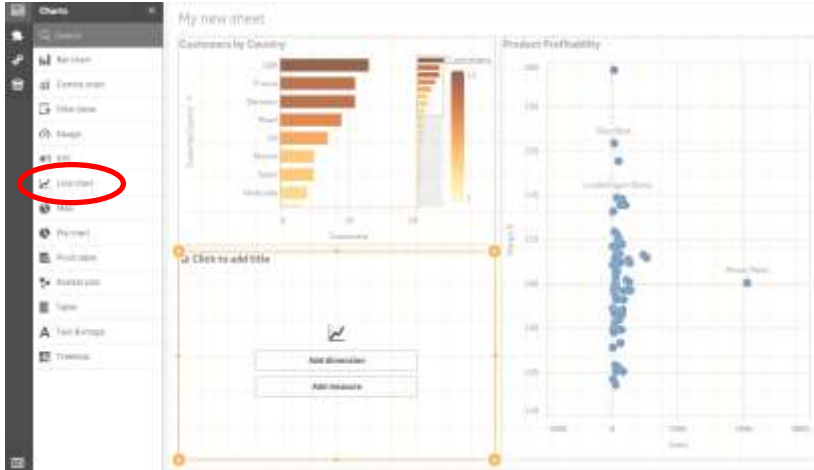
13. Click the **Clear all selections** button and then click the **Edit** button to return to edit mode.

EXERCISE 4

Create a Line Chart

Which Month Had the Highest Sales?

1. Open Charts in left hand pane. Drag a Line chart below the Bar Chart.

2. From **Fields tab**, drag-and-drop OrderDate [12] OrderDate , dimension on to the line chart. Notice that OrderDate has been identified by Qlik Sense as a date field.

3. From the **Fields**, drag-and-drop **Sales** and select **Add as Measures > Sum.**

4. Your visual should now look as follows.
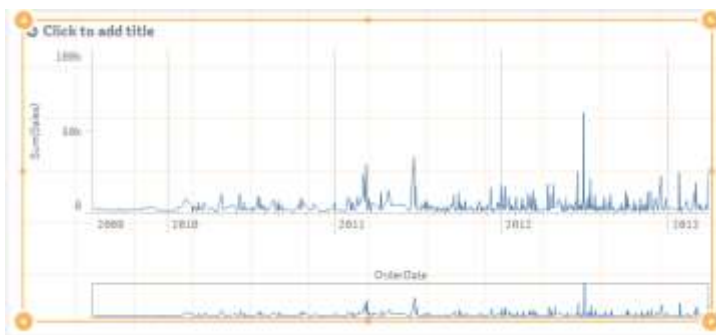
5. From the **Properties** pane, under **Data >Measures > Sales > Label**, rename Sum(Sales) to *Sales*.

6. Also add a space to **OrderDate** Label (*Order Date)*

7. Last provide the Title *Sales Trend*.

8. Click **Save** and exit edit mode by pressing **Done**.

9. Drill down to the charts highest peak narrowing the area in the below minichart
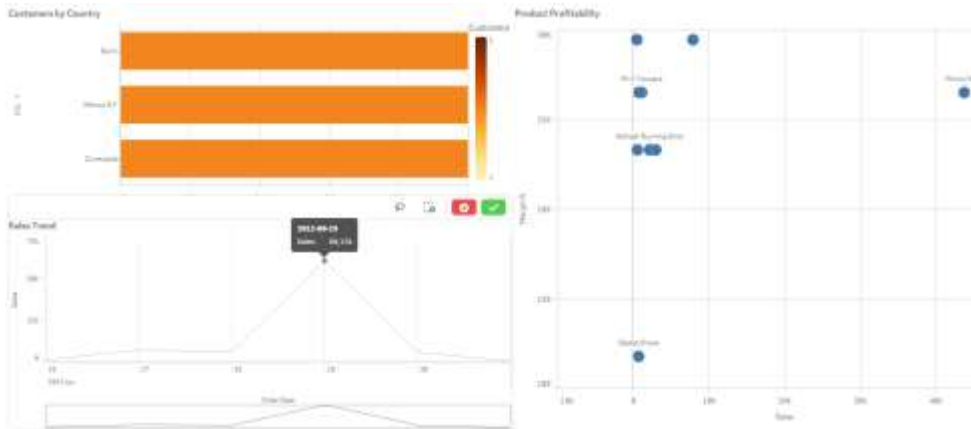

In the visual above, you can see that sales are highest in june 2012 and historically lower in the beginning and end of the Year.

10. Drill even deeper to the exact day when the peek occurred by selecting the peak area in the chart.
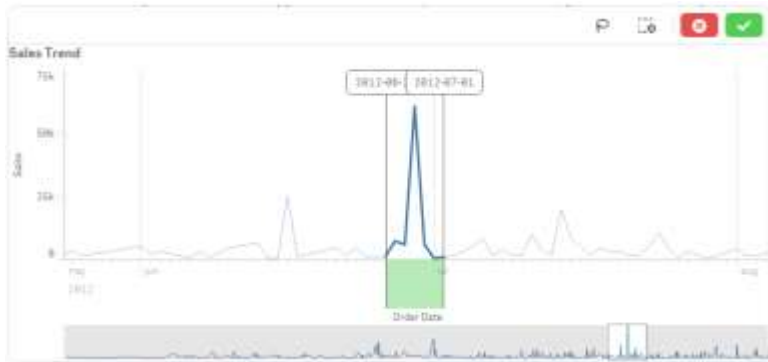

Now we can see that the peak occurred at 29th of june 2012, we can also see location and sold products.

![Qlik logo]

Create a Tree Map

Question to Answer: Which Product drives the most sales in each category?

1. From the Charts section, drag-and-drop a **TreeMap** below the scatter chart.

2. Drag-and-drop **Category** and **Product** onto the Treemap as dimensions. When dragging the fields over use the **Add Category** and **Add Product** options.

3. Drag-and-drop **Sales** and **add as a measure > Sum**

4. Giv it the name **Category Sales**

5. The Treemap should appear as follows:
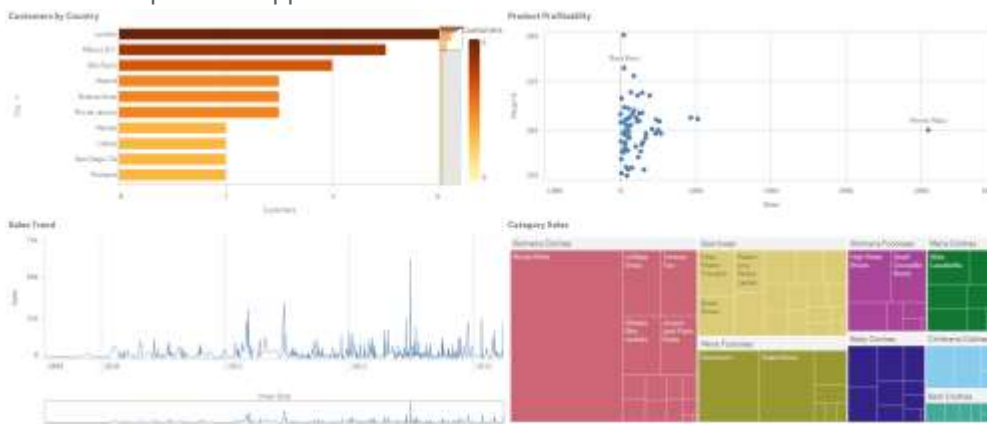
As seen in the treemap **Women's Wear** is the biggest seller and **Minnki Pälsii** is the product that is driving the sales in this category.

6. Use the full screen icon ⊙ to maximize the Treemap, to see the top Product for each Category in the top left corner of each Category block.

Add a Title to the Sheet

1. Click on My new sheet or any area on the canvas (but outside of a visual).
2. Add a title like **Customer Dashboard**.
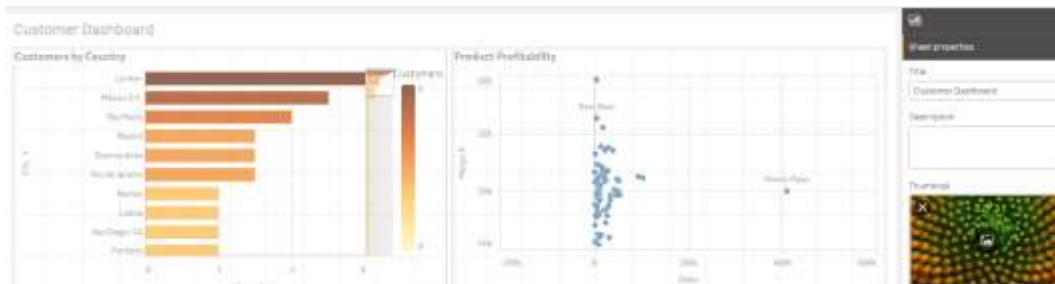
3. There is also the option to add a sheet thumbnail within the property panel as shown above.

4. Save your application

Part 3: Enhance Your Application

So far, you have built a simple, but very powerful application within Qlik Sense. In this third section, you will begin to use more advanced functionality to learn how to leverage other types of data sources, to further enhance an extend your application.

EXERCISE 5

Add KPIs

Question to Answer: What Are Our Top Line Sales, Costs, and Margins?

1. On the Customer Dashboard sheet, resize the objects to make some additional room at the top.

2. From the Charts, drag-and-drop a **#1 KPI** chart to the top of the sheet.

3. In the new **#1 KPI** chart, click **Add measure**

4. Type **Sales** to find the field easily. Select the **Sales** field and click on **Sum(Sales)**.

5. On the right panel, you can see the object properties, from there you can change the Label to **Sales**.

6. The Sales KPI displays in the sheet. You can **resize** the object as follows


Additional or custom number formatting is possible by either selecting a different option in the dropdown menu or by adjusting the format in the text pane below the format.

7. To create a KPI for current Month compared to last month do the following.
    a. From **Fields tab**, right click on Sales and Create calendar measures.
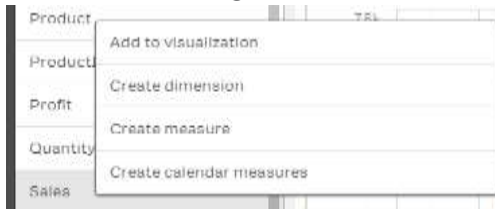
    b. Change Time Range to Monthly and unclick all but SUM Sales for current and last month. Save to master items and close.
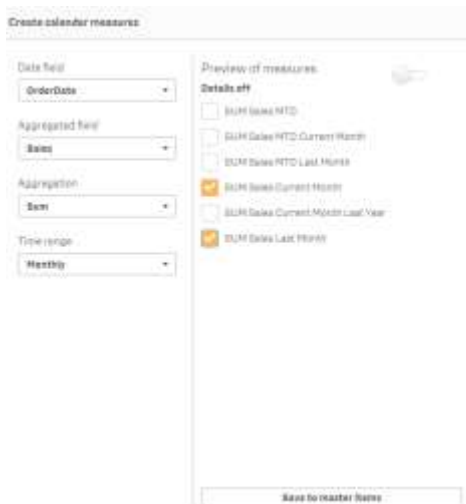
    c. Drag and drop the Master measure SUM Sales Current Month onto the dashboard, a KPI object will be created. Then drag and drop the Master measure SUM Sales Last Month onto the same KPI object, Add SUM Sales Last Month.

8. Add 2 more **KPI objects** to the right. Repeat Steps 2-4 for the following measures.
    - *Sum(Costs)* with Label=*Cost*
    - *Sum(Profit)/Sum(Sales)* with Label=*Margin %*
      Set number formatting to **Number** and **Formatting** to Simple (*12,34% in dropdown list*)

So that it looks as follows:

![Qlik logo]

BONUS Adding Images

In addition to text, images can be added in ways to add more polish to these dashboards.

9. Drag-and-drop a **Text & image** chart to the left of the Sales object.

10. In the **Properties** Pane, click on **Appearance > Background image**.

11. Turn **Use background image** to **On**

12. Click on the Image, choose **default** and choose the file **Sales.png**. Press Insert.

13. Set Sizing to **Always fit**.

14. Repeat **steps 8-11** for **Cost** and **Margin**. The view should look something as follows:

BONUS Conditional Colors

1. Select the third KPI, Margin %, and flip the **Conditional colors** switch in the properties panel under Appearance/Color.

2. Click **Add limit** and insert 0.19 as limit, then change the color of the segments by clicking on the 2 segments. You can also insert an icon per segment, in this case we use the up and down triangle icons.
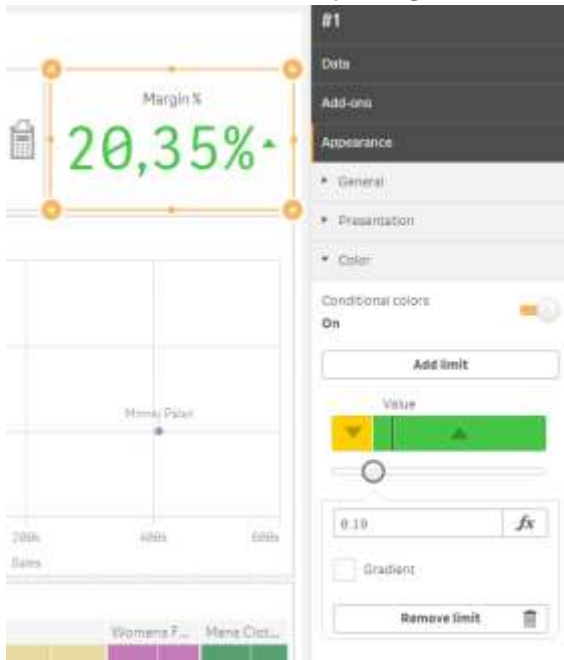
3. Click **Save**.

BONUS Changing App look and feel

There is the option of adding personal app icon and border color

1. Open App Overview
2. Click on the App Option Icon ⚙ avalible on the top right
3. Play around with border color, Image and alignment

4. Go back to the application sheet to see the modified border, if you have more than one tab open you mignt need to press F5.


BONUS 6, Add DataMarket

Prerequisite, these exercises requires a valid internet connection

## Add Qlik DataMarket data

Snapping in data as a service to additional data, we can see if there are geographical development indicators that contribute to the sales execution, even though we don't have that data internally. In this exercise you will load in online data from **Qlik DataMarket**.
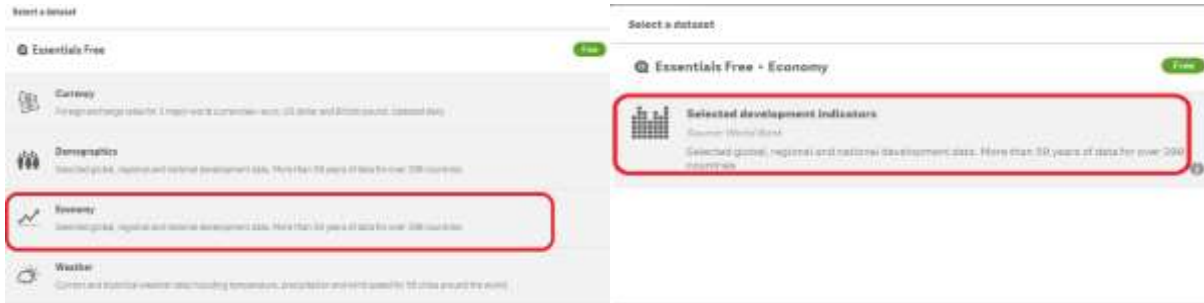
1. Click on the **Menu** icon (second button in the top left-corner).
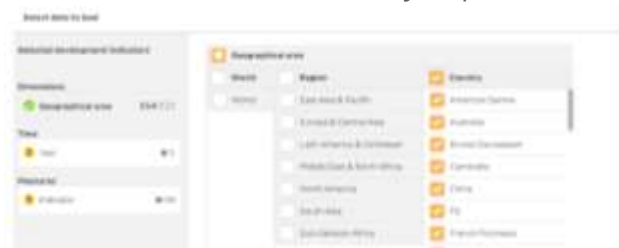
2. Click the **Add data** button.
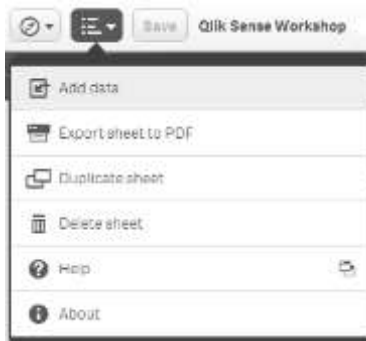
3. Choose **Qlik DataMarket** as the data source and the **Essentials Free** package.
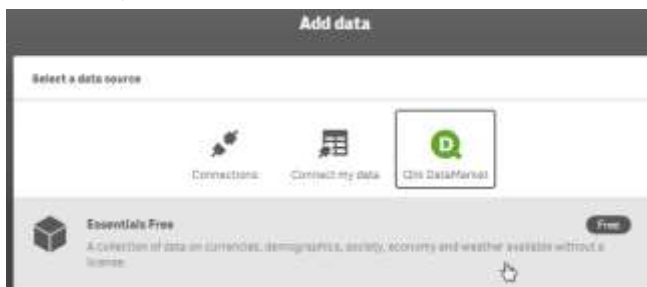
4. Lets add one of the development indicators to compare with the Sales:
Click on "*Selected development indicators*" under **"Economy"**.

a. Under Dimensions, select **Country**, to pick all the countries.
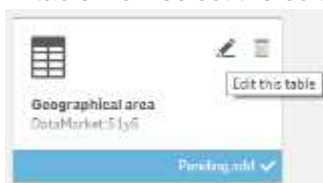

b. Under Time (Year), select **Most Recent.**

c. Under Measures (Indicator), select the **Inflation, consumer prices (annual %)**
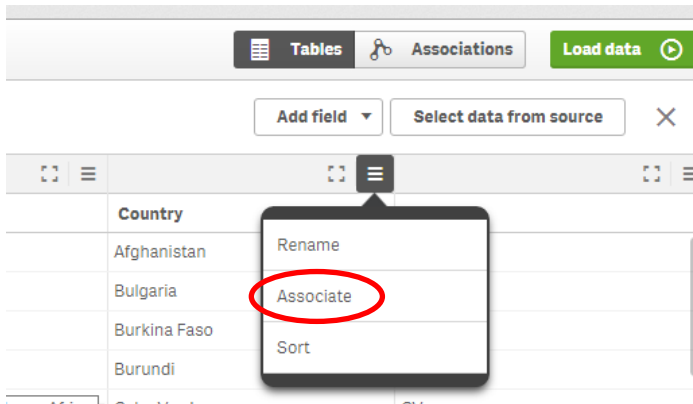

5. Click **Prepare data**.

6. In table view select the edit icon in the new Geographical area table.

7. You from here also associate fields against the datamodel. In the dropdown pane top right in **Country** field, select *Associate*.


8. This will acivate an association menu. The left side is allready filled in as we have chosen Geographical area and Country field. In the right side we need to select the table and field to associate with. Select **Customers** table and **CustomerCountry** field.
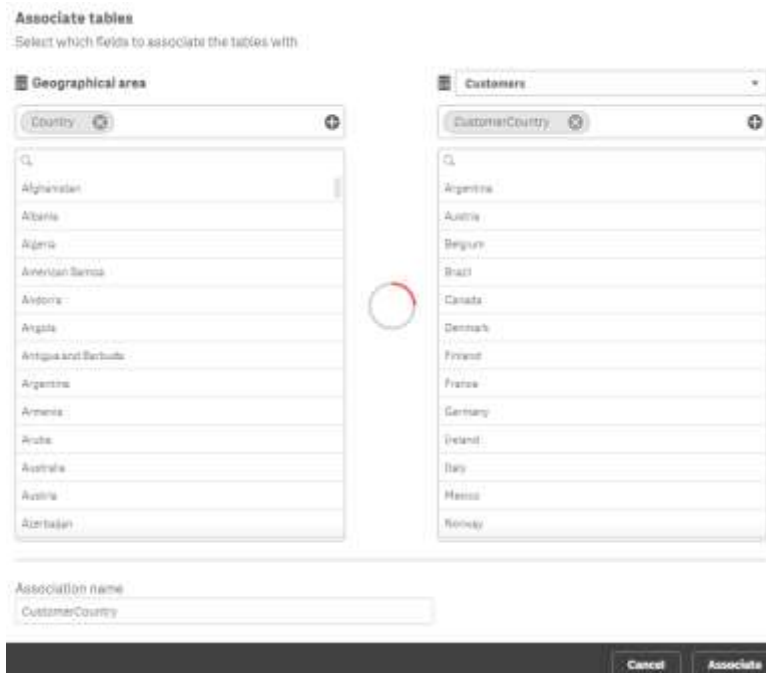
Notice that we have a quite low rating (red circle) as datamarket have much higher amount of countries compaired to the customer countries field.

9. Change the *Association name* to **CustomerCountry**, keeping the old field name is important to get concistency with the previous visualizations.

10. Press the *Associate* button

11. Click the Load Data button. The load might take longer now as we are downloading data online from data market.

12. Once the **Load data progress** dialog finishes loading the data click **Close.**

13. The data model should look something like this:
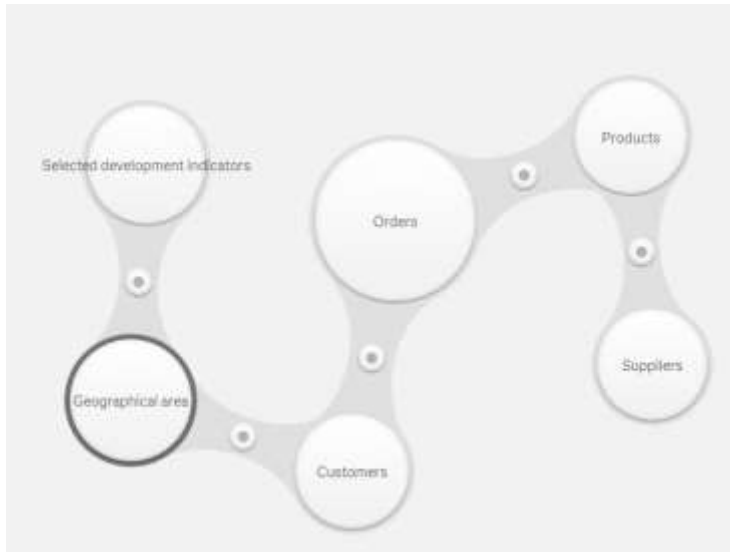
14. You have now associated **Selected development indicators** your data model.

BONUS 7 Maps

Prerequisite, these exercises requires a valid internet connection and are depended on bonus exercise 6

Add New Sheet
First we prepare by creating a new sheet and some selection boxes
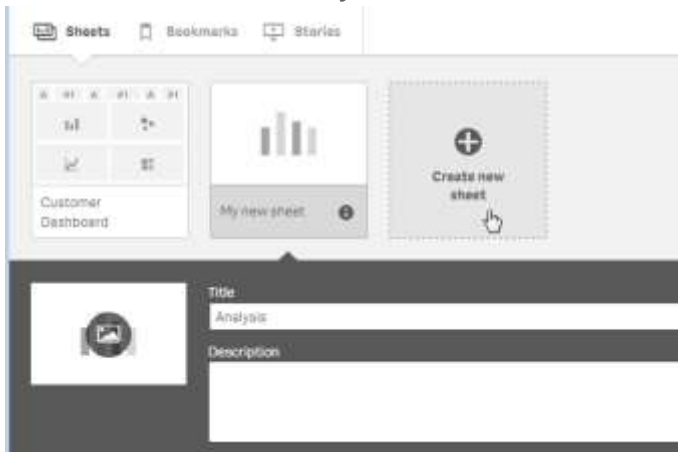
1. Click on the **Compass** button and select **App Overview**

2. Click **Create new sheet**

3. Provide a title, such as **Analysis**.

4. Click on the newly created sheet and click the **Edit** button.

Add Filters

Question to Answer: How to Further Refine These Results Based on Specific Values?

In addition to selecting items directly from a visual, filters can be added that will allow you to dynamically select values to filter the results on the application.

1. From the **Fields** section, drag-and-drop the following fields:
   - **Category**
   - **CustomerCountry** change title to *Country*
   - **Product**
   - **Year** (This is a field calculated by Qlik Sense based on the OrderDate)

2. Resize, rename and place them along the top, as shown in the screenshot below.

Add a Map

**Question to Answer: Where (Geographically) Are the Higher Clusters of Sales?**

Maps can be added to provide a different way of visualizing and interacting with the application.
**For the map to work, you will need to a valid internet connection**.

1. From the **Charts** section, drag-and-drop the **Map** visual on to the page.

2. On the map add dimension **City** and **Customer.City_GeoInfo(point)**.

3. From the **Fields**, select **Sales** and drag-and-drop it on the map. Select **Add as measure > Sum**.
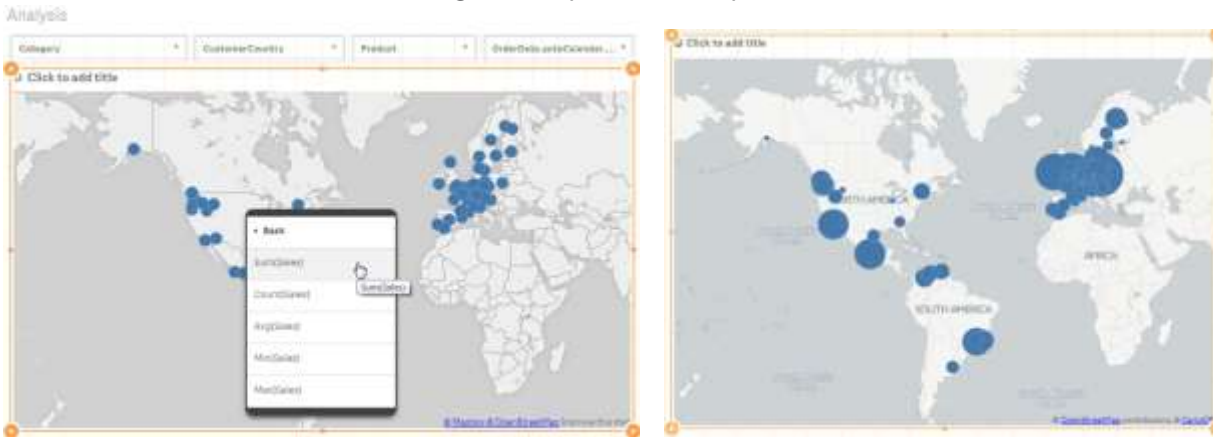
The data points will all be populated, and bubble size will be based on the sum of Sales. To add color based on measure, from **Fields** select **Sales** and drag-and-drop it on the map again, but this time choose Color by then By measure and choose Sum(Sales).
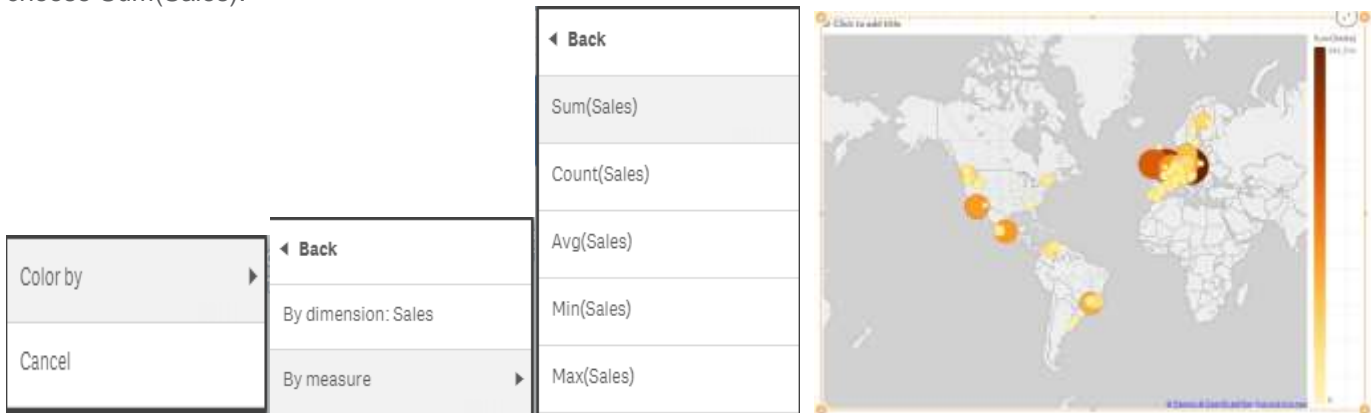
4. Change the title to **Customers Sales Map**.

5. In the properties pane under **Layers**
    - Adjust the **Bubble size** to change the sizes of the individual bubbles.
    - Also change **Label** to **Sales**
    - Uncheck **Include zero value**
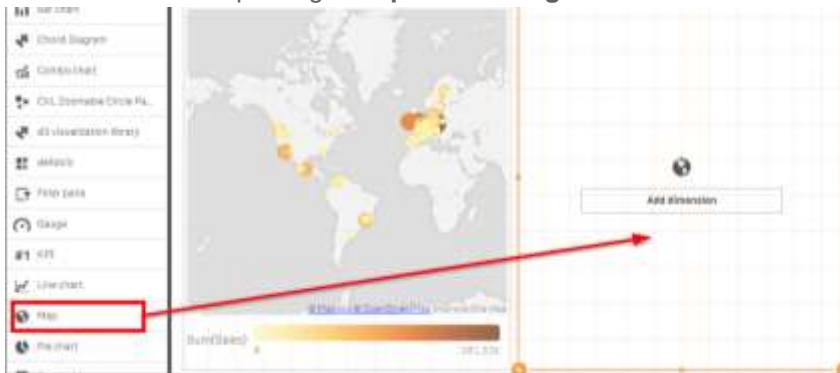
6. Click **Save**.

Add an area map

Question to Answer: Where (Geographically) is more inflaction (consumer prices), does it affect sales?

In this exercise we will use the online data from **Qlik DataMarket**.

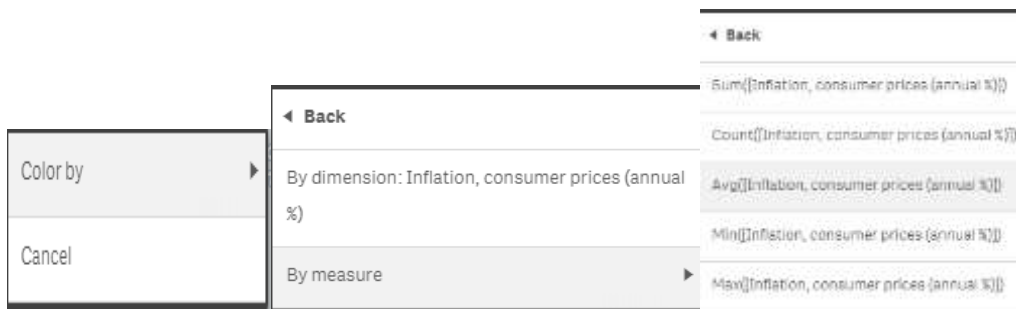1. Let's add a new map. Drag a **Map** onto the **Right** half of the screen.

2. Click Add dimension in the new map and select **City** and **Customer.Country.GeoInfo(area)**.

3. Under the fields tab, search for **Inflation**.
   Select the new field, and drag **Inflation, consumer prices (annual %)** field it onto the new map.

Then choose **Color by** and **By measure** and **Avg(Inflation, consumer prices (annual %)**

4. In the Data Appearance settings under Colors and legend change Show legend to **off**. Change also Data Background Show to **on**.

5. Change the title to **Inflation**.

6. You can see that Brazil has the highest annual inflation of consumer prices
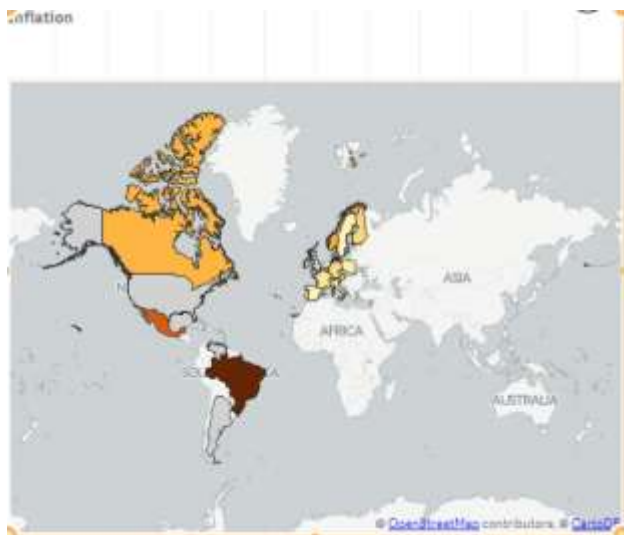
EXERCISE 8

Create Master Items for Reusability

In the first example, you dragged-and-dropped a dimension and a measure onto a visual to populate it. As your application gets more complex, you may have more complex dimensions and expressions that you may wish to reuse in many different places and only define its definition once – to save time and to more easily manage your application. The Master Items or Library allows you to centrally create reusable dimensions, measures, and visualizations to incorporate throughout the application.

1. Change to Edit mode and click on the **Master Items** section.

2. Under **Dimensions**, click **Create New.**
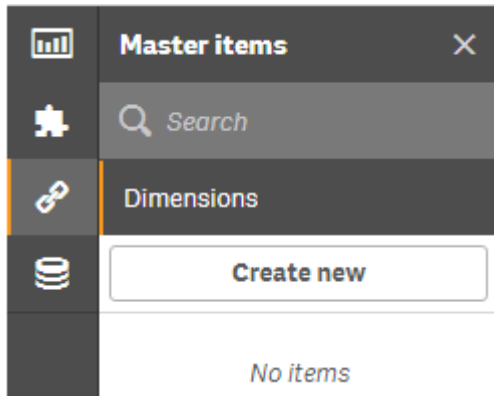
3. Click on **CustomerCountry** and change the name to **Country**
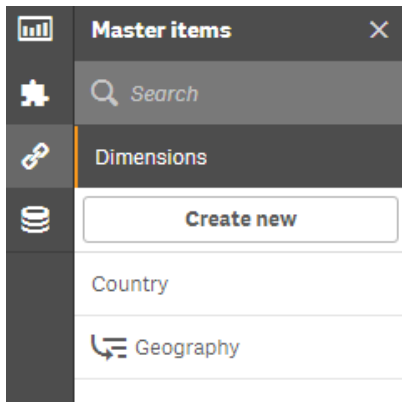4. Select **Add Dimension**.
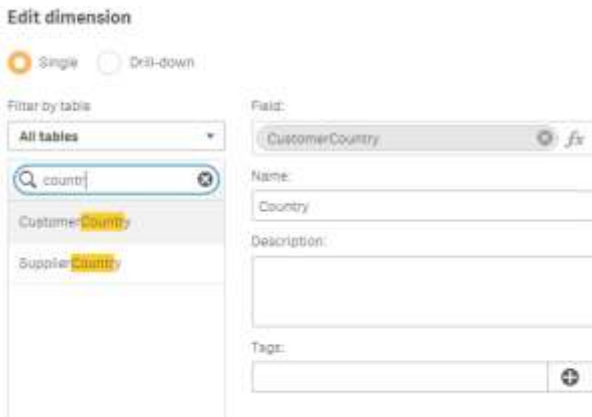
Add a Drill-down Group

This is an example of a simple Dimension that you can create for others to reuse in this application. However, there may be some more complex Dimensions that you may wish to add. A common use case is a Drill-down group, where a user can click and progressively go down to more levels of detail.

1. Within the same window, select **Drill-down**.

2. Click on **CustomerCountry**, **City**, and **Customer**.

3. Click on **Name** and type in **Geography**.

4. Click on **Add dimension**.

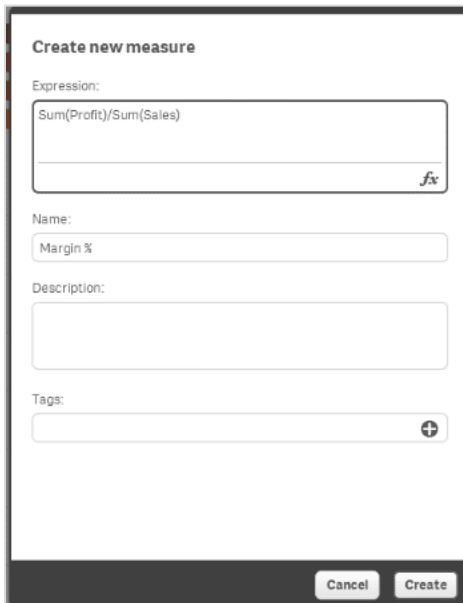Your new dimension is now available to use. Click **Done.**

Create New Measures

Similar to Dimensions, Measures can be created as well. This allows you to create a set of reusable calculations that can be used throughout the application. To create a new measure.

1. Click on **Measures** from the left hand menu.

2. Click **Create new**.

![Master items panel showing Search, Dimensions, Measures, and Create new button]
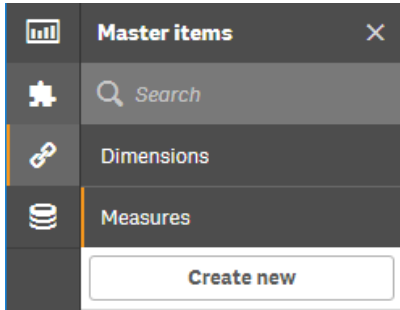
3. Under **Expression**, type in: ***Sum(Profit)/Sum(Sales)***

4. Provide a Name: **Margin %**
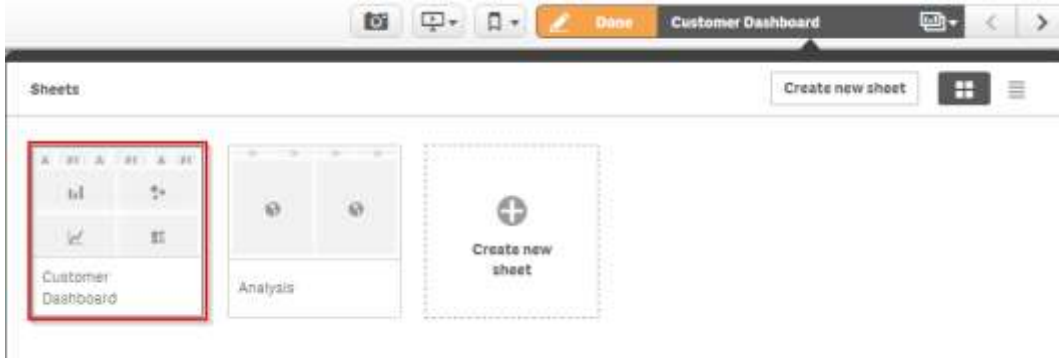
5. Click **Create**.

![Create new measure dialog showing Expression field with Sum(Profit)/Sum(Sales), Name field with Margin %, Description field, Tags field, and Cancel/Create buttons]

6. Your new measure will appear in your library.

Using The Master Items on Visuals

These new master items (dimensions and measures) can now be added to your existing visuals. As an example:
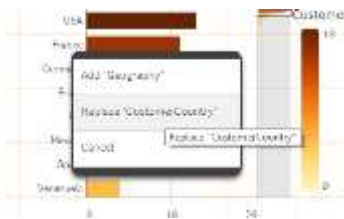
1. Switch to the **Customer Dashboard** sheet

2. Drag-and-drop your master drill-down dimension, **Geography,** over top of the **Customers by Country** visual.
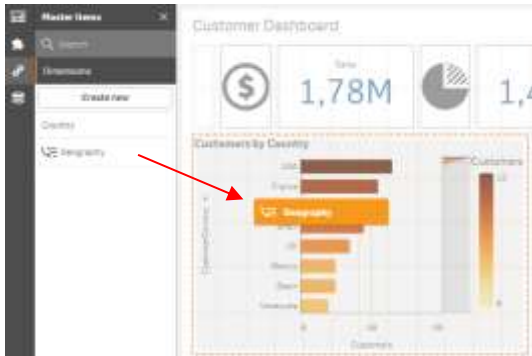
3. Select '**Replace CustomerCountry**'

4. Click **Done**.

5. Click on a **USA** from the visual and notice the drill down.

EXERCISE 9

Create a Story

Now that you've built your first application using Qlik Sense, a very common use case is to share this information with others. One approach is to distribute this application for others to consume this information, but a more effective form of collaboration is to use the information with "narrative" to tell a story with your information and to guide your story in a specific direction. To do this:

1. From the **Stories** icon, select "**Create New Story**" and enter a name for the story such as: **My new story**
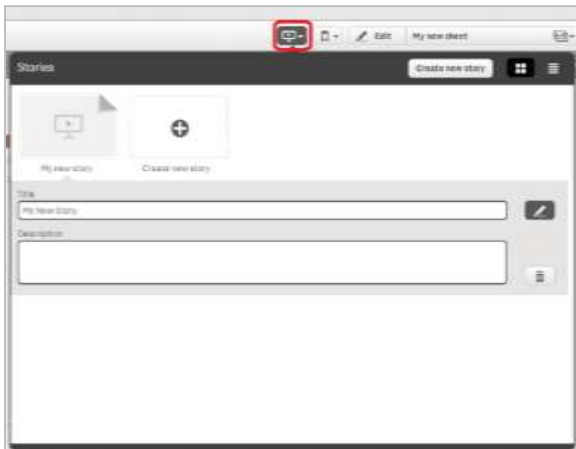
2. Return to the application through the top right menu.
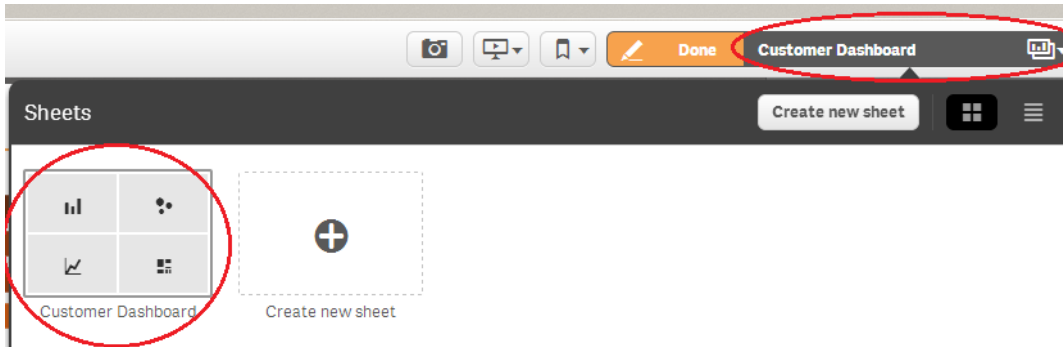
3. Within the application, you can take a "snapshot". A snapshot becomes a view of this visual which can then be used within your story. These snapshots can include different filters and selections for example, the first snapshot could show the summary visual, while the second one can be a drill down for a specific country.

4. Hoover over **Customers by Country** and select the camera Icon to take a "**snapshot**" annotate the snapshot with the text "Customers by Country full data set". Make sure you are not in Edit-mode.
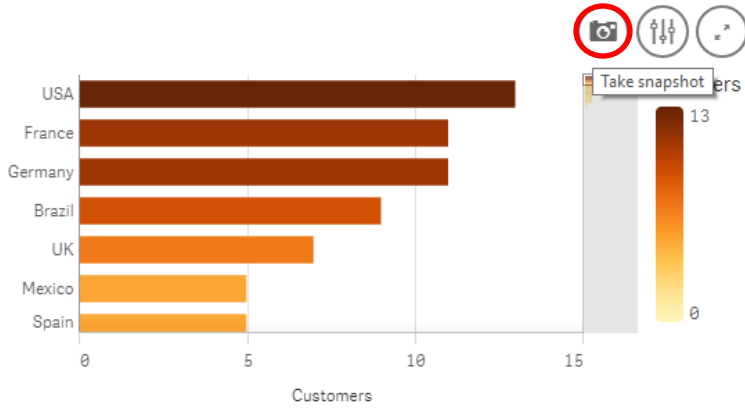
5. If you need to change the text or just forgot to put in the text. Right click on the object and choose Open snapshot library. Here you can edit the snapshot (change text or delete).
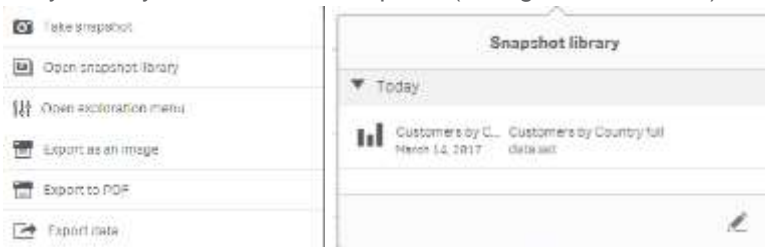
6. Click on **USA** to filter.

7. On the **Scatter Plot** take another **Snapshot** and add the annotation "Product Profitability USA".

8. Open the Story by clicking on the Story icon and then on **My new story**. This will launch the Story Editor.
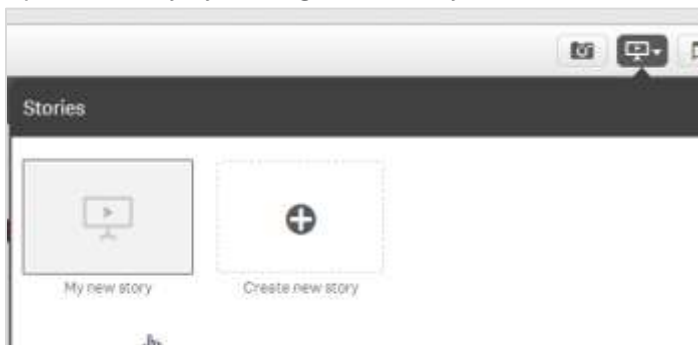
9. Click on the Snapshot library icon in the top right
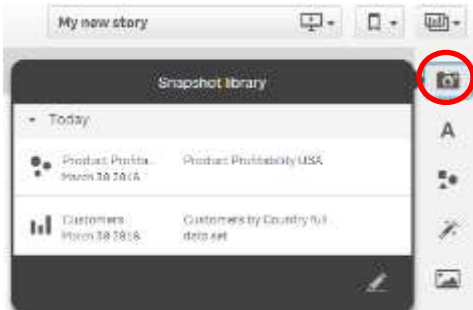
From the **Snapshot library**, **drag-and-drop** the two snapshots onto the canvas and place them as follows:

10. Click the **Effects** icon,
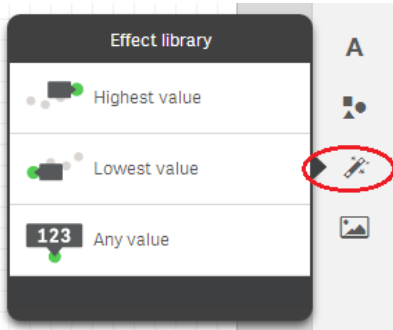
11. And drag the **Highest Value** from the **Effect Library** onto the Bar Chart. It will auto-highlight **USA** as follows:
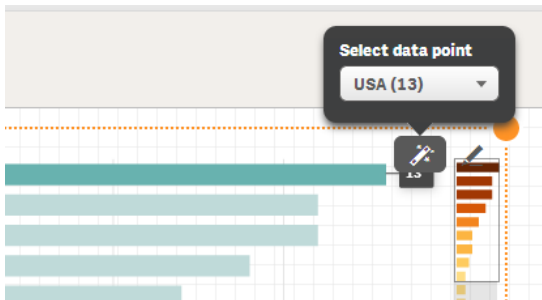
The effects icon allows you to highlight specific pieces of information to easily draw the user's attention to the story that you're looking to convey.

12. On any chart select the edit button to change look and feel of the selected object.
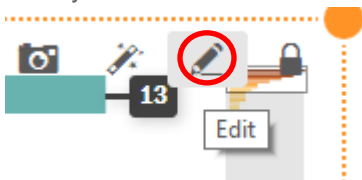
13. Use the **text** button to drag paragraphs or titles to the story as well as the **shapes** button to drag shapes to the story. Create a slide that looks like the image below.
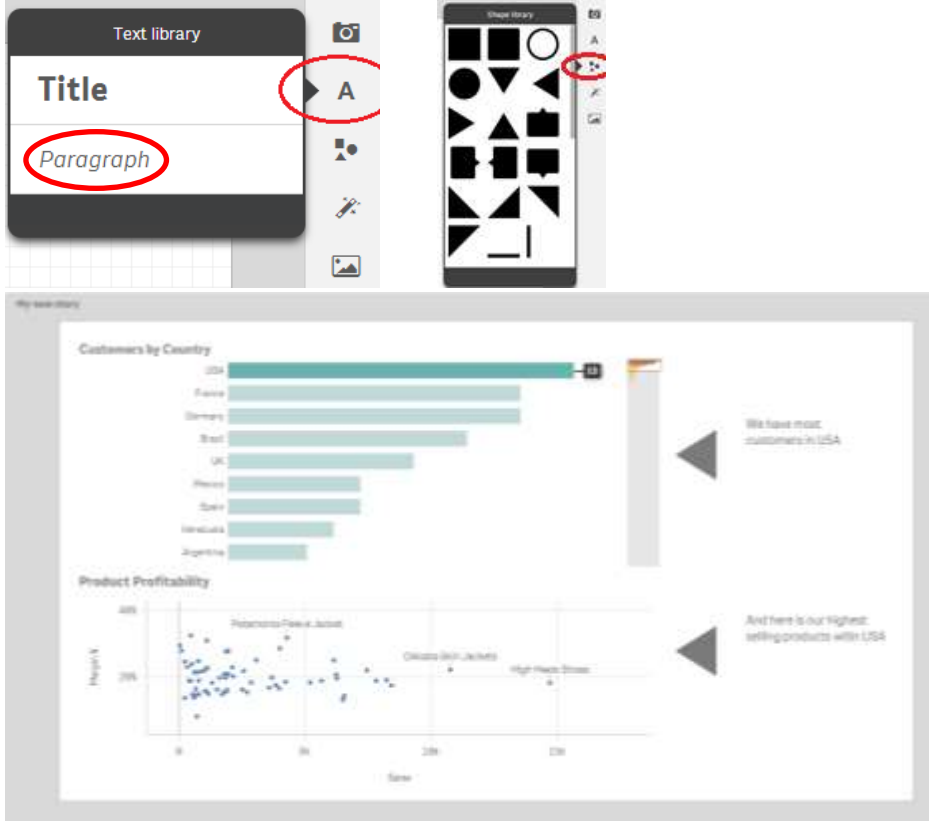
14. In addition to the static views mentioned above, you can embed an entire sheet within the story to provide supporting information as well as an additional level of interactivity.

   Use the + button in the bottom left to add a new Sheet and select **Sheet-left aligned**. Select your **Customer Dashboard** to embed within the story.
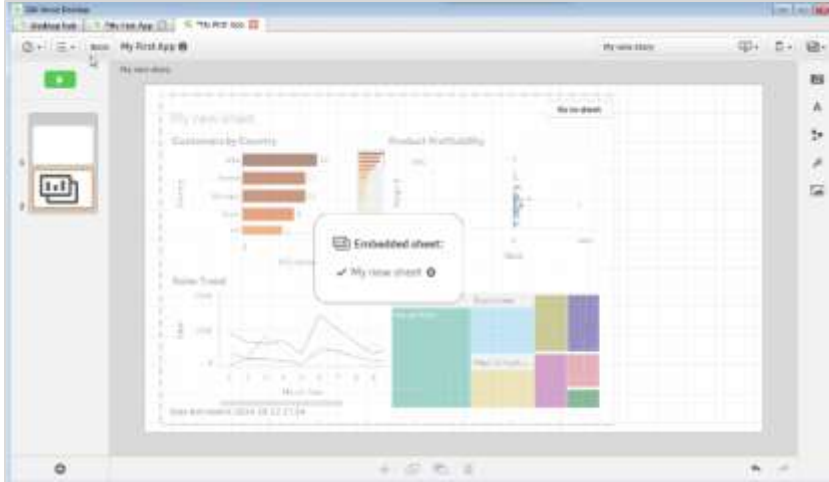
15. Click the green **Play** icon ![play icon] and click through the story. You can use the <- and -> arrow keys to move slides backwards and forwards.

16. When you are finished browsing the Story, hit the black X in the top right to close the Story player. Save and return to the **Customer Dashboard** Sheet by clicking the sheet navigation button in the top right as follows.
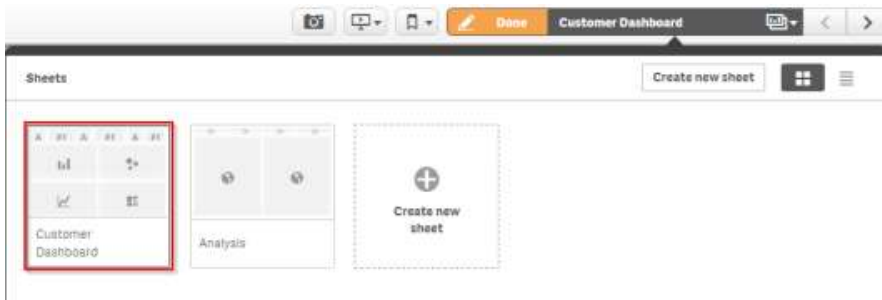
Next Steps

Upon completion of this short introduction to Qlik Sense, these are some recommended next steps.

1. **Need help?**
   Find answers to your questions. Learn at your own pace.

   http://help.qlik.com/

2. **Free Qlik Sense Applications**
   Download free Qlik Sense applications to showcase in class.

   Visit http://sense-demo.qlik.com/ to download now.

3. **Qlik Branch**
   Qlik Branch is the platform for developers to bring the best ideas to market. Rooted in open source philosophy, all projects are freely distributed and modified, allowing faster collaboration and innovation. Non-developers will be able to use Qlik Branch as a resource for finding custom solutions for their applications. Furthermore, if the custom solution cannot be found on Qlik Branch, a developer could be found to build it. For developers, Qlik Branch is a place to innovate and take advantage of the capabilities and extensibility of the APIs and Qlik platform. Sharing their projects on Qlik Branch makes their projects more accessible for use and collaboration.:
   http://branch.qlik.com/

Training & certification

4. **Qlik® Sense courses**
   http://www.qlik.com/services/training/qlik-sense-training Learn to adopt and maximize the full capabilities of Qlik Sense formats ranging from Instructor Led Training to our new self-service learning platform Continuous Classroom, where you choose what, how and when you want to learn.

5. **Qlik Sense Certification**
   http://www.qlik.com/services/training/qlik-sense-certification
   Certification validates your Qlik knowledge and skills against an established and objective level of competency.

Support

1. **Qlik Community**

   Whether they are functionality or technical concerns, you are sure to get speedy results from one of our thousands of Qlik experts. Questions may be answered by both external Qlik experts and or internal Qlik employees. Visit the http://community.qlik.com/ to help answer your Qlik Sense questions. You can login to QlikCommunity using your Qlik login.

   We recommend you review the following areas:
   - **Getting Started Webinar**
   - **New to Qlik Sense**
   - **Resource Library**
   - **Qlik Sense Video Tutorials**

2. **Qlik Support Portal**

   Get answers to your common questions, submit and track support requests, and access your license information. http://support.qlik.com/

   The global Qoncierge Service team is ready to assist you with non-technical issues, including:
   - Login and registration problems
   - License-related questions
   - Download issues
   - Training questions
   - General questions or information regarding Qlik

   You may submit requests through the web form on the Support page: http://support.qlik.com/

   Qoncierge works with both professors and students to get them to the resources they need. If you are not sure where to go for something, Qoncierge will be happy to direct you.

Other resources

The following resources will direct you to numerous websites filled with valuable Qlik information. These websites apply to both QlikView and Qlik Sense

Blogs

Title	URL	Description
QlikTips	http://qliktips.blogspot.com/	Blog by Stephen Redmond
Quick Intelligence Blog	http://www.quickintelligence.co.uk/qlikview-blog/	Blog by Steve Dark
QlikView Notes	http://qlikviewnotes.blogspot.com/	Blog by Rob Wunderlich
QlikView Maven	http://qlikviewmaven.blogspot.com/	Blog by tim.benoit
The Qlik Fix!	http://www.qlikfix.com/	Blog by bh1979
QlikBlog.at	http://www.qlikblog.at/	Blog by Stefan Walther

YouTube

Title	URL	Description
Official Qlik Channel	http://youtube.com/qlikview	Collection of QlikView videos produced and curated by QlikTech
Qlik Tips	http://youtube.com/QlikTips	Videos produced by QlikTech's Josh Good
Quick Intelligence	http://youtube.com/quintelligence	Videos produced by Steve Dark
Alan Farrel's Youtube Channel	https://www.youtube.com/user/RustyFishBones	QlikView Tutorials by Alan Farrell
QlikView Podcast	http://www.youtube.com/user/AnswerSharks	Videos producted by Answer Sharks
QlikView Associative Search	http://www.youtube.com/watch?v=HYtv-qL-1oc&feature=youtu.be	Video produced by QlikTech

Note: Qlik is not responsible for the content of these external third-party sites, and does not endorse, recommend or support any information contained therein. Please use at your own risk.

You may submit requests through the web form on the Support page: http://www.qlikview.com/us/services/support/qonciergeVisit the Support Page to help answer your Qlik Sense questions.