

Introduction to Power BI
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COMMUNITY SUMMIT

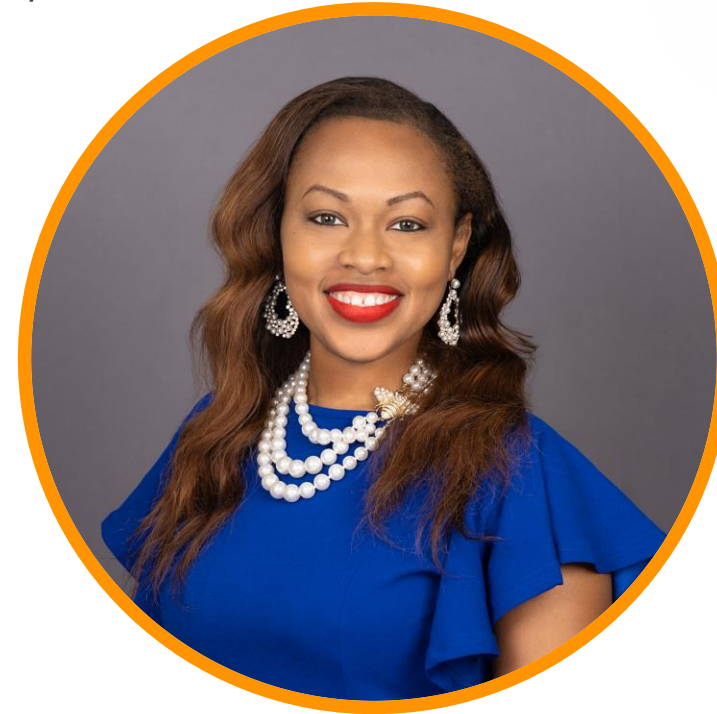
POWER PLATFORM

Introduction to Power BI

San Antonio, Texas
October 13-17, 2024



The largest independent innovation, education,
and training event for Microsoft Biz Apps



Introduction to Power BI

A Dynamics–First,
'For User, By User'
Event.

About the speaker

- Courtney Watts is a Data Scientist with a Master's in Statistics and Data Analytics. Courtney is a leader in Advanced Analytics, bringing over 13 years of comprehensive experience across all aspects of Machine Learning, Analytical Solutions & Reporting, and software training. With a robust skill set that includes Power BI, Machine Learning, R Programming, SQL Programming, Technical Training, and D365 Embedded Analytics, Courtney offers a unique blend of technical expertise and practical insights.
- Courtney also emphasizes and understands the critical importance of establishing data governance within analytics and software development, ensuring a solid foundation before leveraging Advanced Analytics or Reporting solutions

| Agenda

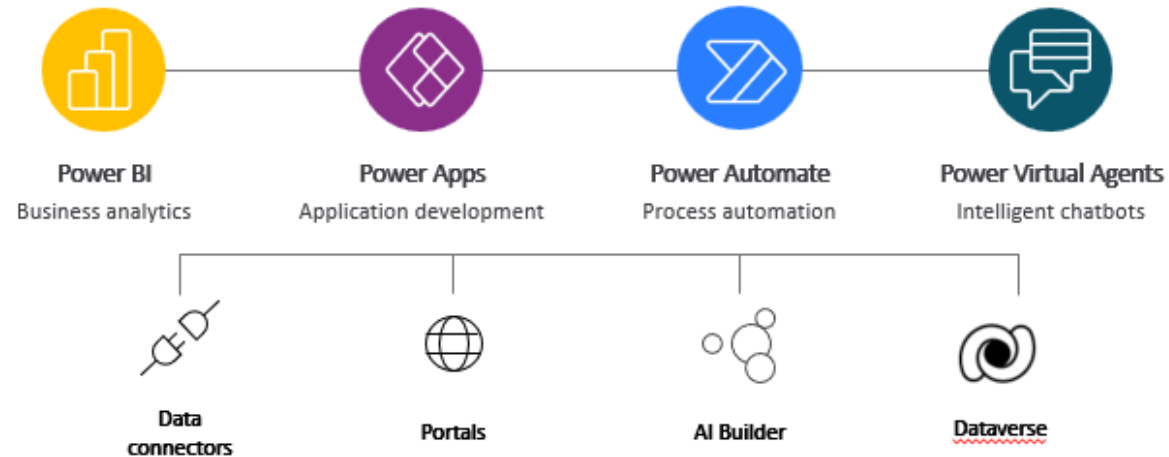


- 1. The Power Platform**
- 2. Overview of Power BI**
- 3. Data Example (Excel)**
- 4. Data Connectivity**
- 5. Data Transformation**
- 6. Visualizations**
- 7. Interactive Dashboards**
- 8. Collaboration and Sharing**

The Power Platform



- The Power Platform is a SaaS services that enables users to Analyze, Act, and Automate their data and workflows



Power BI

Power BI is user-friendly and designed to be accessible for a wide range of users across various teams. Its intuitive interface allows individuals with varying levels of expertise to effectively harness its capabilities for data analysis and visualization



Power BI

Power BI Desktop is free

A grey downward-pointing arrow indicating a flow from the first point to the second.

Easily Integrated with Excel, Power Point,
and SSMS

A grey downward-pointing arrow indicating a flow from the second point to the third.

You can create custom visualization or
themes for data analysis and visualization

Key Features



Data Connectivity:

Power BI can connect to a wide range of data sources, including Excel, SQL Server, cloud services (like Azure, Google Analytics), and many others.

Data Transformation:

Using Power Query, users can clean, transform, and shape their data before creating reports. This includes filtering rows, adding columns, merging tables, and more.

Visualizations:

Power BI offers a variety of visualizations such as bar charts, line charts, pie charts, maps, and custom visuals. Users can easily drag and drop to create engaging dashboards.

Interactive Dashboards:

Dashboards can be created with multiple visualizations that interact with each other, allowing users to drill down into specific data points for deeper insights.

will interpret and generate the appropriate visuals.

Collaboration and Sharing:

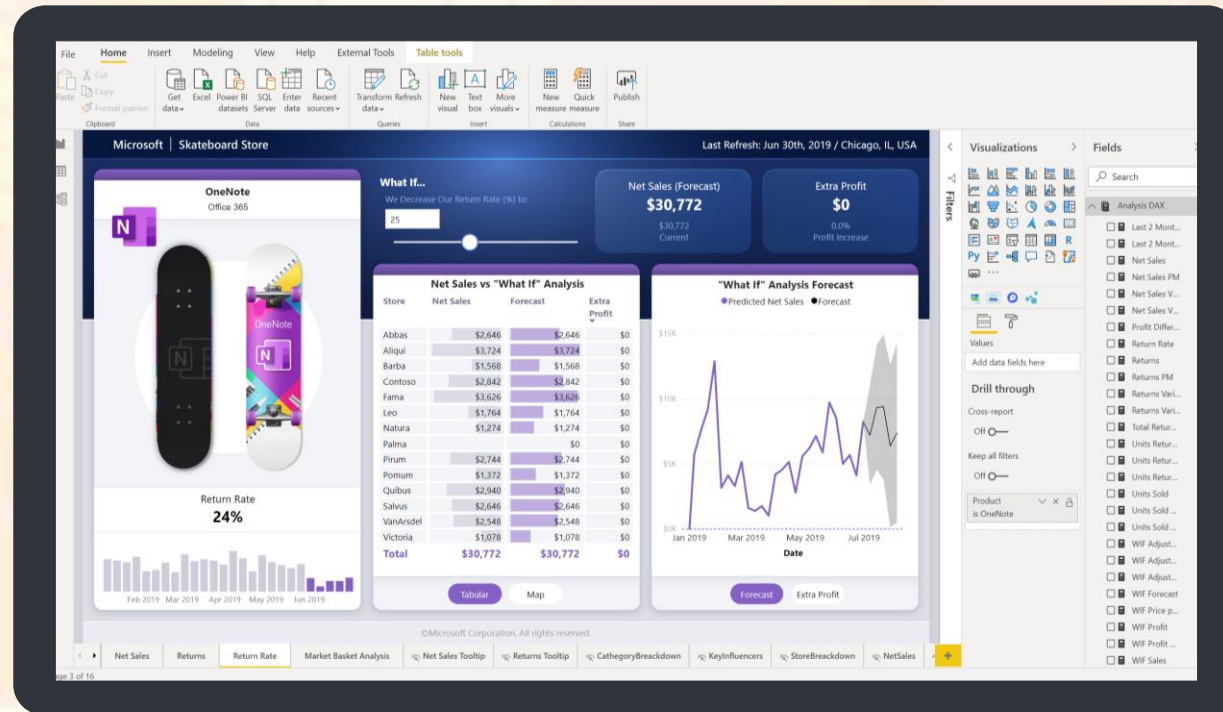
Reports and dashboards can be shared with others in the organization via the Power BI service. You can set up row-level security to ensure that users only see data relevant to them.

Mobile Access:

Power BI has mobile apps that allow users to access reports and dashboards on the go, ensuring they can stay informed anytime, anywhere.

Integration with Other Microsoft Products:

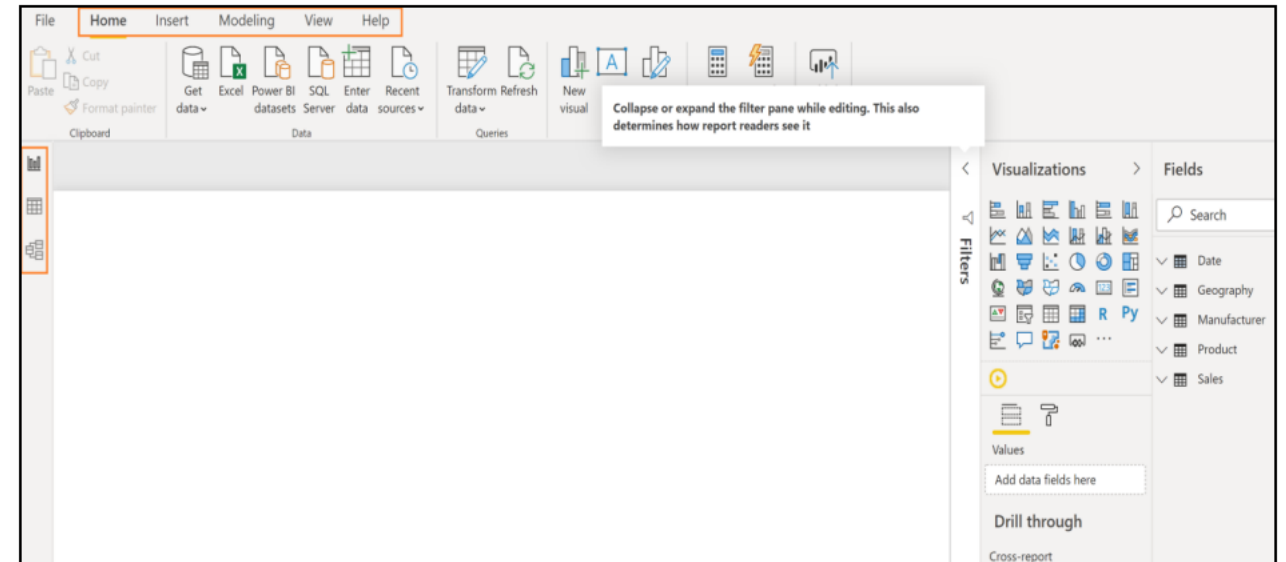
Seamlessly integrates with other Microsoft tools like Excel, SharePoint, Teams, and more, enhancing productivity.



Power BI Layout



1. The Home tab is where the most common operations you perform are available.
2. The Insert tab in the ribbon allows you to insert shapes, a text box or new visuals
3. The Modeling tab in the ribbon enables additional data modelling capabilities like adding custom columns and calculating measures.
4. The View tab has options to format the page layout.



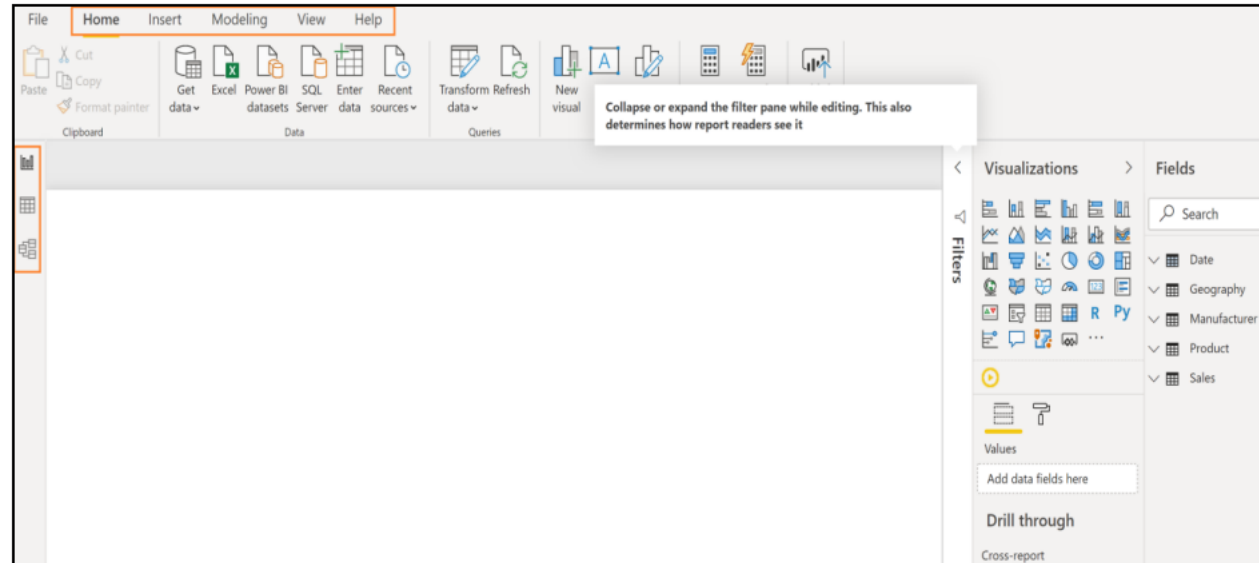
Power BI Layout Cont'd



1. The Help tab provides self-help options like guided learning, training videos, and links to online communities.

2. On the left side of the window, you have three icons, **Report**, **Data**, and **Model**. If you hover over the icons, you can see the tooltips. Switching between these allows you to see the data and the relationships between the tables.

3. The center white space is the canvas where you will be creating visuals



Sample Data



File Type: Excel
Columns:

- 1. Customer Name
- 2. Company Size
- 3. Customer Group
- 4. Payment Terms
- 5. Credit Rating
- 6. State
- 7. Parent Company
- 8. Sales Rep
- 9. Revenue

File Home Insert Draw Page Layout Formulas Data Review View Automate Help										
Clipboard		Font			Alignment		Number		Styles	
Aptos Narrow 11		B I U			General		Conditional Formatting		Format as Table	
K7		X ✓ fx			Number		Cell Styles			
	A	B	C	D	E	F	G	H	I	J
	Customer Name	Company Size	Customer Group	Payment Terms	Credit Rating	State	Parent Company	Sales Rep	Revenue	
1	John Doe	Small	Bronze	30	B	New York	ABC Corp	Alice Johnson	10,000.00	
2	Jane Smith	Medium	Silver	60	A	California	XYZ Inc.	Bob Smith	5,000.00	
3	Emily Johnson	Large	Gold	90	A+	Texas	123 Industries	Carol Lee	8,000.00	
4	Michael Brown	Small	Bronze	30	C	Florida	Acme Corp	David Brown	5,000.00	
5	Sarah Davis	Medium	Silver	60	B+	Illinois	Global Solutions	Emma White	7,000.00	
6	David Wilson	Large	Gold	90	A	Washington	Tech Innovations	Frank Green	2,000.00	
7	Jane Doe	Medium	Silver	60	A	Texas	TZY Corp	Alice Johnson	2,000.00	
8	Michael Davis	Small	Bronze	30	A	Texas	ABF Corp	Bob Smith	3,000.00	

Obtaining Data



Data types are organized in the following categories:

- All
- File
- Database
- Microsoft Fabric
- Power Platform
- Azure
- Online Services
- Other

The All category includes all data connection types from all categories.

- The File category provides the following data connections:
- Excel
- Text/CSV
- XML
- JSON
- Folder
- SharePoint Folder

Get Data

All

File

Database

Microsoft Fabric

Power Platform

Azure

Online Services

Other

All

Excel Workbook

Text/CSV

XML

JSON

Folder

PDF

Parquet

SharePoint folder

SQL Server database

Access database

SQL Server Analysis Services database

Oracle database

IBM Db2 database

IBM Informix database (Beta)

IBM Netezza

MySQL database

Certified Connectors

Template Apps

Connect

Cancel

Data Connectivity:



File Home Help Table tools

Paste Cut Copy

Get data Excel workbook OneLake data hub SQL Server Enter data Dataverse Recent sources

Transform data Refresh data Queries

Manage relationships Relationships

New measure Quick measure New column New table Calculations

Manage roles View as Security

Clipboard

Common data sources

- Excel workbook
- Power BI semantic models
- Dataflows
- Dataverse
- SQL Server
- Analysis Services
- Text/CSV
- Web
- OData feed
- Blank query
- Power BI Template Apps
- More...

01/01/2013

01/02/2013

01/03/2013

01/04/2013

01/05/2013

01/06/2013

01/07/2013

01/08/2013

01/09/2013

01/10/2013

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01/18/2013

01/19/2013

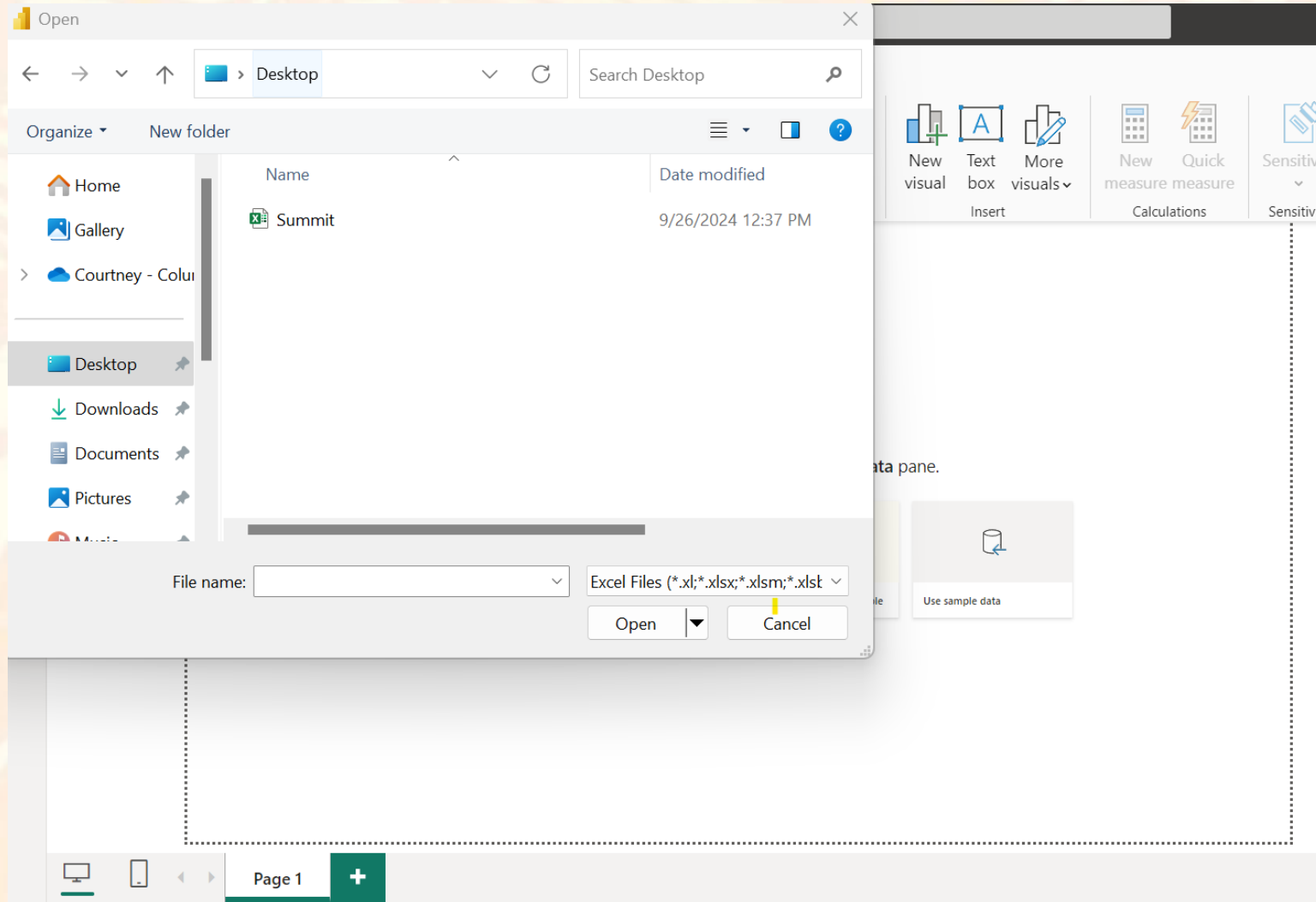
01/20/2013

01/21/2013

ble: Date (3,287 rows)

- Select the Home Ribbon
- Select Get Data

Data Connectivity:



- Select the sample excel file created
- Select Open

Data Connectivity:



Display Options ▾

Summit.xlsx [1]

☒ Sheet3

Sheet3

Customer Name	Company Size	Customer Group	P
John Doe	Small	Bronze	
Jane Smith	Medium	Silver	
Emily Johnson	Large	Gold	
Michael Brown	Small	Bronze	
Sarah Davis	Medium	Silver	
David Wilson	Large	Gold	
Jane Doe	Medium	Silver	
Michael Davis	Small	Bronze	

<

>

Load

Transform Data

Cancel

- In the Navigator Screen select load
- Your dataset is now within Power BI

Data Connectivity:



- In the Navigator Screen select load
- Your dataset is now within Power BI

Customer Name	Company Size	Customer Group	Payment Terms	Credit Rating	State	Parent Company	Sales Rep	Revenue
John Doe	Small	Bronze	30	B	New York	ABC Corp	Alice Johnson	10000
Jane Smith	Medium	Silver	60	A	California	XYZ Inc.	Bob Smith	5000
Emily Johnson	Large	Gold	90	A+	Texas	123 Industries	Carol Lee	8000
Michael Brown	Small	Bronze	30	C	Florida	Acme Corp	David Brown	5000
Sarah Davis	Medium	Silver	60	B+	Illinois	Global Solutions	Emma White	7000
David Wilson	Large	Gold	90	A	Washington	Tech Innovations	Frank Green	2000
Jane Doe	Medium	Silver	60	A	Texas	TZY Corp	Alice Johnson	2000
Michael Davis	Small	Bronze	30	A	Texas	ABF Corp	Bob Smith	3000

Data Transformation

Data Transformation:

Data

Search

- New measure
- New column
- New quick measure
- Refresh data
- Edit query**
- Incremental refresh
- Manage aggregations
- Copy table
- Rename
- Delete from model
- Hide in report view
- Unhide all
- Collapse all
- Expand all

File Home Help Table tools

Paste Cut Copy

Get data Excel workbook OneLake data hub SQL Server Enter data Dataverse Recent sources

Clipboard Data

Transform data Refresh

Manage relationships

New measure Quick measure New column New table

Manage roles View as

Transform data

Data source settings

Edit parameters

Edit variables

Customer Name	Company Size	Customer Group	Payment Terms	State	Parent Company	Sales Rep	Revenue
John Doe	Small	Bronze			ABC Corp	Alice Johnson	10000
Jane Smith	Medium	Silver			XYZ Inc.	Bob Smith	5000
Emily Johnson	Large	Gold			123 Industries	Carol Lee	8000
Michael Brown	Small	Bronze	30 C	Florida	Acme Corp	David Brown	5000
Sarah Davis	Medium	Silver	60 B+	Illinois	Global Solutions	Emma White	7000
David Wilson	Large	Gold	90 A	Washington	Tech Innovations	Frank Green	2000
Jane Doe	Medium	Silver	60 A	Texas	TZY Corp	Alice Johnson	2000
Michael Davis	Small	Bronze	30 A	Texas	ABF Corp	Bob Smith	3000

Steps to access the Power Query Editor

Data Transformation:

Power Query Editor

Transform Add Column View Tools Help

Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Manage Choose Columns Remove Columns Reduce Rows Sort Split Column Group By Data Type: Whole Number Use First Row as Headers Replace Values Combine Text Analytics Vision Azure Machine Learning All Insights

fx = Table.TransformColumnTypes(#"Promoted Headers",{{"Customer Name", type text}},

	Customer Group	Payment Terms	Credit Rating	State
1	Bronze	30	B	New York
2	Silver	60	A	California
3	Gold	90	A+	Texas
4	Bronze	30	C	Florida
5	Silver	60	B+	Illinois
6	Gold	90	A	Washington
7	Silver	60	A	Texas
8	Bronze	30	A	Texas

Query Settings

PROPERTIES

Name

Sheet3

All Properties

APPLIED STEPS

Source

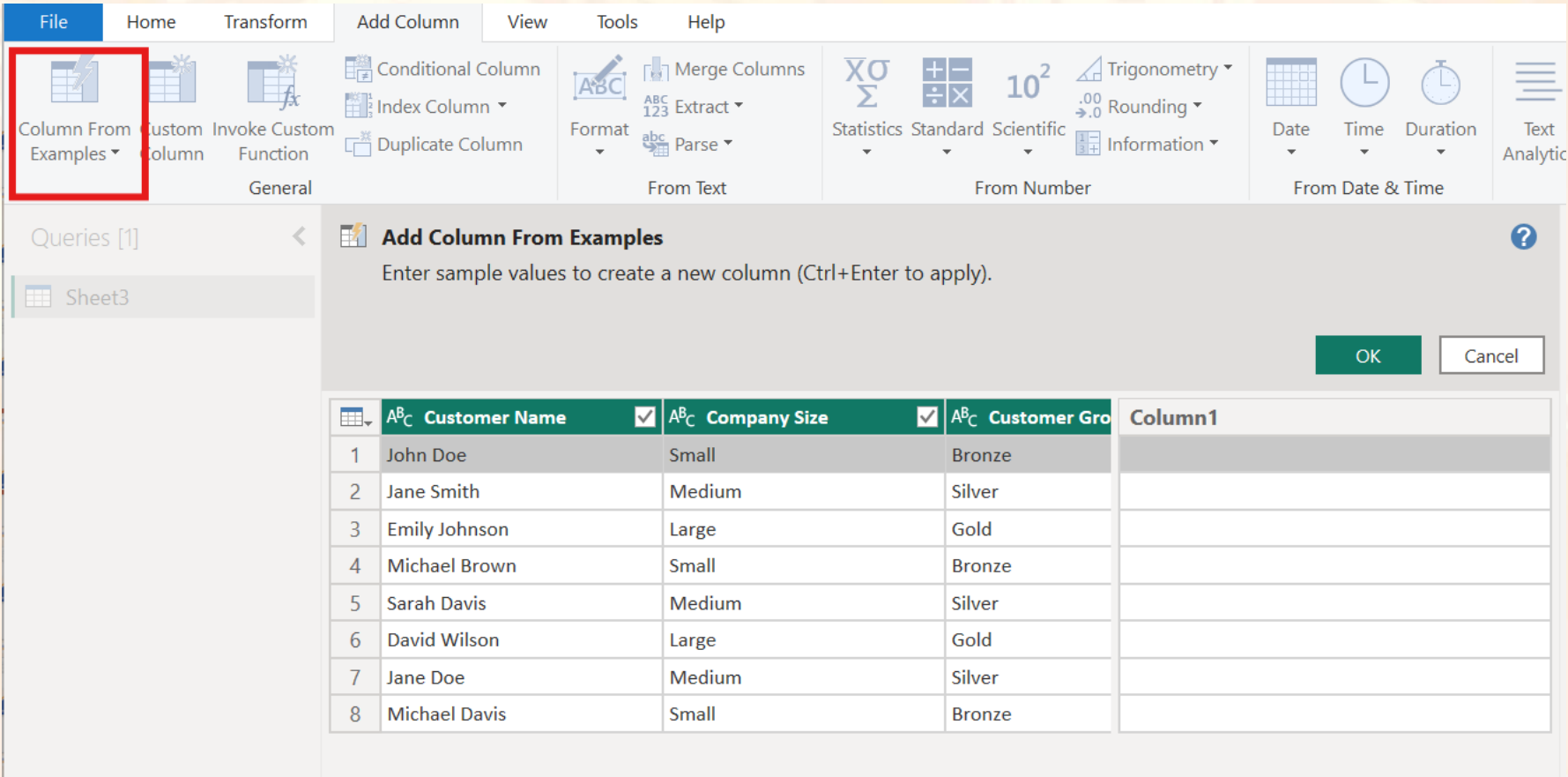
Navigation

Promoted Headers

Changed Type

- Clean Data
- Update First Row as Headers
- Format text

Data Transformation:

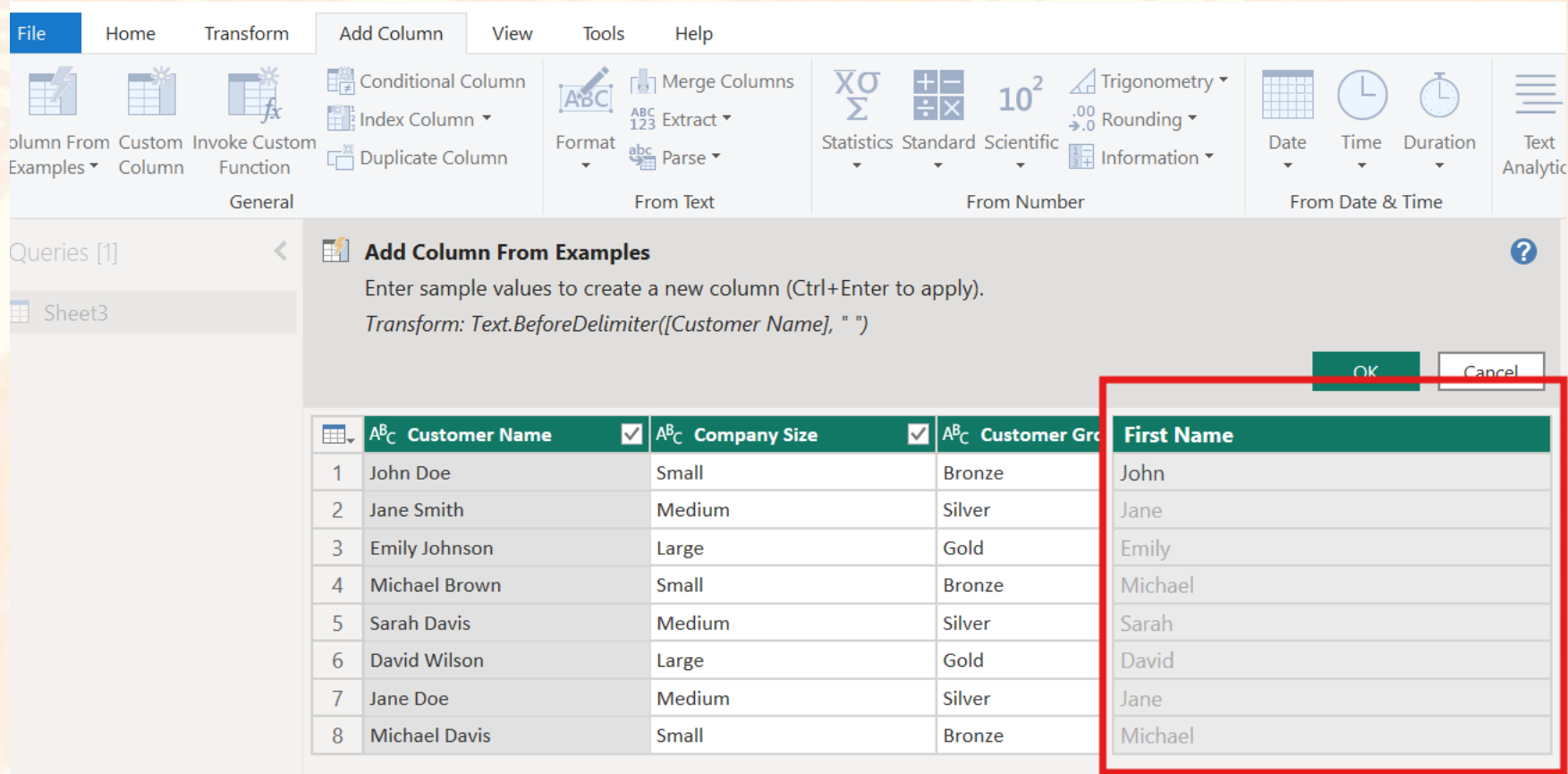


The screenshot shows the 'Add Column From Examples' dialog box in Power Query. The ribbon has tabs for File, Home, Transform, Add Column, View, Tools, and Help. The 'Add Column' tab is active, and the 'Column From Examples' button is highlighted with a red box. The dialog box contains a table with 8 rows of sample data and a new column named 'Column1'.

	ABC Customer Name	ABC Company Size	ABC Customer Gro	Column1
1	John Doe	Small	Bronze	
2	Jane Smith	Medium	Silver	
3	Emily Johnson	Large	Gold	
4	Michael Brown	Small	Bronze	
5	Sarah Davis	Medium	Silver	
6	David Wilson	Large	Gold	
7	Jane Doe	Medium	Silver	
8	Michael Davis	Small	Bronze	

- Adding custom columns is simple
- Ability to create custom columns or columns from examples

Data Transformation:



Add Column From Examples

Enter sample values to create a new column (Ctrl+Enter to apply).
 Transform: `Text.BeforeDelimiter([Customer Name], " ")`

	Customer Name	Company Size	Customer Group	First Name
1	John Doe	Small	Bronze	John
2	Jane Smith	Medium	Silver	Jane
3	Emily Johnson	Large	Gold	Emily
4	Michael Brown	Small	Bronze	Michael
5	Sarah Davis	Medium	Silver	Sarah
6	David Wilson	Large	Gold	David
7	Jane Doe	Medium	Silver	Jane
8	Michael Davis	Small	Bronze	Michael

- Adding Column from example
- Adding Customer first name

Data Transformation

- Select Close and Apply



The screenshot shows the Power Query ribbon with the 'Close & Apply' button highlighted. The ribbon includes tabs for File, Home, Transform, Add Column, View, Tools, and Help. The 'Close & Apply' button is located in the 'Home' tab, under the 'Close' group. The 'Transform' tab is also visible, showing various transformation options like Sort, Split Column, and Group By.

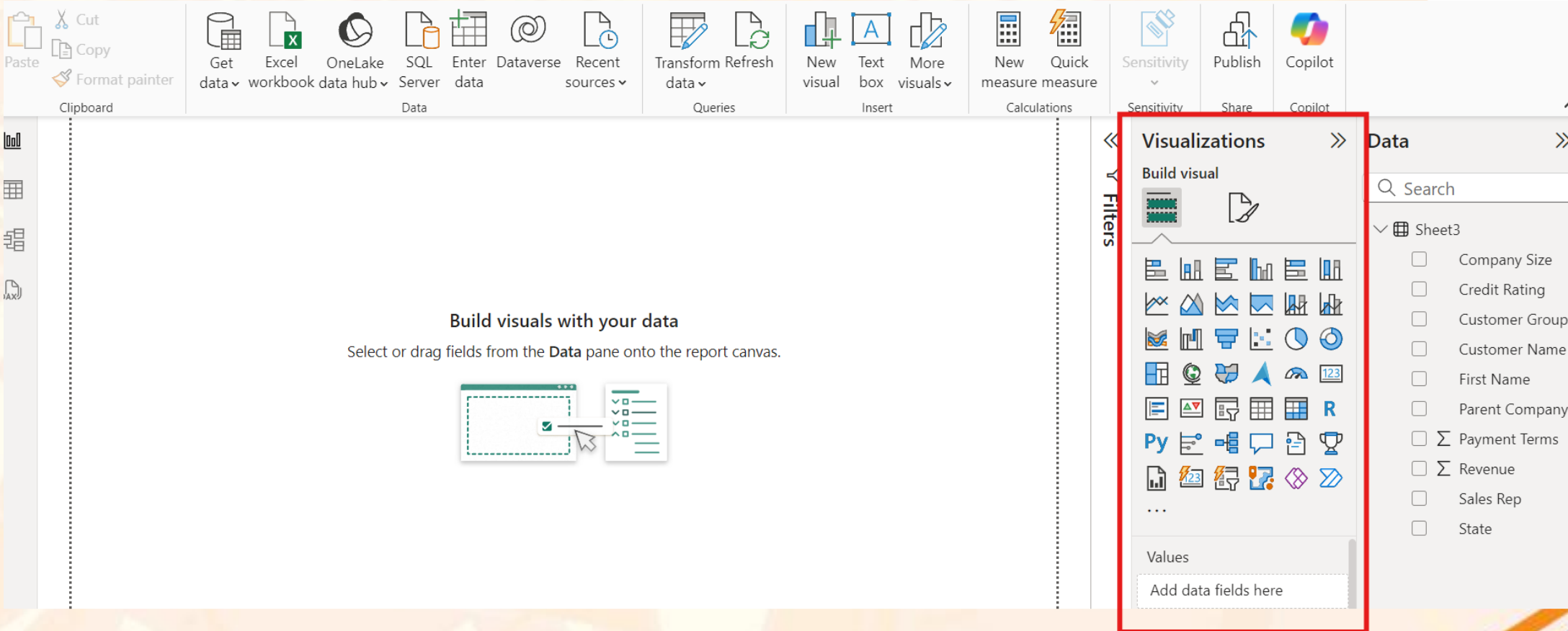
Below the ribbon, the 'Queries [1]' pane shows 'Sheet3' selected. The main area displays a table with the following data:

	Customer Name	Company Size	Customer Group	Payment Terms	
1	John Doe	Small	Bronze	30	B
2	Jane Smith	Medium	Silver	60	A
3	Emily Johnson	Large	Gold	90	A+
4	Michael Brown	Small	Bronze	30	C
5	Sarah Davis	Medium	Silver	60	B+
6	David Wilson	Large	Gold	90	A
7	Jane Doe	Medium	Silver	60	A
8	Michael Davis	Small	Bronze	30	A

Data Transformation Demo

Visualizations

Visualizations



The screenshot displays the Power BI Desktop interface. The top ribbon includes tabs for Clipboard, Data, Queries, Insert, Calculations, Sensitivity, Share, and Copilot. The main workspace shows a 'Build visuals with your data' prompt. On the right, the 'Visualizations' pane is open, with a red box highlighting the 'Build visual' section. This section contains a grid of visualization icons, including bar charts, line charts, pie charts, and maps. Below the grid is a 'Values' section with the text 'Add data fields here'. To the right of the 'Visualizations' pane is the 'Data' pane, which shows a search bar and a list of fields from 'Sheet3' with checkboxes for selection.

Build visuals with your data

Select or drag fields from the **Data** pane onto the report canvas.

Visualizations

Build visual

Values

Add data fields here

Data

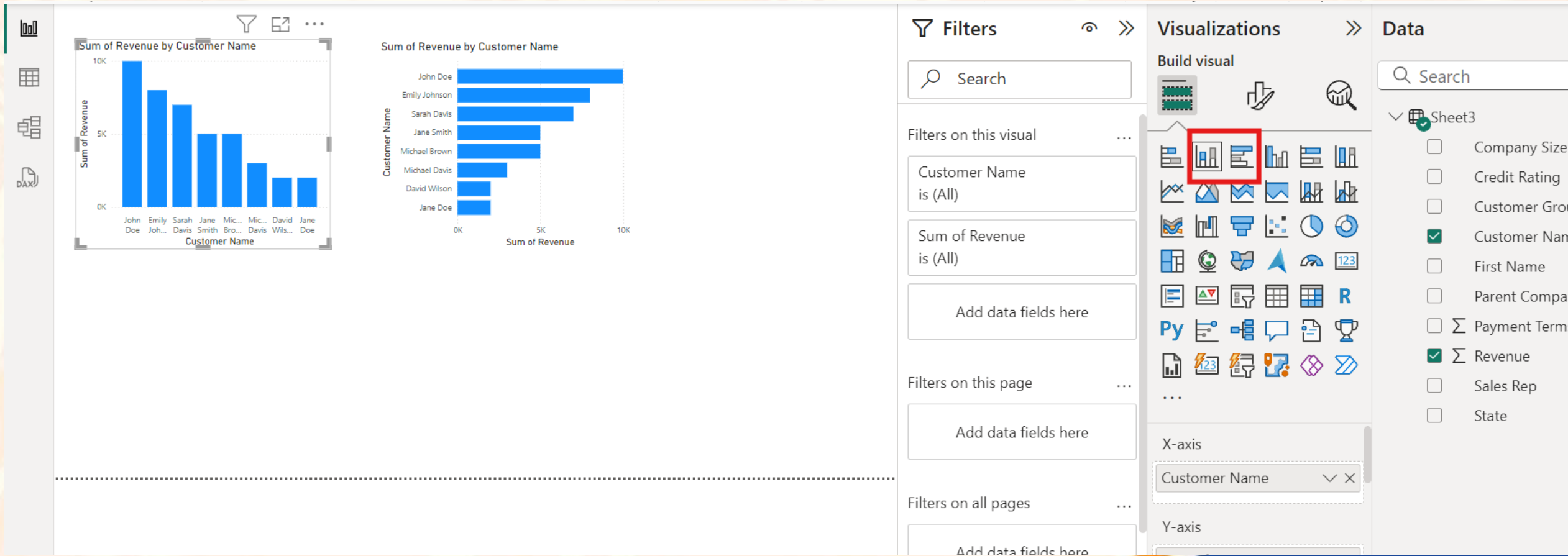
Search

Sheet3

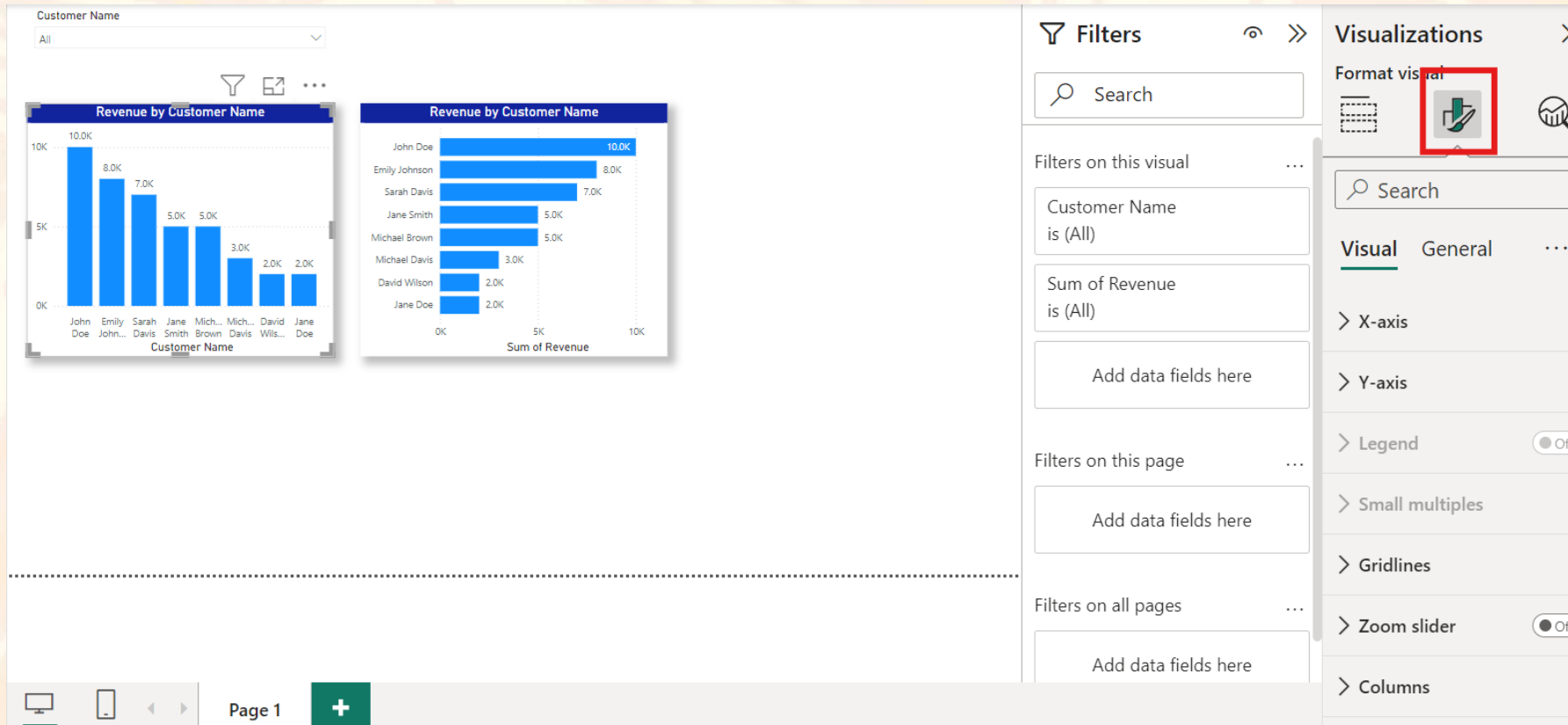
- ☐ Company Size
- ☐ Credit Rating
- ☐ Customer Group
- ☐ Customer Name
- ☐ First Name
- ☐ Parent Company
- ☐ Payment Terms
- ☐ Revenue
- ☐ Sales Rep
- ☐ State

There are many **Out of the Box** Visualizations in Power BI Desktop

Visualizations (Bar Charts)

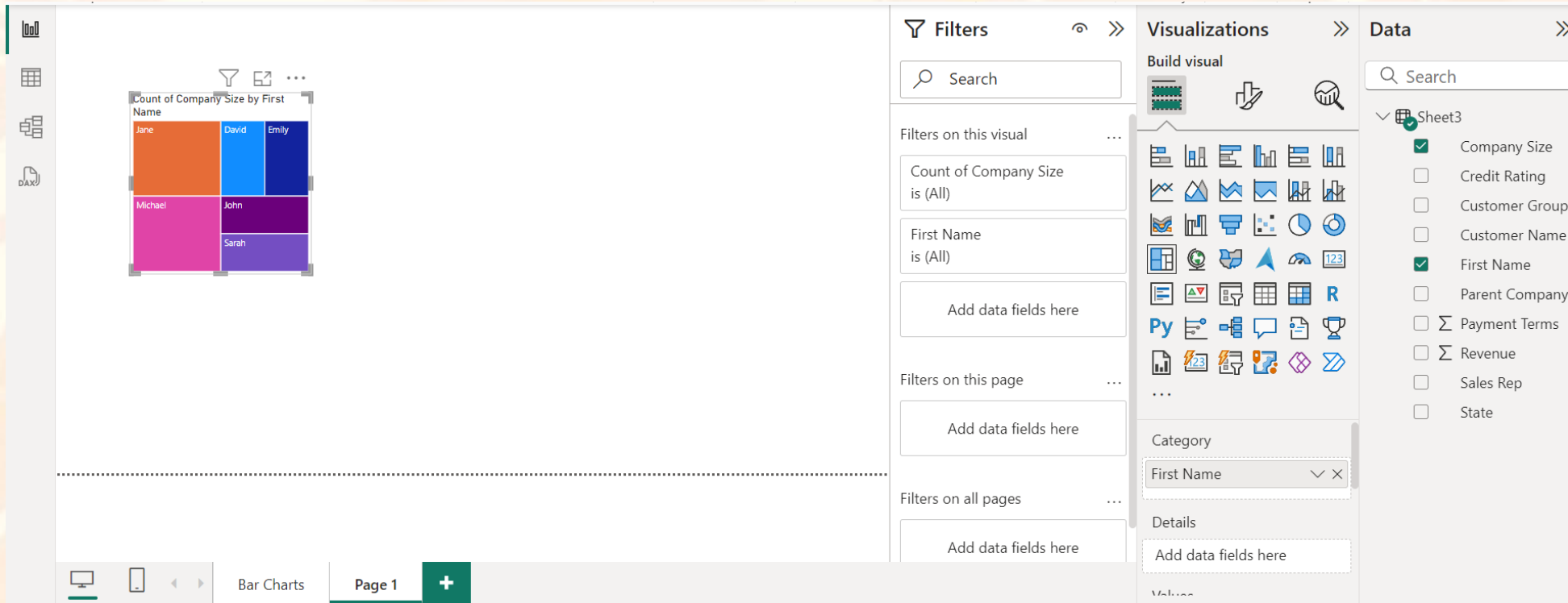


Visualizations (Customizing Bar Charts)

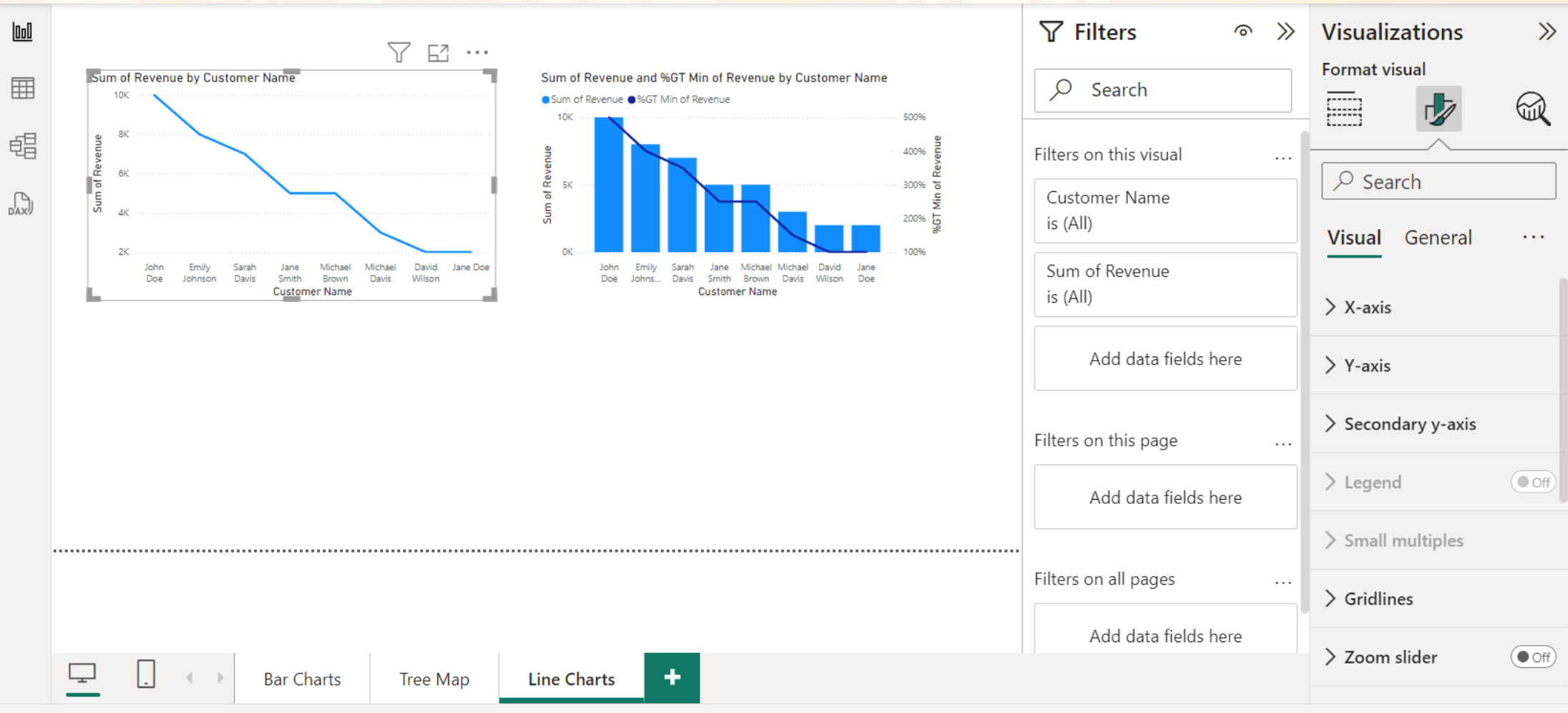


Visualizations (Tree Map)

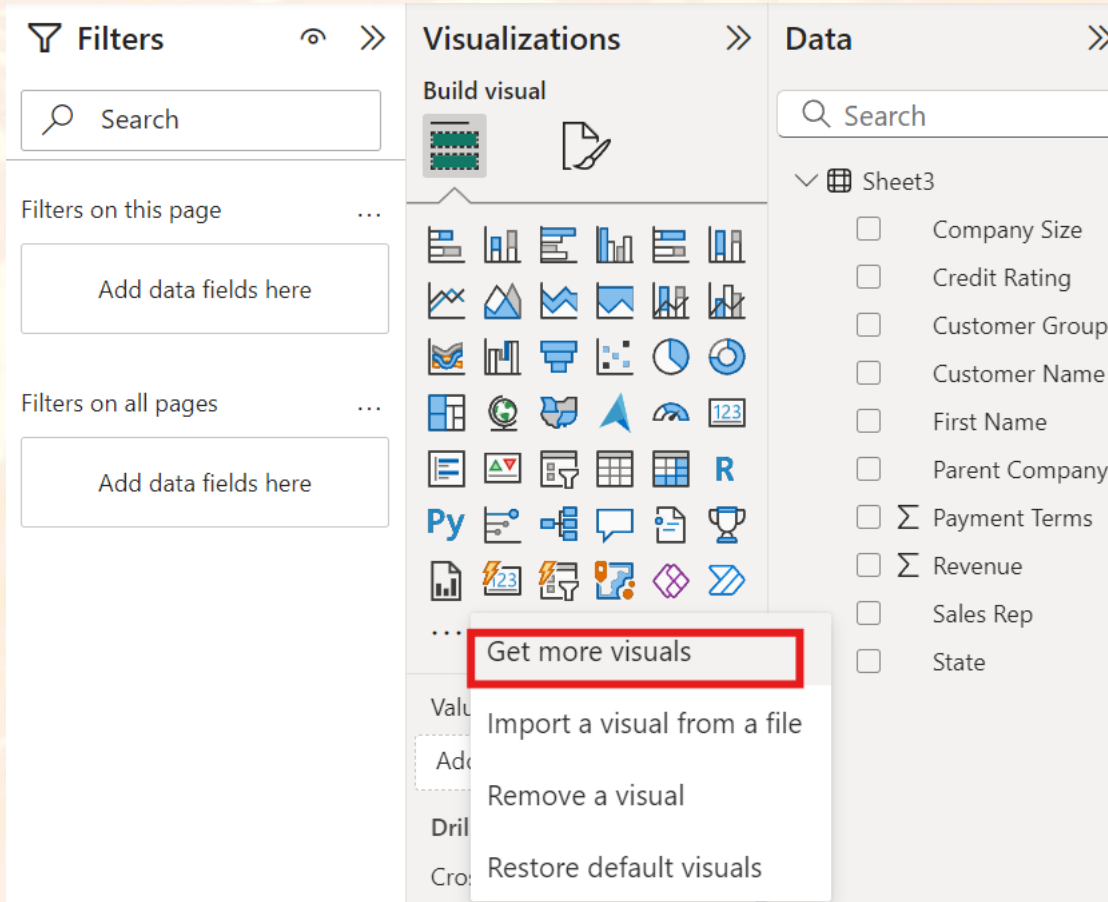
- A wonderful way to display hierarchical data
- Data is displayed as set of nested rectangles.



Visualizations (Line Charts)



Visualizations (Custom Charts)



- Many additional custom visualizations available
- Many additional Appsource visualizations are available

Visualizations (Custom Charts)

Power BI visuals

By clicking 'Add' and/or 'Download Sample' and downloading a visual, you agree to the provider's Terms and Conditions and Privacy Policy on the visual's page and agree Microsoft can share your account details to provider for their transactional purposes. Use of Microsoft's AppSource is subject to the [Microsoft Commercial Marketplace Terms](#) and [Privacy Statement](#).

All visuals Organizational visuals AppSource visuals

Search

Enhance your Power BI experience using tested and approved visuals [Learn more](#)

Filter by All

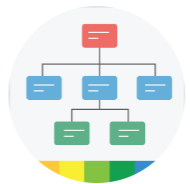
Sort by: Popularity



Zebra BI Tables 7.0

Zebra BI

★★★★★(12)



Performance Flow -...

xViz LLC

★★★★★(16)



Sunburst by Power...

TRUVIZ INC

★★★★★(5)



Icon Map Pro

Tekantis

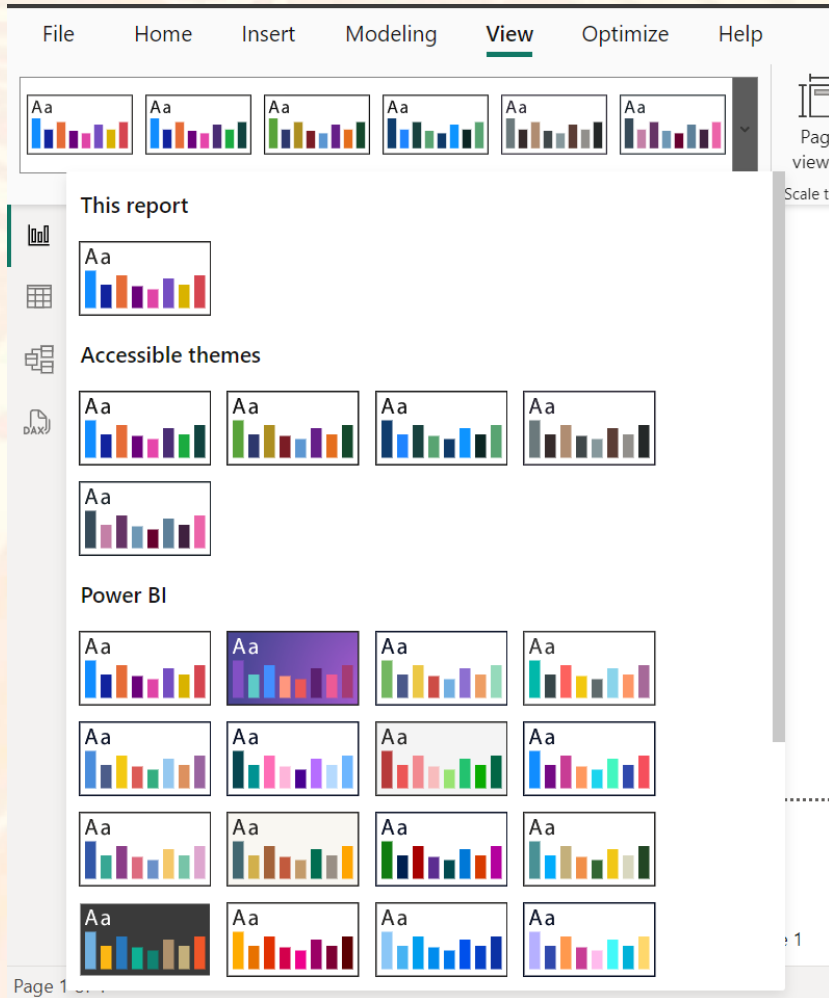
★★★★★(1)



Visualizations Demo

Themes

Themes



- Power BI allows users to customize their report with custom themes which include graph and title colors and fonts
- You can also import themes

Themes



Power BI forums > Galleries

Themes Gallery

Recently Posted Featured Top Kudos All Themes ▾

Submit a report theme

Options ▾

PowerBI Dashboard Template

- 6 Well Organized Pages
- Fully Customizable
- Flexible Content

Metrix Light

Power_Viz 0

PowerBI Dashboard Template

- 6 Well Organized Pages
- Fully Customizable
- Flexible Content

Stellar Light

Power_Viz 1

Digital Marketing Dashboard | Marketing Dashboard Template

Mokkup 0

World Stats

Shehab 0

Table Visual

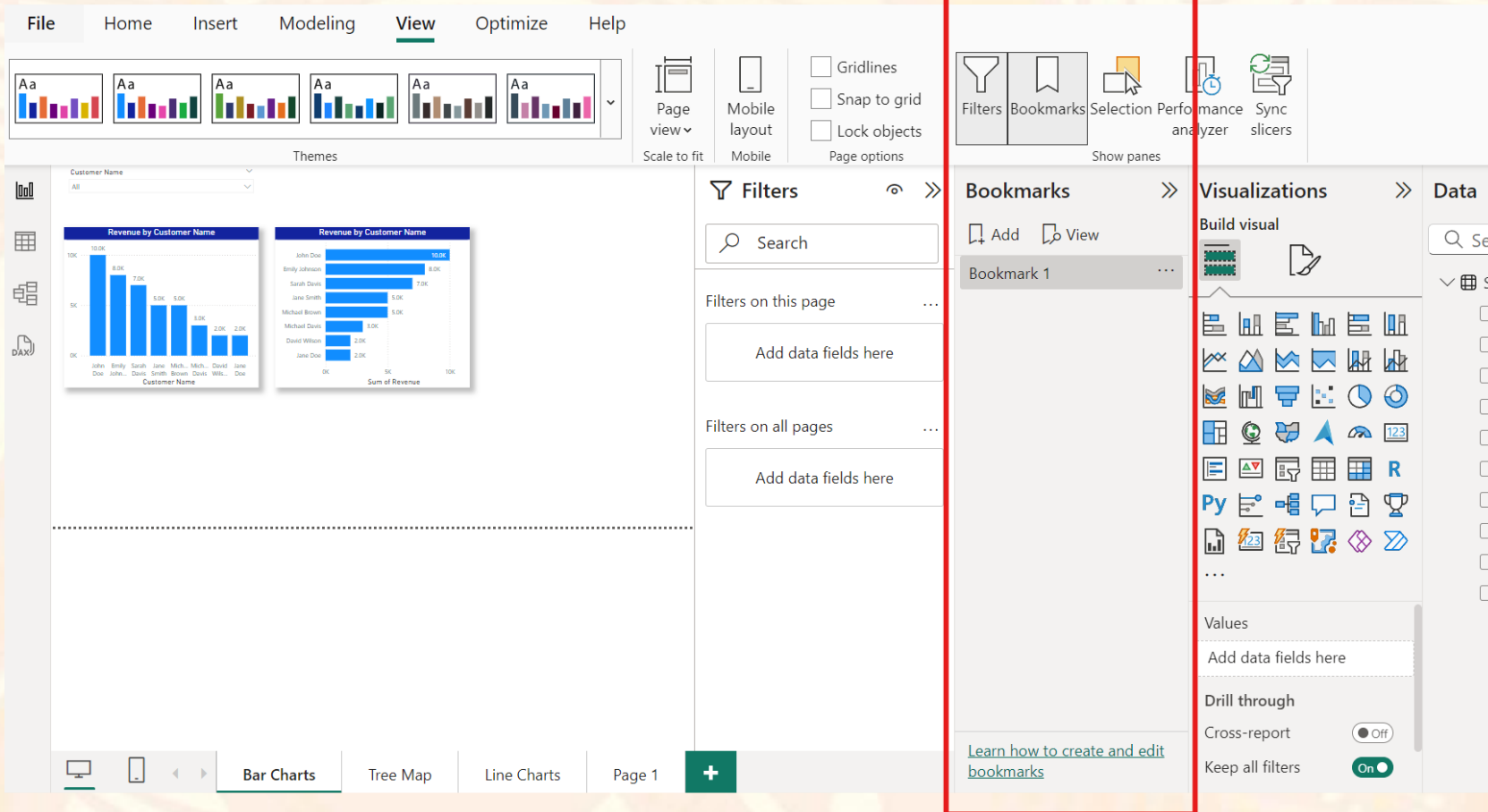
Financial Analytics Report Insights

Online Learning | Analytics Report

Bank Customer Churn

Access the Microsoft Theme Library and download custom themes

Bookmarks

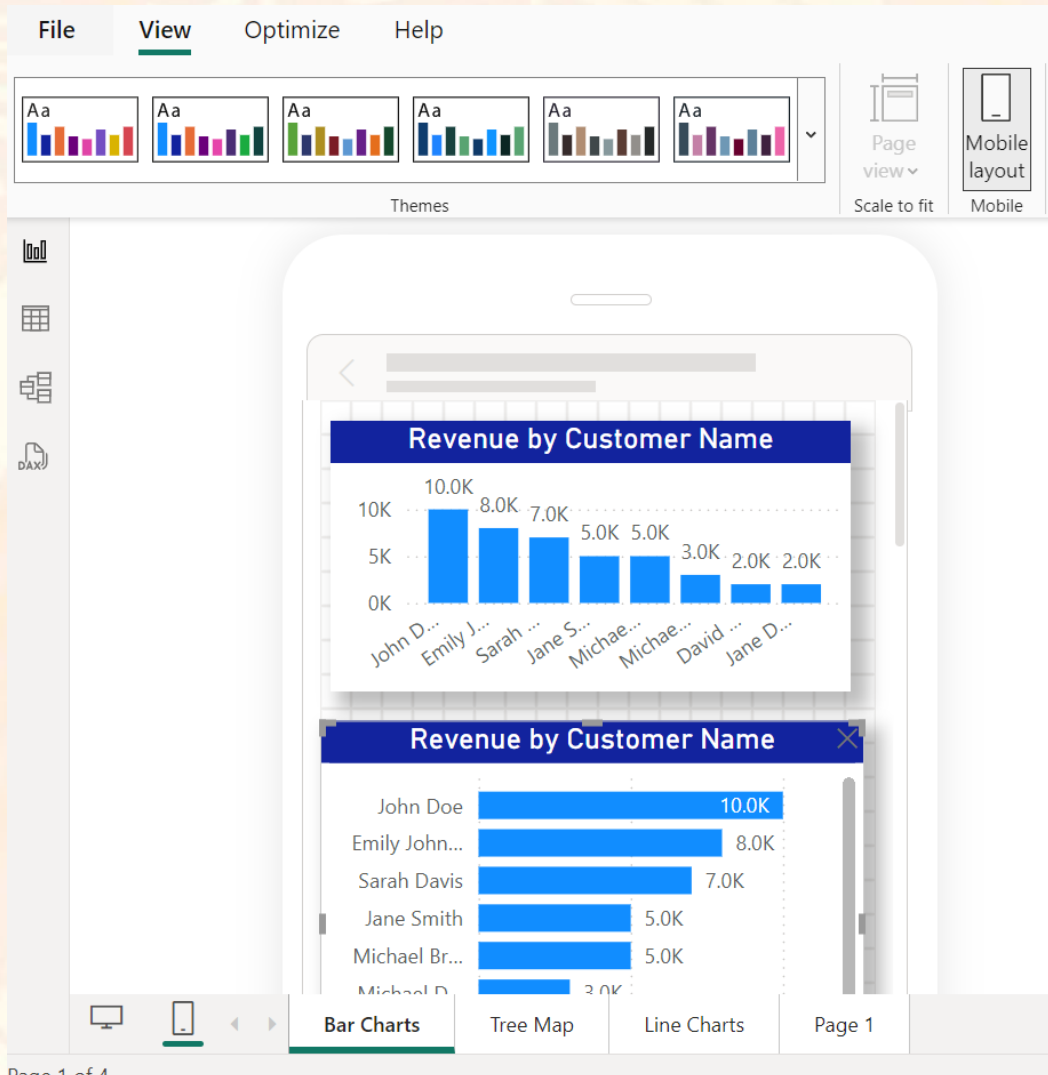


The screenshot shows the Power BI Desktop interface. The 'View' tab is selected in the ribbon. The 'Bookmarks' pane is highlighted with a red box. It contains a search bar, a list of filters on the page and all pages, and a 'Bookmarks' section with 'Bookmark 1' listed. The 'Visualizations' pane is also visible, showing various chart types and options like 'Values', 'Drill through', 'Cross-report', and 'Keep all filters'.

- Bookmarks are great tools to add to your report
- Bookmarks allow users to save the current state of a report page including filters

Mobile Layout

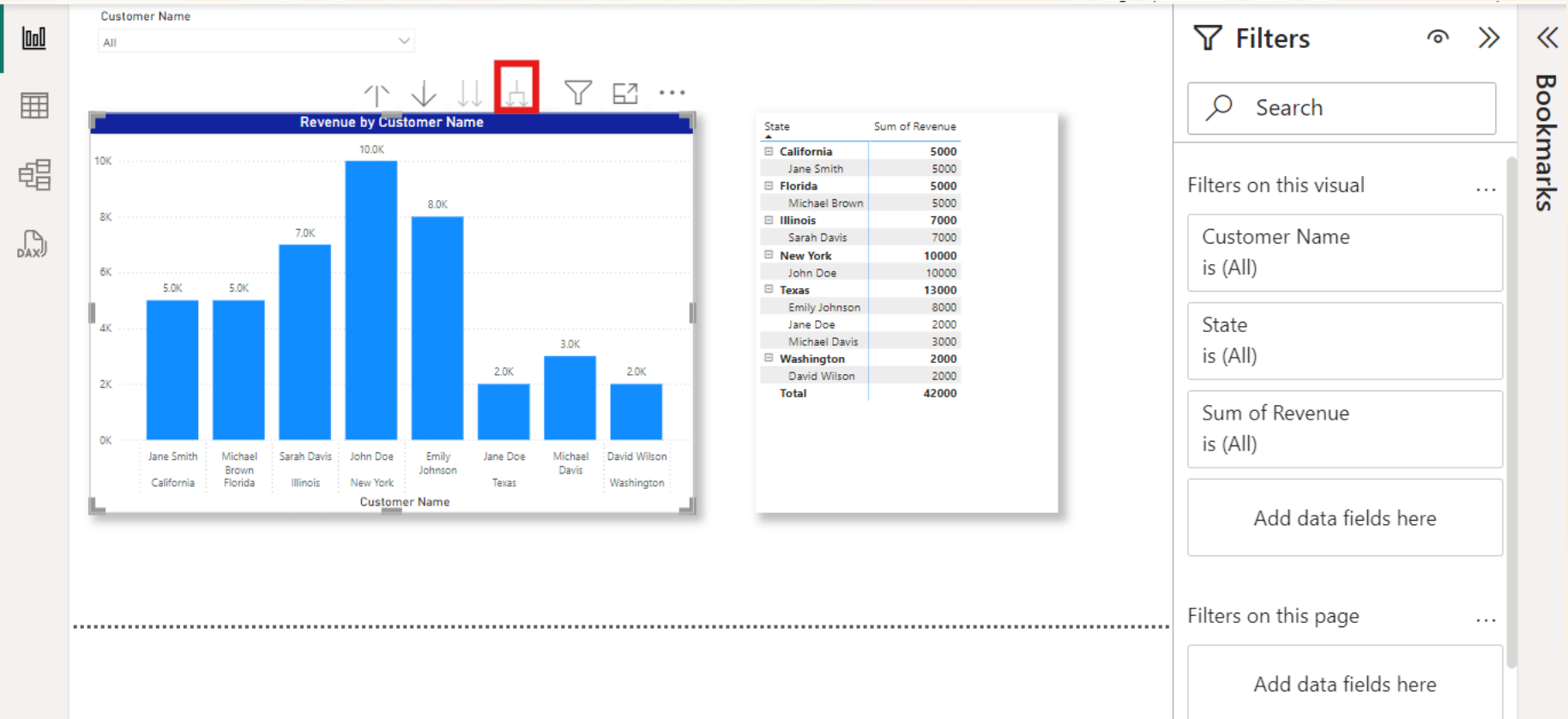
- Mobile layout is a wonderful tool
- Mobile layout is also great for Sales teams, and it allows insights on the go



Themes, Bookmarks, and Mobile Layout Demo

Interactive Dashboards

Interactive Dashboards: Drill Down



- Power BI allows users to create hierarchies
- Power BI allows users to view data in different ways even in regard to calendar dates

Report Publishing

The image shows the Power BI Desktop interface. The top ribbon has several tabs: Clipboard, Data, Queries, Insert, Calculations, Sensitivity, and Share. The 'Share' tab is highlighted with a red box, showing the 'Publish' button. The main workspace contains three visualizations: a treemap titled 'Company Size by Customer Name', a horizontal bar chart titled 'Revenue by Sales Rep', and a vertical bar chart titled 'Revenue by Customer Name'. The right-hand pane shows the 'Filters' and 'Visualizations' sections. The 'Visualizations' pane is open, showing the 'Format visual' options for the selected chart, including 'General' and 'Properties' tabs. The 'Title' property is set to 'Revenue by Sales Re' and the 'Heading' is set to 'Heading 3'.

Clipboard: Paste, Cut, Copy, Format painter

Data: Get data, Excel workbook, OneLake data hub, SQL Server, Enter data, Dataverse, Recent sources

Queries: Transform data, Refresh data

Insert: New visual, Text box, More visuals

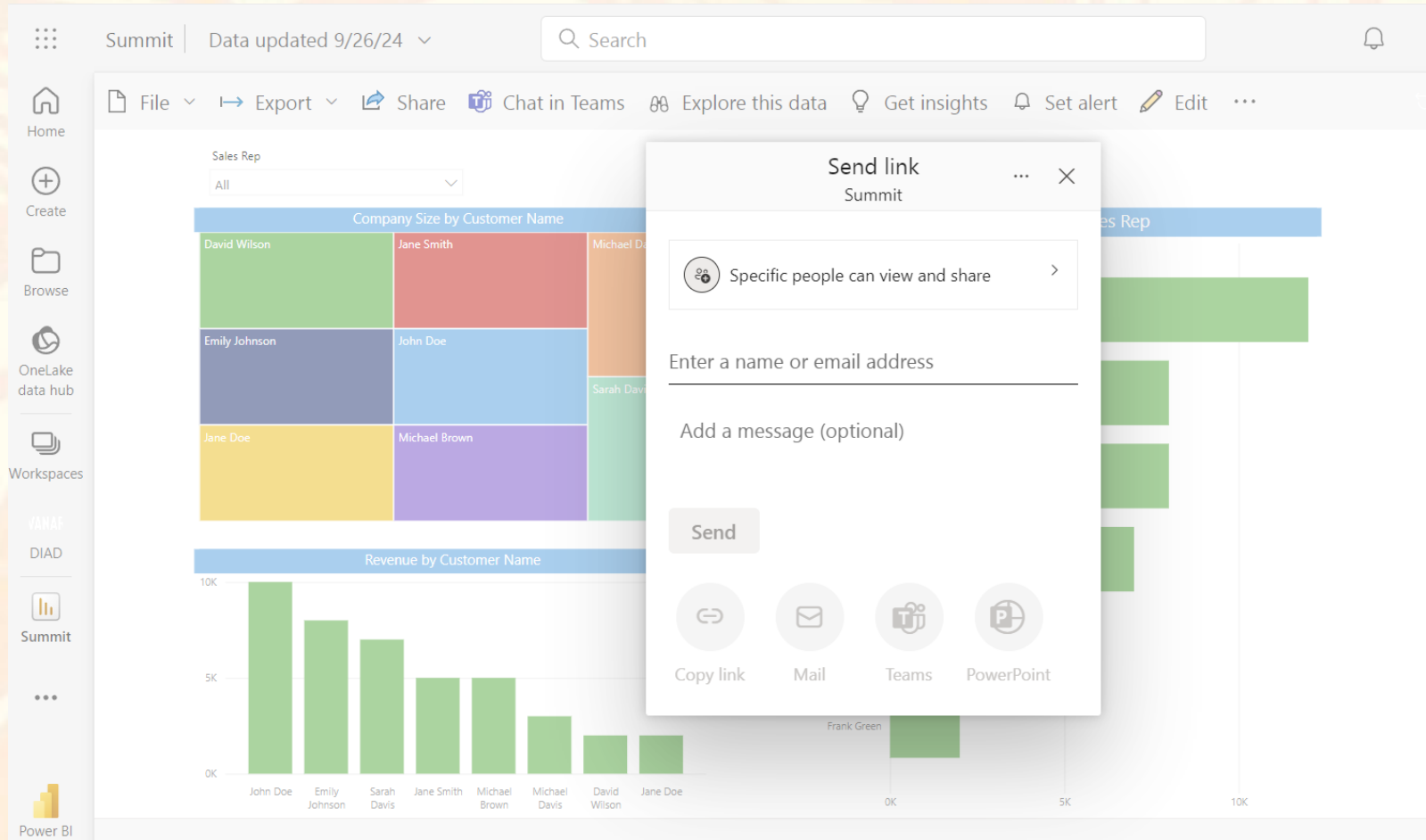
Calculations: New visual calculation, New measure, Quick measure

Sensitivity: Sensitivity

Share: Publish, Share

Visualizations: Format visual, Search, Visual General, Properties, Title (On), Title, Text (Revenue by Sales Re), Heading (Heading 3)

Collaborating and Sharing



Collaborate and
share your report
on the Power BI
Service
(app.powerbi.com)

Demo: Report Publishing, Collaborating, and Sharing

Thank you for attending!



COMMUNITY SUMMIT