

# DevAnalytics

Integrations — Last update: 15 November 2022

Basis Technologies

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# Introduction

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This document provides insight for the integration and visualization of DevAnalytics

All integration exporting steps are carried out from the SAP GUI where DevAnalytics is run and then exported into Data Tools such as Power BI, Tableau or SAP Lumira.

# Exporting of DevAnalytics Data

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If your business, like many others, already utilises data visualization software such as SAP Lumira and Tableau, those same solutions can be used in combination with DevAnalytics to create dashboards that monitor and track SAP change.\*

Data can be exported from DevAnalytics in a format suitable for importing into such tools. Full data extracts are possible, but exports can also be streamlined by defining a specific date range and selecting the necessary classifications (see Reporting). The resulting data can be aggregated across selected periods (e.g. monthly) to provide the view that you need.

In combination with DevAnalytics' near-realtime data refresh – updates can occur on a daily basis – this feature allows you to present relevant information in a manner that is timely, attractive and easily understandable.

\*Licences for third-party tools are not supplied by Basis Technologies and may incur fees.

# Running DevAnalytics to view and extract data

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Once the data for DevAnalytics has been generated (see Setup section) it can be analysed in SAP or exported for analysis in an external visualization tool.

Note that program **/BTR/DEVA\_MAIN\_N** must have been run with the required variant in order to generate the data. Any previously generated data can be analysed or exported.

To run the data analysis, execute program **/BTR/DEVA\_TRANS**. This program allows data to be analysed for selected data extract runs.

Execution notes:

- **Output mode:** Choose how you want to output the data
  - **Hierarchical (in SAP GUI)** – This displays the metric data output in the SAP GUI via a grid and allows the user to drill down, filter, show graphs, etc.
  - **Report (ALV)** – Output the data as a flat ALV report
  - **Download to server** – Download the data to the specified server folder and filename in tab delimited format. The filename will automatically be appended with a date and timestamp
  - **Download to PC** – Download the data to the specified PC folder and filename in tab delimited format. The filename will automatically be appended with a date and timestamp
- **Analysis period:** Choose the date period that you wish to view the data for
- **Data source:** Always choose “Use instance results”
- **Metric selection:** Choose which metrics you wish to view and the period you wish to have the data aggregated by (E.g. Monthly)
- **Data restrictions:** Enter any specific selection criteria to narrow down the data selection for a more targeted view (E.g. only show data for specific systems and projects)
- **Transformation run options:** This allows specific data extract runs to be selected. In most cases the **Latest run** would be used but previous extract runs (if available) can also be selected if required

## Notes

Program **\*/BTR/DEVA\_TRANS** can be scheduled as a background job using the “Download to server” option to automatically run and download all the available data file for use in external data visualization tools like Tableau, QlikView, etc.

## Hierarchical (in SAP GUI)

When the data has been output in SAP there are options to be able to manipulate the data on screen:

- Metrics can be added to / removed from the graphic section
- Different filters, periods, date ranges can be specified
- Data can be expanded to view a breakdown for each classification
- The data visible on screen can be exported to spreadsheet / Excel

**Report and Download options**

The data extracted in these modes split up by metric and the associated classifications so you can obtain lower level figures across all available classifications. These modes are best used when extracting the DevAnalytics data to be viewed in external data visualization tools.

# Example Integration Tools to View DevAnalytics Data

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DevAnalytics provides detailed information about your SAP development and delivery processes but also delivers the means to create at-a-glance dashboards. Review data in the SAP GUI, import it into other visualisation tools, or dig right into the spreadsheets

These topics below will cover a step by step guide on how to import the DevAnalytics exported data using Tableau, SAP Lumira and Microsoft Power BI in order to have a visual representation of the data.

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# Microsoft Power BI

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Power BI is known as a visual intelligence tool that is used to visualize data and create stories to provide graphical details of the data. Data is entered in Power BI as dataset and you can apply filters, hierarchies, and columns to prepare documents.

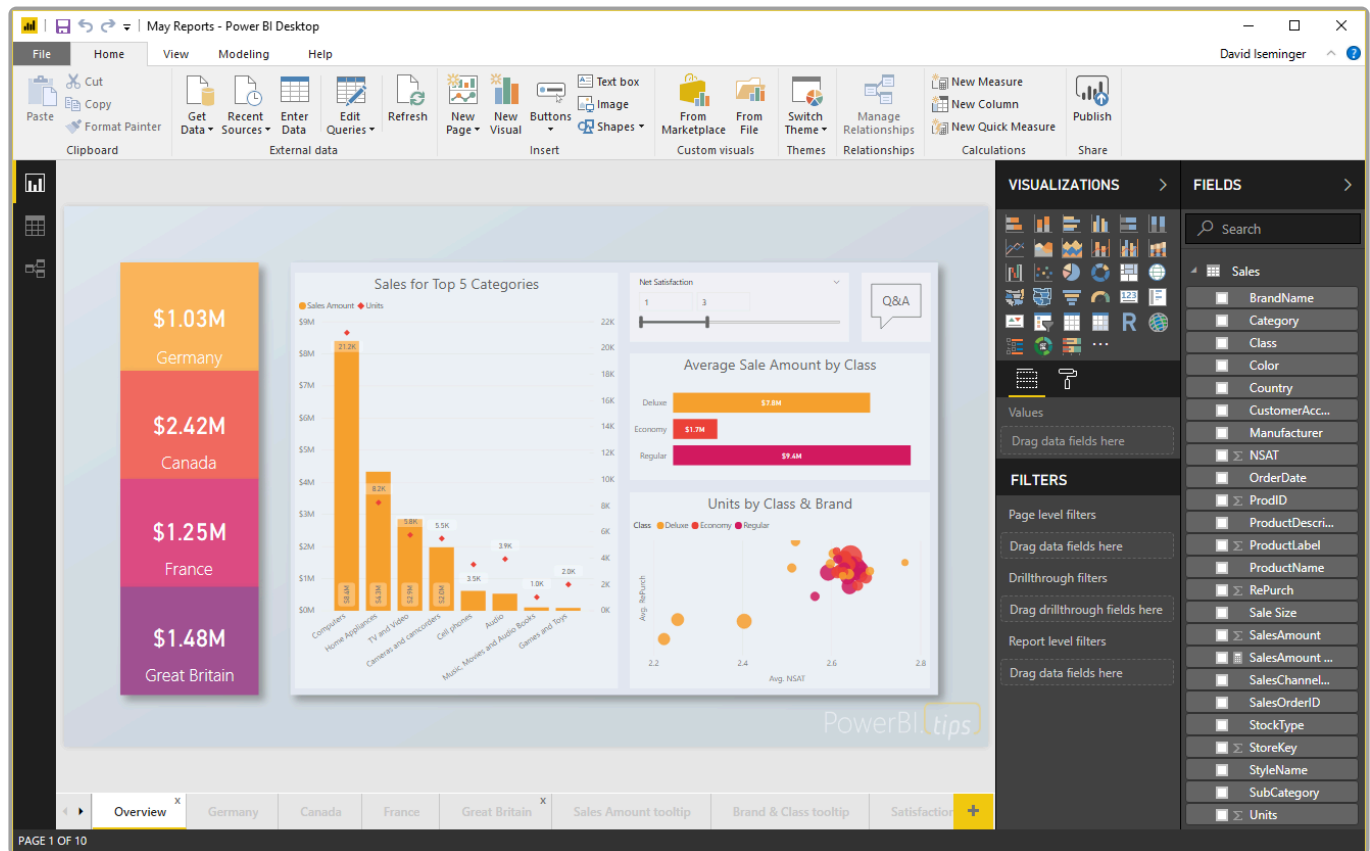
Power BI is a analytics tools that deliver insights throughout your organization. Connect to hundreds of data sources, simplify data prep, and drive ad hoc analysis.

Basis Technologies have a ready-made Power BI dashboard template for customers that would prefer to start with an existing template. This is available from Basis Technologies on request.



# Power BI-User Interface

When you login to Power BI Data visualization tool, below user interface is seen. This is known as the Power BI Desktop work area.



## Transform and clean data, create a model

In Power BI, you can clean and transform data using the built-in Query Editor. With Query Editor you can make changes to your data, such as changing a data type, removing columns, or combining data from multiple sources. It's a little bit like sculpting – you can start with a large block of clay (or data), then shave pieces off or add others as needed, until the shape of the data is how you want it.

1 Query

Table 0

9 COLUMNS, 50 ROWS

PREVIEW DOWNLOADED AT 9:44 AM

Query Settings

PROPERTIES

Name

Table 0

All Properties

APPLIED STEPS

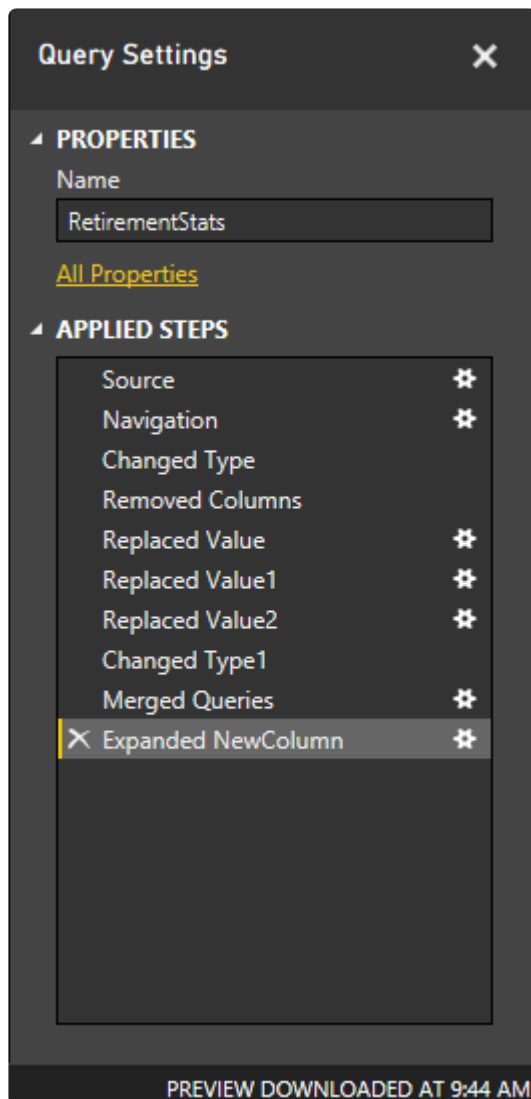
Source

Navigation

Changed Type

Each step you take in transforming data (such as rename a table, transform a data type, or delete columns) is recorded by Query Editor, and each time this query connects to the data source those steps are carried out so that the data is always shaped the way you specified.

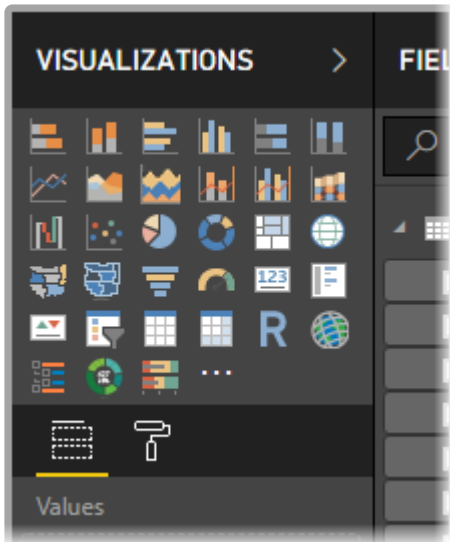
The following image shows the Query Settings pane for a query that has been shaped, and turned into a model.



Once your data is how you want it, you can create visuals.

### Create visuals

Once you have a data model, you can drag fields onto the report canvas to create visuals. A visual is a graphic representation of the data in your model. The following visual shows a simple column chart. There are many different types of visuals to choose from in Power BI. To create or change a visual, just select the visual icon from the Visualizations pane. If you have a visual selected on the report canvas, the selected visual changes to the type you selected. If no visual is selected, a new visual is created based on your selection.



### Create reports

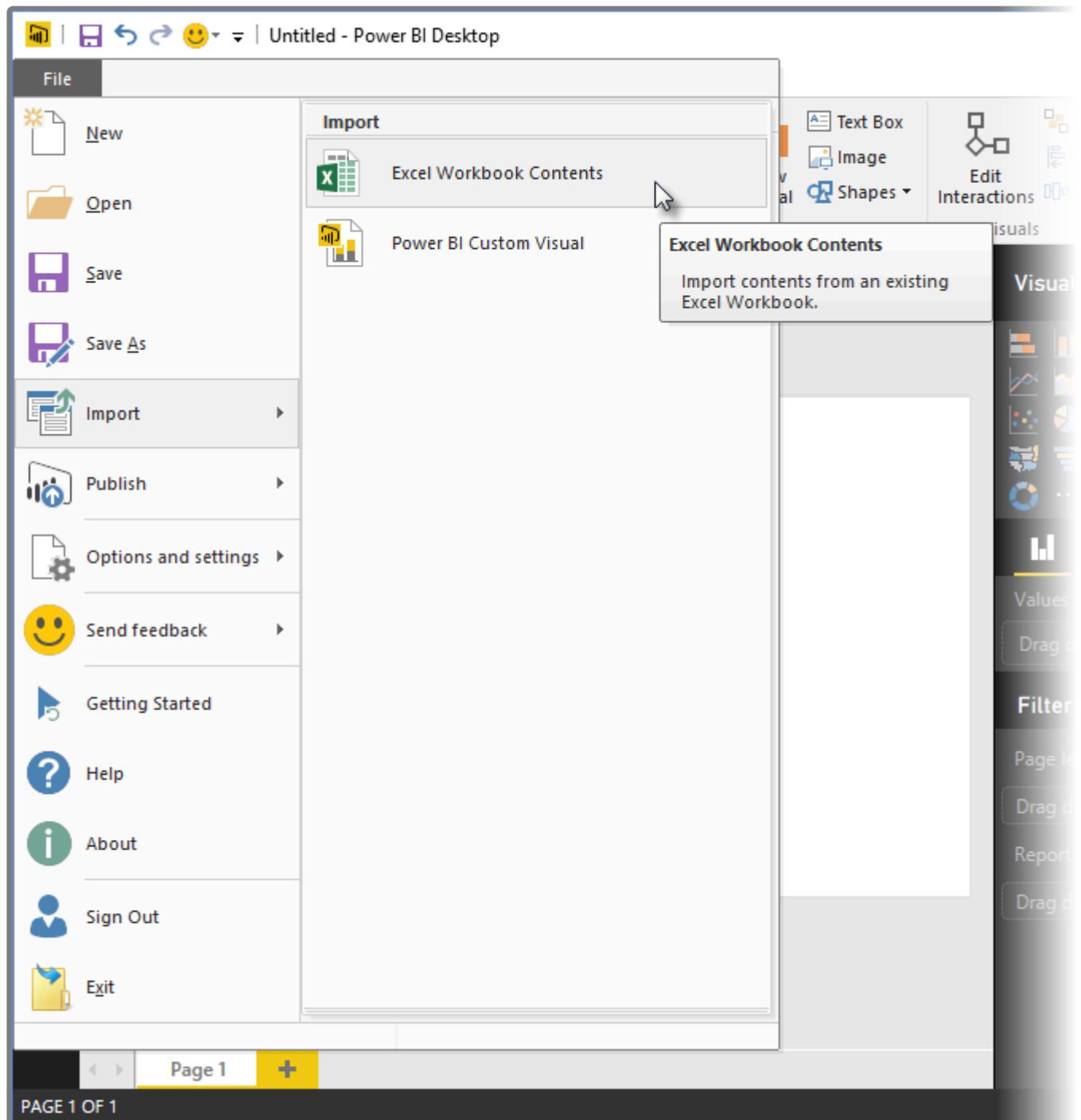
More often, you'll want to create a collection of visuals that show various aspects of the data you have used to create your model in Power BI. A collection of visuals, in one Power BI Desktop file, is called a report. A report can have one or more pages, just like an Excel file can have one or more worksheets. In the following image you see the first page of a Power BI Desktop report, named Overview (you can see the tab near the bottom of the image). In this report, there are ten pages.

### Share reports

Once a report is ready to share with others, you can Publish the report to the Power BI service, and make it available to anyone in your organization who has a Power BI license. To publish a Power BI Desktop report, you select the Publish button from the Home ribbon in Power BI Desktop. Once you select Publish, Power BI Desktop connects you to the Power BI service using your Power BI account, and then prompts you to select where in the Power BI service you would like to share the report, such as your workspace, a team workspace, or some other location in the Power BI service. You must have a Power BI license to share reports to the Power BI service.

# Step by Step Power BI Data Set from DevAnalytics

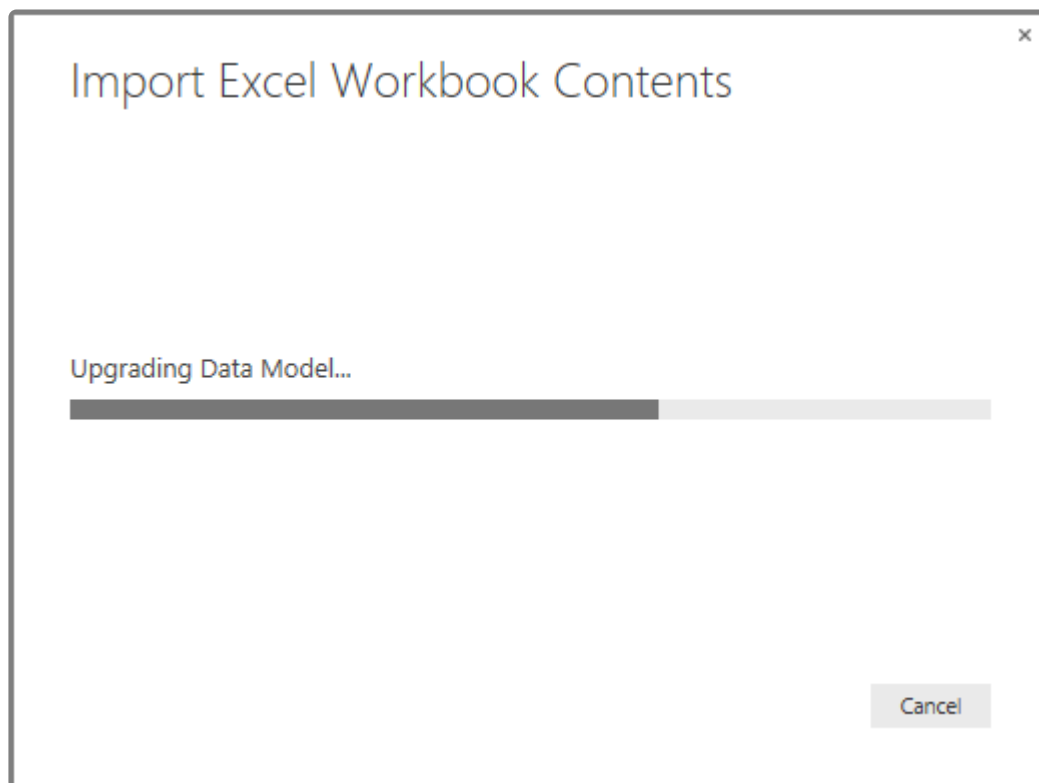
**Step 1:** Connect to your data. (Using the extracted DevAnalytics data you have from your system when you ran the exporting of DevAnalytics Data Program) select File -> Import -> Excel Workbook Contents.



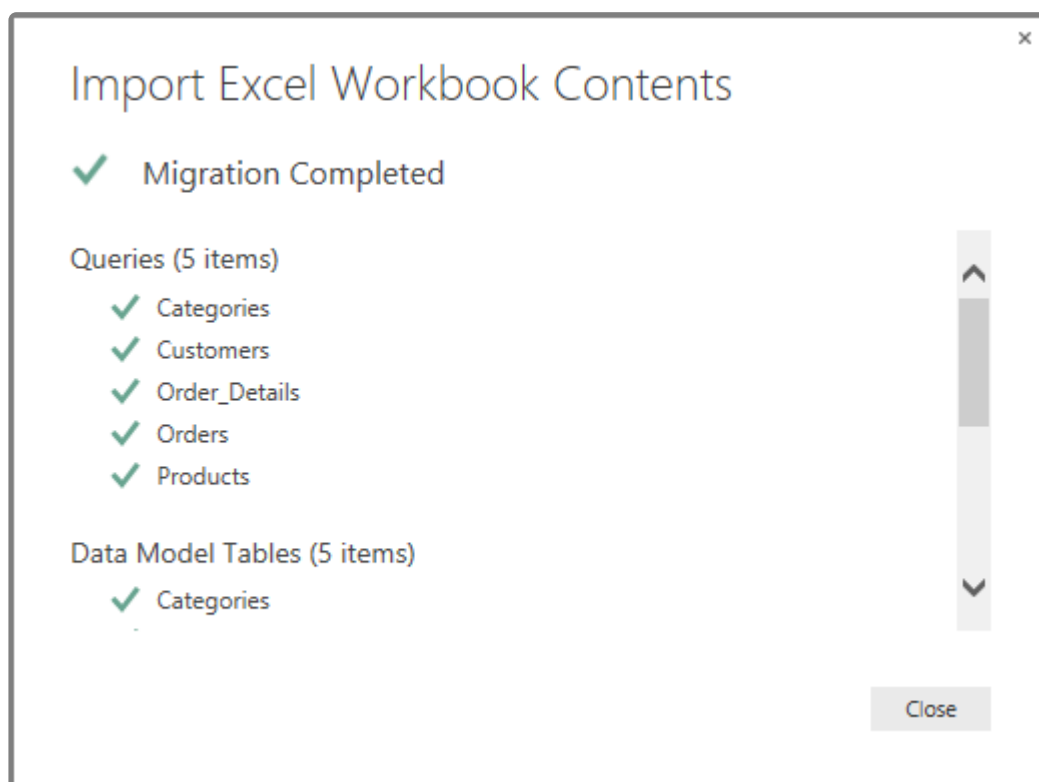
A window appears, letting you select the workbook to import. There is currently no limitation on the size or number of objects in the workbook, but larger workbooks take longer for Power BI Desktop to analyze and import.

Once a workbook is selected, Power BI Desktop analyzes the workbook and converts it into a Power BI Desktop file (.pbix). This action is a one-time event; once the Power BI Desktop file is created with these

steps, the Power BI Desktop file has no dependence on the original Excel workbook, and can be modified or changed (and saved, and shared) without affecting the original workbook.

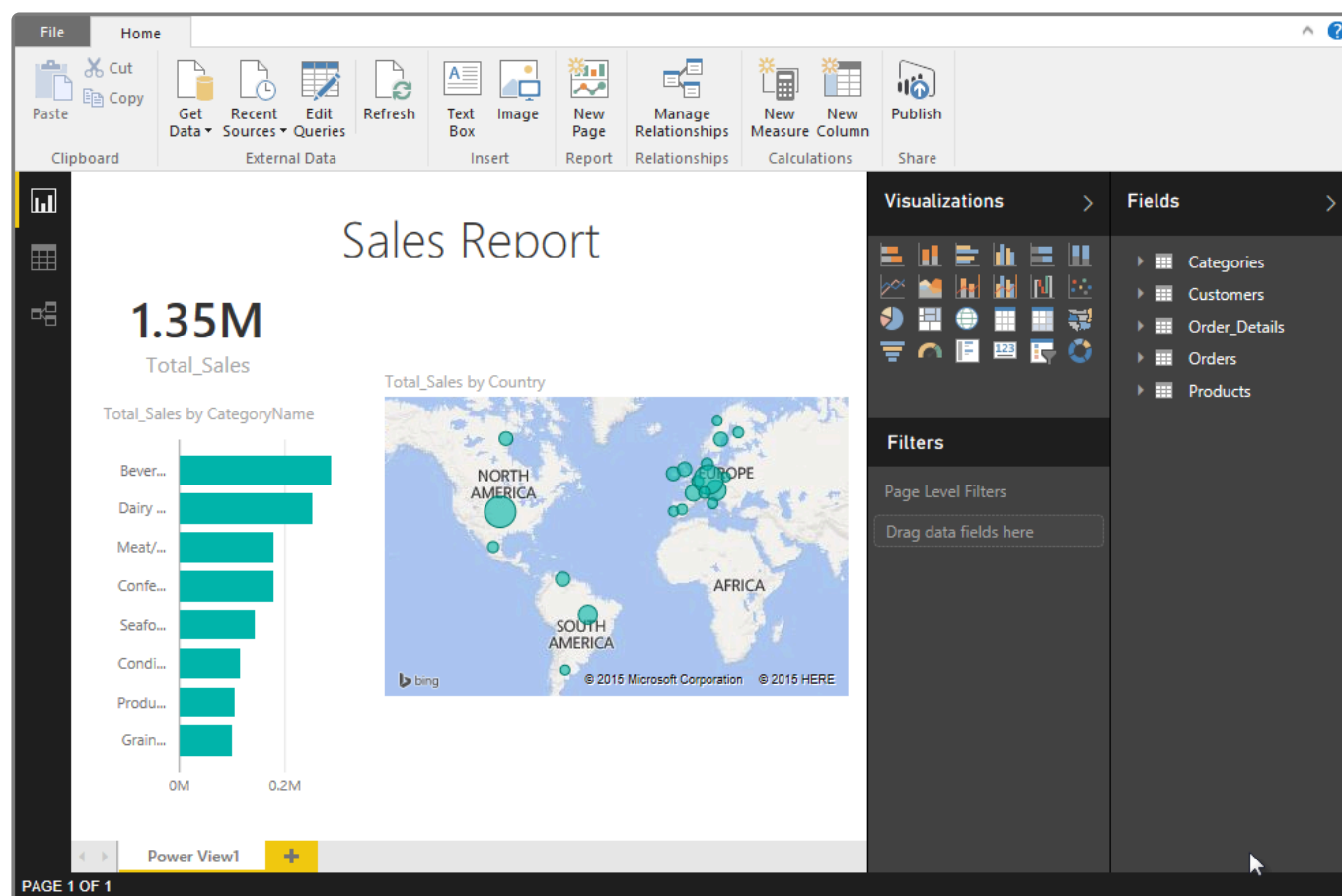


Once the import is finished, a Summary page is displayed that describes the items that were converted, and also lists any items that were not able to be imported.



When you select Close, the report is loaded in Power BI Desktop. The following image shows Power BI Desktop after an Excel workbook was imported: Power BI Desktop automatically loaded the report based

on the workbook contents.

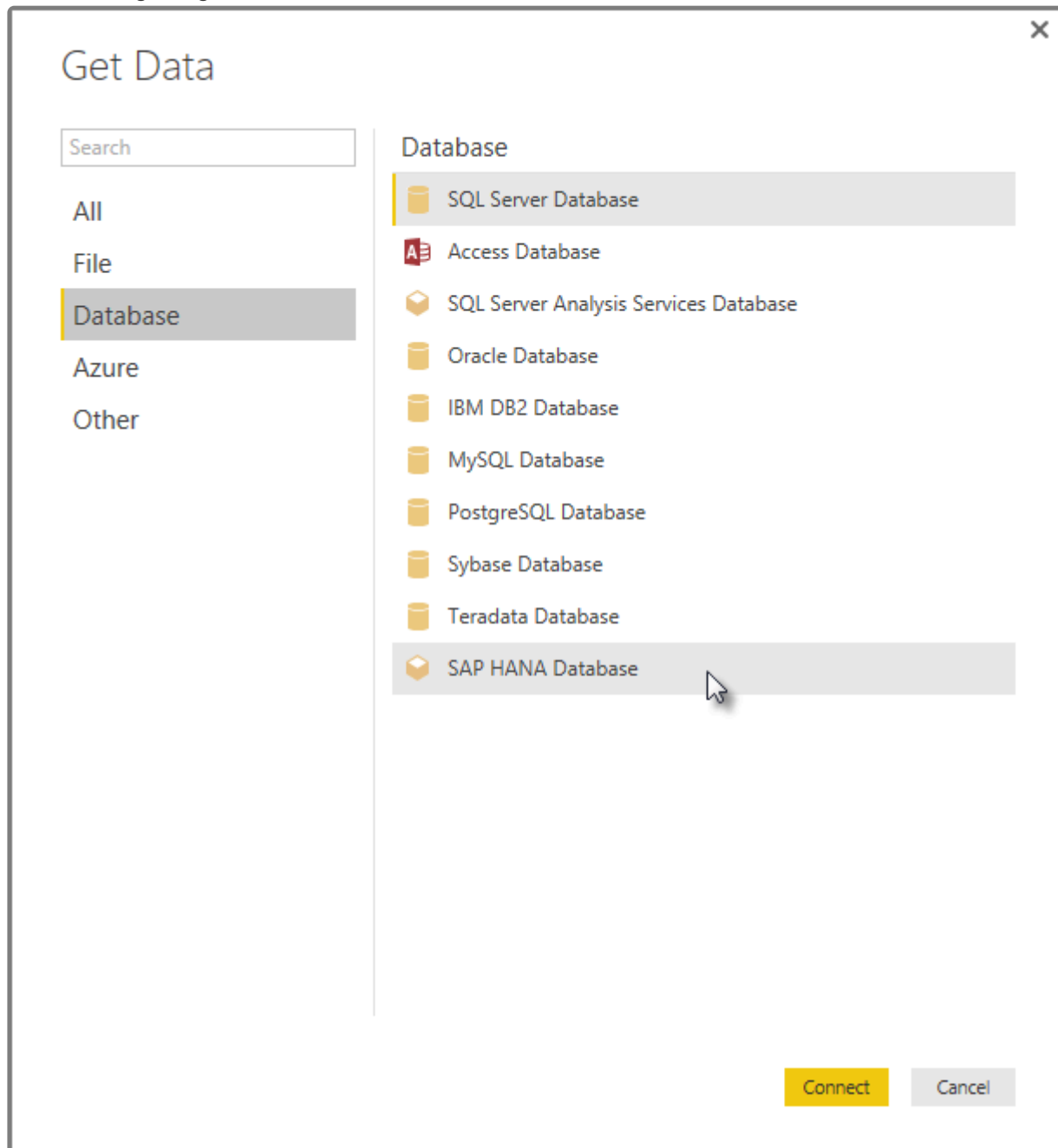


Now that the workbook is imported, you can continue working on the report – such as creating new visualizations, adding data, or creating new report pages – using any of the features and capabilities included in Power BI Desktop.

# Use SAP HANA in Power BI

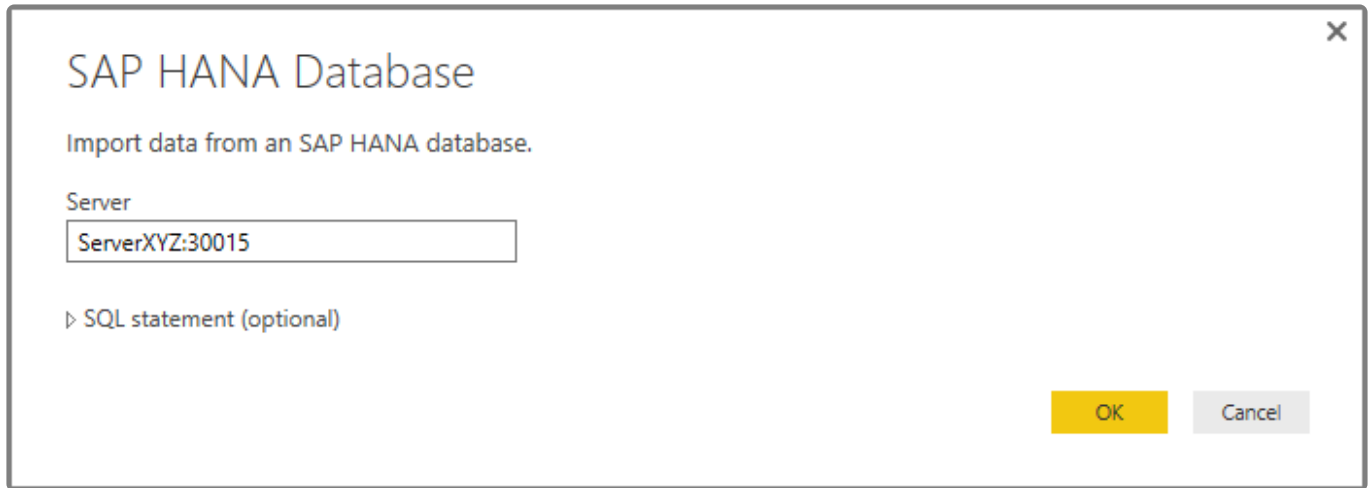
With Power BI Desktop, you can now access SAP HANA databases. To use SAP HANA, the SAP HANA ODBC driver must be installed on the local client computer in order for the Power BI Desktop SAP HANA data connection to work properly. You can download the SAP HANA ODBC driver from the SAP Software Download Center. From there, search for the SAP HANA CLIENT for Windows computers. Since the SAP Software Download Center changes its structure frequently, more specific guidance for navigating that site is not available.

To connect to a SAP HANA database, select Get Data > Database > SAP HANA Database as shown in the following image:



When connecting to a SAP HANA database, specify the server name and the port in the format server:port – the following image shows an example with a server named ServerXYZ and port 30015.





**SAP HANA Database**

Import data from an SAP HANA database.

Server

ServerXYZ:30015

SQL statement (optional)

OK Cancel

In this release SAP HANA in DirectQuery mode is supported in Power BI Desktop and the Power BI service, and you can publish and upload reports that use SAP HANA in DirectQuery mode to the Power BI service. You can also publish and upload reports to the Power BI Service when not using SAP HANA in DirectQuery mode.

#### Supported features for SAP HANA

This release has many capabilities for SAP HANA, as shown in the following list:

The Power BI connector for SAP HANA uses the SAP ODBC driver, to provide the best user experience

SAP HANA supports both DirectQuery and Import options

Power BI supports HANA information models (such as Analytic and Calc views) and has optimized navigation

With SAP HANA, you can also use the direct SQL feature to connect to Row and Column Tables

Includes Optimized Navigation for HANA Models

Power BI supports SAP HANA Variables and Input parameters

Installing the SAP HANA ODBC driver

#### Limitations of SAP HANA

There are also a few limitations to using SAP HANA, shown below:

NVARCHAR strings are truncated to maximum length of 4000 Unicode characters

SMALLDECIMAL is not supported

VARBINARY is not supported

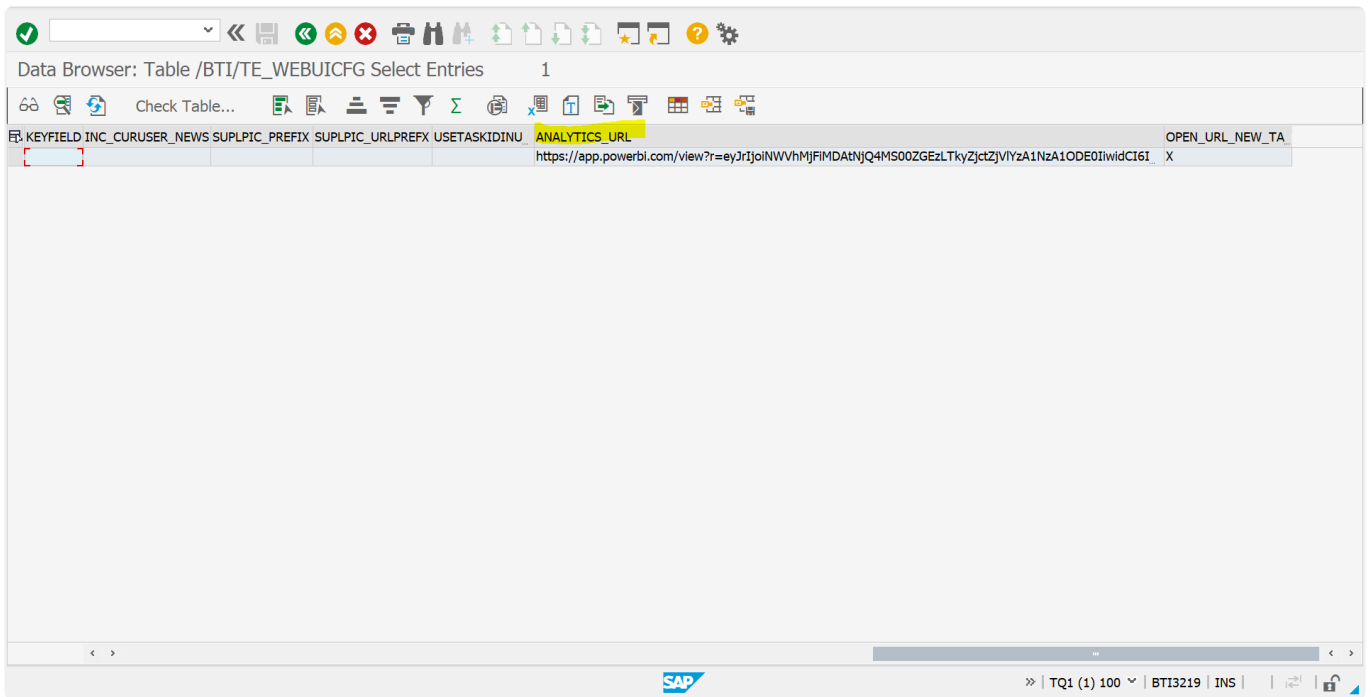
Valid Dates are between 1899/12/30 and 9999/12/31

# Addition of Power BI dashboard to AC WEBUI

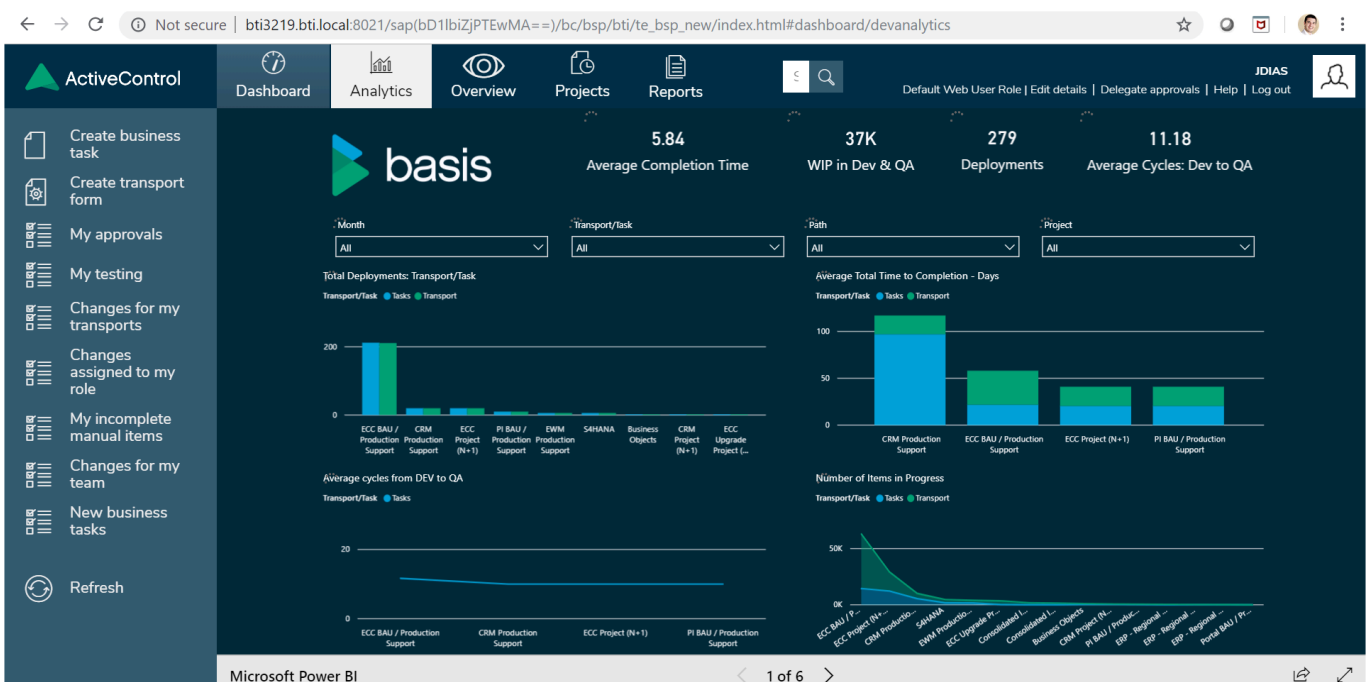
Configuration steps to add published URL from Power BI to display it AC Web UI dashboard:

Once you have got the published URL from PowerBI you will go to table /BTI/TE\_WEBUICFG in the ActiveControl Domain Controller system.

Populate the Analytics\_URL entry in the table with the valid URL from PowerBI.



Once completed, go to the AC Web UI and a new tab should be displayed with the dashboard/reports from Power BI that you have published.



# SAP Lumira

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SAP Lumira is known as a visual intelligence tool that is used to visualize data and create stories to provide graphical details of the data. Data is entered in SAP Lumira as dataset and you can apply filters, hierarchies, and columns to prepare documents. You can choose various charts like Bar charts, Pie charts, etc. to visualize the data effectively. This basic tutorial explains how to use SAP Lumira with the DevAnalytics extract once done.

# SAP Lumira-User Interface

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When you login to SAP Lumira Data visualization tool, there are four tabs at the top –

The **Prepare** tab is used to import data set in SAP Lumira. Data is cleansed and converted into appropriate measures or attributes for the reports. You can add new custom calculations here.

The **Visualize** tab is used to add graphs and charts on the data that has been imported and organized in Prepare tab. You can add different attributes and measures to the Label axis.

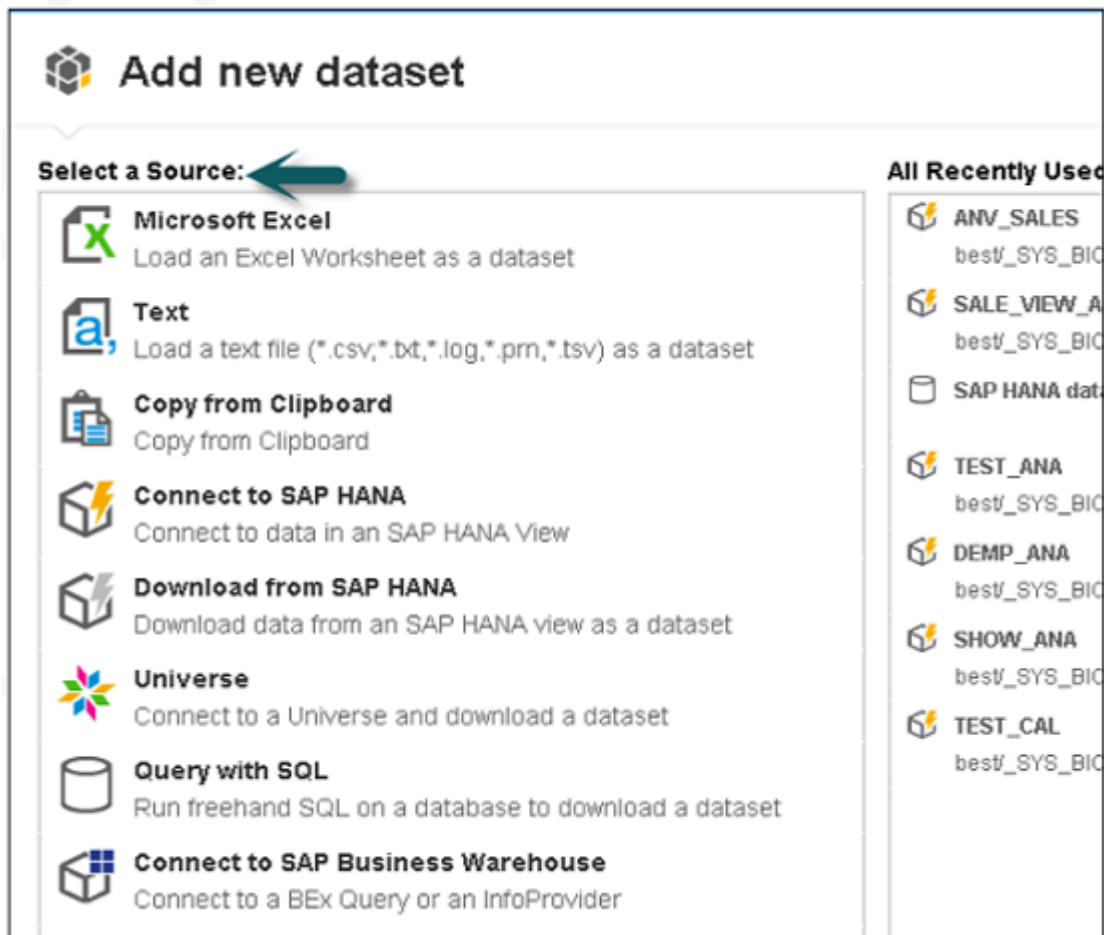
The **Compose** tab is used to create stories and presentations, including background colors, titles, pictures, and text.

The **Share** tab is used to publish your visualizations to different platforms or with different set of users in the BI Repository.

# Step by Step SAP Lumira Data Set from DevAnalytics Extract

Once you open SAP Lumira, go to File → New Data set

You can select from various Data sources to create a new data set. For DevAnalytics we recommend to use the Microsoft excel data source as that is how you would export your data from the DevAnalytics tool (as per Exporting of DevAnalytics Data).



Excel file to create data set in SAP Lumira steps:

**Step 1** – Go to File → New (Create a data set).

**Step 2** – Select a Source – Load an Excel worksheet as a dataset and click the Next icon at the bottom.

**Step 3** – Browse the path of .xls file. You have an option to choose the first row as column names. You can hide a particular column from .xls by selecting the Select All option.

**Step 4** – You can click the Advance option to select a custom range. You can also include hidden rows and columns. Once correct options are selected, click the create button at the bottom.

## Add new dataset

Dataset Name:

File(s):  Add Files

Sheet:  ☐ Append all sheets ☒ Set first row as column names

Table Header Type:

☒ Select All

3 / 3 columns - 5 rows

Emp ID	EMP NAME	SALARY
1	John	3456
2	Anna	2500
3	Sally	4500
4	Jason	5000

**Advanced Options**

Range Selection:  Example: B3:N18 Apply ☒ Show hidden columns

Column:  Row:  ☒ Show hidden rows ☐ Data of merged cells

Previous Next Create Cancel

**Step 5** – All the data with integer values appear under Measures and all the columns appear under Dimensions. This data will come under the Prepare tab.

**SAP Lumira**

File Edit View Data Help **Prepare** Visualize

Find

**MEASURES** 2

- Emp ID Sum
- SALARY Sum

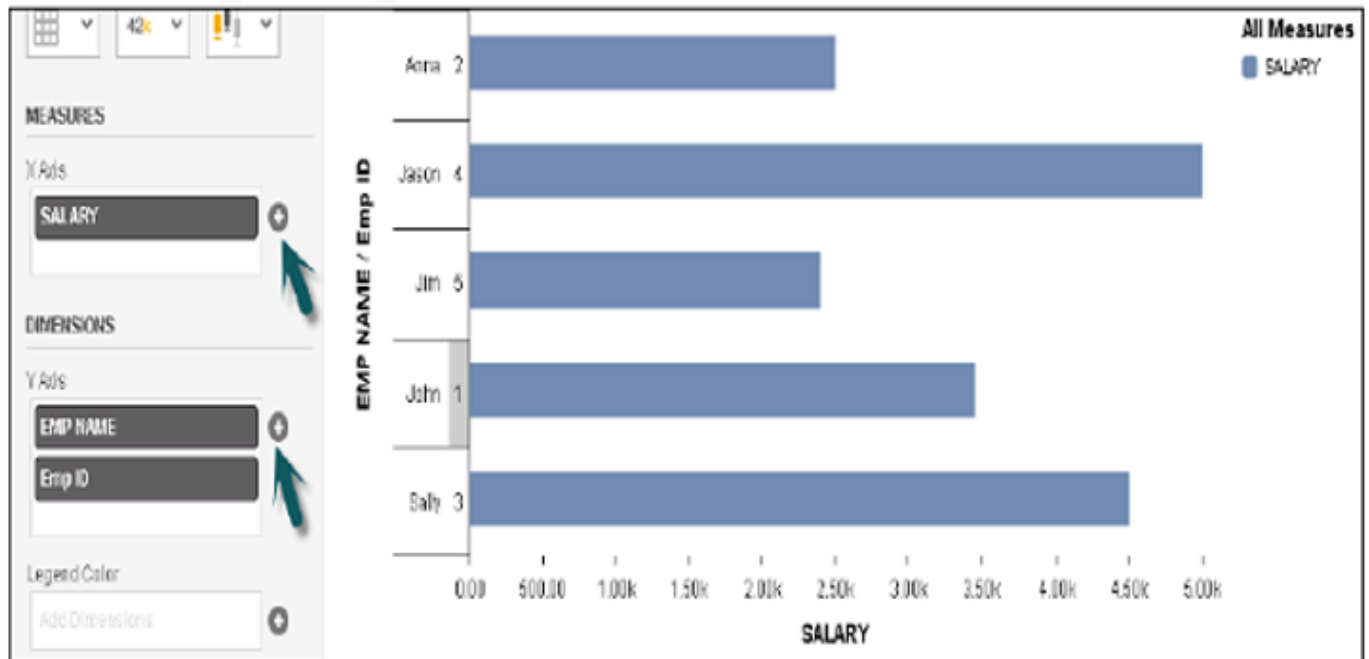
**DIMENSIONS** 3

- Emp ID
- EMP NAME
- SALARY

No filter applied currently on the dataset

Emp ID	EMP NAME	SALARY
123	ABC	123
4	Jason	5000
5	Jim	2400
3	Sally	4500
1	John	3456
2	Anna	2500

**Step 6** – Go to the Visualize tab at the top to create the visualization on top of the data set.

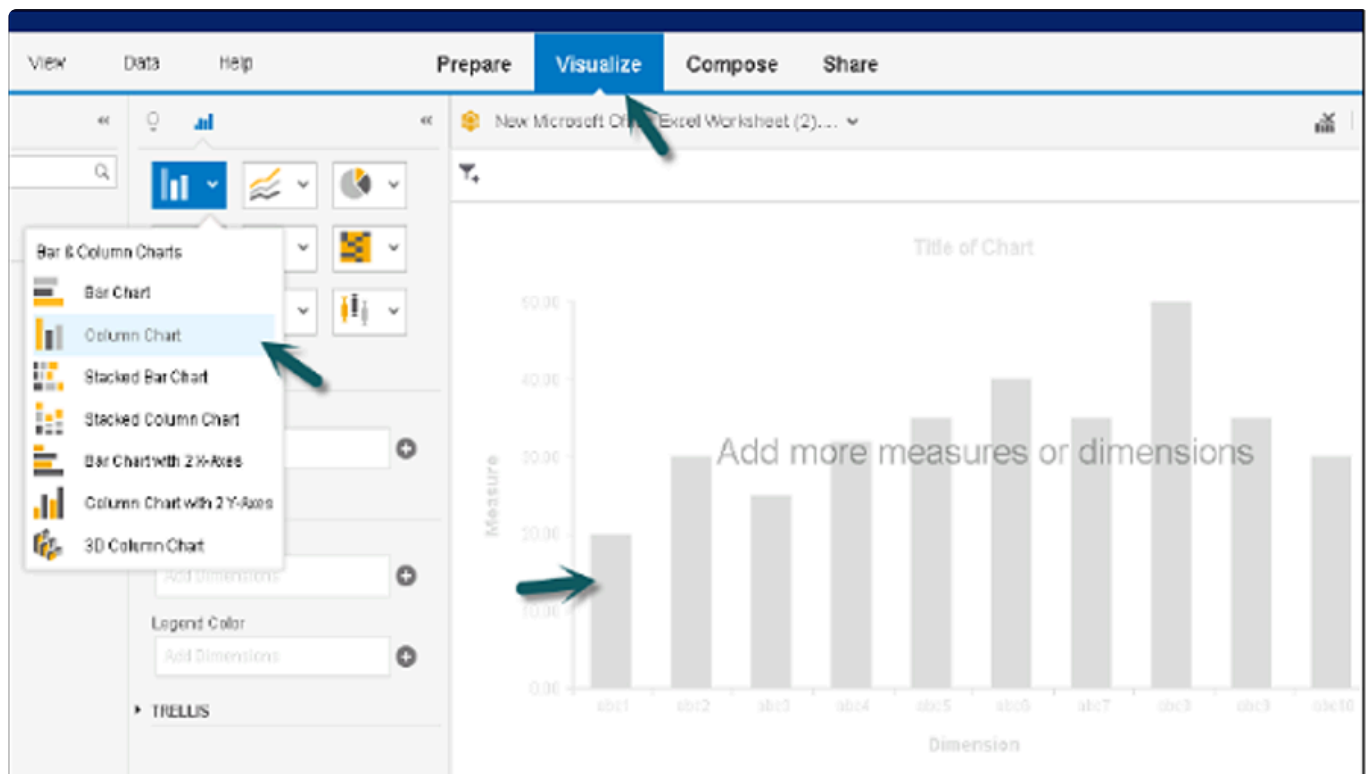


In SAP Lumira, you can quickly create a chart by dragging the objects directly to chart area. To create a chart, the dataset should contain at least one measure value.

When you create a chart in SAP Lumira, it can be used in compose and Share tab for the current session.

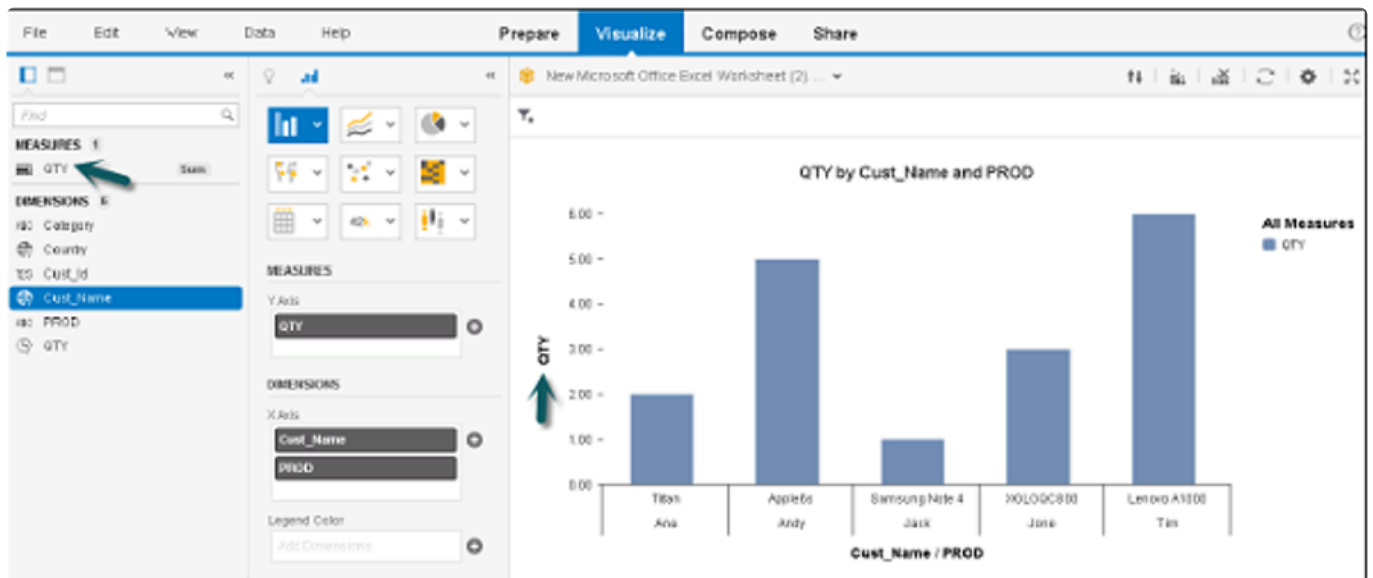
**Step 1** – If you want to save the chart as document to use it permanently you have to go to File → Save.

**Step 2** – Go to Visualize tab → Select a chart type from the list of available charts and add to chart builder.



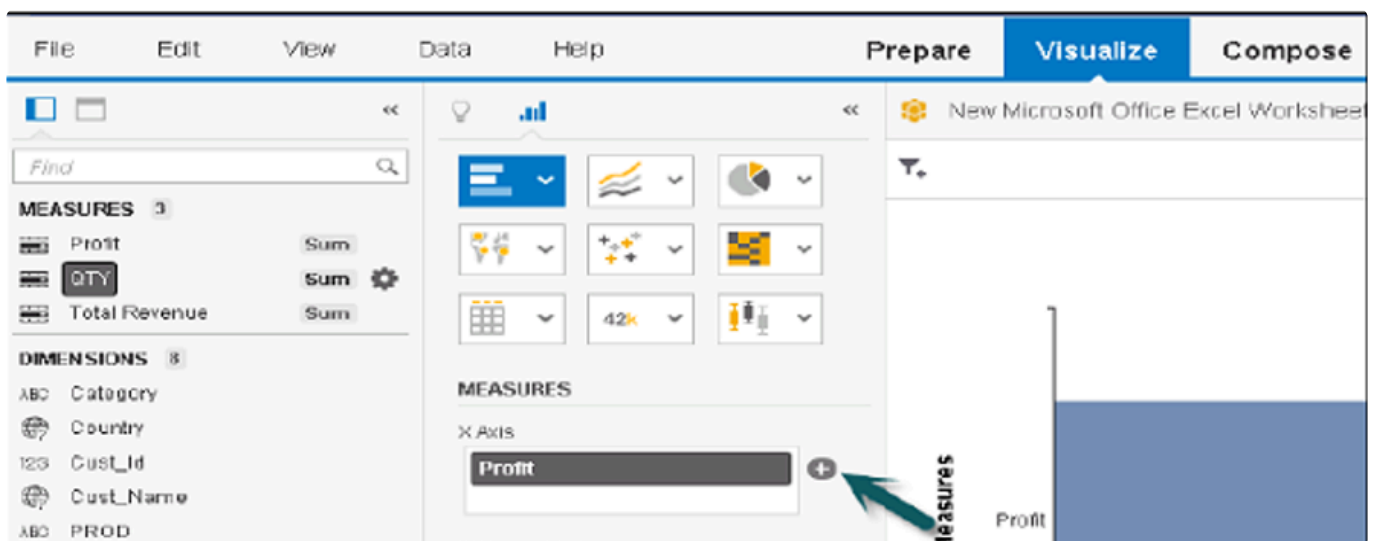
**Step 3** – Drag the Measures and Dimensions on axis of the chart. The text written in the chart helps you

to find out which object is to be dragged to which axis.



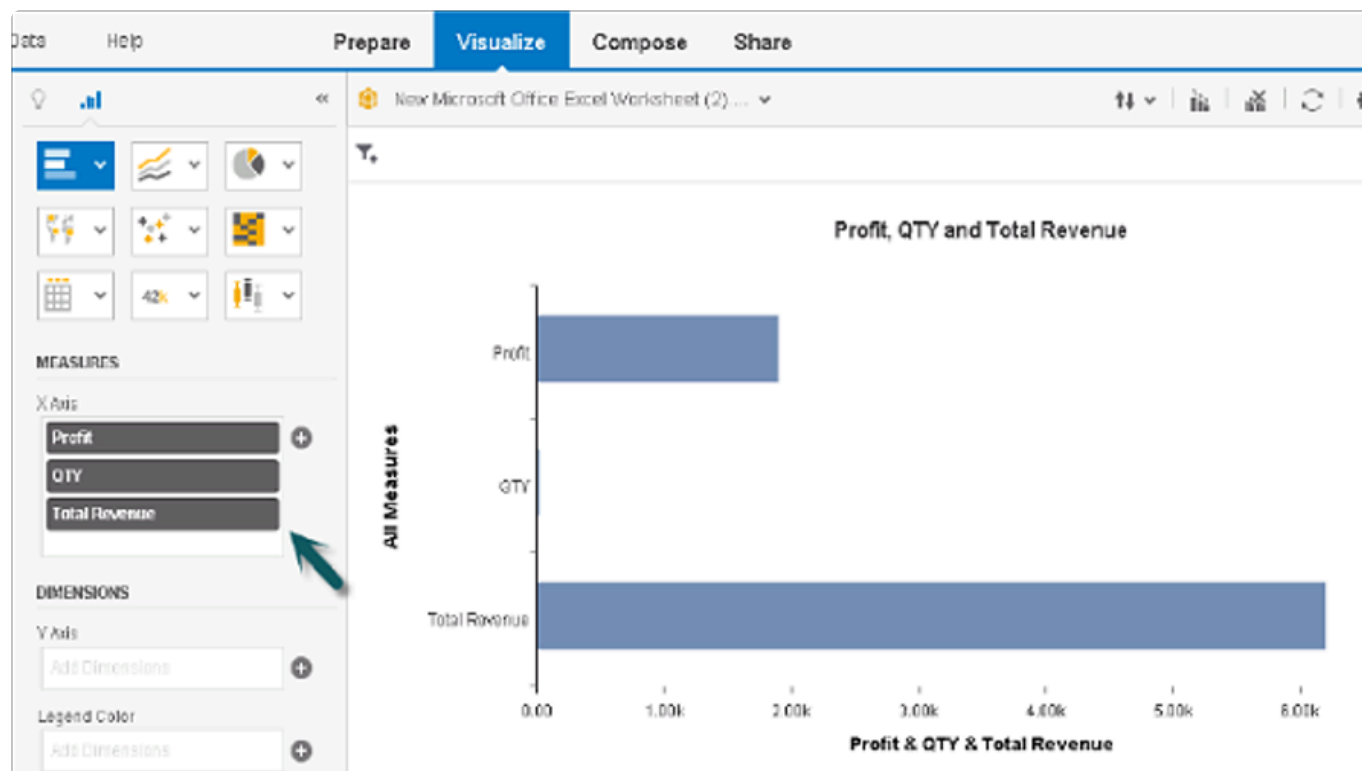
You can also add measures as a dimension in SAP Lumira. To do this, add two or more measures as dimensions in the chart. This can be used to check how data is spread over multiple axis in a single chart.

**Step 1** – Go to Visualize tab → drag measure to measure panel.



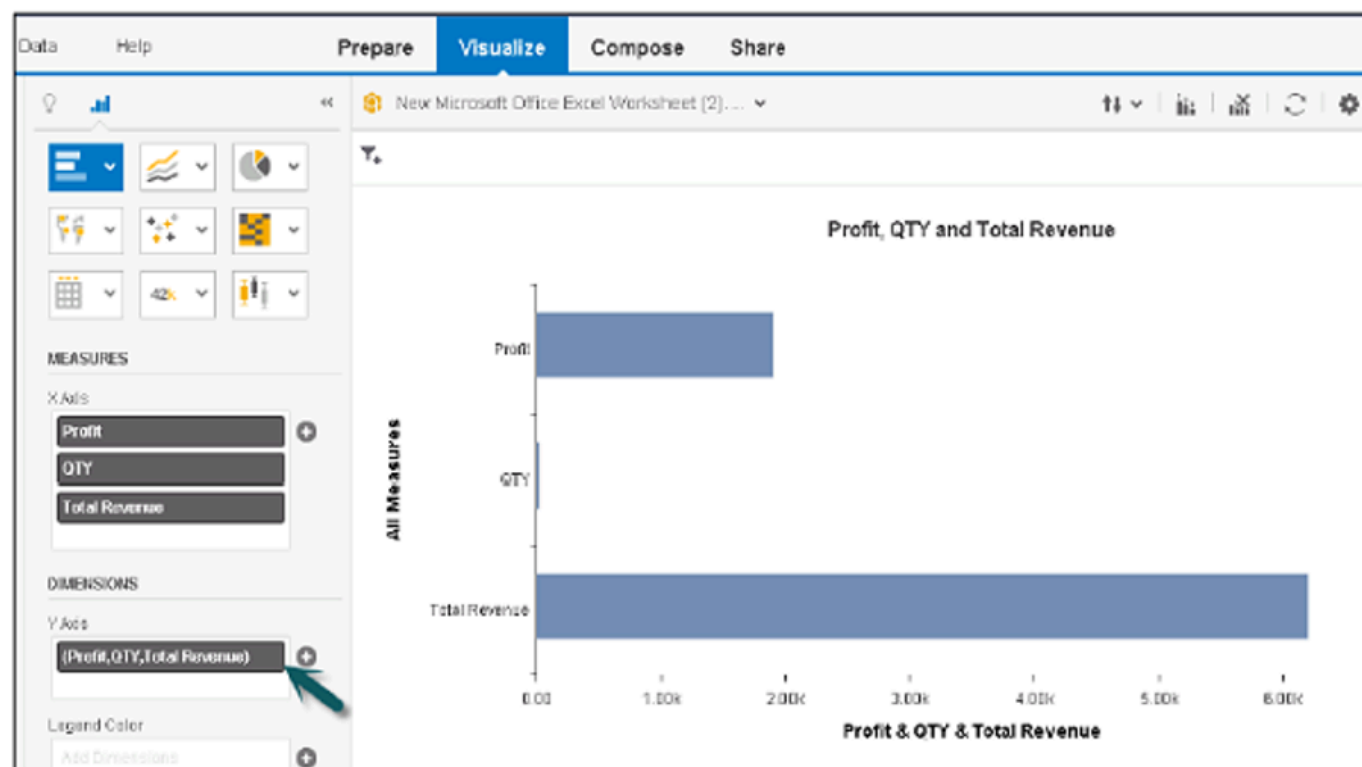
**Step 2** – Go to Settings and click use Measures as dimensions option.



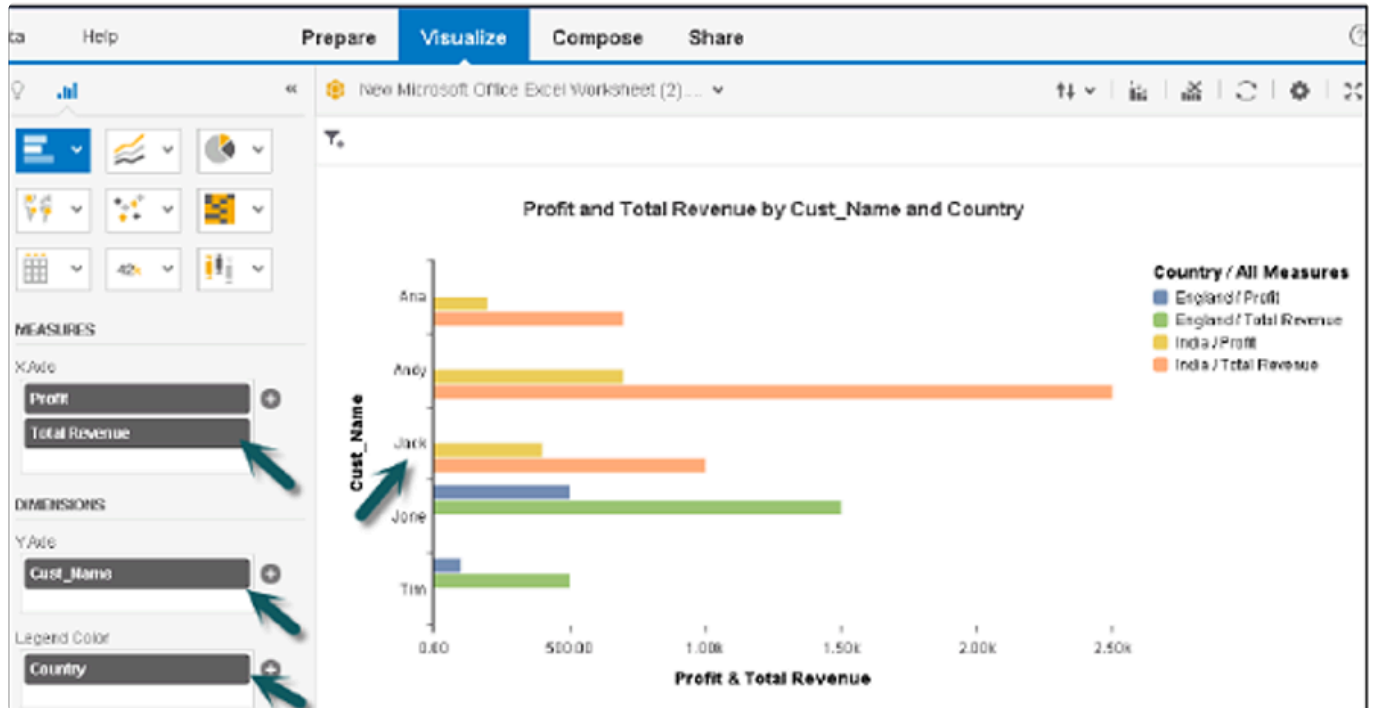


Once you select this option, measures are displayed as new measure dimension in Dimension panel.

**Step 3** – Now you see the Dimension axis, measures will be added to the dimensions panel.



**Step 4** – Add a dimension to this chart and see how it works.



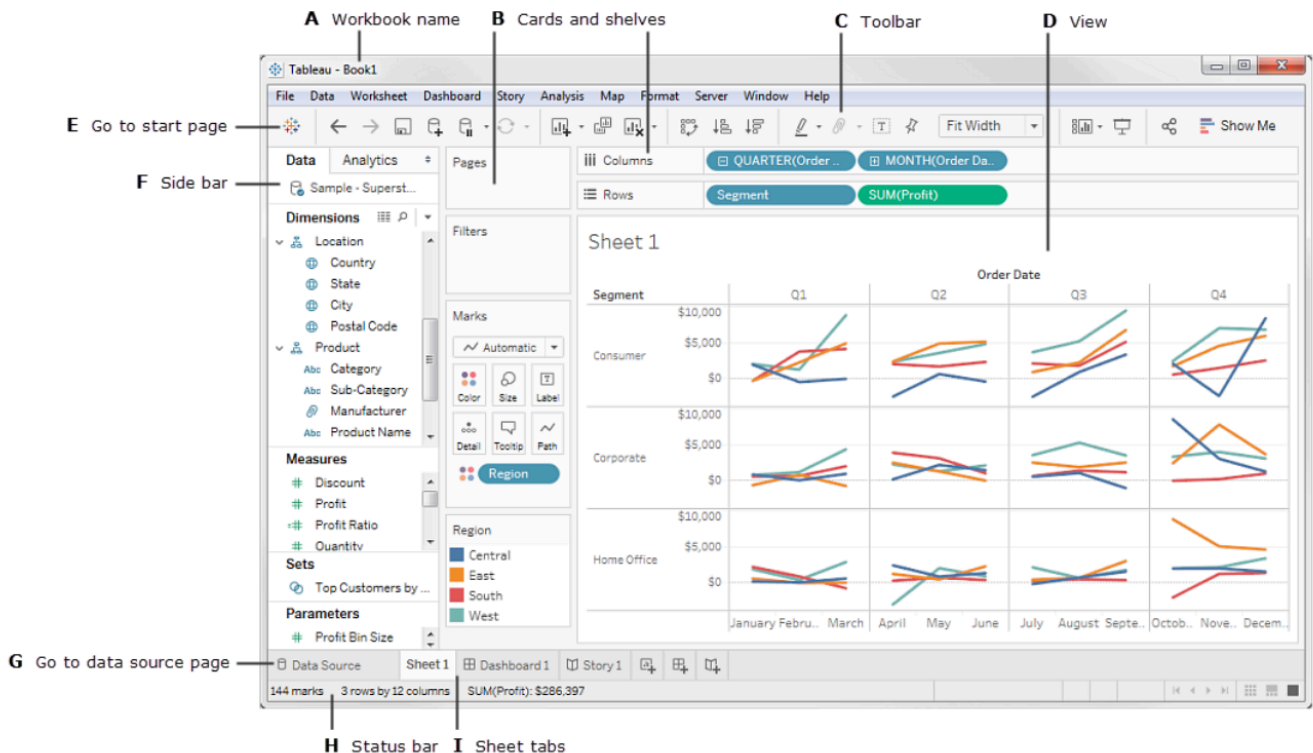
# Tableau

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Tableau is known as a visual intelligence tool that is used to visualize data and create stories to provide graphical details of the data. Data is entered in Tableau as dataset and you can apply filters, hierarchies, and columns to prepare documents. You can choose various charts like Bar charts, Pie charts, etc. to visualize the data effectively. This basic tutorial explains how to use Tableau with the DevAnalytics extract once done.

# Tableau-User Interface

When you login to Tableau Data visualization tool, below user interface is seen. This is known as the workspace area.



- A. Workbook name. A workbook contains sheets. A sheet can be a worksheet, a dashboard, or a story.
- B. Cards and shelves – Drag fields to the cards and shelves in the workspace to add data to your view.
- C. Toolbar – Use the toolbar to access commands and analysis and navigation tools.
- D. View – This is the workspace where you create your data visualizations.
- E. Goes to the start page. .
- F. Side Bar – In a worksheet, the side bar area contains the Data pane and the Analytics pane.
- G. Go to the data source page.
- H. Status bar – Displays information about the current view.
- I. Sheet tabs – Tabs represent each sheet in your workbook. This can include worksheets, dashboards, and stories.

# Step by Step Tableau Data Set from DevAnalytics Extract

**Step 1:** Connect to your data. (Using the extracted DevAnalytics data you have from your system when you ran the exporting of DevAnalytics Data Program)

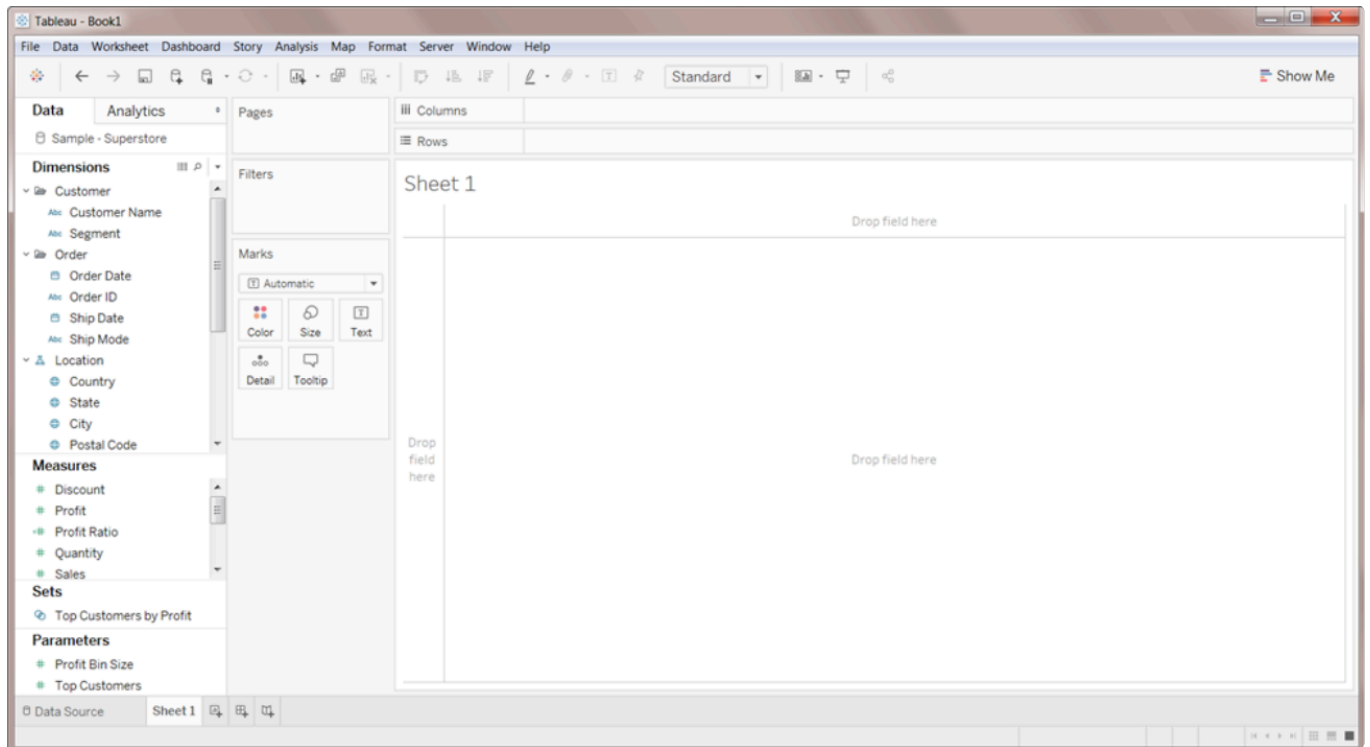
You can connect to a file and import your excel exported data and it here as per number 1 in green below:

## Example



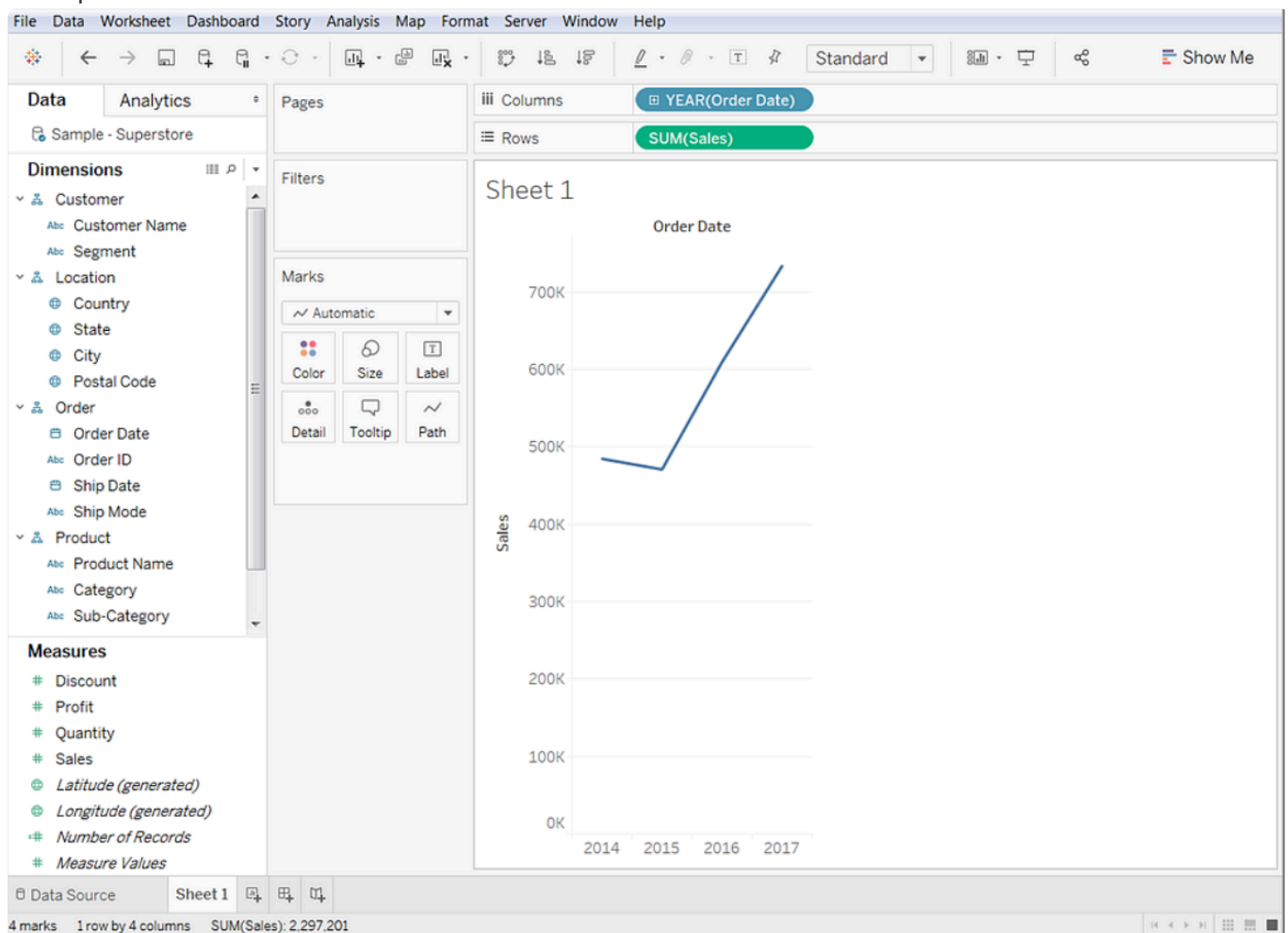
Once data has been imported it will look as below:

## Example



**Step 2:** Create a view. From Dimensions in the Data pane, drag a Dimension to the Columns shelf.

Example



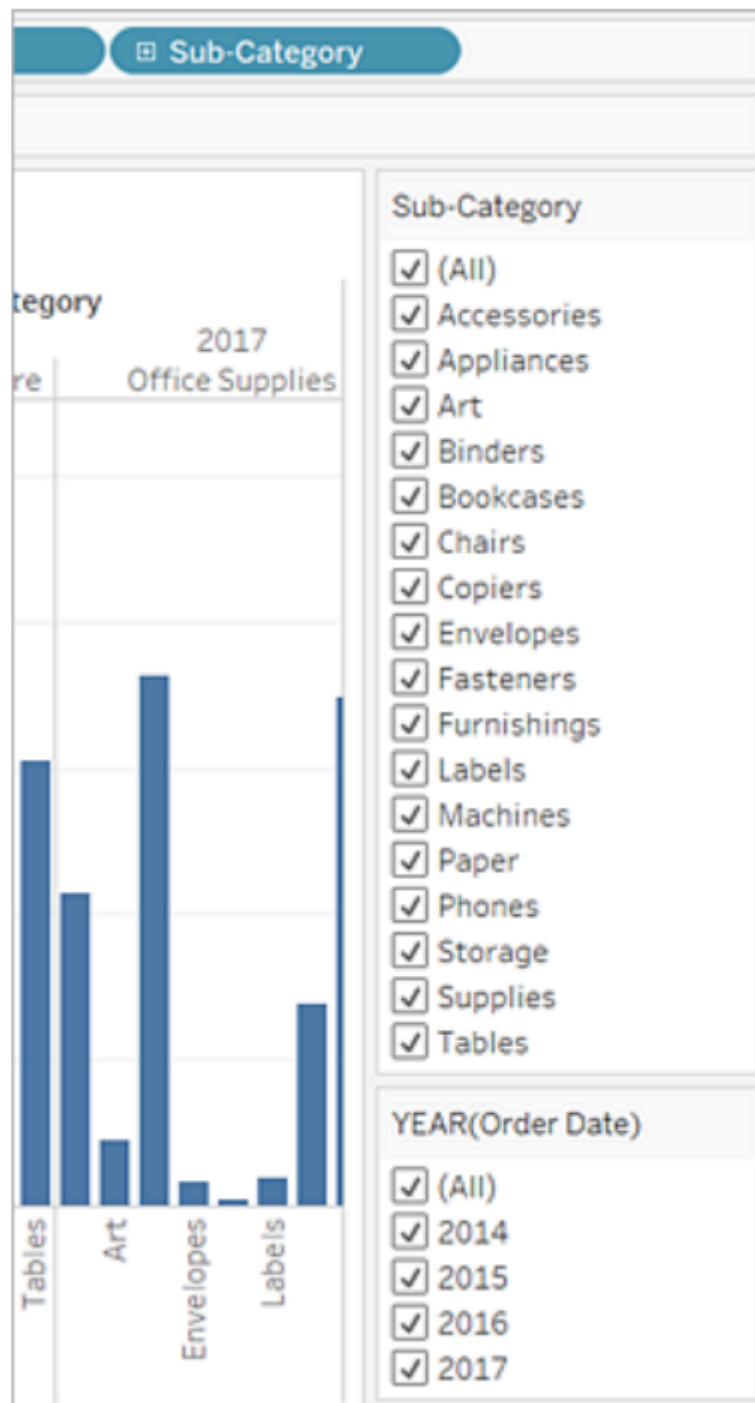
**Step 3:** Focus your results. Filters and colors are ways you can add more focus to the details that

interest you. You can use filters to include or exclude values in your view. In the Data pane, under Dimensions, right-click a Dimension and select Show Filter.

Repeat the step above for the Sub-Category field.

The filters are added to the right-hand side of your view in the order that you selected them.

#### Example



# Google DataStudio

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Google DataStudio is known as a visual intelligence tool that is used to visualize data and create stories to provide graphical details of the data. Data is entered in Google DataStudio as dataset and you can apply filters, hierarchies, and columns to prepare documents.

Google DataStudio is a analytics tools that deliver insights throughout your organization. Connect to hundreds of data sources, simplify data prep, and drive ad hoc analysis.



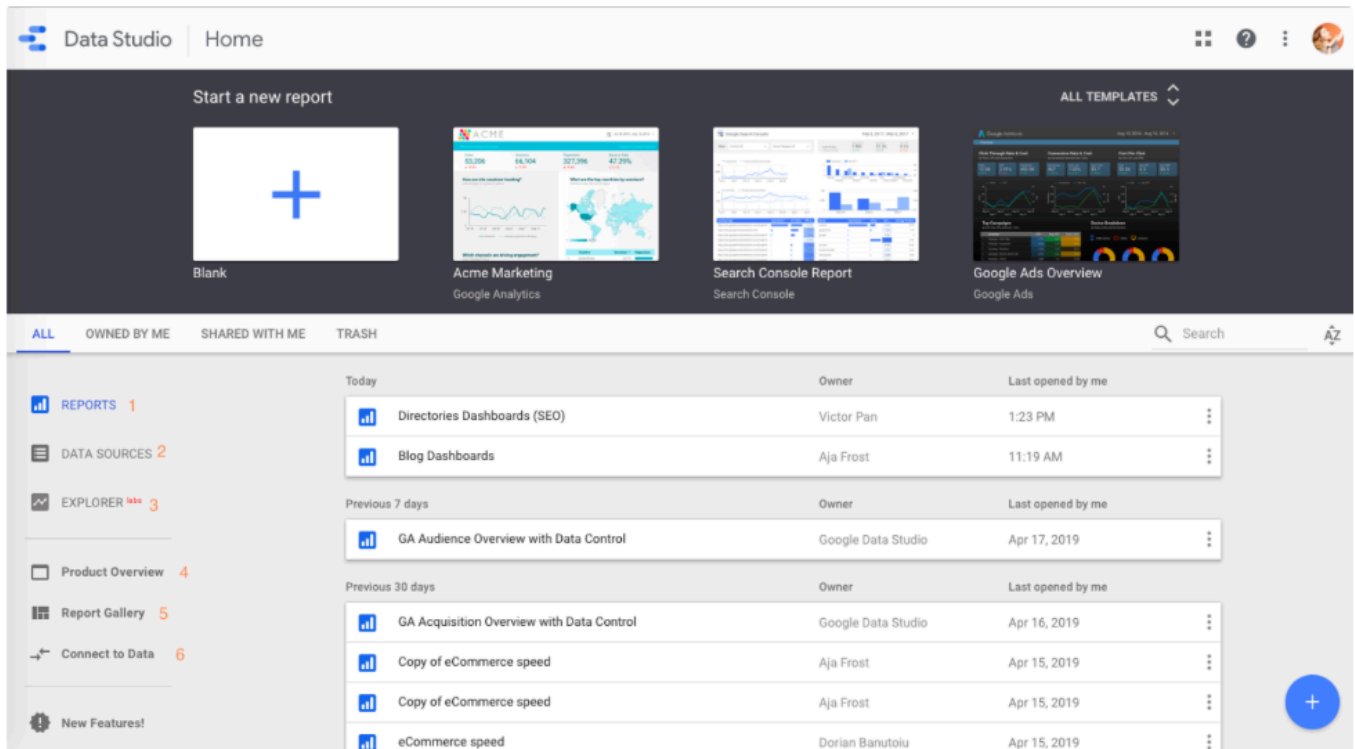
# Google DataStudio-User Interface

## 1. Log into Data Studio

To log in, you'll need a Google account—I recommend using the same one as your Analytics, Search Console, and/or Google Ads account.

You'll land on the Data Studio overview page. Click the “Home” tab to view your dashboard.

## 2. Explore the Data Studio Dashboard

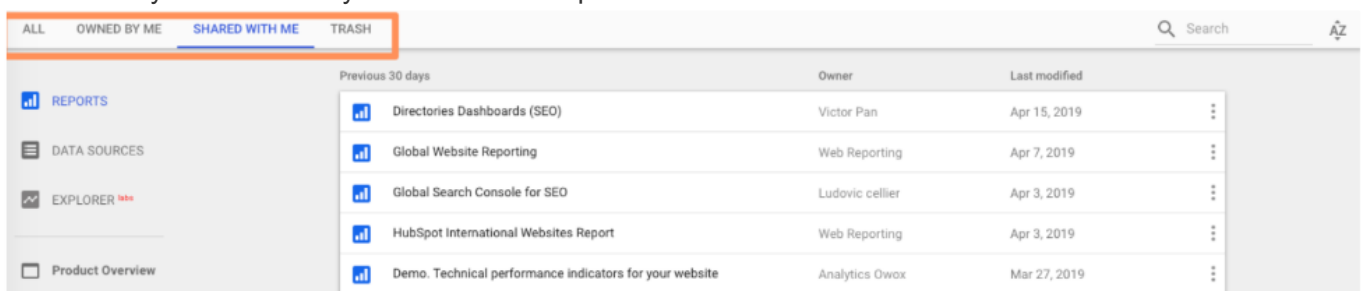


If you've used Google Docs, Sheets, or Drive before, this dashboard should look pretty familiar.

## 1. Reports

Here's where you can access all of your reports (equivalent to a workbook in Tableau or Excel).

Notice that you can filter by who owns the report:



## . Data Sources

Data sources lists all the connections you've created between Data Studio and your original data sources.

Data Studio currently supports 500+ data sources (jump to the section where I show you how to explore the possibilities.)

### Google Data Studio Data Sources

The most popular sources include:

Google Analytics

Google Ads

Google Search Console

BigQuery

YouTube Analytics

PostgreSQL

Search Ads 360

Display & Video 360

If you're using Google Analytics and/or Search Console (which I highly recommend), you'll need to individually connect each view and property, respectively.

So if you have three GA views for three different subdomains, you'll need to set up three different data sources.

Fear not, this is an easy process.

### 3. Explorer

Explorer is an experimental tool that lets you experiment or tweak a chart without modifying your report itself.

For instance, let's say you've created a table in Data Studio that shows the top landing pages by conversion rate. While looking at this table, you think, "Huh, I wonder what I'd find if I added average page load time."

You don't want to edit the chart in the report, so you export it into Labs—where you can tweak it to your heart's content. If you decide the new chart is valuable, it's easy to export it back into the report. (Jump to the section where I explain how.)

### 4. Product Overview

This brings you back to that Overview tab. Not sure why it's here; I never click it.

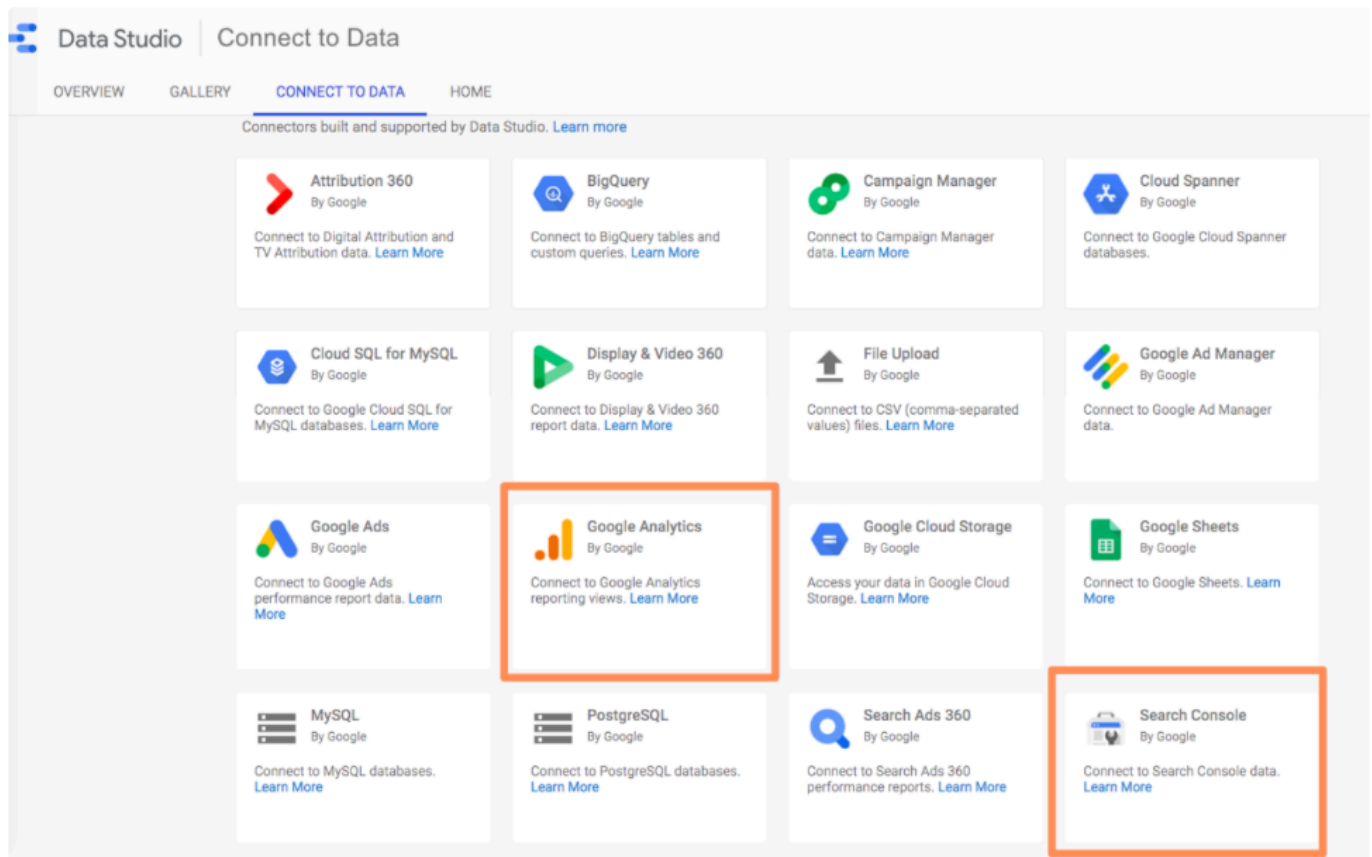
### 5. Report Gallery

This is a collection of templates and examples. More on the gallery in a bit.

# Step by Step Google DataStudio Data Set from DevAnalytics

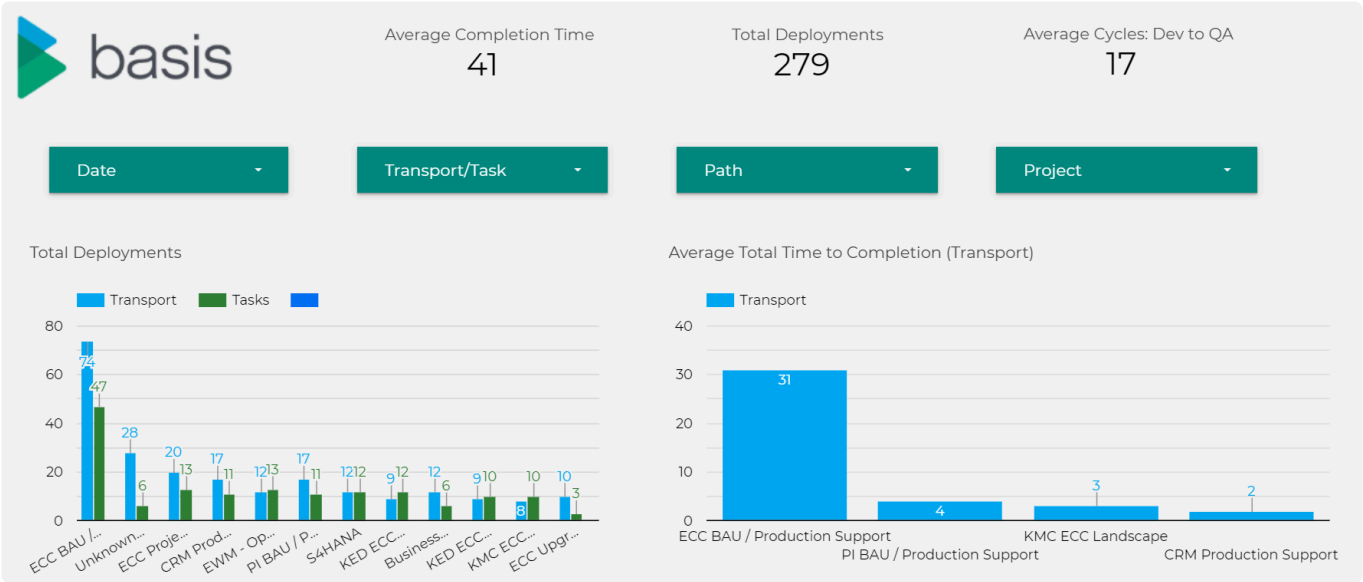
**Step 1:** Connect to your data. (Using the extracted DevAnalytics data you have from your system when you ran the exporting of DevAnalytics Data Program) select Connect to data-> file upload(your stored DevAnalytics file)

Connect to Data:



Once data has been imported, then you can start working on the dashboard/reports.

You can add charts, graphs, scorecards etc. Below example of the report dashboard:



# Addition of Google DataStudio dashboard to AC WEBUI

Configuration steps to add published URL from Google DataStudio to display it AC Web UI dashboard:

Once you have got the published URL from Google DataStudio you will go to table /BTI/TE\_WEBUICFG in the ActiveControl Domain Controller system.

Populate the Analytics\_URL entry in the table with the valid URL from Google DataStudio.

Change View "AC: Web UI Configuration": Details

New Entries

Key Field 0

AC: Web UI Configuration	
User Pict. Obj.	/BTI/TE_WEBUI_USER_PIC_GENERIC
User Pict. Obj.	/BTI/TE_WEBUI_USER_PIC_TE
User Pict. Obj.	ZTE_WEBUI_USER_PIC_
URL	/bti/te_web_services?action=GETUSERPICTURE&uname=
Role ID	00000000000000000000
Role ID	
Number of News Items	50
No. Recent Act items	50
Filter ID	2
<input checked="" type="checkbox"/> Exclude Complete	
<input type="checkbox"/> Inc. curr. user news	
User Pict. Obj.	
URL	
<input type="checkbox"/> Use TaskId	
Analytics URL	<a href="https://datastudio.google.com/s/i6hjCubSat0">https://datastudio.google.com/s/i6hjCubSat0</a>
<input type="checkbox"/> Open URL in new tab	
<input type="checkbox"/> TL Refresh	
<input type="checkbox"/> DB Refresh	

Once completed, go to the AC Web UI and a new tab should be displayed with the dashboard/reports from Google DataStudio that you have published.