



Week 3 - Data Warehouse Analytics

✔ Tipo	Anotaciones
☰ Posición	
☰ Etiquetas	
↗ Bibliografía	
⌚ Fecha de creación	@June 22, 2022 9:53 PM
☰ Property	

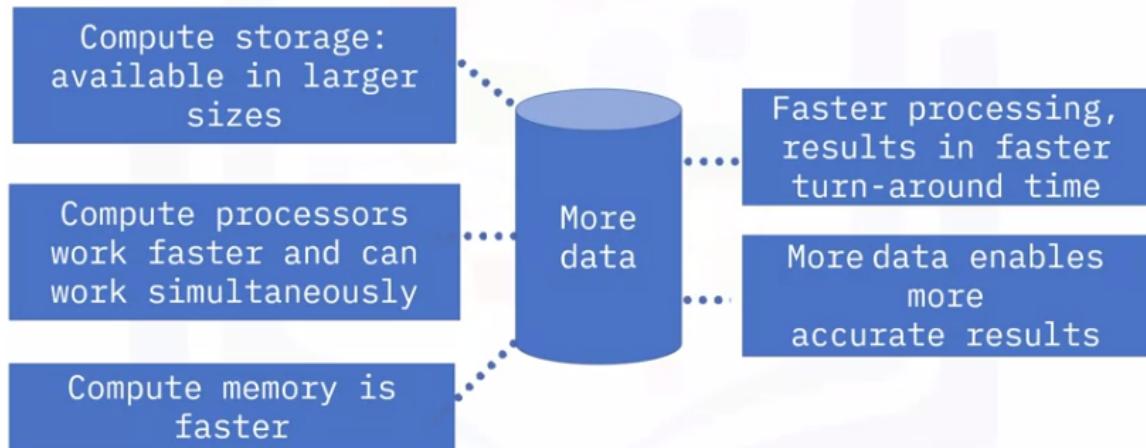
▼ Data Warehouse Analytics

▼ Introduction to Analytics and Business Intelligence (BI) Tools

Analytics defined

Analytics is the systematic compilation and dissection of data, statistics, and operations research to build models to make better decisions.

Tools-revolutionizing analytics



Analytics in action and results

When more data is available, analytics are more accurate. Organizations can use BI tools' built-in expertise to analyze data and find patterns using machine learning based on statistical modeling.

These analytical outcomes can be descriptive, prescriptive, or predictive.

- **Descriptive** analytics provide insight into the past.
- **Predictive** analytics provide insight into what could happen in the future.
- **Prescriptive** analytics provide insight into what actions an organization should take to create a specific outcome in the future.

Business Intelligence (BI) tools

<ul style="list-style-type: none"> • Enable data preparation, mining, management, and visualization 	<ul style="list-style-type: none"> • Focus on the “what” and the “why” • Apply statistics and operations research
<ul style="list-style-type: none"> • Harness the power of descriptive, diagnostic, predictive and prescriptive analytics 	
<ul style="list-style-type: none"> • Dashboarding, reporting and self-serve analytics 	<ul style="list-style-type: none"> • Transform data into opportunity

Tools for Business Intelligence

- IBM Cognos Analytics - integrates Watson Analytics that leverages IBM's artificial intelligence and natural language processing
- Microsoft Power BI - well known for its secure insights
- Tableau - provides powerful visualizations
- Oracle Analytics cloud - known for its conversational analytics
- SAP Business Objects - known for its intelligent analytics
- Tibco Spotfire offers scalability for small and large organizations.

IBM Cognos Analytics



▼ Cognos Analytics: Introduction and How to Sign Up

IBM.BIZ/TRY_COGNOS

IBM

IBM Cognos Analytics trial

Uncover the truth hidden in your data with Cognos Analytics. Start now for free, no download required. The 30-day trial includes:

- Guided demo to show you around Cognos Analytics
- Stunning visualizations that will help you understand your data - and act on it
- AI Assistant that allows you to ask questions and receive answers in plain language
- Simple self-service that simply works - no matter your skill level
- Ability to use your own data and convert it after you buy
- Pricing for everyone from SMBs to Enterprises

Get started now for free!
[About Cognos Analytics](#)

Already have an IBM account? [Log in](#)

Start your free trial

1. Account information [Edit](#)

E-mail	cognoseducationaltrial@yopmail.com
First name	Jam
Last name	Smith
Country	Canada
State or province	Ontario

2. Additional information

Are you a student? Yes No

Company	IBM	Job title	<input type="text"/>
Phone	+1	Industry	<input type="button" value="Choose an option"/>
		Select Data Center	<input type="button" value="Choose an option"/>
<input type="button" value="Next"/>			

3. Verify email

IBMid: cognoseducationaltrial@yopmail.com

My IBM Profile Billing

Welcome to the all-new IBM Cognos Analytics 00:22

Products

Trials

1 Offering

	IBM Cognos Analytics on Cloud - Trial
Active Expires on Aug 22, 2020	
<input type="button" value="Launch"/>	<input type="button" value="Manage"/>

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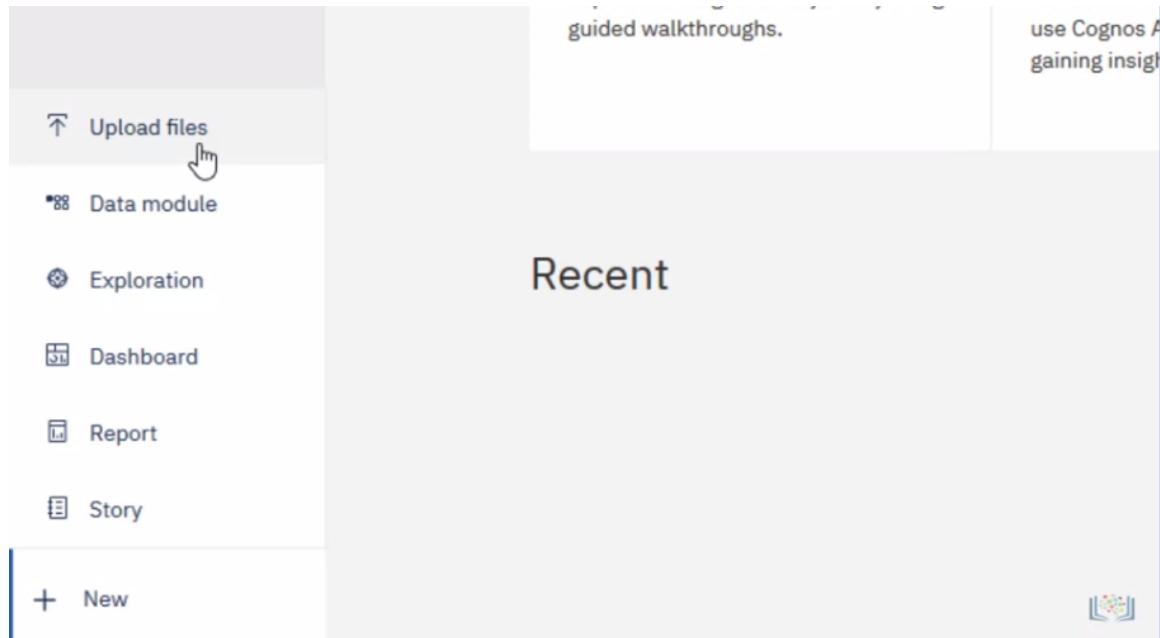
[https://myibm.ibm.com/](#)

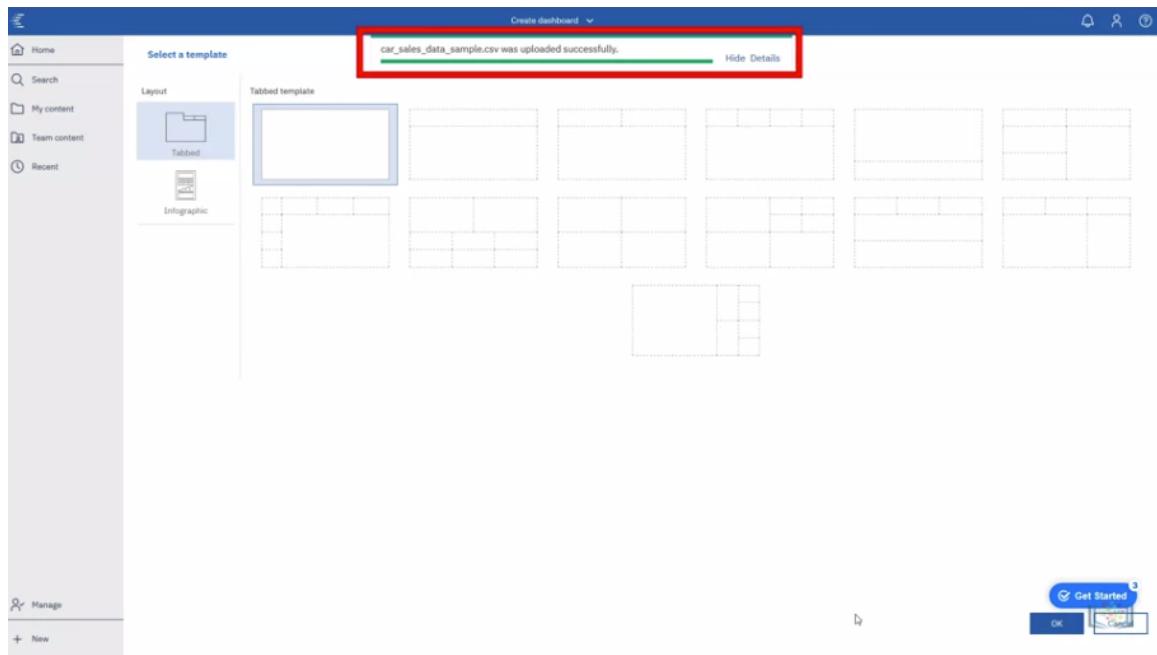
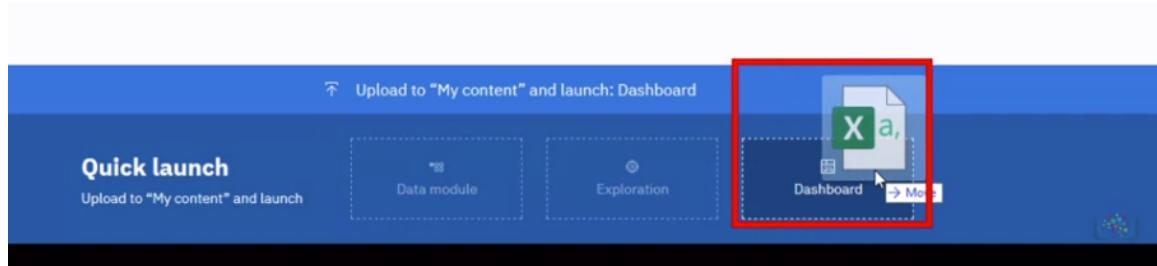
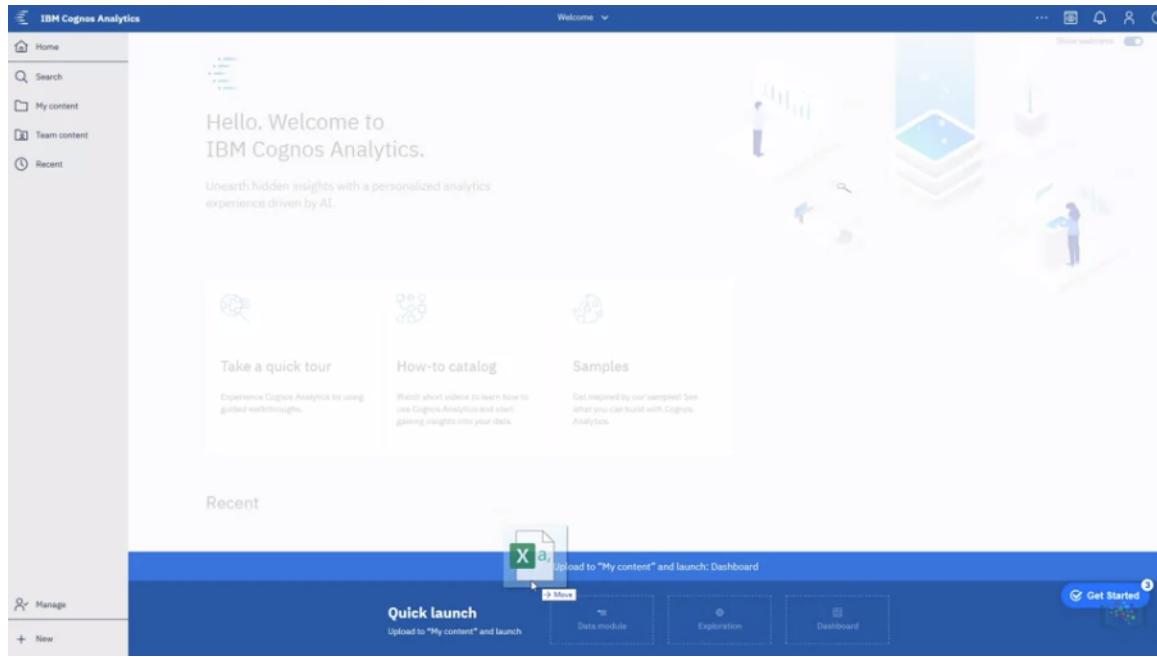
▼ Navigating in Cognos Analytics

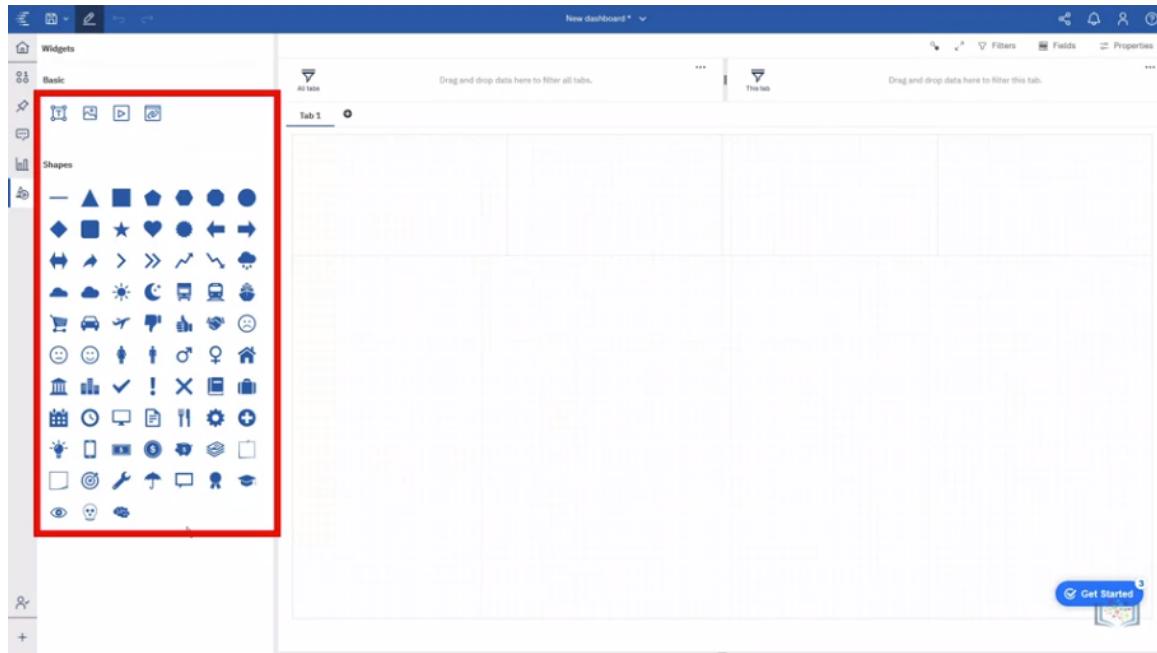
Overview

Topics covered:

- How to upload spreadsheets
- General Navigation in Cognos Analytics
- Starting a new dashboard
- Dashboard templates
- Navigating in Cognos Analytics Dashboards







▼ Creating a Simple Dashboard in Cognos

Overview

Topics Covered:

- Different methods to create a visualization
 - Automatic
 - Manual
 - Assistant
- Filtering in a Cognos Analytics dashboard

A screenshot of a data analysis interface. On the left, there's a sidebar with a search bar and a tree view of navigation paths. A file named "car_sales_data_sample.csv" is selected. A context menu is open over the item "Order Number ID". The menu items are: Filter..., Create calculation..., Create data group..., Format data..., and Properties... . The "Properties..." option is highlighted with a blue border.

A screenshot of a "Properties" dialog box for the "Order Number ID" item. The dialog has the following settings:

Setting	Value
Label	Order Number ID
Usage	Identifier
Aggregate	Count
Data type	Integer
Represents	Default
Members	Disabled
Sort by	Order Number ID
Order	Ascending

The "Usage" dropdown is highlighted with a red box. A blue button at the bottom right of the dialog has a hand cursor icon pointing to it.

car_sales_data_sample.csv

- # Order Number ID
- Quantity Ordered
- Price Each
- Order Line Number
- Sales**
- > Order Date
- > Status
- Quarter
- Month
- Year
- > Product Line
- Msrp
- > Product Code
- > Customer Name
- > Phone
- > Address Line 1
- > Address Line 2

Tab 1

Drop here to make a chart

Sales

New dashboard

Change visualization

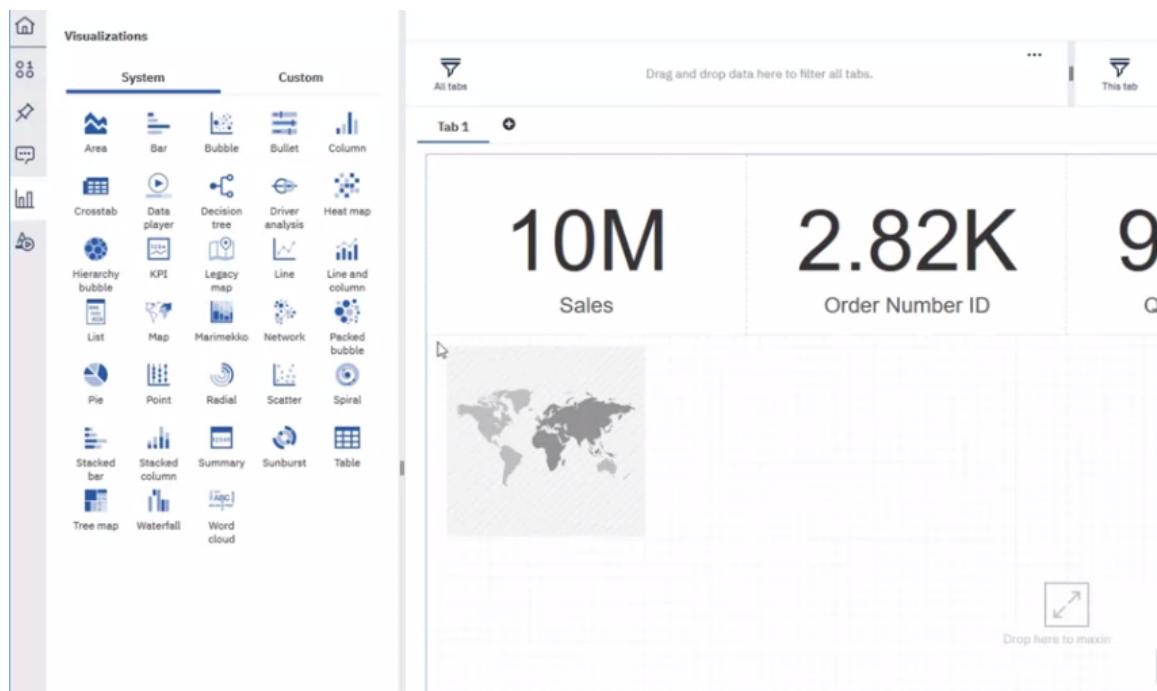
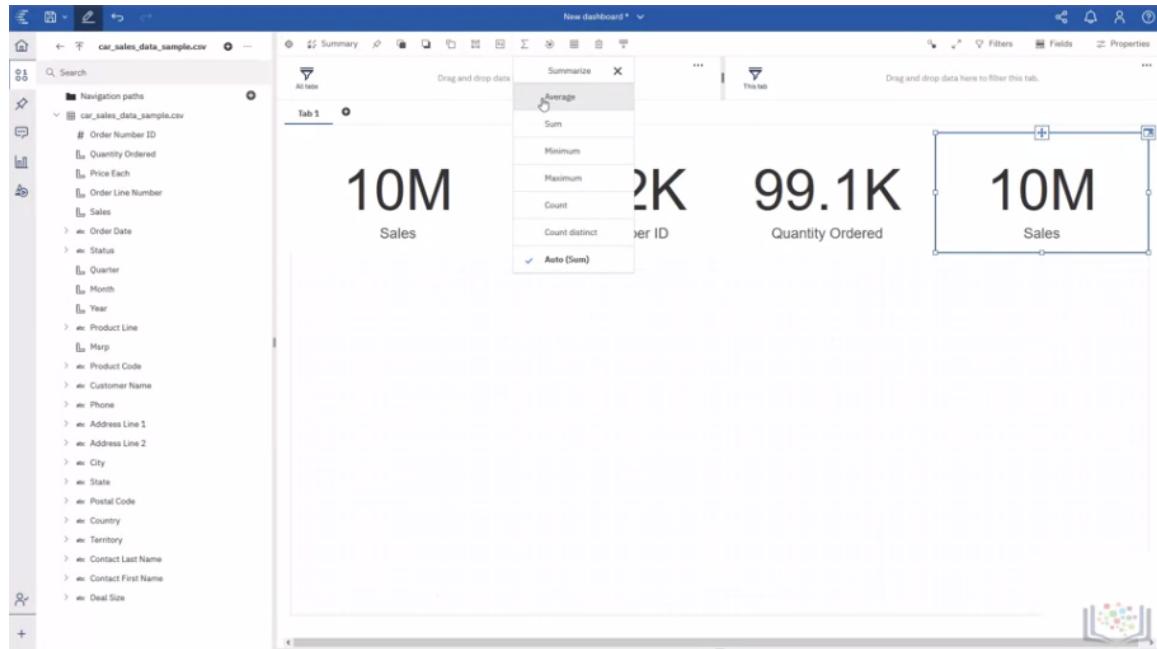
Recommended visualizations

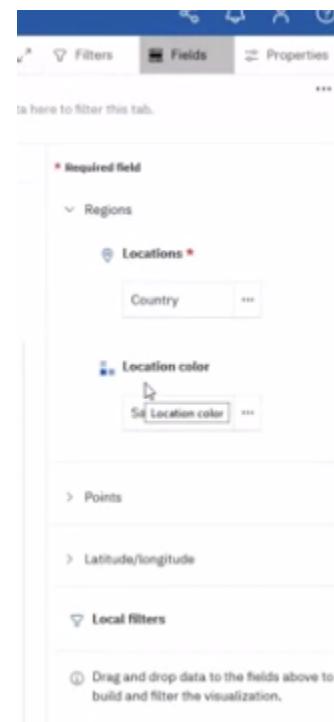
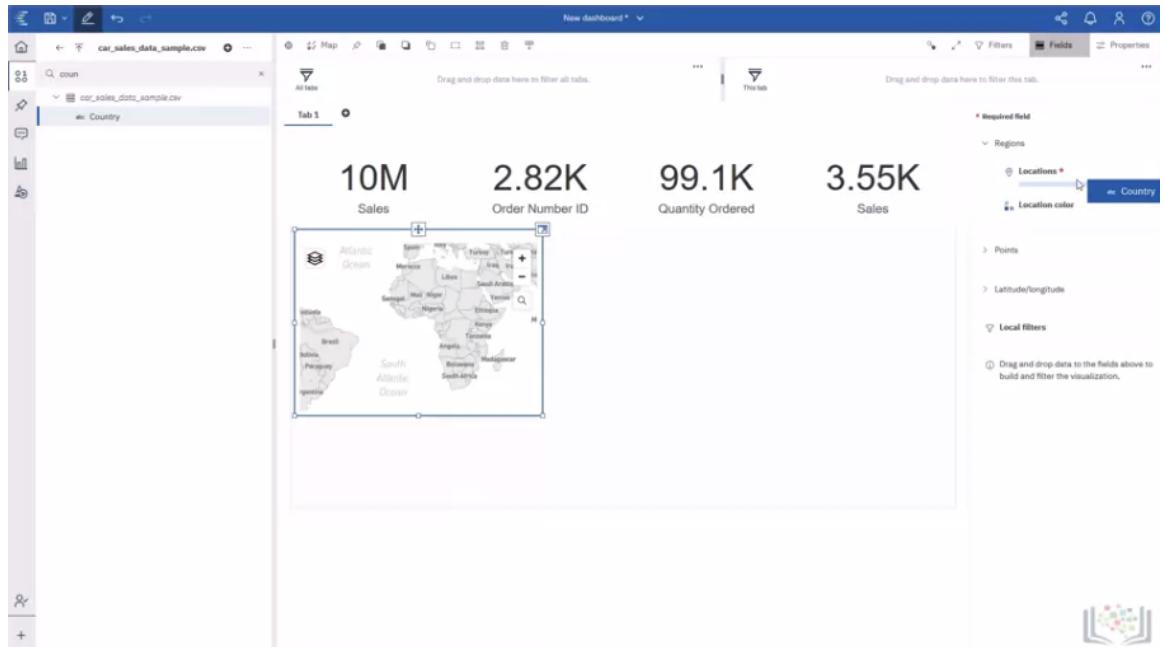
All visualizations

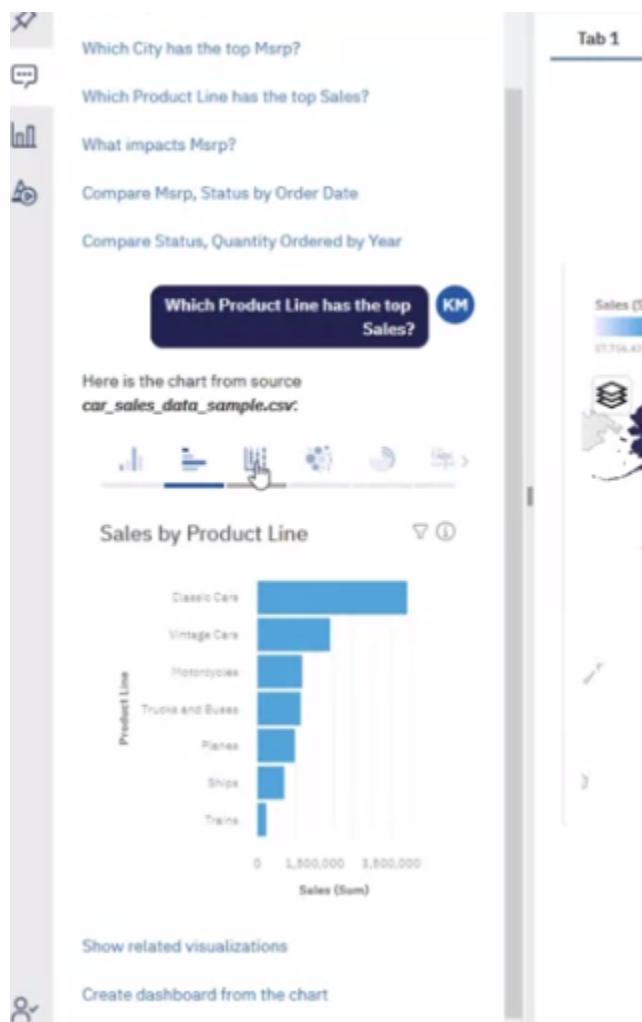
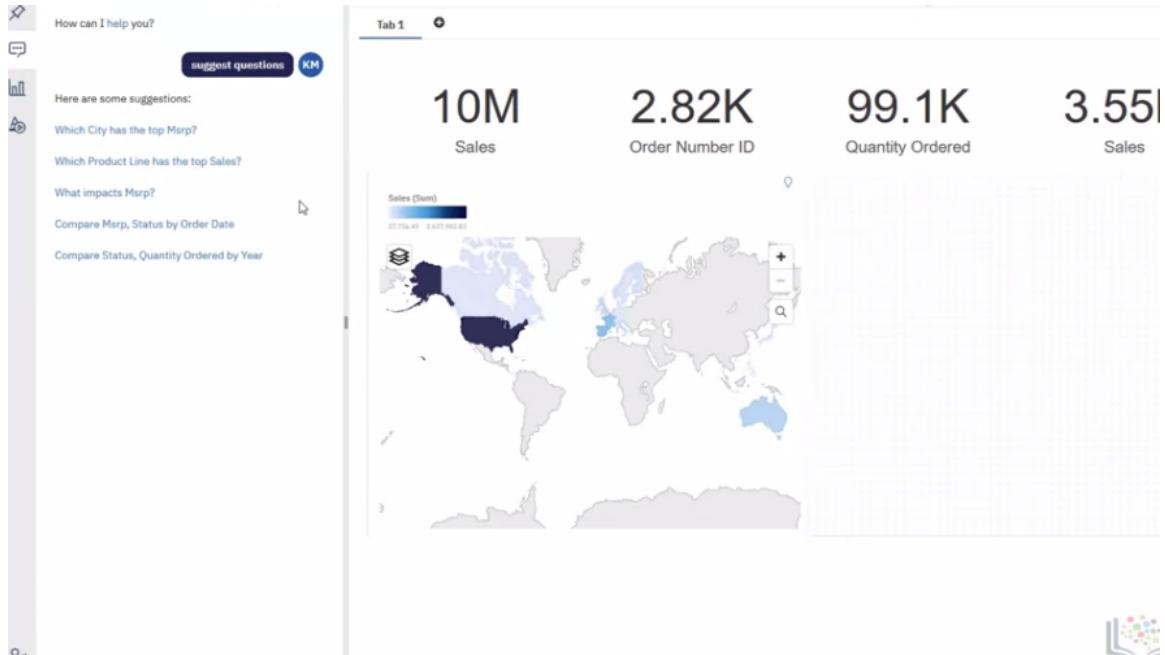
- Automatic
- Spiral
- Stacked bar
- Stacked column
- Summary
- Sunburst
- Table

Drag and drop data here to filter this tab

This tab







Dashboard Overview

This dashboard provides a high-level summary of sales data across various dimensions. Key metrics displayed include Sales (10M), Order Number ID (2.82K), Quantity Ordered (99.1K), and Sales (3.55K). A world map visual shows sales distribution by region. A bar chart details Product Line sales, with 'Classic Cars' leading at approximately 3.5 million.

Product Line Sales

Product Line	Sales (Sum)
Classic Cars	~3,500,000
Vintage Cars	~1,000,000
Motorcycles	~500,000
Trucks and Buses	~500,000
Planes	~300,000
Boats	~200,000
Trains	~100,000

Product Line Sales (Detailed)

Product Line	Sales (Sum)
Classic Cars	~3,500,000
Vintage Cars	~1,000,000
Motorcycles	~500,000
Trucks and Buses	~500,000
Planes	~300,000
Boats	~200,000
Trains	~100,000

Visualizations

Explore more visualizations and create a dashboard from this chart.

Dashboard Overview

This dashboard provides a high-level summary of sales data across various dimensions. Key metrics displayed include Sales (3.92M), Order Number ID (967), Quantity Ordered (34K), and Sales (4.05K). A world map visual shows sales distribution by region. A bar chart details Product Line sales, with 'Classic Cars' leading at approximately 3.5 million.

Product Line Sales

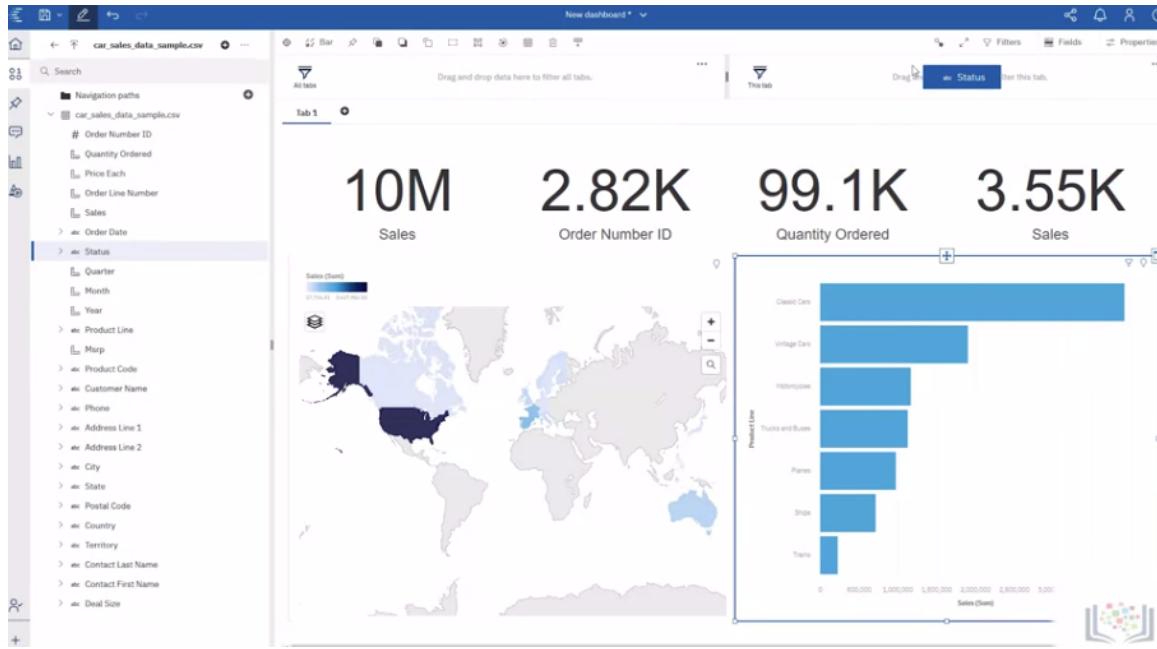
Product Line	Sales (Sum)
Classic Cars	~3,500,000
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Motorcycles	~500,000
Trucks and Buses	~500,000
Planes	~300,000
Boats	~200,000
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Product Line Sales (Detailed)

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Trucks and Buses	~500,000
Planes	~300,000
Boats	~200,000
Trains	~100,000

Visualizations

Explore more visualizations and create a dashboard from this chart.



▼ Advanced Capabilities in Cognos Analytics Dashboards

Overview

Topics Covered:

- Creating Calculations
- Navigation Paths
- Exclude
- Top/Bottom

The screenshot shows the Power BI service interface. On the left, there is a navigation pane with a search bar at the top. Below it, under 'Navigation paths', there is a tree view of data sources and fields. One node, 'car_sales_data_sample.csv', is expanded, showing fields like Order Number ID, Quantity Ordered, Price Each, etc. To the right of the navigation pane is the main workspace, which has tabs for 'Overview' and 'Sales'. A context menu is open over the 'car_sales_data_sample.csv' node in the workspace.

New dashboard * New dashboard

car_sales_data_sample.csv

Navigation paths

car_sales_data_sample.csv

- # Order Number ID
- Quantity Ordered
- Price Each
- Order Line Number
- Sales
- > # Order Date
- > # Status
- # Quarter
- # Month
- # Year
- > # Product Line
- Map
- > # Product Code
- > # Customer Name
- > # Phone
- > # Address Line 1
- > # Address Line 2
- > # City
- > # State

Drag and drop data here to filter all tabs.

This tab

Drag and drop

Overview Sales

New

car_sales_data_sample.csv

Properties...

The screenshot shows the 'Create calculation' dialog in Power BI. At the top, there is a search bar and a 'Components' section with a tree view of data sources. Below that is a table with columns 'Name' and 'Expression'. The 'Expression' column contains a dropdown menu with various function names. The first item in the dropdown, 'average', is highlighted. The right side of the dialog shows a detailed view of the selected function, including its summary, function type, and other details.

Create calculation

Name Calculation name

Components	Expression
car_sales_data_sample.csv	average

Information

OK Cancel Get Started

The screenshot shows a data warehouse interface with a sidebar on the left and a main dashboard area on the right.

Left Sidebar (Navigation Paths):

- car_sales_data_sample.csv
- Margin (highlighted with a red box)
- # Order Number ID
- Quantity Ordered
- Price Each
- Order Line Number
- Sales
- > abc Order Date
- > abc Status
- # Quarter
- # Month
- # Year
- > abc Product Line
- Margin (highlighted with a red box)
- Product Code
- Customer Name
- Phone
- Address Line 1
- Address Line 2
- City
- State
- Postal Code

Main Dashboard Area:

- All tabs
- Drag and drop data here to filter all tabs.
- Overview Sales
- This tab
- Drag and drop data here to filter this tab

The screenshot shows a 'Create navigation path' dialog box overlaid on the data warehouse interface.

Left Sidebar (Navigation Paths):

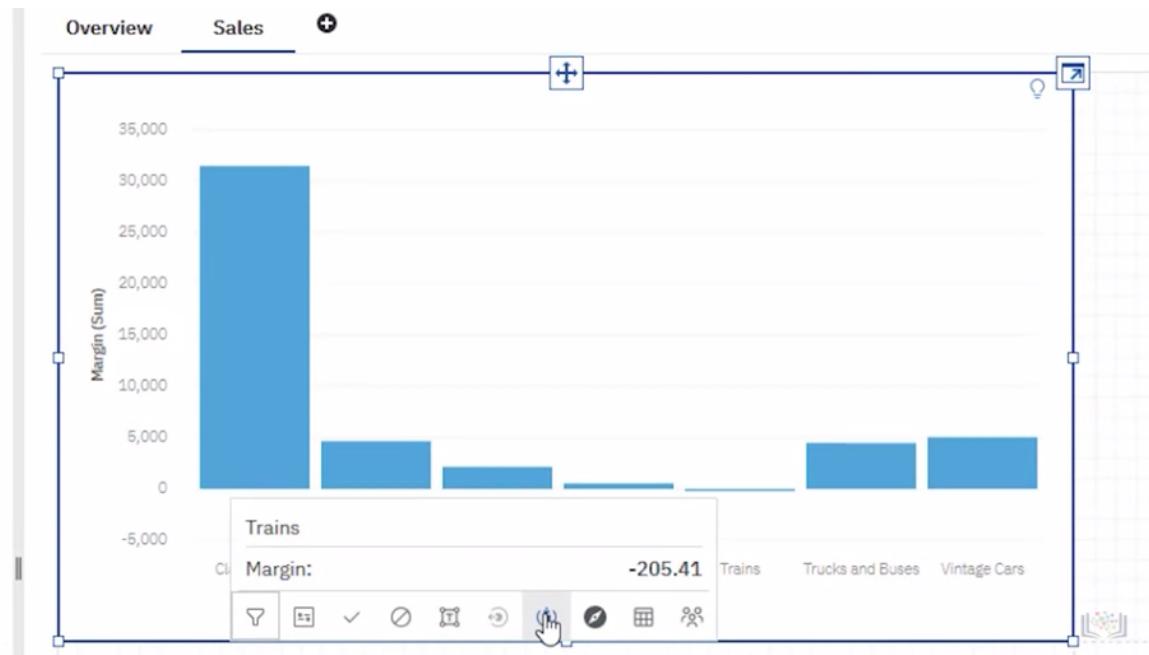
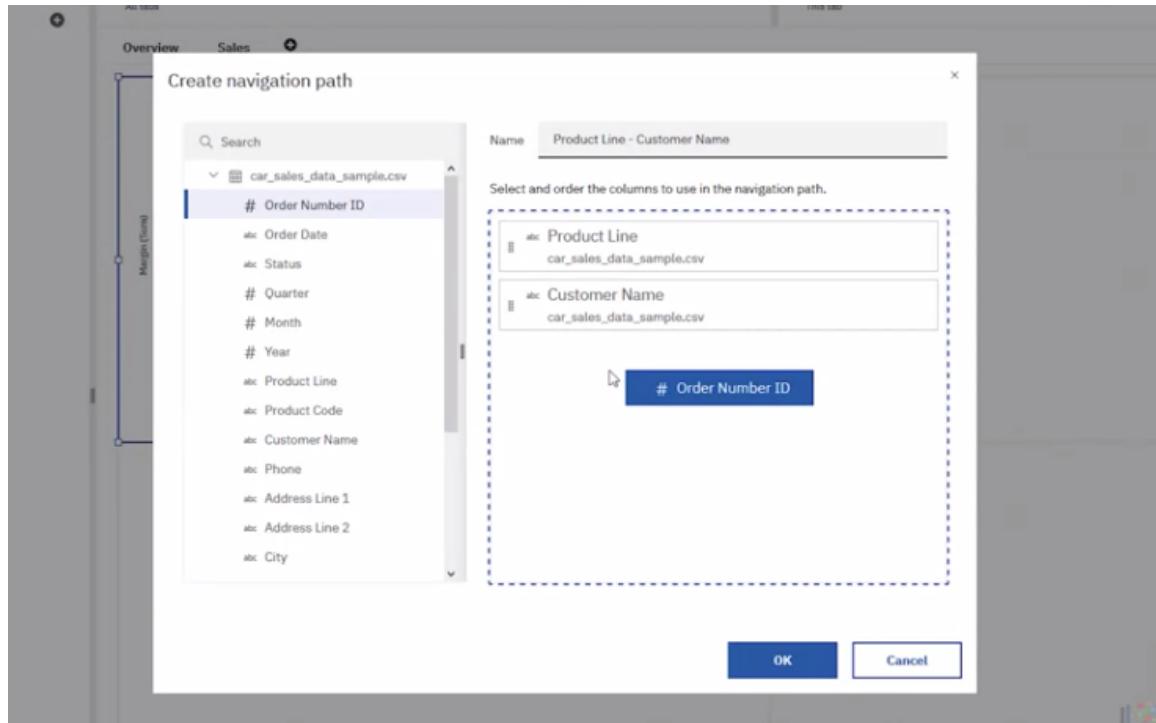
- car_sales_data_sample.csv
- Margin
- # Order Number ID
- Quantity Ordered
- Price Each
- Order Line Number
- Sales
- > abc Order Date

Main Dashboard Area:

- All tabs
- Drag and drop data here to filter
- Overview Sales +

Create navigation path Dialog:

- Search bar: car_sales_data_sample.csv
- Name input field: Margin (Sum)
- Select dropdown: Select





Margin (Sum)

Order Number ID

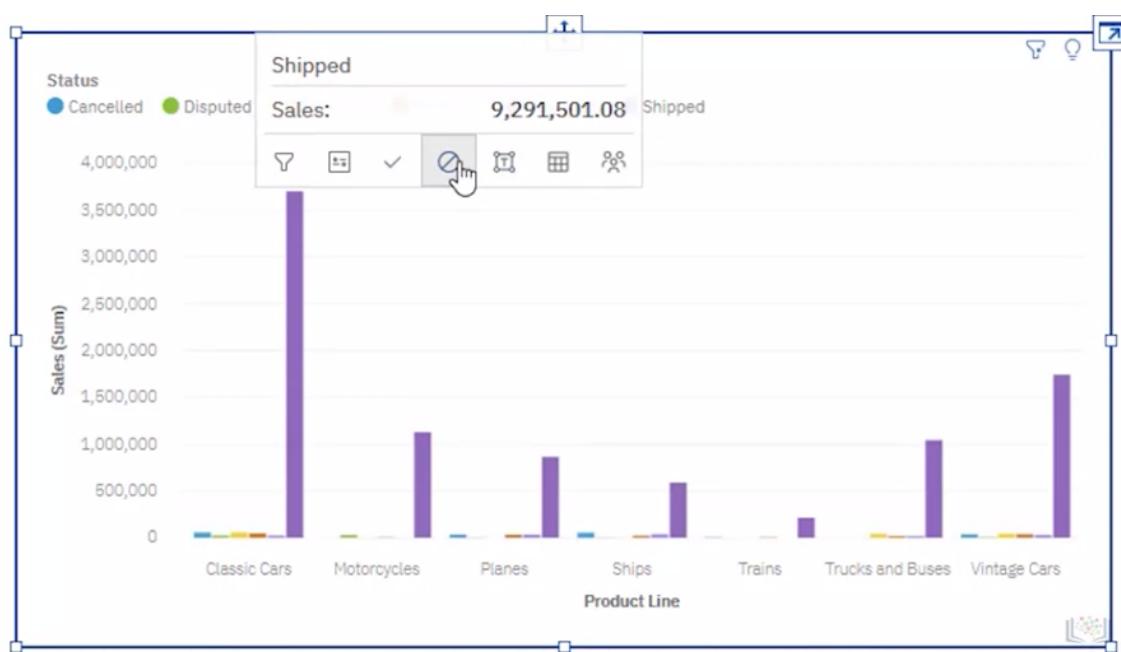
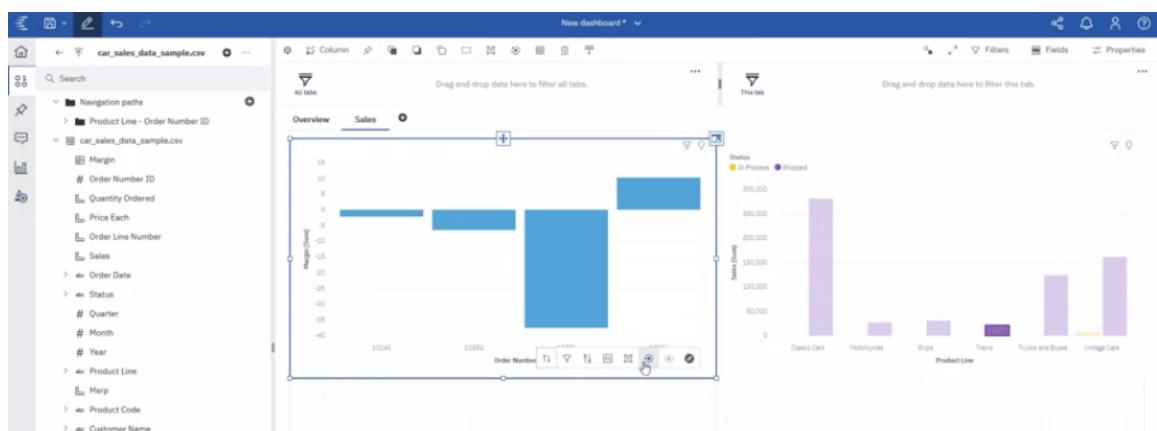
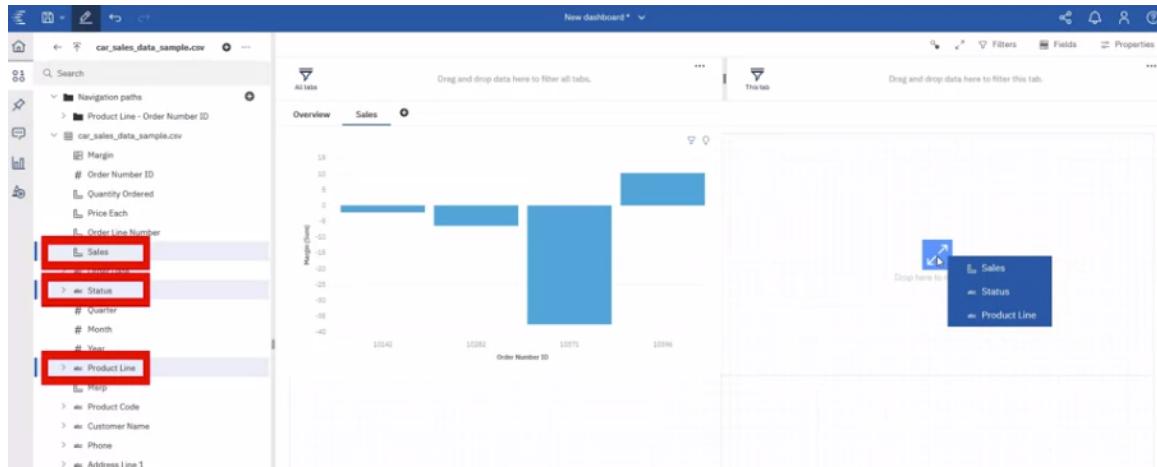
Order Number ID	Margin (Sum)
10042	~-10
10082	~-10
10096	~10
10097	~-10

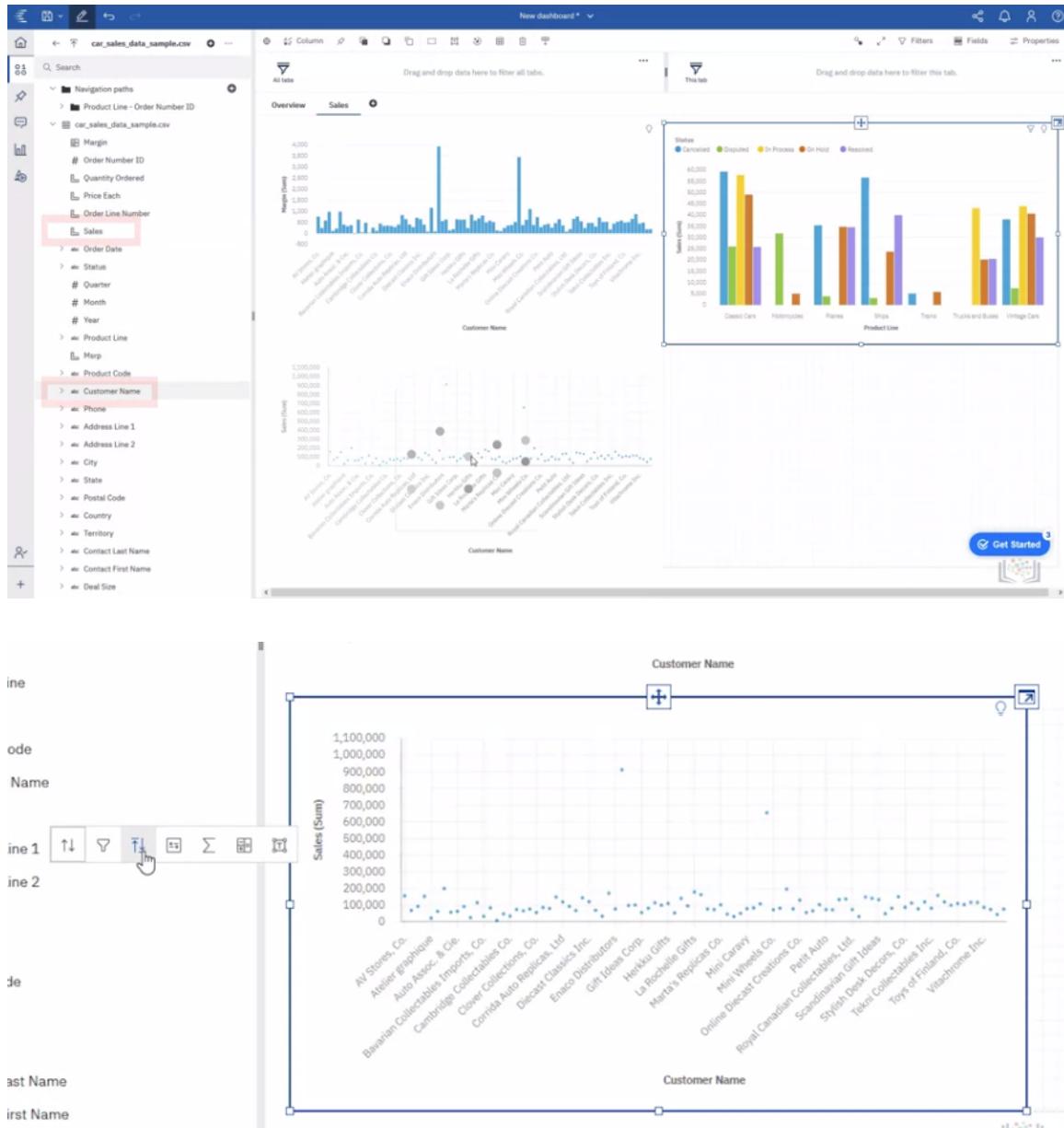
car_sales_data_sample.csv

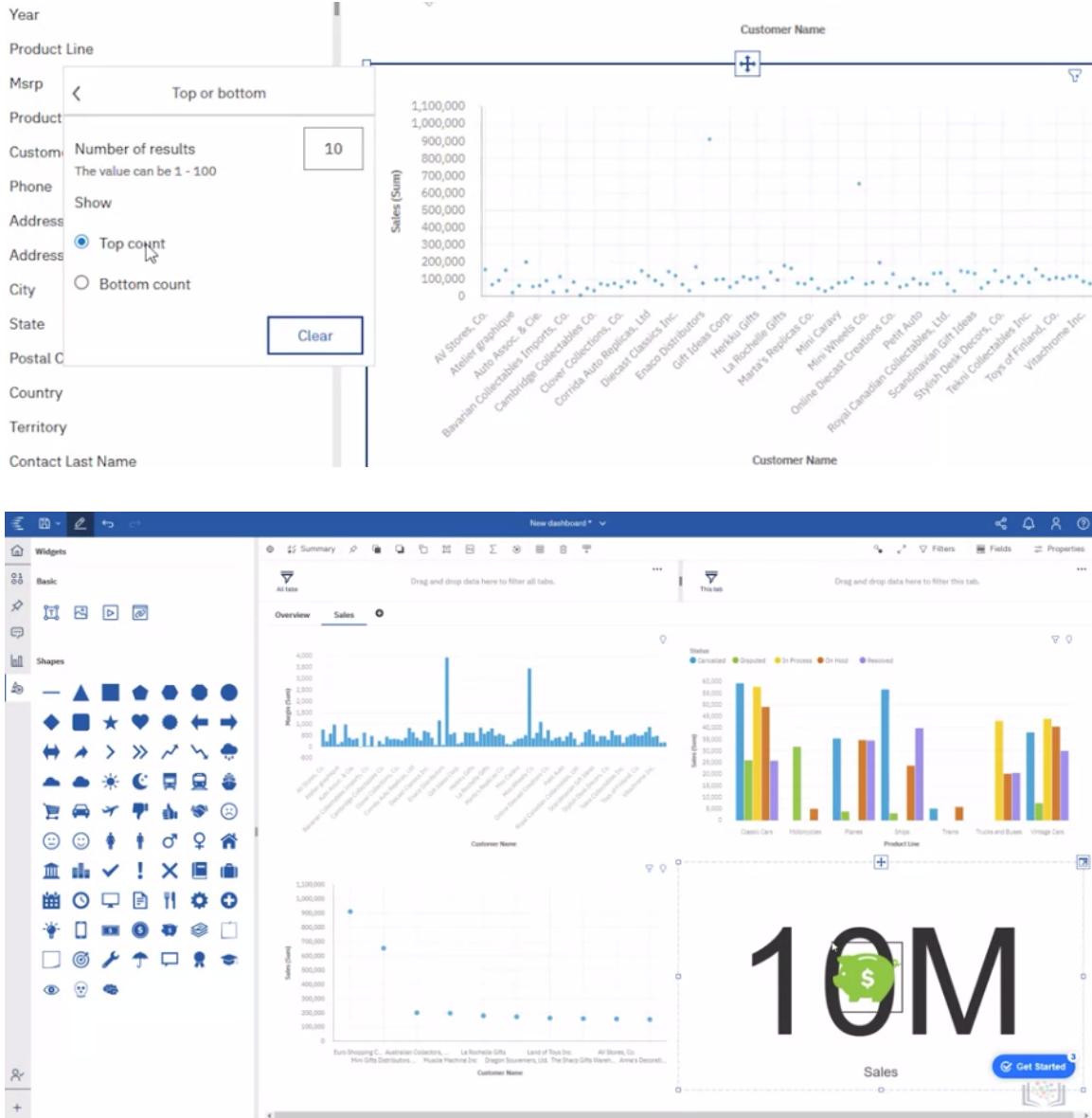
Overview Sales

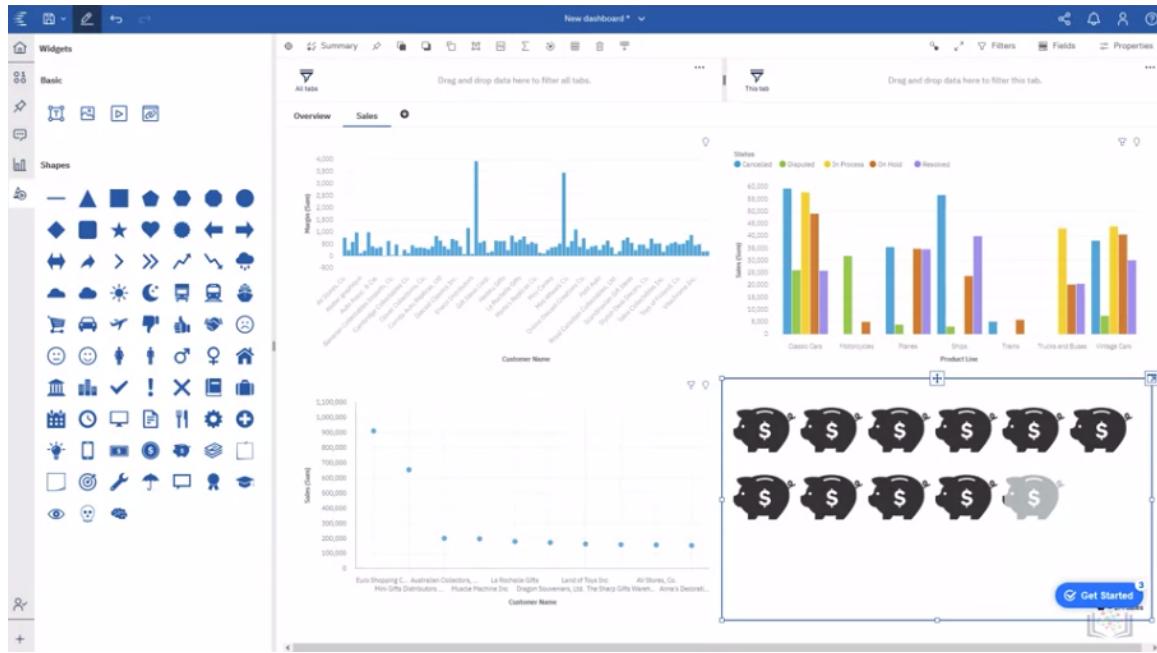
New dashboard * Get Started

Fields Properties









▼ Accessing Your Warehouse With Cognos

Accessing databases - overview

Flexible access to many databases and data warehouses systems



- Identify the source databases, including schemas and tables, and obtain their connection credentials.
- Within Cognos Analytics, you'll create data server connections to the selected databases.
- For each connection, create data modules for the selected tables.

- Create a dashboard and add the data modules as sources.
- Drag columns from the data module onto the dashboard canvas.

1. Data source: Db2

The screenshot shows the IBM Cloud Service Credentials page for a service named "Db2-4y". The top navigation bar includes "Resource list /", the service name "Db2-4y" with an "Active" status and "Add tags" link, "Details", and "Actions..." dropdown. Below the navigation, there are several tabs: "Manage", "Getting started" (highlighted with a red box), "Service credentials" (also highlighted with a red box), and "Connections". A search bar "Search credentials..." and a "New credential" button (+) are also present. The "Service credentials" section contains a brief description: "You can generate a new set of credentials for cases where you want to manually connect an app or external consumer to an IBM Cloud service.", followed by a "Learn more" link. The "Create credential" modal is open, prompting for "Name:" (containing "Service credentials-1") and "Role:" (set to "Manager"). At the bottom of the modal are "Cancel" and "Add" buttons, with "Add" highlighted with a red box.

Service credentials

You can generate a new set of credentials for cases where you want to manually connect an app or external consumer to an IBM Cloud service. [Learn more](#)

The screenshot shows the 'Service credentials' interface. At the top, there is a search bar labeled 'Search credentials...' and a blue button labeled 'New credential'. Below this is a table with columns 'Key name' and 'Date created'. A row for 'Service credentials-1' is selected, indicated by a red box around its key name. The table also includes icons for edit and delete.

Below the table is a large code block showing the JSON configuration for the selected credential. The JSON structure is as follows:

```
{
  "db2": {
    "authentication": {
      "method": "direct"
    },
    "password": "REDACTED",
    "username": "REDACTED"
  },
  "certificate": {
    "certificate_base64": "REDACTED"
  },
  "composed": [
    {
      "db2://lnf96733:d10xxMy1FwkzIe0Y@fdb88901-ebdb-4a4f-a32e-9822b9fb237b.clogj3sd0tgtu0lqde00.databases.appdomain.cloud:32731/bludb?authSource=admin&replicaSet=repset"
    }
  ],
  "database": "bludb",
  "host_res": [
    "fdb88901-ebdb-4a4f-a32e-9822b9fb237b.clogj3sd0tgtu0lqde00.databases.appdomain.cloud:32670"
  ],
  "hosts": [
    {
      "hostname": "fdb88901-ebdb-4a4f-a32e-9822b9fb237b.clogj3sd0tgtu0lqde00.databases.appdomain.cloud",
      "port": 32731
    }
  ],
  "jdbc_url": "jdbc:db2://fdb88901-ebdb-4a4f-a32e-9822b9fb237b.clogj3sd0tgtu0lqde00.databases.appdomain.cloud:32731/bludb:userid=<userid>;password=<your_password>;sslConnection=true;"
}
```

Red boxes highlight several sensitive fields: the password in the authentication section, the certificate_base64 in the certificate section, and the entire jdbc_url field at the bottom.

IBM Cloud

Resource list / Db2-4y Active Add tags Details Actions...

Manage

Getting started Service credentials Connections

Getting started Where can I find my credentials? Get your username and password by clicking the "Service Credentials" link to the left and selecting "New Credentials".

Go to UI Getting started docs

This screenshot shows the IBM Cloud Resource list interface for a Db2-4y service. The service is marked as active. A red box highlights the 'Manage' button. Below it are links for 'Getting started', 'Service credentials', and 'Connections'. To the right, there's a 'Getting started' section with a red box around the 'Go to UI' button. Another red box highlights the 'CUSTOMER_LOYALTY' table entry in the 'Tables' list.

IBM Db2 on Cloud

Load Data Load History Tables Views Indexes Aliases MQTs Sequences Application objects

Find schemas or tables Refresh

Schemas

Name	Type	Tables
LFN96733	User	2

Tables

Name	Schema	Properties
BILLING_DATA	LFN96733	...
CUSTOMER_LOYALTY	LFN96733	...

This screenshot shows the IBM Db2 on Cloud interface. It displays a list of schemas and tables. A red box highlights the 'SQL' tab and the 'LFN96733' schema entry. Another red box highlights the 'CUSTOMER_LOYALTY' table entry in the 'Tables' list.

IBM Db2 on Cloud

Load Data Load History Tables Views Indexes Aliases MQTs Sequences Application objects

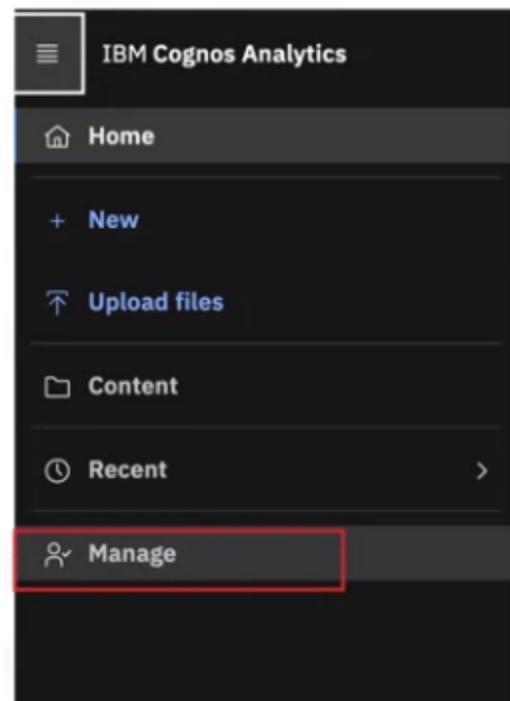
LFN96733.CUSTOMER_LOYALTY Back

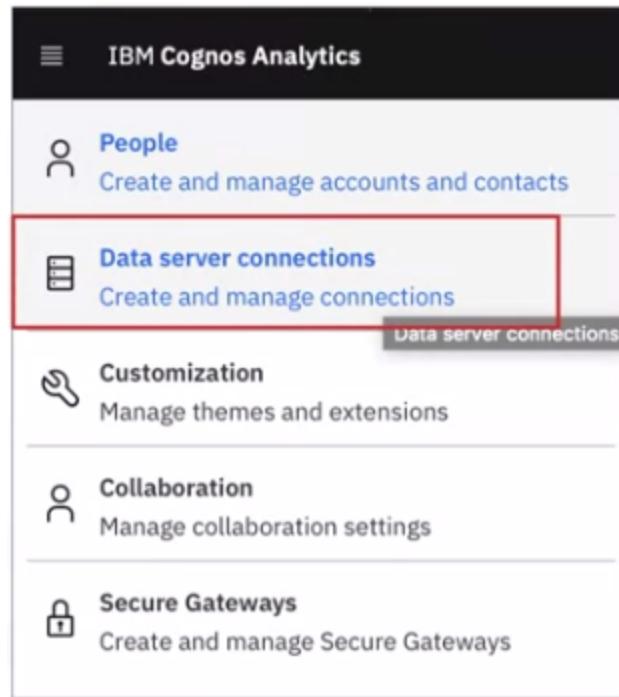
SQL

Export to CSV

LOYALTY_	FIRST_NAME	LAST_NAME	CUSTOMER_NAME	COUNTRY	PROVINCE_OR_STATE	CITY
100018	Mina	Smida	Mina Smida	Canada	Alberta	Edmonton
100055	Sadie	Straseskie	Sadie Straseskie	Germany	Bayern	Nurnberg
100102	Rigoberto	Palacio	Rigoberto Palacio	Canada	Ontario	Toronto
100119	Rheba	Stonum	Rheba Stonum	United Kingdom	Greater London	London
100124	Soo	Schier	Soo Schier	Germany	Bayern	Nurnberg

Items per page: 50 ▾ 1-50 items 1 ▾ page 1 ▶





The screenshot shows the 'Data server connections' creation screen. A new connection is being created, indicated by a red box around the '+' button. The 'Select a type' dropdown is open, showing various database types. 'IBM Db2' is selected and highlighted with a red box.

Name	Modified
Weather Company	25/05/2021 8:57 PM

Select a type

- IBM Big SQL
- IBM Db2
- IBM Db2 for i
- IBM Db2 Warehouse
- IBM Informix Dynamic Server
- IBM Netezza
- IBM Planning Analytics
- IBM Weather Company
- MariaDB
- MemSQL
- Microsoft SQL Server

IBM Cognos Analytics

New data server connection

Owner: Unknown | Created: | Modified: | Type: Connection

General Settings Schemas Permissions

Connection details Edit >

Authentication method

- Connect anonymously
- Prompt for the user ID and password
- Use an external namespace
- Use the following signon:

[Test](#) Not tested

[Save](#)

Edit IBM Db2 connection

JDBC URL: `jdbc:db2://fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud:32731/bludb;user=<user name>;password=<your password>;sslConnection=true;`

Driver class name: `com.ibm.db2.jcc.DB2Driver`

[Restore](#)

Example URL

Connection properties: ⓘ

[Close](#)

MyDB2

Owner: Sriram ... 39657 | Created: 16/09/2021 3:20 AM | Modified: 16/09/2021 4:57 AM | Type: Connection

General Settings Schemas Permissions

Connection details Edit >

Authentication method

- Connect anonymously
- Prompt for the user ID and password
- Use an external namespace
- Use the following signon:

[Test](#) Success ⓘ

[Save](#)

Edit IBM Db2 connection

JDBC URL: `jdbc:db2://fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud:32731/bludb;user=ufm98733;password=;sslConnection=true;`

Driver class name: `com.ibm.db2.jcc.DB2Driver`

[Restore](#)

Example URL

Connection properties: ⓘ

Cloud certificate details ⓘ

Secure Gateway destination ⓘ

MyDB2

Owner: Sriram ... 39657 | Created: 16/09/2021 3:20 AM
Modified: 16/09/2021 7:48 AM | Type: Connection

General Settings Schemas Permissions

Status	Schema name	Tables loaded
<input type="radio"/>	AUDIT	
<input type="radio"/>	DB2INST1	
<input type="radio"/>	ERRORSCHEMA	
<input type="radio"/>	LFN96733	

Load metadata Load options



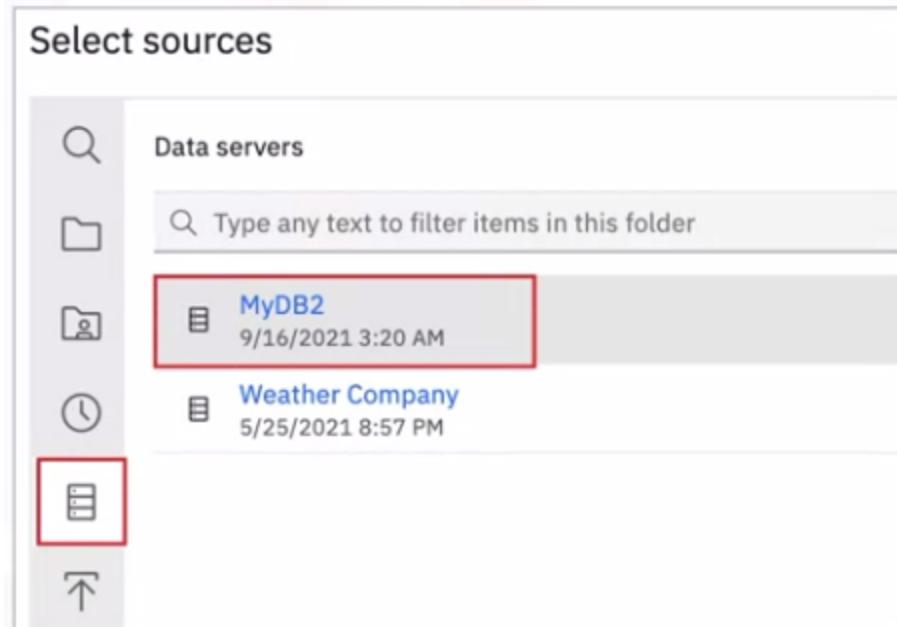
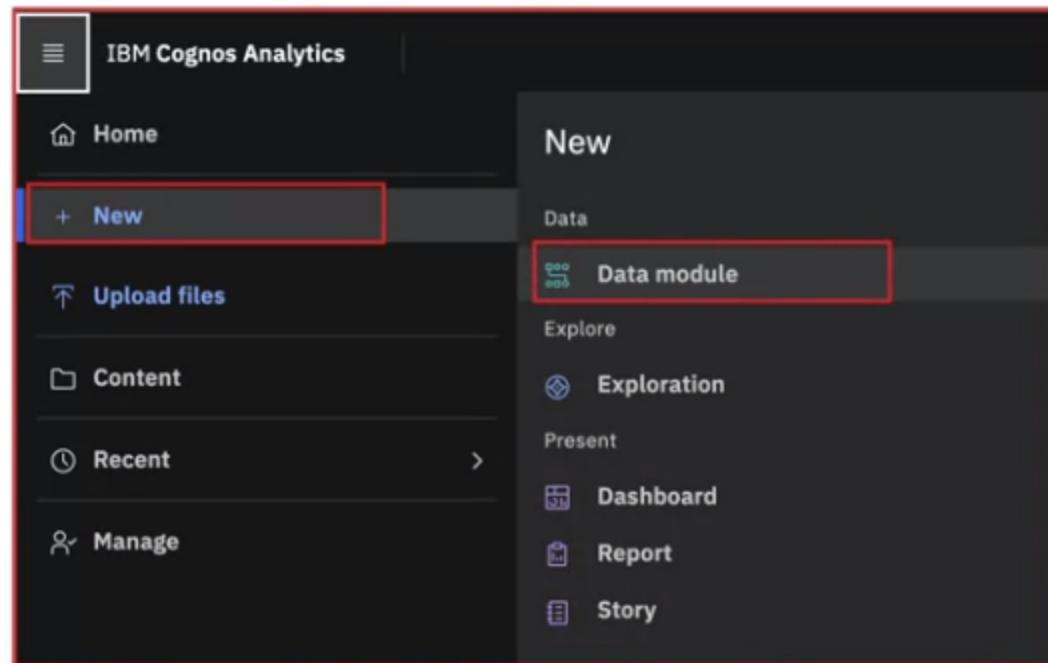
MyDB2

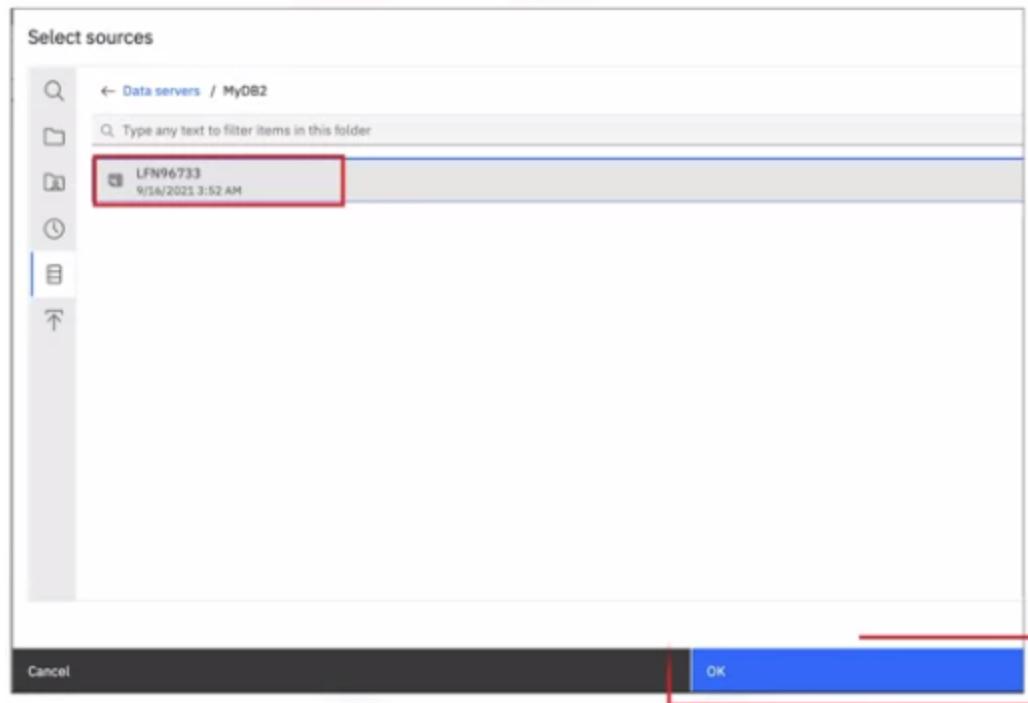
Owner: Sriram ... 39657 | Created: 16/09/2021 3:20 AM
Modified: 16/09/2021 7:48 AM | Type: Connection

General Settings Schemas Permissions

Status	Schema name	Tables loaded
<input type="radio"/>	AUDIT	
<input type="radio"/>	DB2INST1	
<input type="radio"/>	ERRORSCHEMA	
<input checked="" type="radio"/>	LFN96733	2 / 2



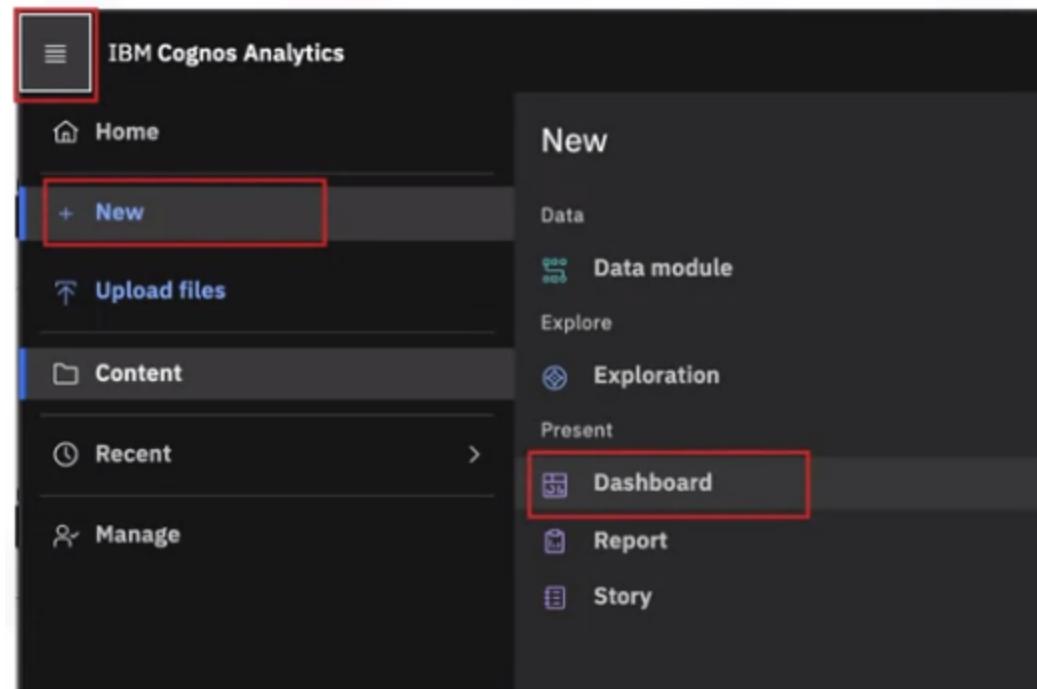
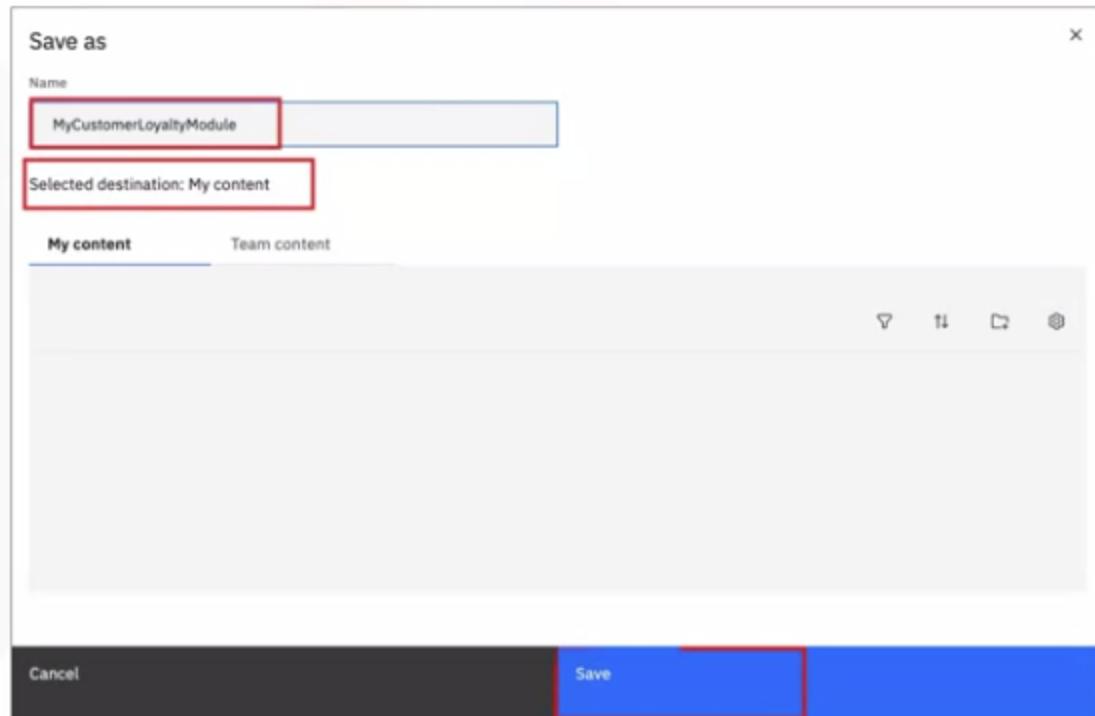


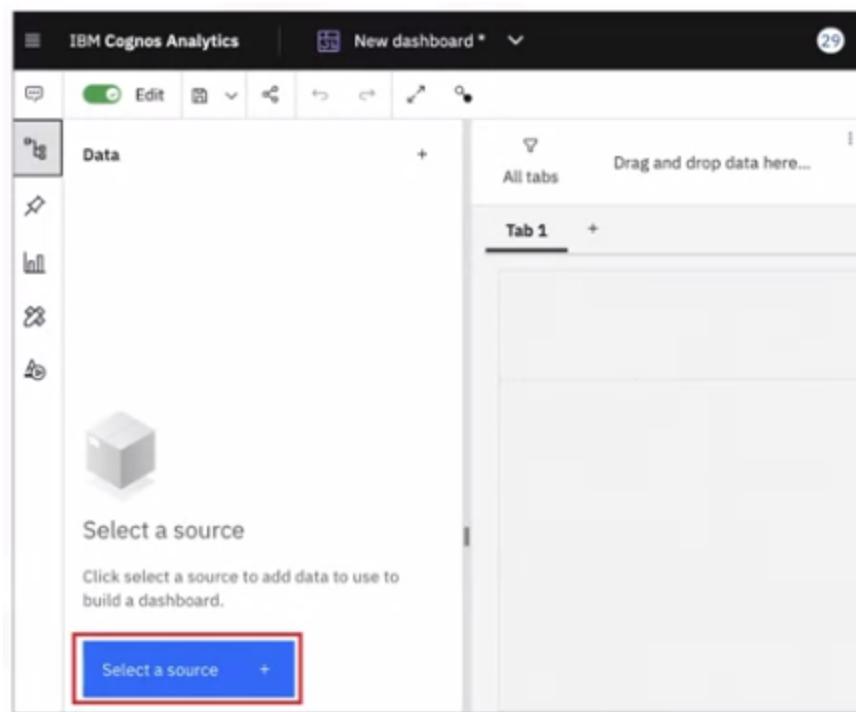
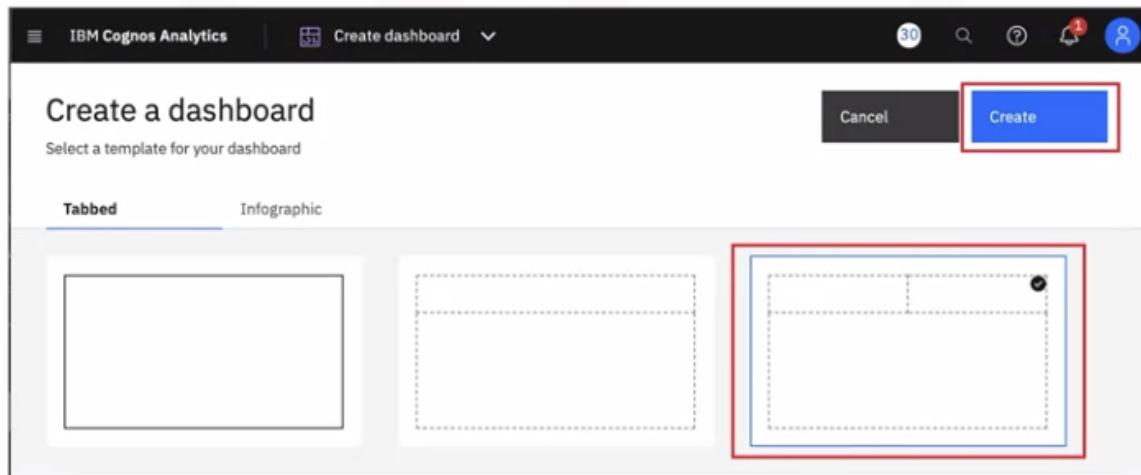


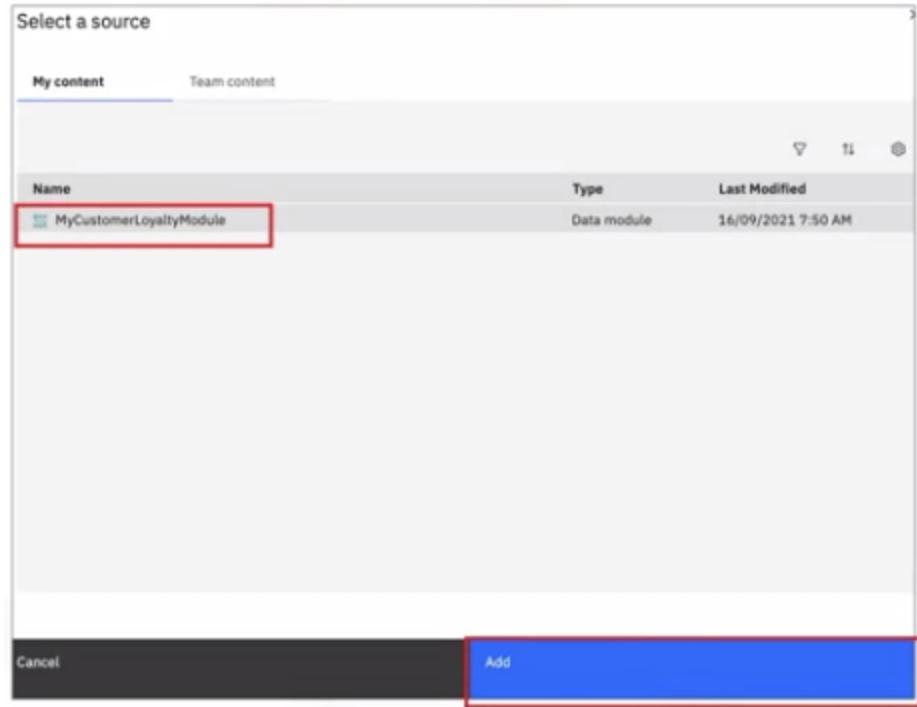
Data module

Grid Relationships Custom tables

Loyalty	First Name	Last Name	Customer Name	Country	Province Or State	City
837810	Abigail	Goris	Abigail Goris	Canada	British Columbia	Dawson C.
707928	Ada	Glaude	Ada Glaude	Germany	Bremen	Bremen
901442	Ada	Staback	Ada Staback	Canada	Manitoba	Winnipeg
237303	Adam	Boner	Adam Boner	Canada	Ontario	Sudbury
348835	Adam	Dunnegan	Adam Dunnegan	Canada	Manitoba	Winnipeg
186842	Adelaide	Drago	Adelaide Drago	Germany	Thuringen	Erfurt
605640	Adell	Maroni	Adell Maroni	United Kingdom	Reading	Ilkley Roa
723924	Adolph	Prey	Adolph Prey	Germany	Saarland	Saarbrück
202299	Adria	Osterstuck	Adria Osterstuck	Canada	New Brunswick	Fredericton
826271	Adriane	Dottin	Adriane Dottin	Canada	New Brunswick	Fredericton
616030	Akilah	Caravalho	Akilah Caravalho	Germany	Hessen	Frankfurt







Selected sources / MyCustomerLoyaltyModule

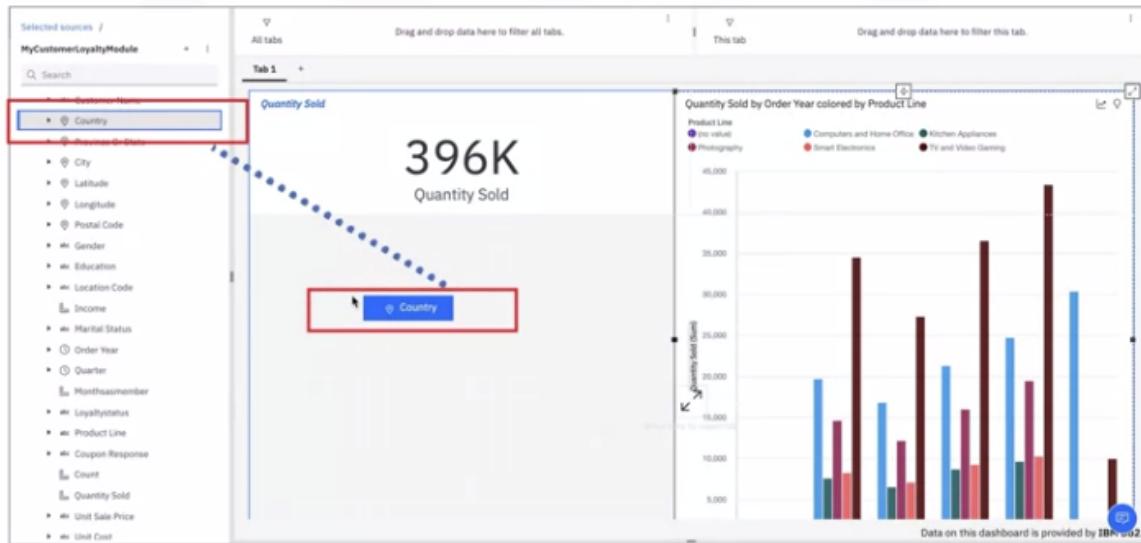
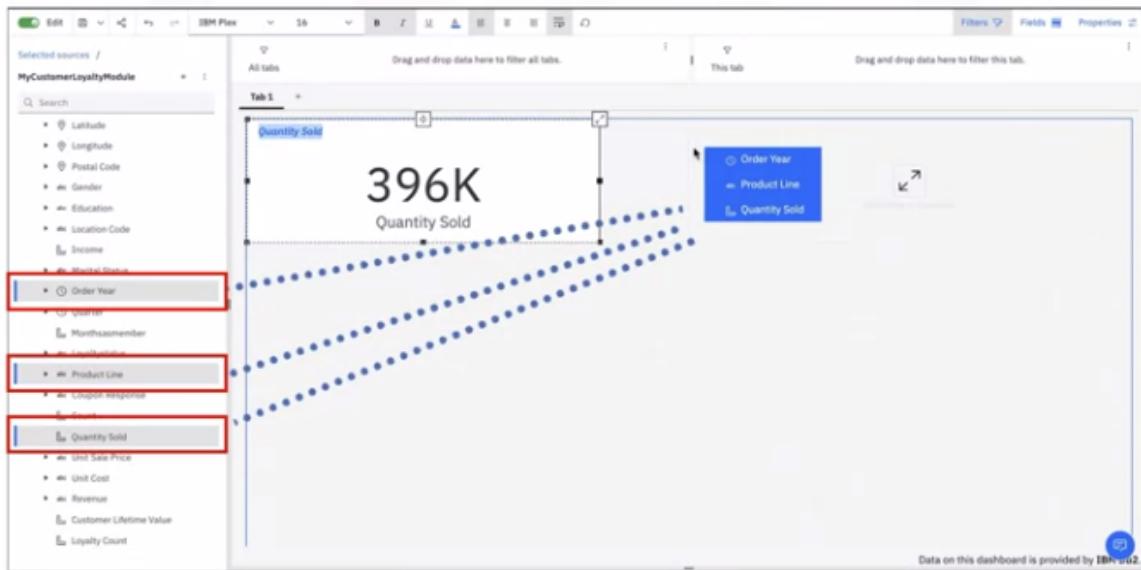
Search

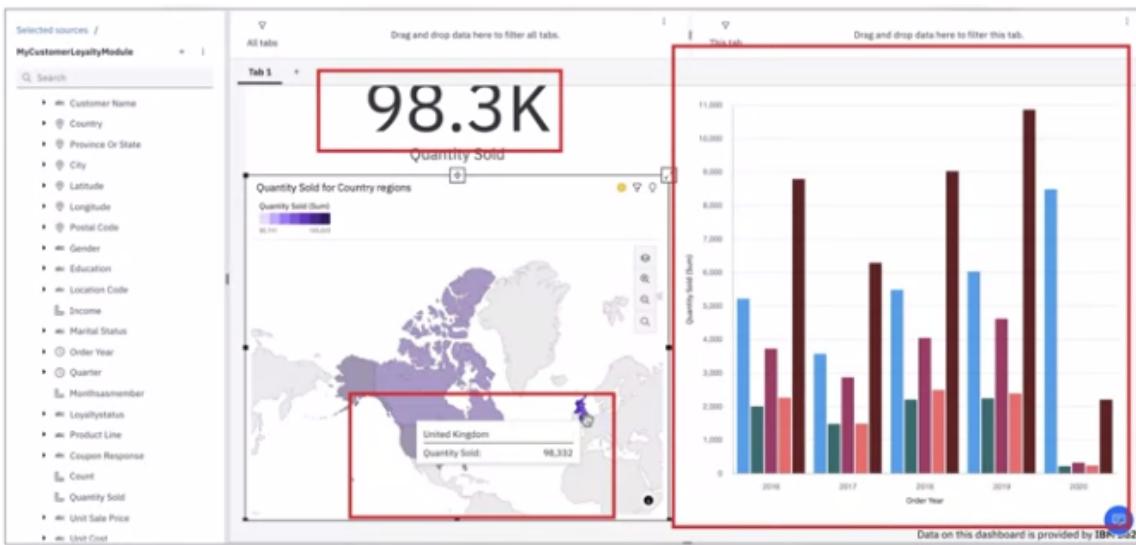
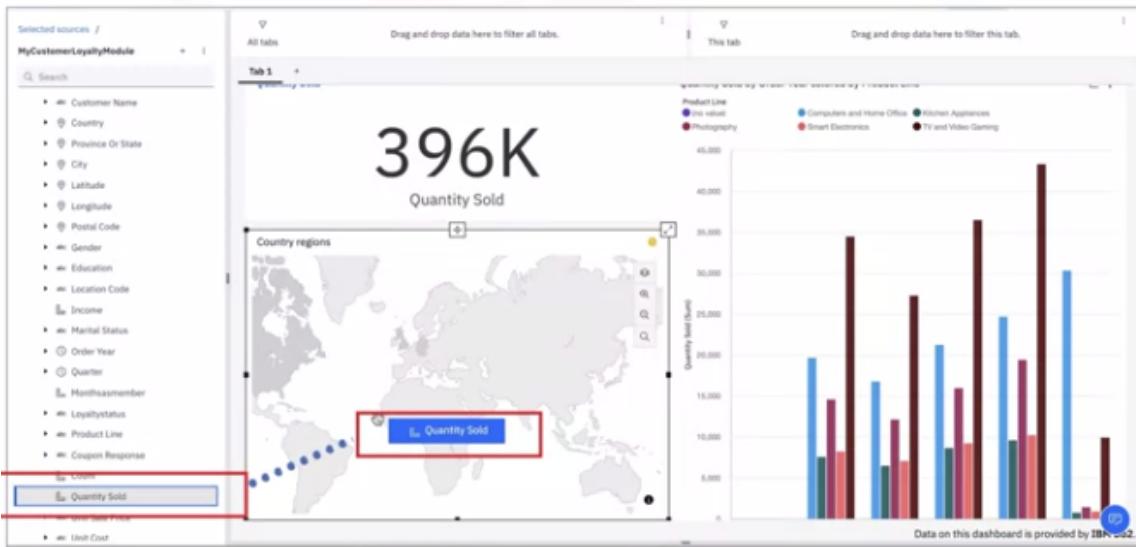
- Latitude
- Longitude
- Postal Code
- Gender
- Education
- Location Code
- Income
- Marital Status
- Order Year
- Quarter
- MonthasNumber
- LoyaltyStatus
- Product Line
- Coupon Response
- Owner
- Quantity Sold
- Unit Cost
- Revenue
- Customer Lifetime Value
- Loyalty Count

All tabs Drag and drop data here to filter all tabs. Tab 1 Drag and drop data here to filter this tab.

Quantity Sold

This screenshot shows the 'Selected sources' interface for the 'MyCustomerLoyaltyModule'. On the left, a sidebar lists various data items such as Latitude, Longitude, Postal Code, Gender, Education, Location Code, Income, Marital Status, Order Year, Quarter, MonthasNumber, LoyaltyStatus, Product Line, Coupon Response, Owner, Quantity Sold, Unit Cost, Revenue, Customer Lifetime Value, and Loyalty Count. In the center, a main area shows a blue box labeled 'Quantity Sold' being dragged from the sidebar to a grid. The grid has a dotted line indicating where the data will be placed. The 'Tab 1' tab is selected. The 'Quantity Sold' item is also highlighted with a red box in the sidebar.







Hands-on Lab: Getting Started with Cognos Analytics

Hands-on Lab: Different Methods for Creating Dashboards Visualizations with Cognos Analytics

Hands-on Lab: Advanced Dashboard Capabilities in COgnos Analytics

Hands-on Lab: Analyzing DB2 Data With Cognos Analytics

(Optional) Hands-on Lab: Analyzing Data With Cognos Analytics