

IBM Training

Student Exercises

Lab-5: Create a COVID-19 Dashboard using Cognos Analytics

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Introduction

This lab will build a series of Cognos Dashboards to display COVID-19 data.

Objectives

The goal of the lab is to familiarize the user with the use of the Cognos Analytics web-based business intelligence suite. IBM Cognos Analytics contains integrated toolsets for reporting, analytics, and visualization. This lab will focus on the visualization component.

We will be creating three tabs similar to those on the [IBM & Weather Channel COVID-19 Dashboard](#). IBM created a data fabric pulled from state and local governments as well as the World Health Organization. Where the public dashboard updates dynamically based on daily data pulls, we will use extracted data tables for the lab to build visualizations for a specific set of dates.

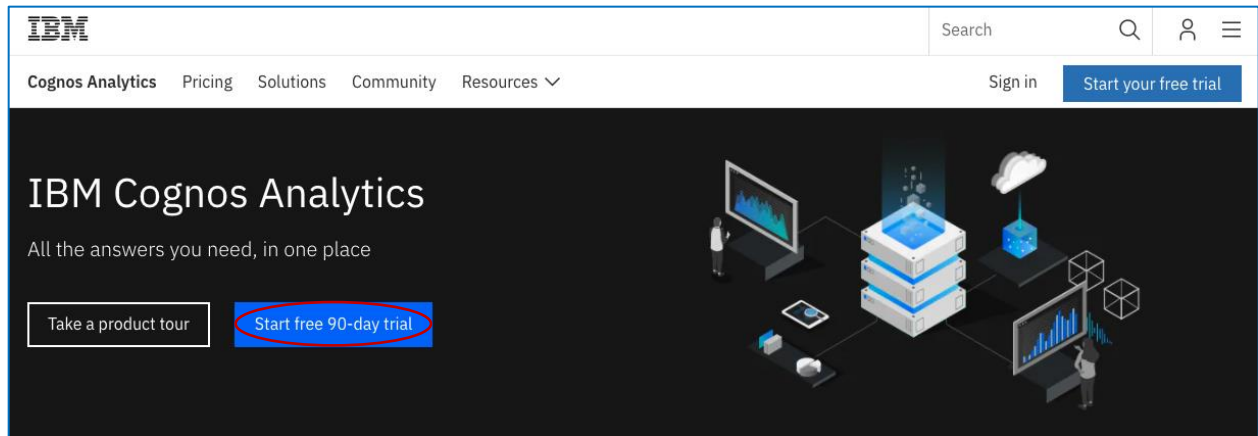
After completing this lab you will be familiar with these features of Cognos Analytics:

1. Upload data into Cognos Analytics
2. Create and customize visualizations to build dashboards
3. Create links to external websites tabs
4. Work with calculations and filters for individual tiles

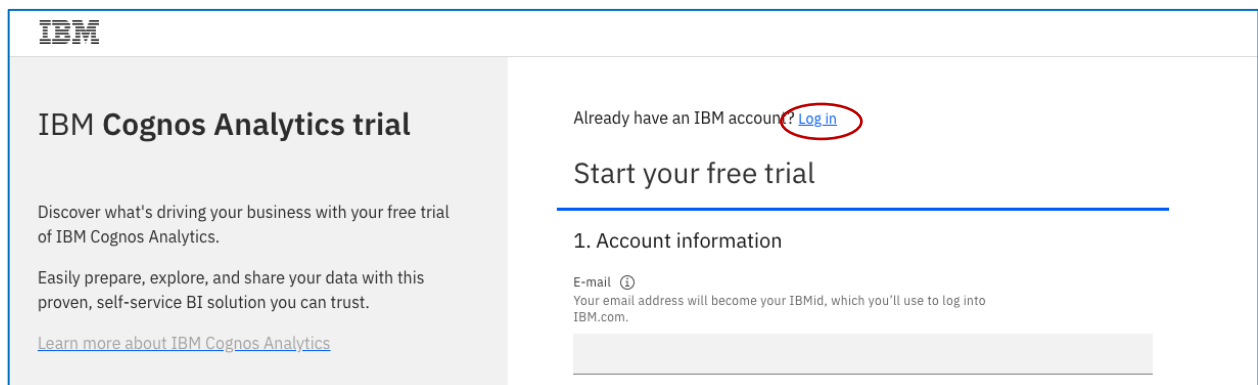
Exercise 1: Access your Cognos Free Trial

Cognos Analytics is a web-based business intelligence suite with toolsets for reporting, analytics, and monitoring of events and metrics. In this exercise we will access Cognos Analytics before we begin building our dashboards.

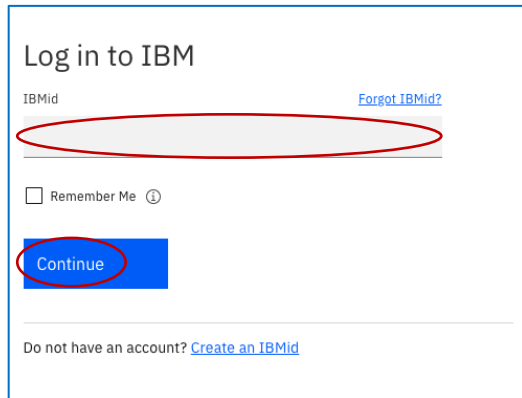
1. Access <https://www.ibm.com/products/cognos-analytics>
2. Click on **Start free 90-day trial**.



3. If you completed the previous labs, or have an IBM account, click Log in.

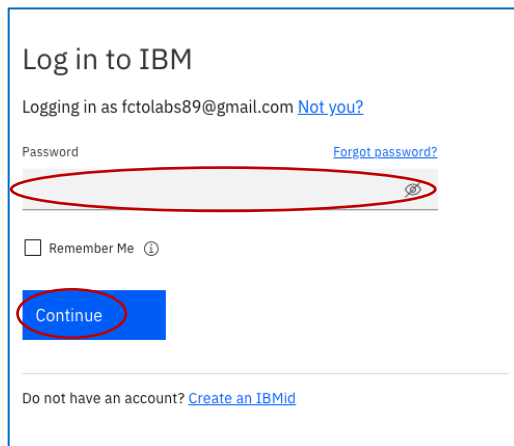


4. Enter your **email** and click **Continue**.



The screenshot shows the 'Log in to IBM' page. The 'IBMId' input field is highlighted with a red oval. To its right is a blue link 'Forgot IBMId?'. Below the input field is a checkbox labeled 'Remember Me' with a help icon. A blue 'Continue' button is also highlighted with a red oval. At the bottom, there is a link 'Do not have an account? Create an IBMId'.

5. Enter your **password** and click **Continue**.



The screenshot shows the 'Log in to IBM' page. It indicates 'Logging in as fctolabs89@gmail.com' with a blue link 'Not you?'. The 'Password' input field is highlighted with a red oval, and a 'Forgot password?' link is to its right. Below the input field is a checkbox labeled 'Remember Me' with a help icon. A blue 'Continue' button is also highlighted with a red oval. At the bottom, there is a link 'Do not have an account? Create an IBMId'.

If you already had an existing trial, you will receive an error:

Error Occurred

It appears your trial has expired. To continue using this product you must acquire a paid subscription. If you need help, please contact [IBM Marketplace support](#) and provide the code BZSMS3064E.

If you received this error, please clear your browser history, and log in with a new email account. If you did not receive this error, continue on to step 6 below.

6. Fill out the form to claim the free trial and click **Continue**.

The screenshot shows the IBM Cognos Analytics trial registration page. On the left, there is a sidebar with the IBM logo and text about the trial. The main content area is titled 'So that we can better assist you Please provide the following information'. It contains several form fields: 'Are you a student? (optional)' with radio buttons for 'Yes' and 'No'; 'Country or region of residence' with a dropdown menu showing 'United States'; 'State or province' with a dropdown menu showing 'Virginia'; and 'Phone' with a dropdown for the country code '+1' and an empty input field for the number. Below these fields, there is a section for marketing consent with checkboxes for 'by E-mail' and 'by telephone', both of which are checked. There is also a paragraph about withdrawing consent and a link to the 'IBM Privacy Statement'. At the bottom, there is a checkbox for accepting the 'Terms and Conditions' and a blue 'Continue' button.

IBM Cognos Analytics trial

Discover what's driving your business with your free trial of IBM Cognos Analytics.

Easily prepare, explore, and share your data with this proven, self-service BI solution you can trust.

[Learn more about IBM Cognos Analytics](#)

We now offer an updated trial experience, to learn more about these updates, [click here](#).

So that we can better assist you
Please provide the following information

Are you a student? (optional)
☐ Yes ☐ No

Country or region of residence: **United States** (dropdown)
State or province: **Virginia** (dropdown)

Phone: +1 (dropdown) []

IBM may use my contact data to keep me informed of products, services and offerings:
☒ by E-mail
☒ by telephone

You can withdraw your marketing consent at any time by submitting an [opt-out request](#). Also you may unsubscribe from receiving marketing emails by clicking the unsubscribe link in each email.

More information on our processing can be found in the [IBM Privacy Statement](#). By submitting this form, I acknowledge that I have read and understand the IBM Privacy Statement.

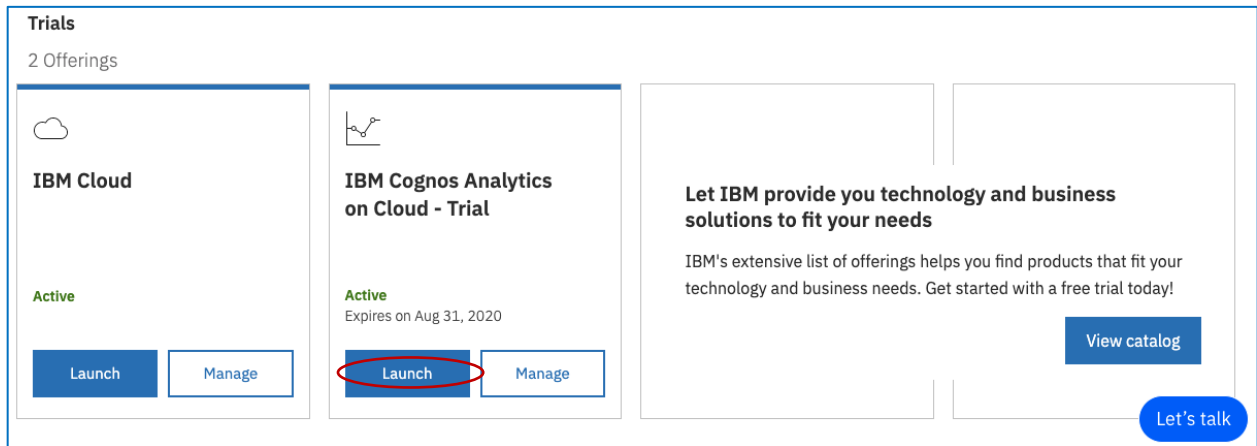
I accept the product [Terms and Conditions](#) of this registration form.

Continue

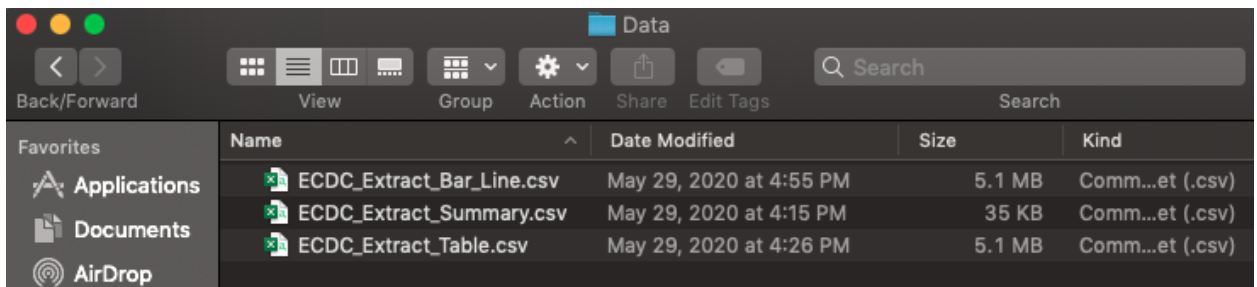
7. Wait a minute for the resource request to finish processing.



- Once the “Preparing” prompt changes to “ready to use,” scroll down and click **Launch** on IBM Cognos Analytics on Cloud – Trial.



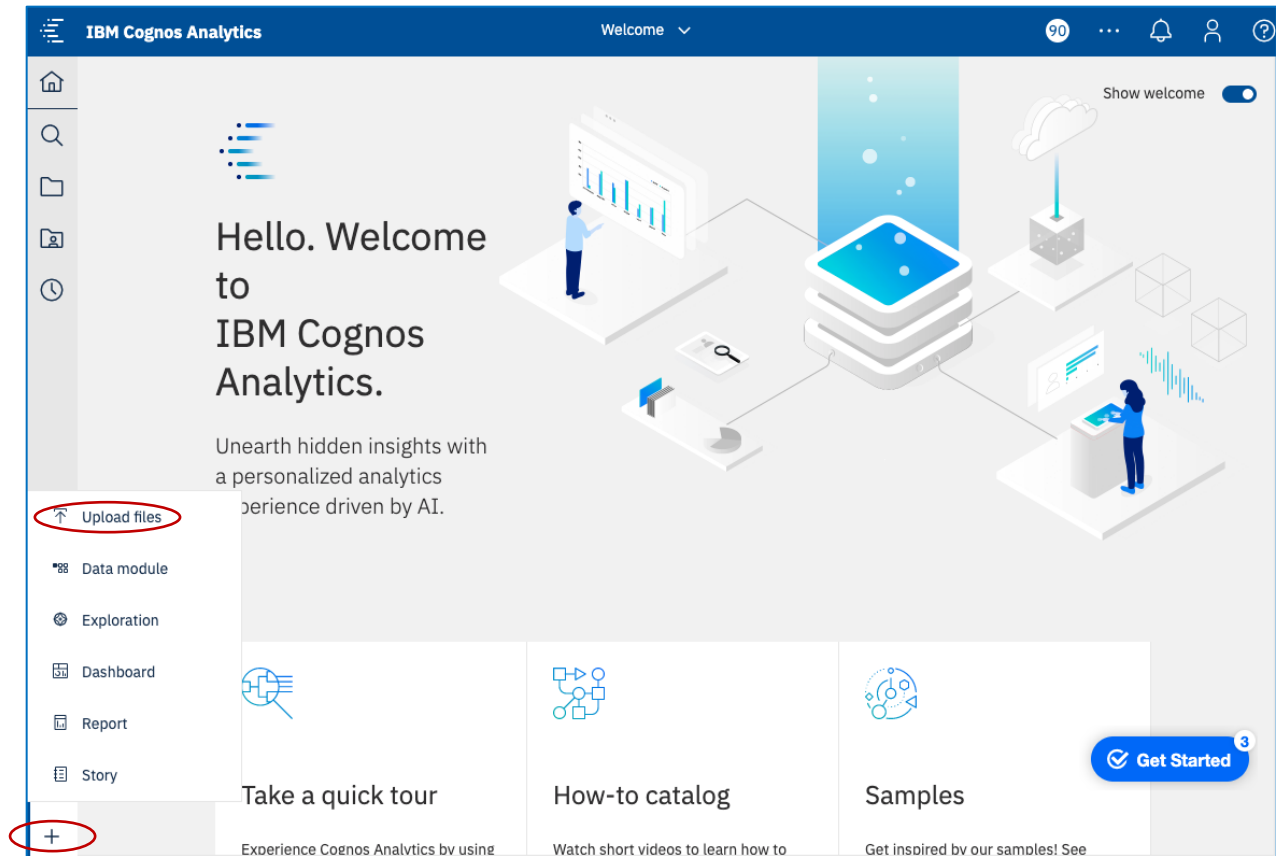
- Download a zip file of data for the lab by copying the following URL into your Firefox or Chrome browser: https://github.com/bleonardb3/AI_POT_06-11-2020/raw/master/Lab-5/Data.zip.
- Unzip the file.



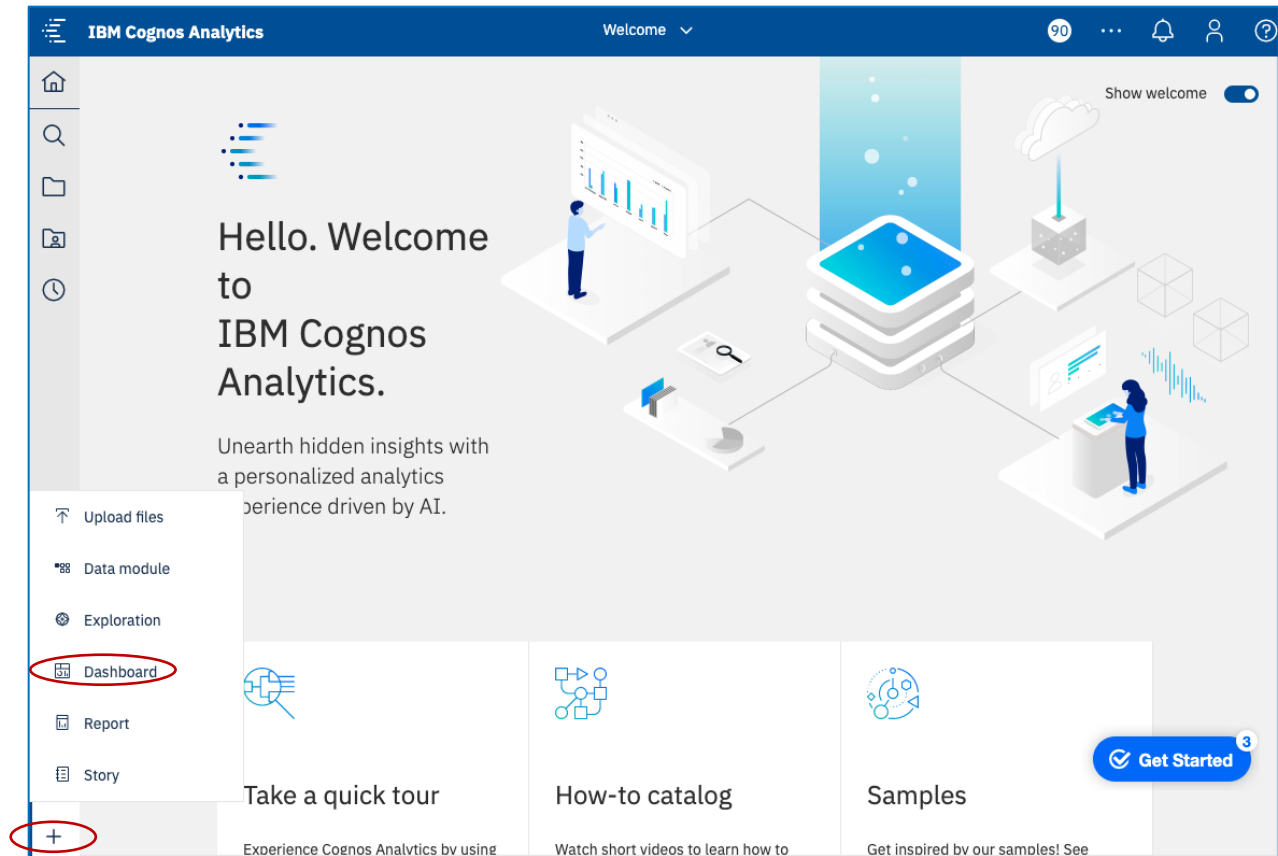
Exercise 2: Create “Covid-19 Cases Dashboard”

Once logged in to your Cognos dashboard, you’ll want to import the appropriate data. This lab leverages the three csv files in the zip you downloaded in the previous exercise, each of which are pre-modified to keep the focus of the lab on constructing visualizations.

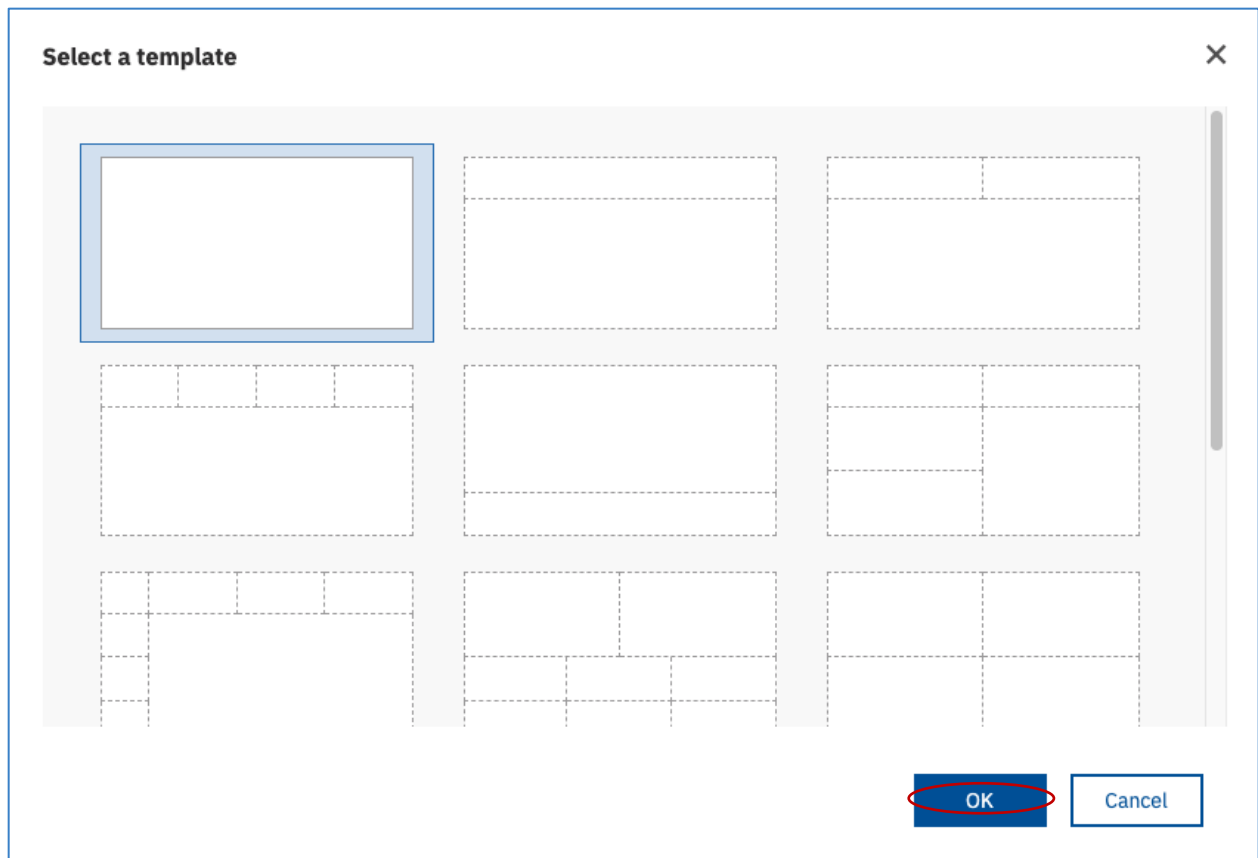
- Click **New (+)** and **Upload Files** and locate the csv folder.



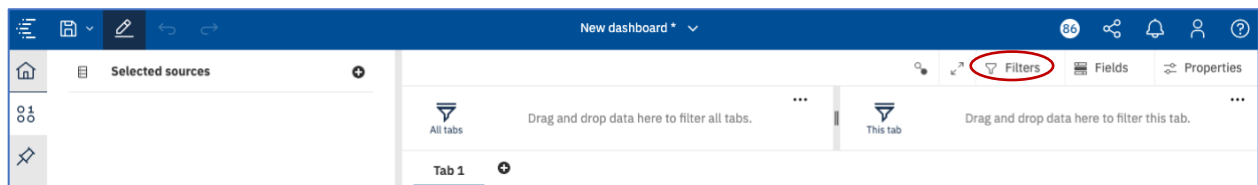
2. Once the files have been successfully uploaded create a new blank dashboard by clicking **New (+)** and **Dashboard**



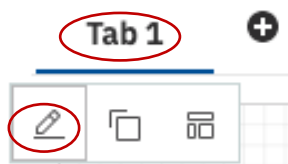
3. Keep the default template and click **OK**.



4. Click on the **Filters** button to close the Filters panel.

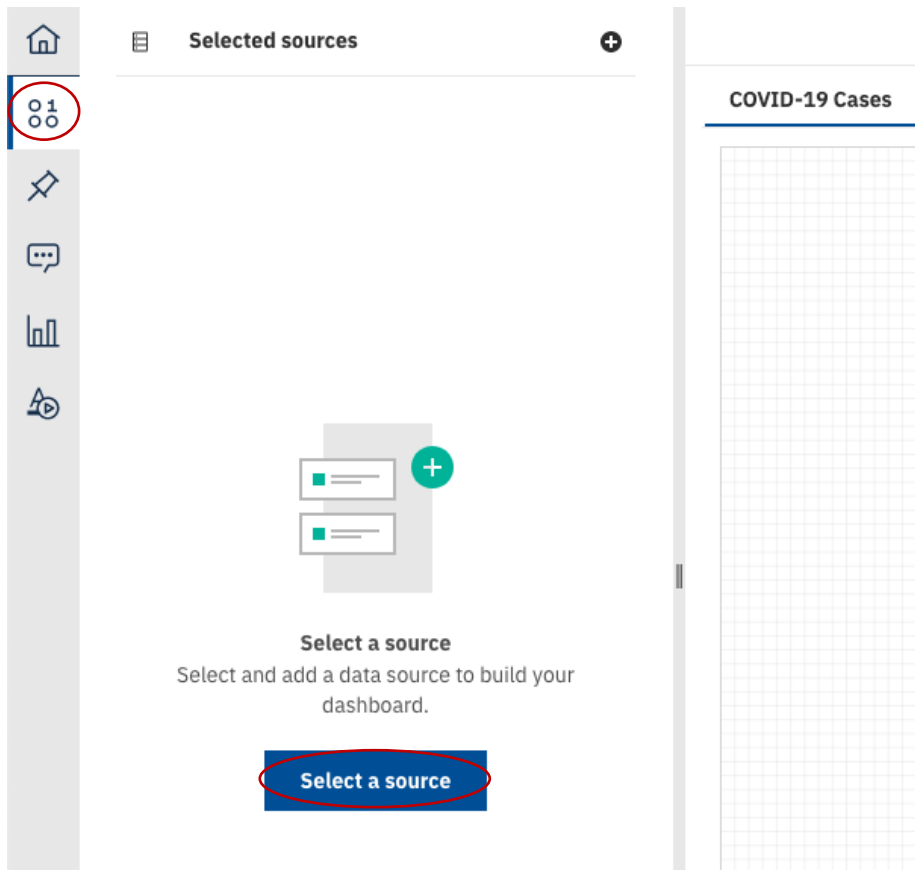


5. Click on **Tab 1**

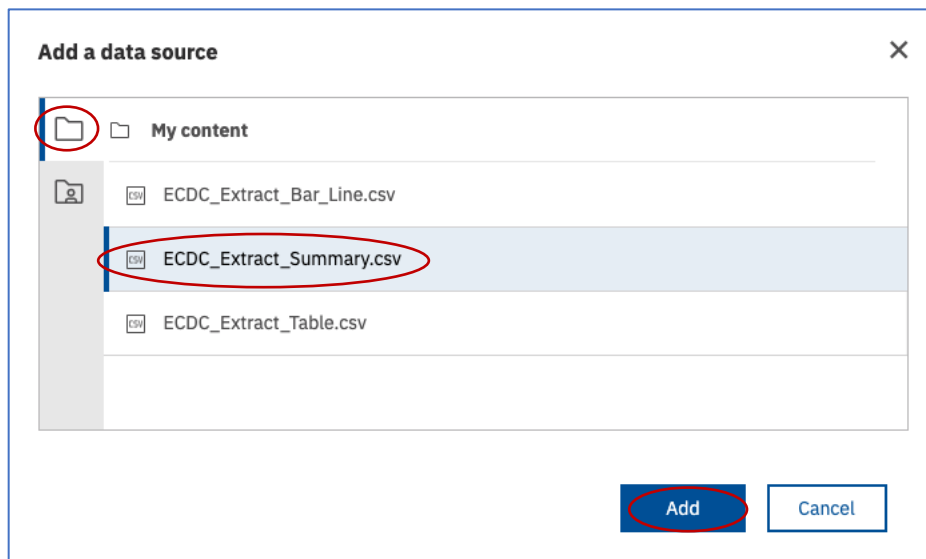


6. Enter “**COVID-19 CASES**” as the tab title.

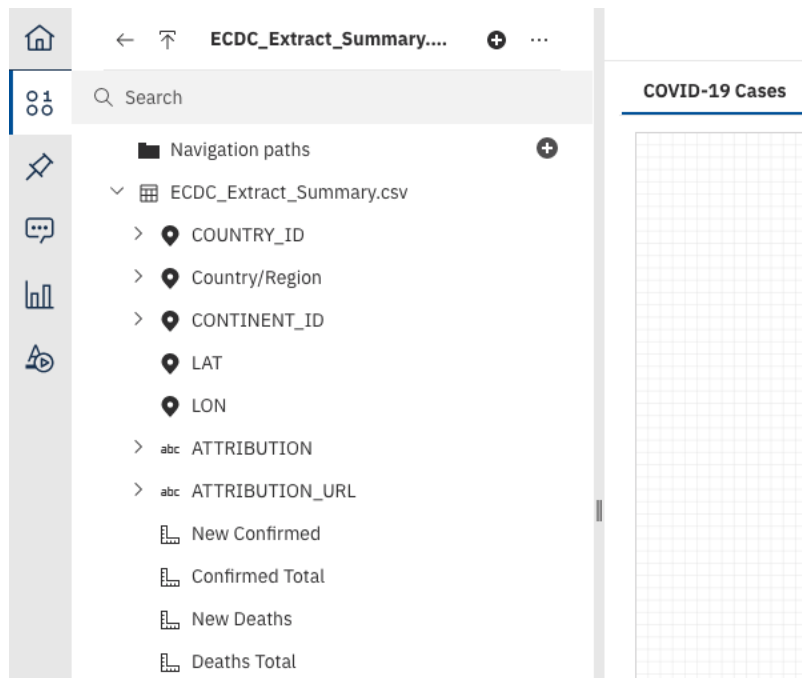
7. Import ECDC_Extract_Summary.csv into your dashboard project by opening the Sources panel. Click on the **0100** tile and **Select a source**.



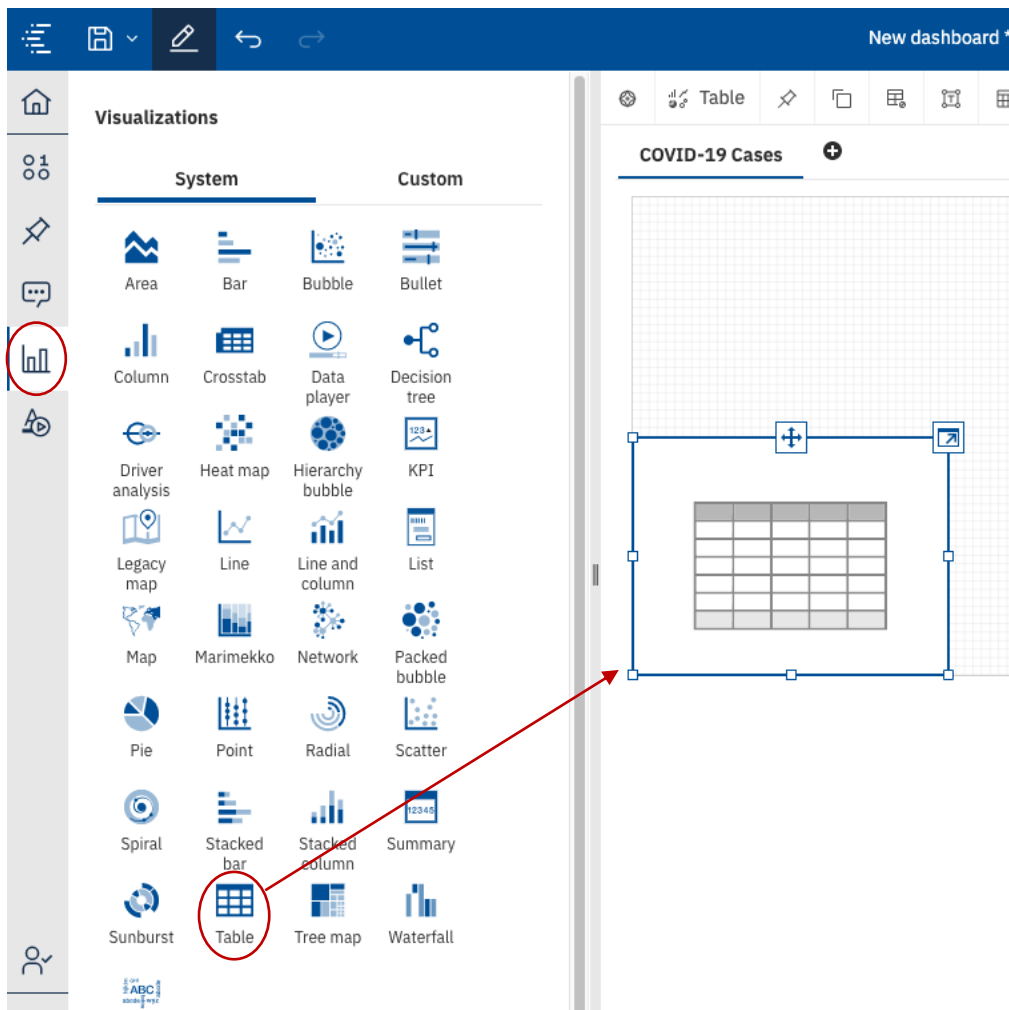
8. Click on the **top folder**, **ECDC_Extract_Summary.csv**, and **Add**.



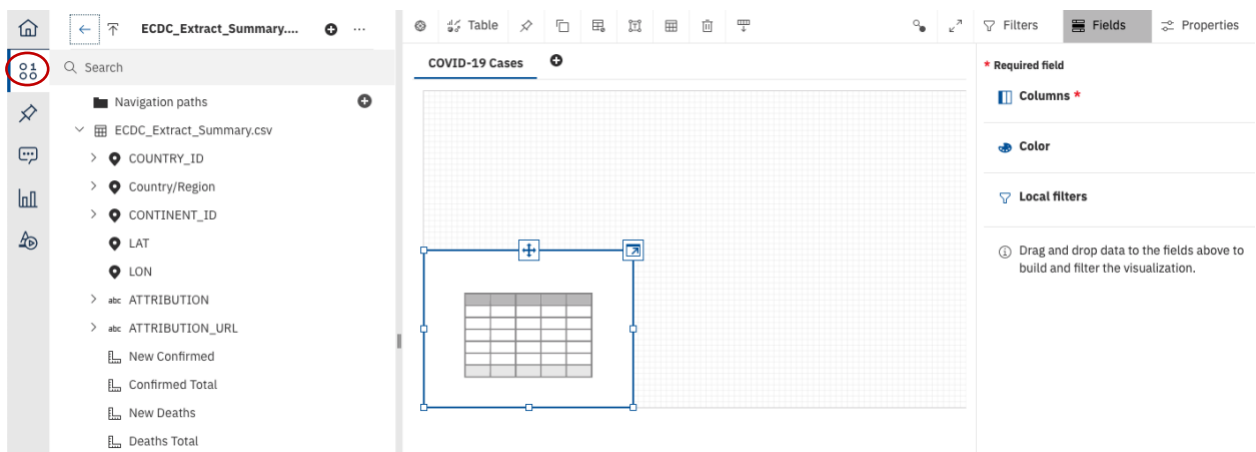
The .csv contents will appear in the side panel.



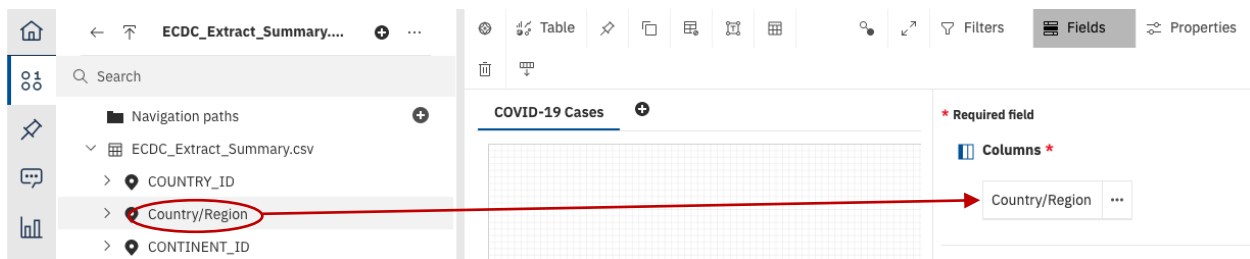
- Click on the **visualizations** (graph) button to open the visualizations panel then **click and drag the Table icon to the bottom left of your dashboard.**



10. With the table tile selected in your dashboard, open the sources panel by clicking on the **sources button (0100)**.

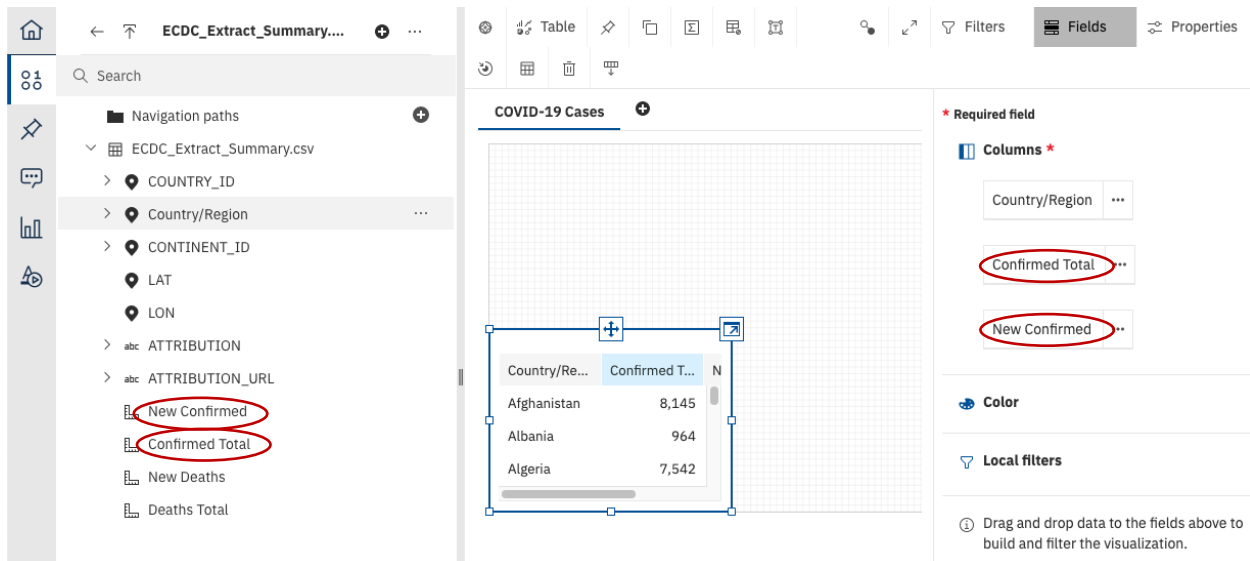


11. Click on **Country/Region** in the sources panel (on the left) and **drag it to the Columns field** in the Fields panel (on the right).



12. Repeat step 11 for **Confirmed Total** and **New Confirmed**.

- Confirmed is the total number of cases confirmed up to May 20th, 2020
- New is the number of new cases on May 20th, 2020



If needed, click on the white squares on the border of the Table tile to resize. **Resize as needed** so you can view all three columns.

13. Click on the **Properties** tab in the top right for the Table tile, click on **General**, **Appearance**, and check **Show title**.

The screenshot shows the Qlik Sense interface. On the left, a table tile titled "COVID-19 Cases" is displayed with the following data:

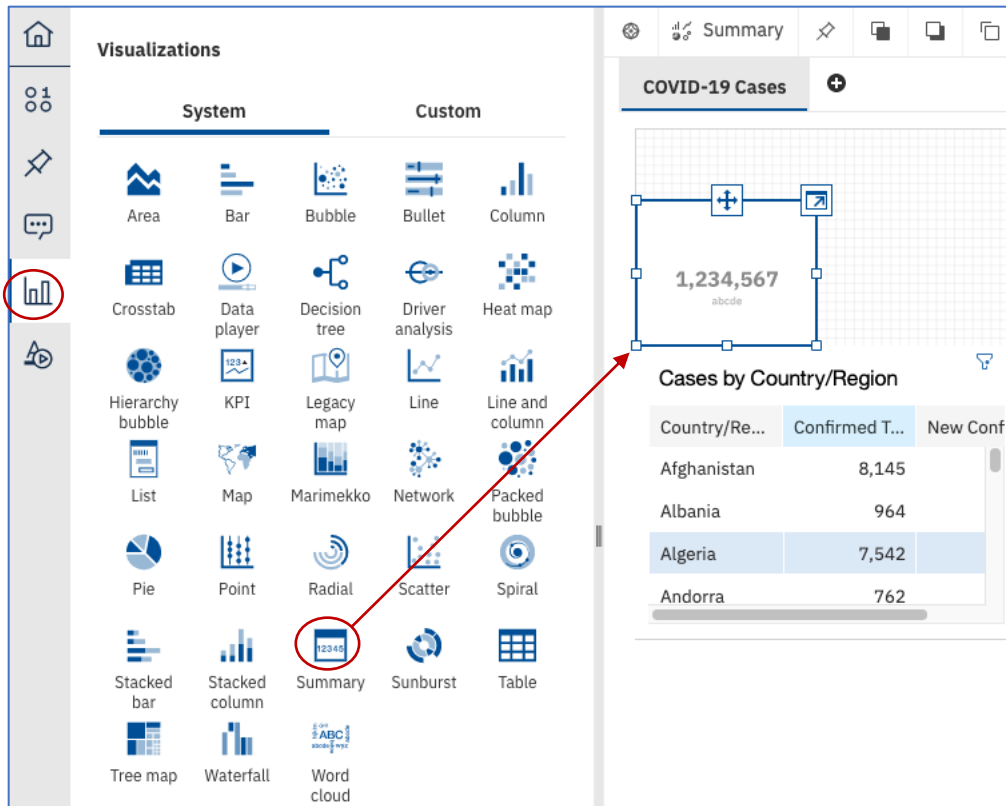
Country/Region	Confirmed Total	New Confirmed
Afghanistan	8,145	
Albania	964	
Algeria	7,542	
Andorra	762	

On the right, the "Visualization properties" panel is open. The "General" tab is selected. Under the "Appearance" section, the "Show title" checkbox is checked.

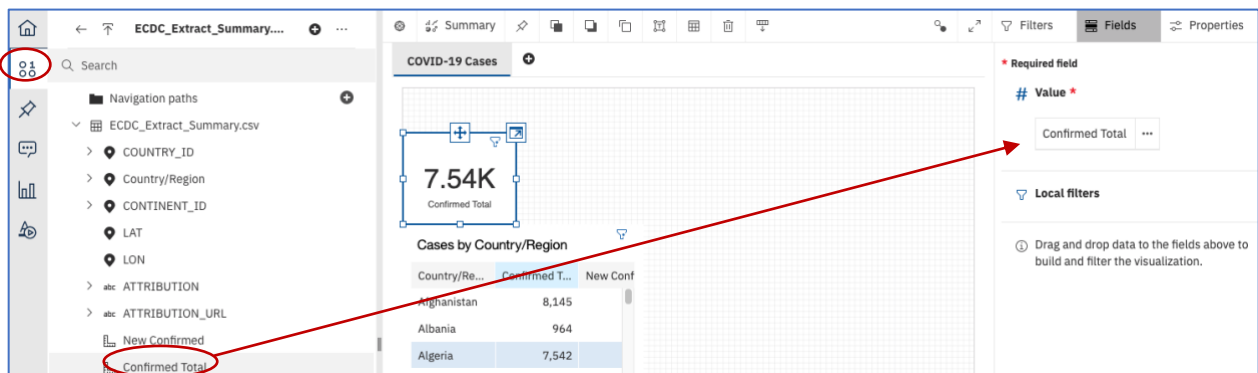
14. Enter “Cases by Country/Region” as the title and switch the Font size to 16.

The screenshot shows the Qlik Sense interface. The table tile now has the title "Cases by Country/Region" (circled in red). The "Properties" panel is still open, and the "Text details" sub-tab is selected. The "Font size" is set to 16 (circled in red).

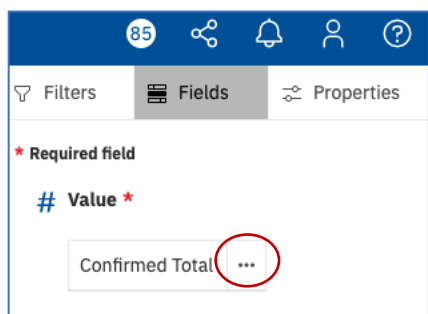
15. Open the **visualizations** panel, click on the **Summary tile** and drag it above your dashboard. Leave some space at the top as we will add a title to the dashboard.

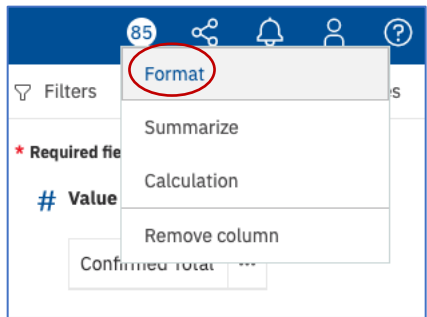


16. Open the **sources** panel and drag **Confirmed Total** to the Value required field.

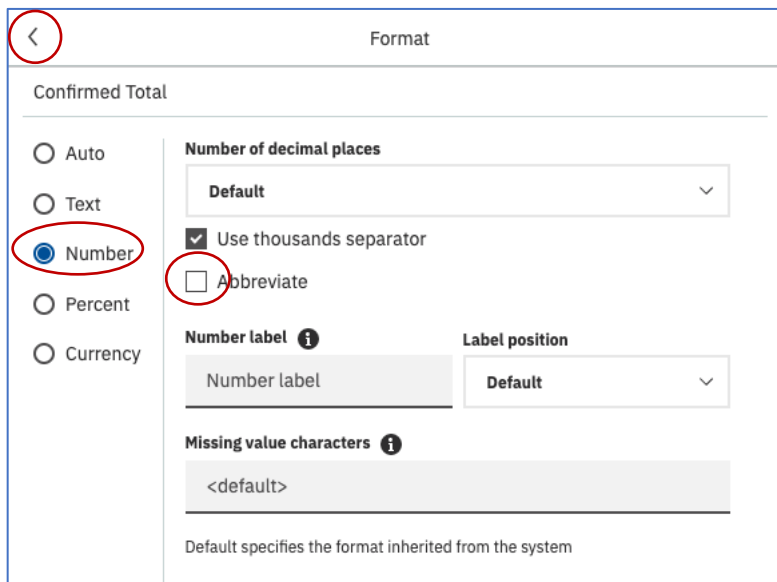


17. Click on the **three dots to the right of Confirmed Total** then click on **Format**.

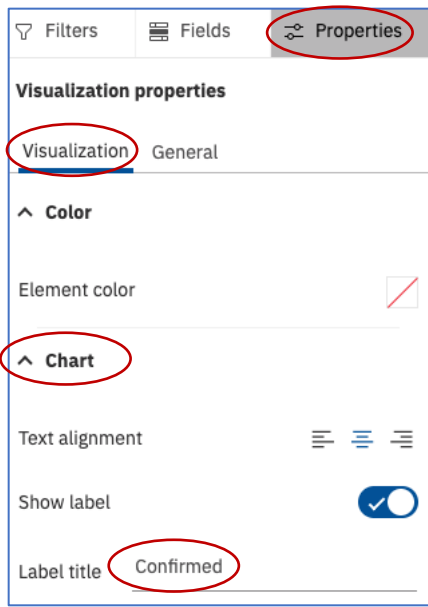




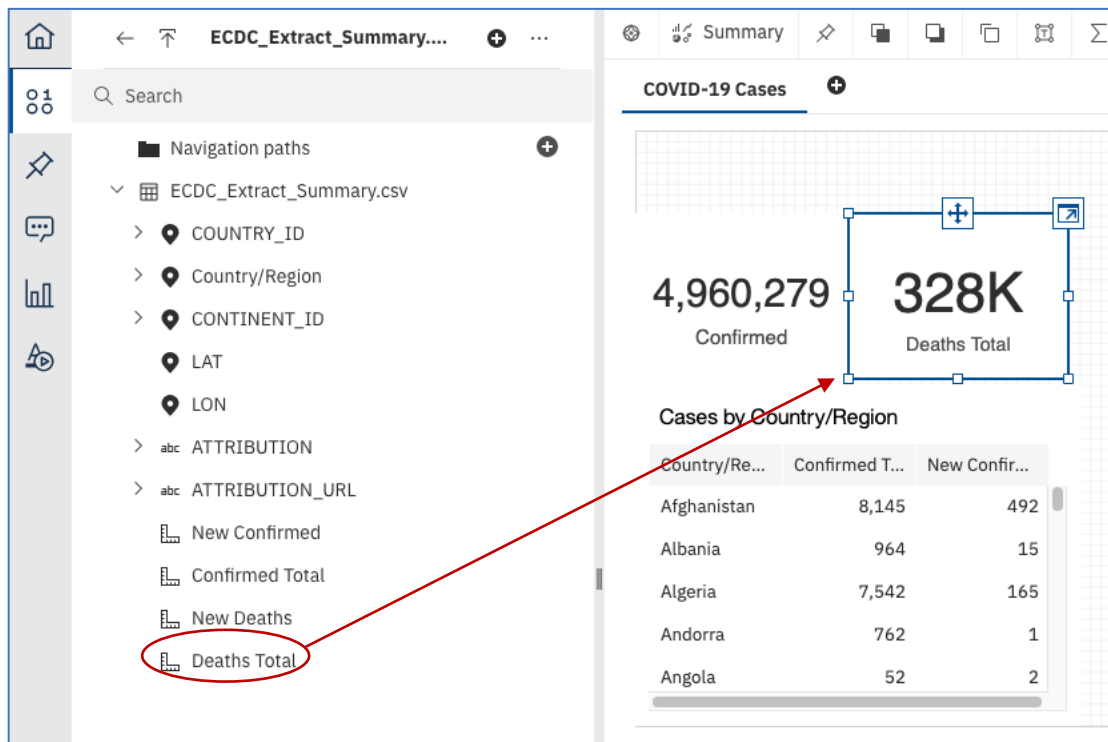
18. Click on **Number**, uncheck **Abbreviate**, and click on the back arrow.



19. Click on the **Properties Tab, Visualization, Chart**, and change the Label title to “Confirmed”



20. On the left side of the screen, click on the **Sources** tile then **click and drag the Deaths Total source to the dashboard**. Cognos will automatically infer the “Summary” title as an appropriate visualization. Move it to the top left above the dashboard beside Confirmed. Resize as needed.

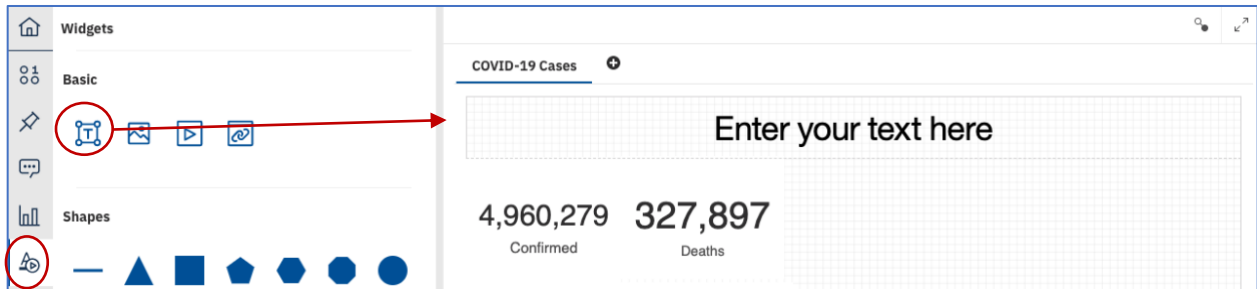


21. Repeat steps 17 and 18 to turn off abbreviation for the **Deaths Total** tab.

22. Repeat step 19 to change the title to “Deaths”

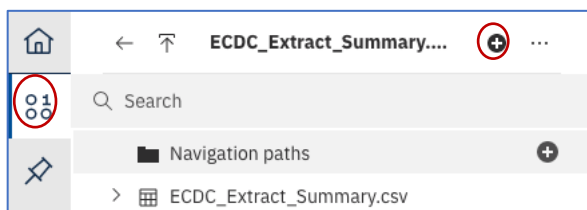


23. Click on the widgets button to open the **Widgets** panel. Then click and drag a **Text icon** to the top of your dashboard. Resize to fit the top of your dashboard.

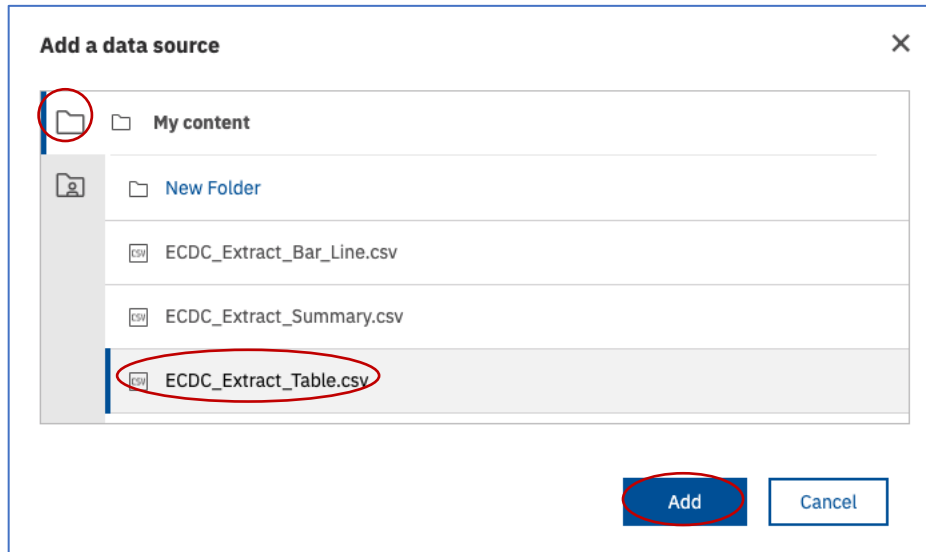


24. Click on the **text to edit** and **change the title “IBM Global COVID-19 Statistics”**

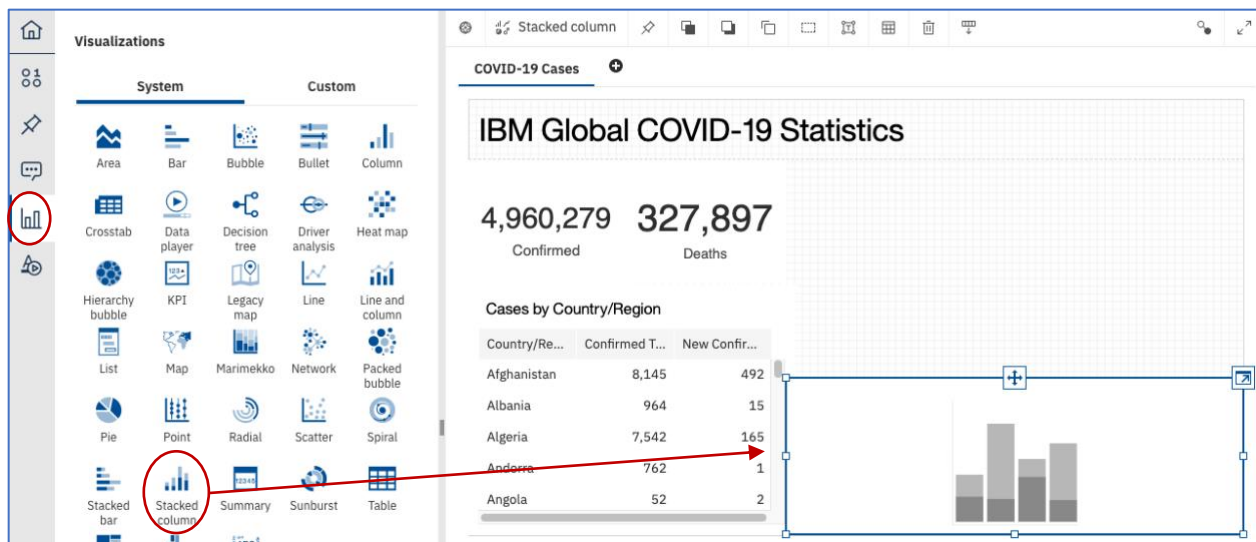
25. We will now pull in a different data source to create a stacked bar graph to show the number of cases by region. **Click on Sources button** to open the Sources panel and **click on the top (+) button** to add a source.



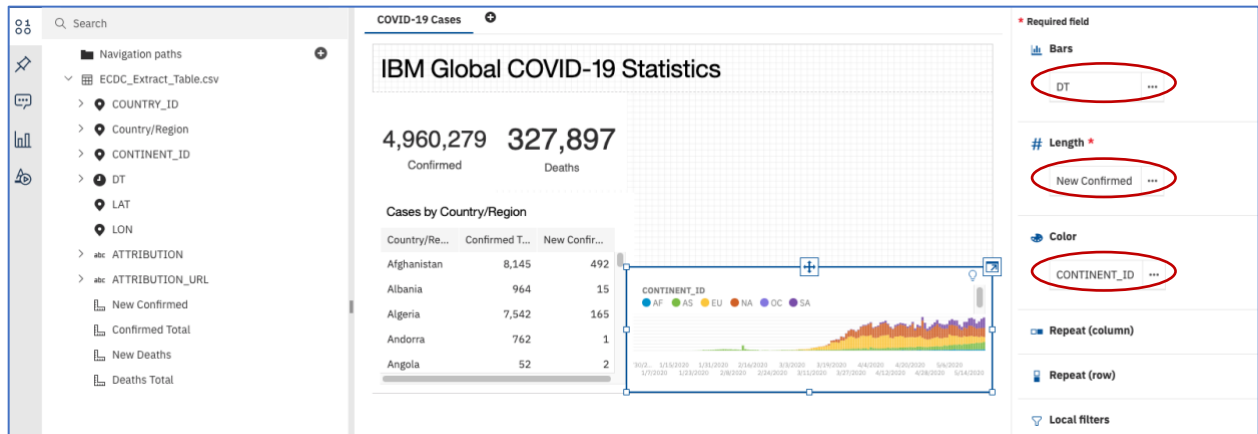
26. Click on **My Content**, **ECDC_Extract_Table.csv** and **Add**.



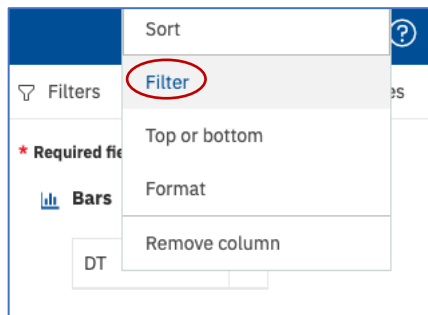
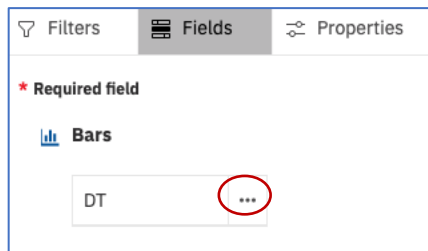
27. Open the **Visualizations** panel, click and drag the **Stacked Column** Visualization to the bottom right quadrant of the dashboard.



28. Open Source and add the **DT** column to the Bars field, the **New Confirmed** column to the Length field, and the **CONTINENT_ID** column to the color field



29. Add a Date filter to only show results from May 6th to May 20th by clicking on the **three dots** next to **DT** then click **Filter** and choose May 6th.



30. Enter the dates:

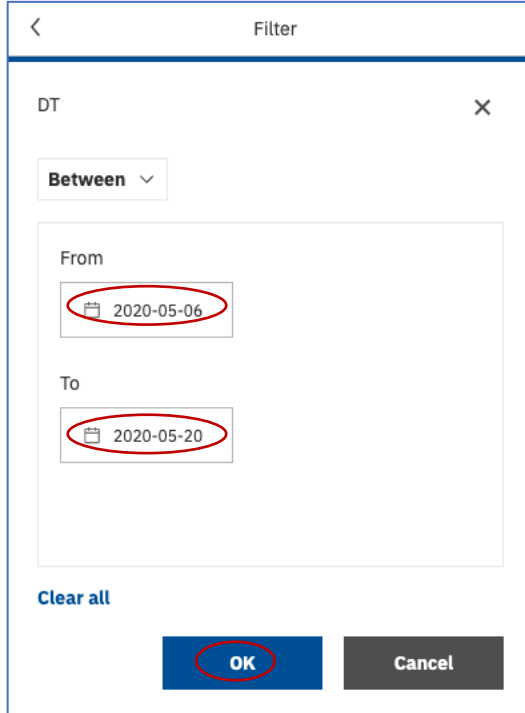
From

2020-05-06

To

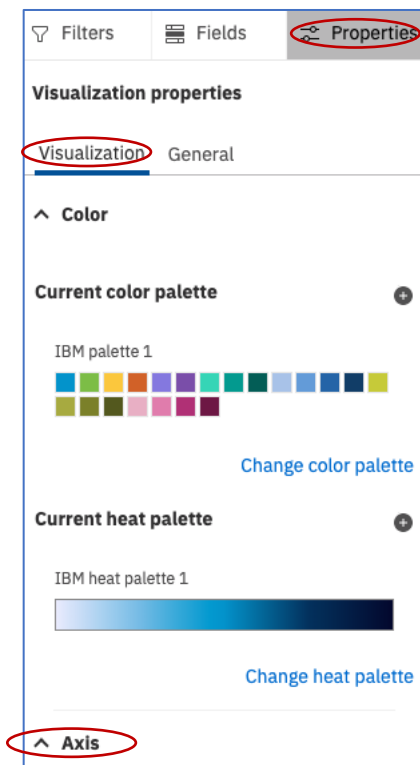
2020-05-20

And click **OK**.



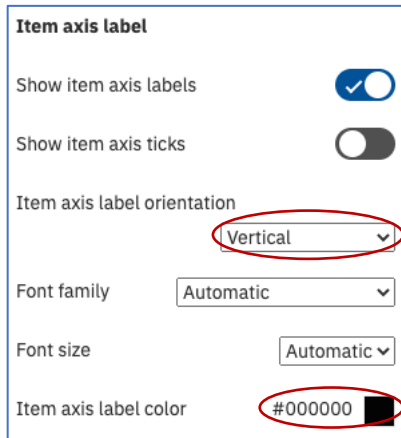
A screenshot of a 'Filter' dialog box. At the top, there is a back arrow and the title 'Filter'. Below this, the field 'DT' is shown with a close button 'X'. A dropdown menu is set to 'Between'. Underneath, there are two date selection fields: 'From' with the date '2020-05-06' and 'To' with the date '2020-05-20'. Both dates are circled in red. At the bottom left is a 'Clear all' link. At the bottom right are two buttons: 'OK' (circled in red) and 'Cancel'.

31. Now we'll be styling to the graph, first we'll fix the cluttered dates by making them vertical and making the font color black. Click on **Properties**, **Visualization**, and **Axis**.



A screenshot of the 'Properties' panel in a software interface. The top bar has three tabs: 'Filters', 'Fields', and 'Properties' (which is selected and circled in red). Below the tabs, the section 'Visualization properties' is shown. Under this, the 'Visualization' tab is selected and circled in red. The 'General' sub-tab is active. Under the 'Color' section, there are two palettes: 'Current color palette' (labeled 'IBM palette 1') and 'Current heat palette' (labeled 'IBM heat palette 1'). Both have 'Change' links below them. At the bottom, the 'Axis' section is expanded, with its header circled in red.

32. Change **Item axis label orientation** to **vertical** and **Item axis label color** to **black**.



Item axis label

Show item axis labels ☒

Show item axis ticks ☐

Item axis label orientation **Vertical**

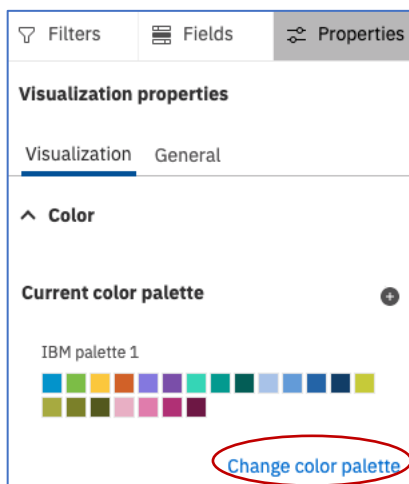
Font family Automatic

Font size Automatic

Item axis label color **#000000**

Steps 34-36 are optional.

33. To add the aesthetic, we'll be changing the default color scheme to a custom one. **Click on the stacked bar graph**. Scroll up and click on **Change color palette**.



Filters Fields Properties

Visualization properties

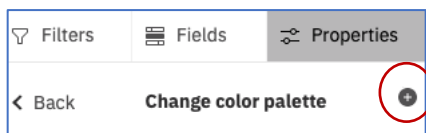
Visualization General

Color

Current color palette

IBM palette 1

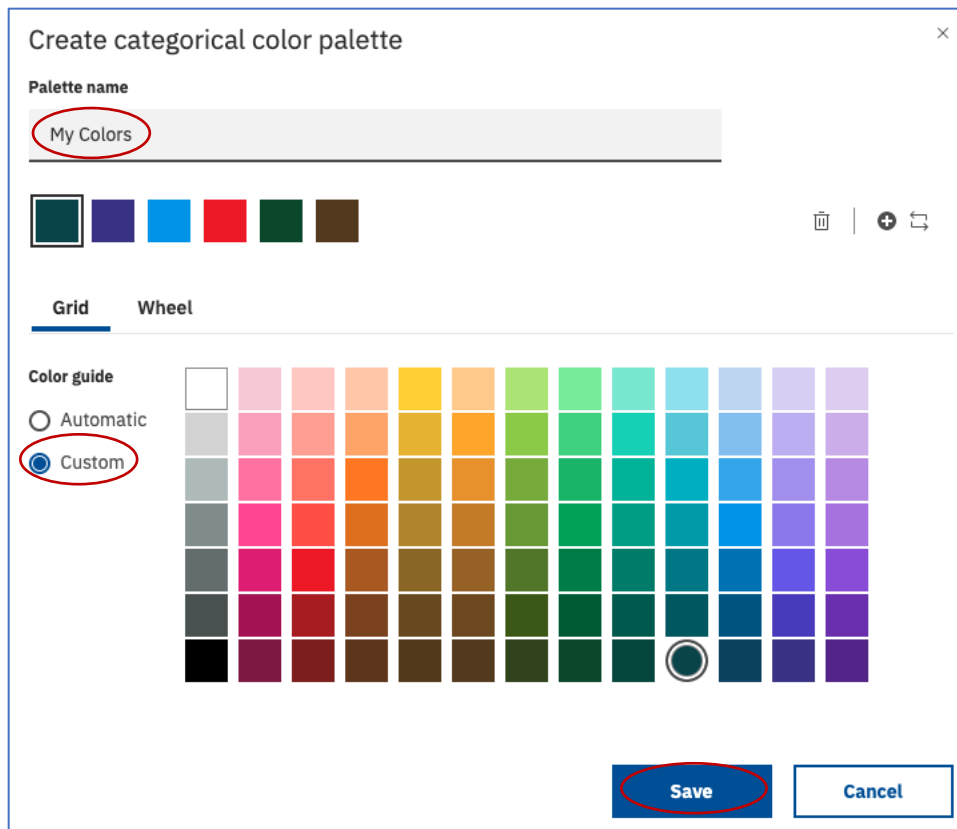
[Change color palette](#)



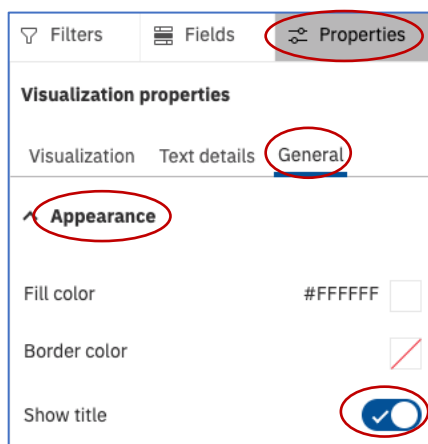
Filters Fields Properties

< Back Change color palette

34. Click **custom** and on the colors you see in the same order as the image below (or choose your own colors). Name your palette “My Colors” and click **Save**.

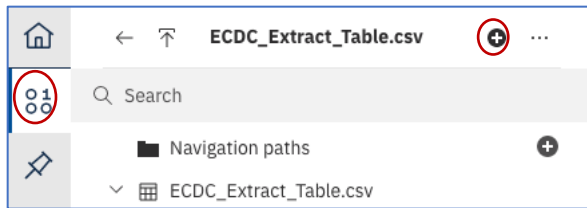


35. Click on **Properties**, **General**, **Appearance**, and Show **title**.

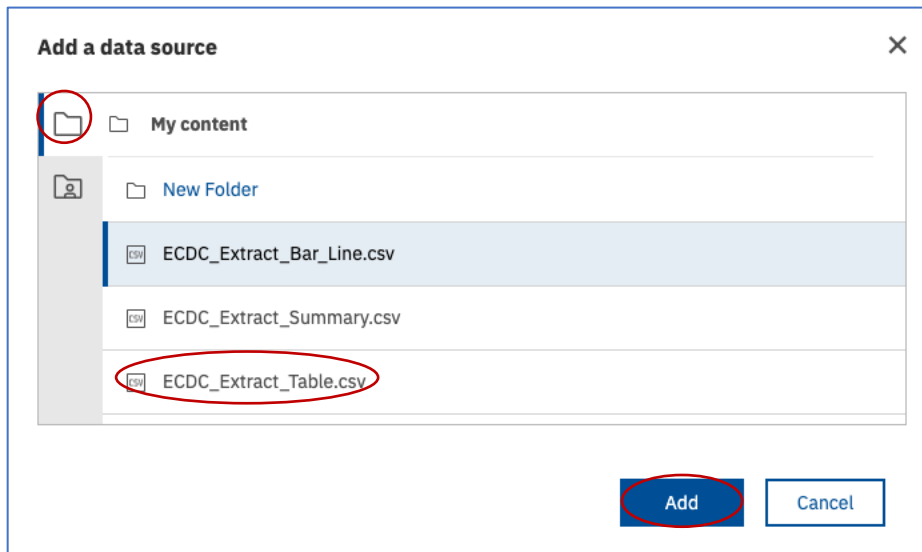


36. Enter “**Confirmed Cases by Region – Last 14 Days**” as the title and set the font to 16.

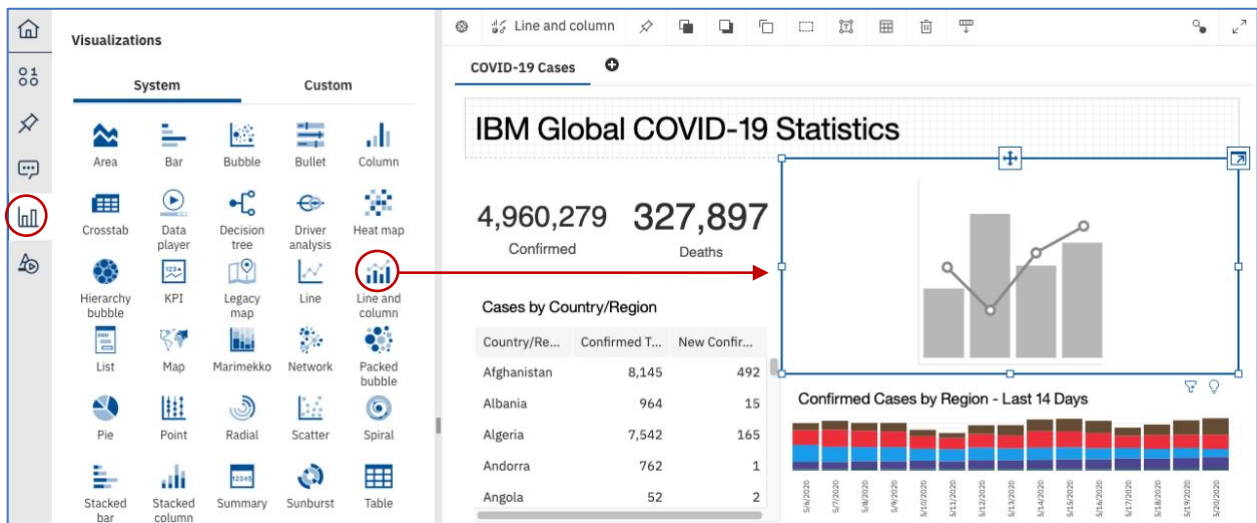
37. We will now pull in a different data source to create a stacked bar graph to show the number of cases by region. Click on **Sources** button to open the Sources panel **and click on the top (+) button** to add a source.



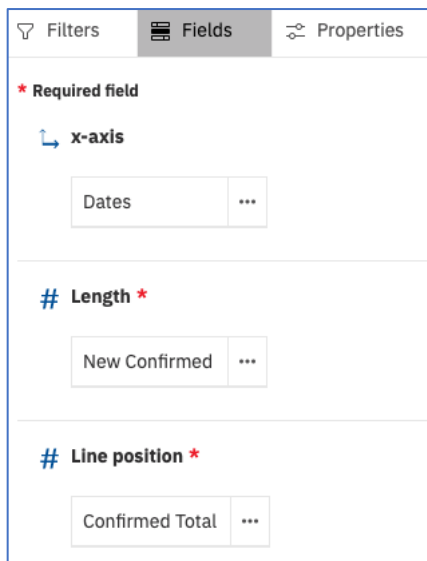
38. Click on **My Content**, **ECDC_Extract_Bar_Line.csv** and **Add**.



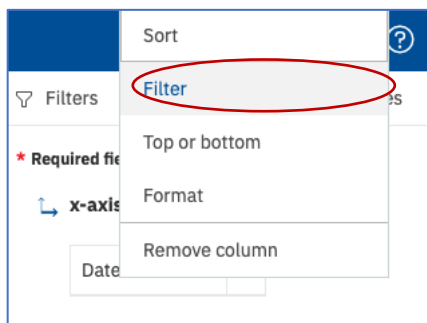
39. Finally, we'll be making a line/bar graph to show how confirmed cases have changed over time. Let's begin by importing **ECDC_Extract_Bar_Line.csv**. Click on **visualizations** then **drag a Line and Column tile** to the remaining space in your **dashboard**. Resize as needed.



40. Then add the **Dates** column to the x-axis field, **New Confirmed** to the Length field, and **Confirmed Total** to the Line Position



41. Apply a filter to the Dates column so the graph shows information from March 1st to May 20th. Click on the **three dots next to Date** and then click **Filter**.



42. Set the filter dates to:

From

2020-03-01

To

2020-05-20

Then Click **OK**.

Filter

Dates

Between

From

2020-03-01

To

2020-05-20

Clear all

OK Cancel

43. Click on **Properties** and **Axis**.

Filters Fields Properties

^ Axis

44. Similar to what we did for the stacked bar graph, change the **Item axis label color** to **black**, **Item axis label orientation** to **vertical**. Additionally, change the **Value axis title**, **Line value axis title color**, and **Value axis label** to **black**.

Item axis label

Show item axis labels ☒

Show item axis ticks ☐

Item axis label orientation Vertical

Font family Automatic

Font size Automatic

Item axis label color #000000

Value axis title

Show value axis title ☒

Column value axis title

Font family Automatic

Font size Automatic

Column value axis title color #000000

Line value axis title

Font family Automatic

Font size Automatic

Line value axis title color #000000

Value axis label

Show value axis labels ☒

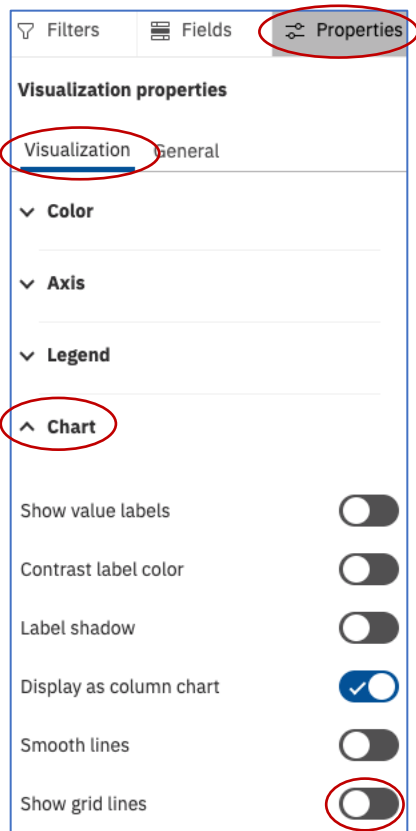
Show value axis ticks ☐

Font family Automatic

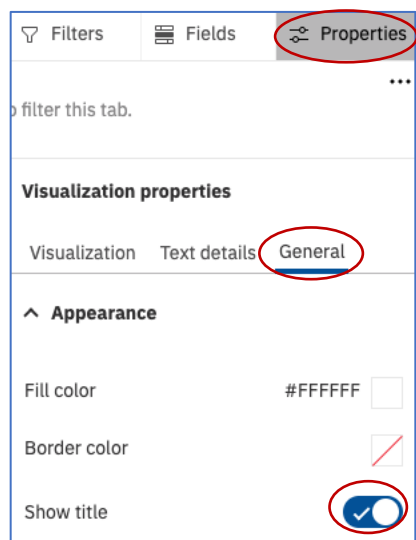
Font size Automatic

Text color #000000

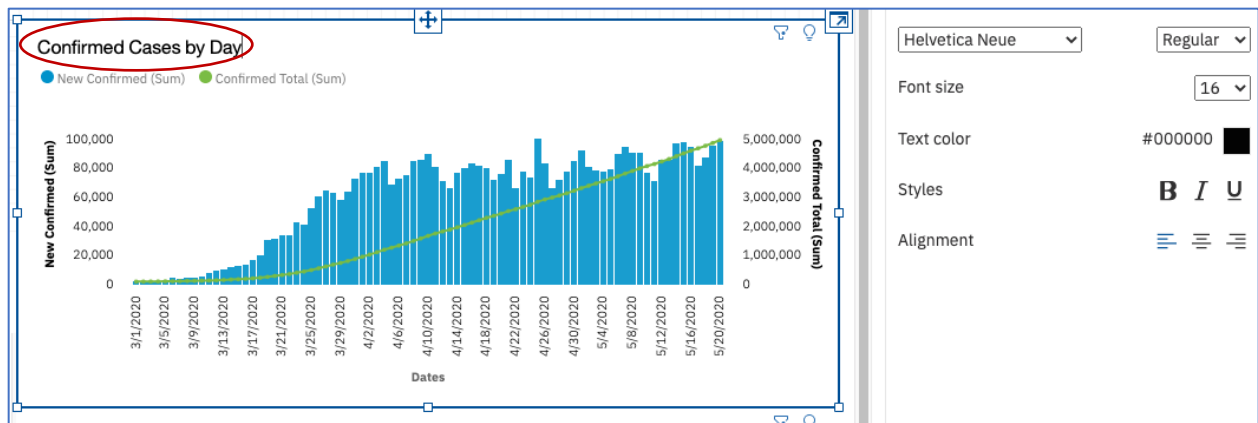
45. Remove the grid lines by clicking on **Properties, Visualizations, Chart, and Toggle Show Grid Lines.**



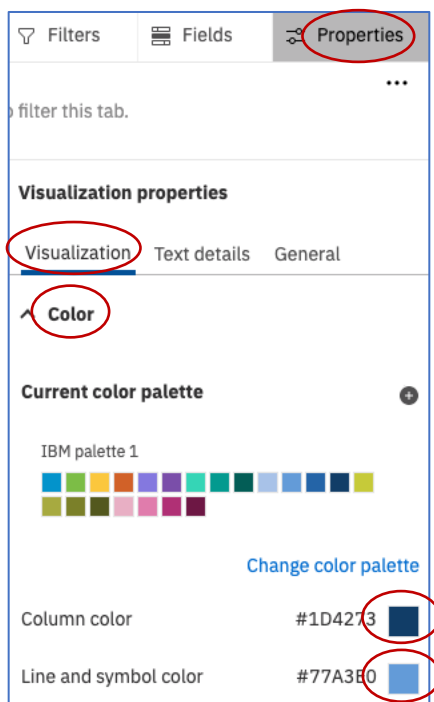
46. Click on **Properties**, **General**, and **Appearance**. Check **Show title**.



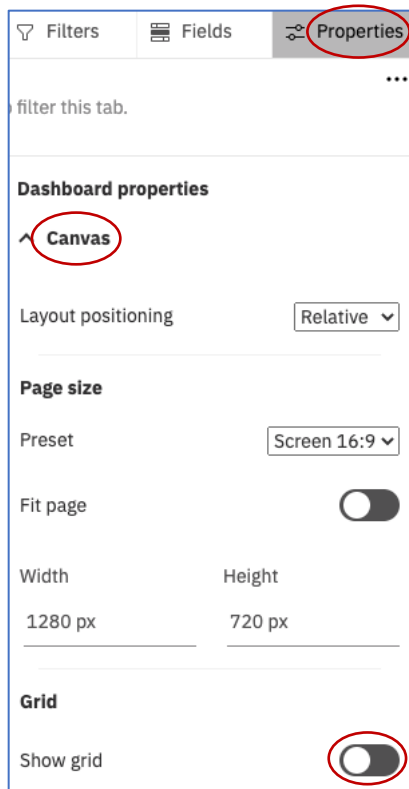
47. Enter “**Confirmed Cases by Day**” as the title and set the font to 16.



48. Click on **Properties, Visualization, Color**. Switch **Column color** to **Navy Blue** and **Line and Symbol Color** to **Sky Blue**.



49. Finally, for the finishing touches, select the Dashboard (**click anywhere on the dashboard that is not a tile**) then click on **Properties, Canvas**, and toggle **show grid**



50. Voila! You have successfully created your first tab. Play around with the alignment to make sure everything looks neat and clean. Play around with the data by clicking on different countries and regions.

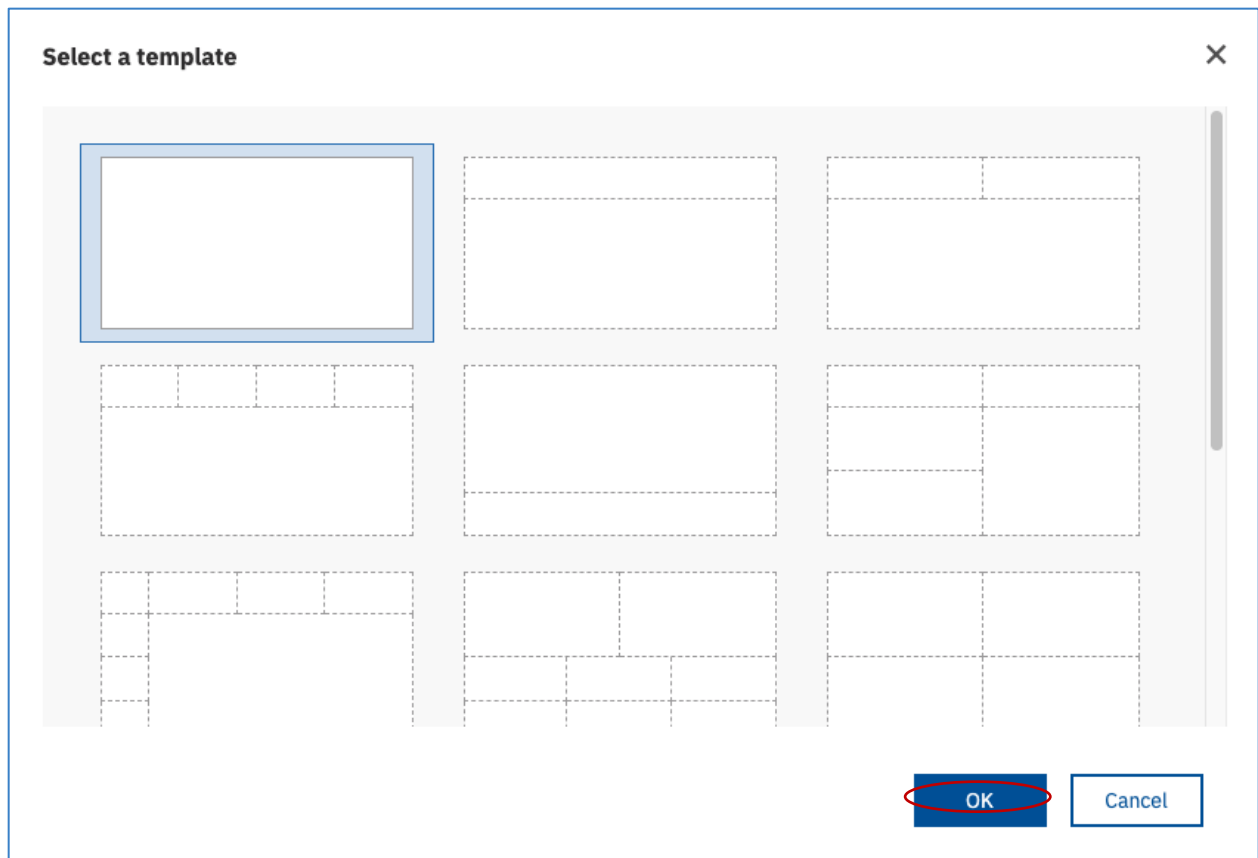
Exercise 3: Create a Global Map View

Now that we have our primary dashboard, we will create a new tab to view COVID-19 statistics in a regional view.

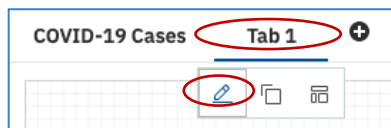
1. To the right of your COVID-19 Cases tab, **click the plus sign.**



2. **Click the blank template** and click **OK.**



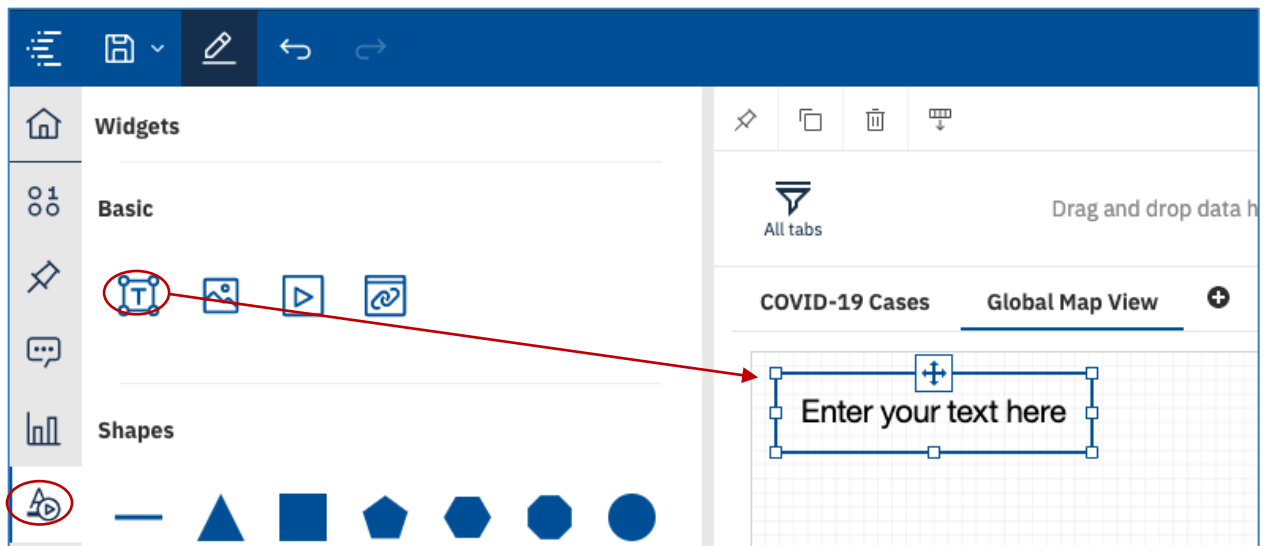
Click on **the Tab 1 title** and the **pencil icon**.



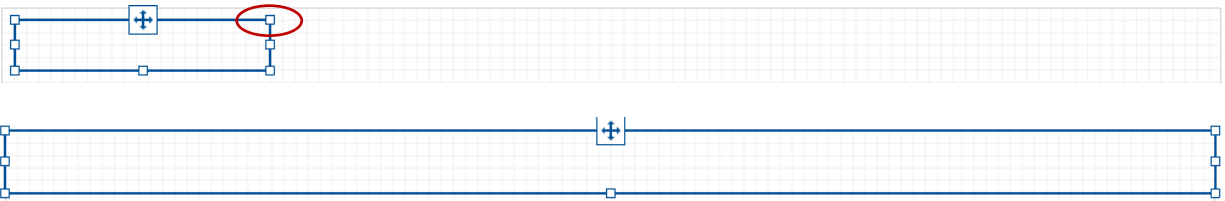
3. Enter the name “**Global Map View**.”



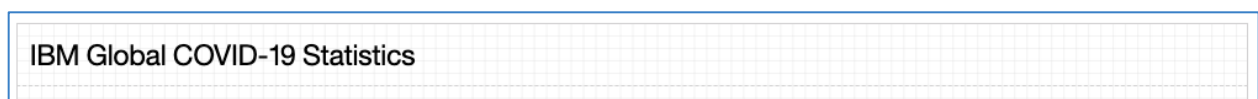
4. Click on the **Widgets (A)** icon, **select the Text icon**, and **drag it to the top left of your dashboard**.



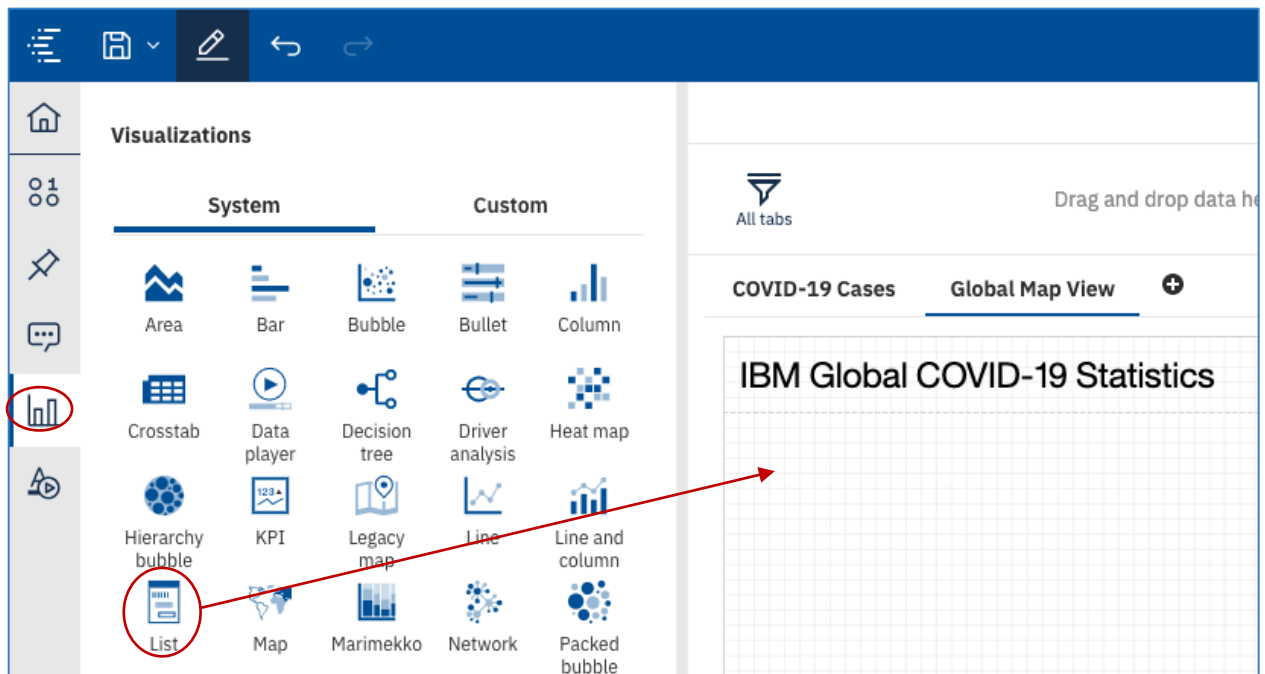
5. Click on the white circles on text box and **resize the box to fit the top borders of the screen.**




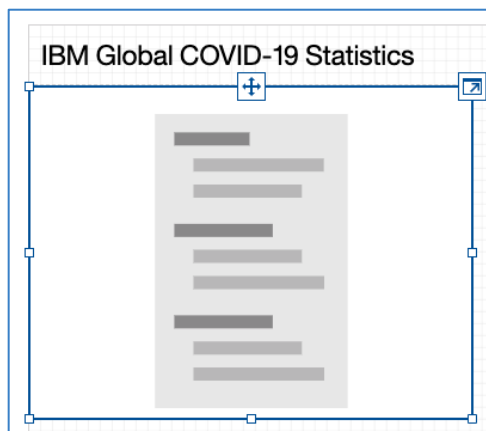
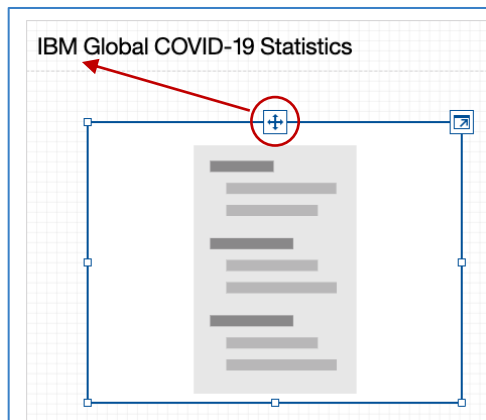
6. Enter the title “**IBM Global COVID-19 Statistics**”



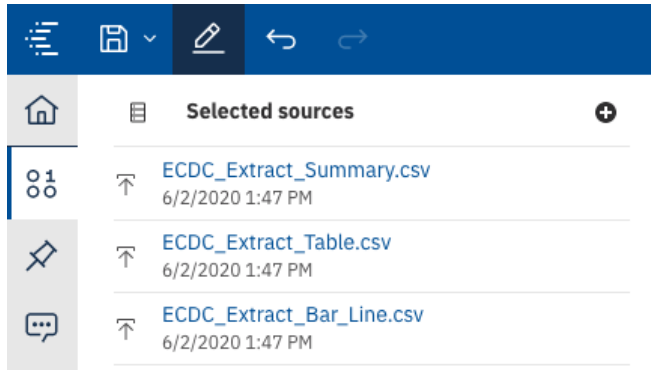
7. Click on the **visualizations** (graph) button, click on the **List icon**, and **drag the icon to the screen** under the dashboard title.



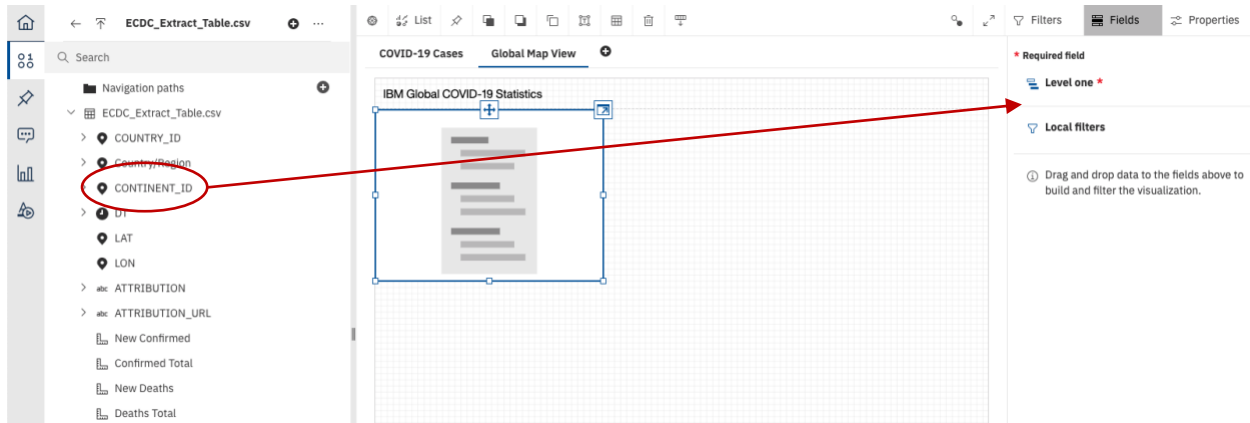
8. Click on the  icon and drag the new list under the left of your title.



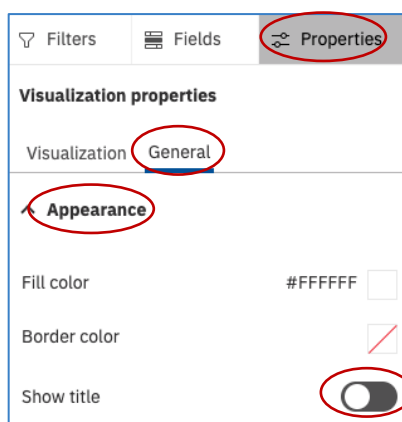
9. In your **Selected** sources panel, click **ECDC_Extract_Table.csv**



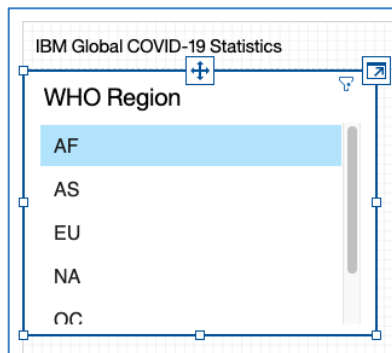
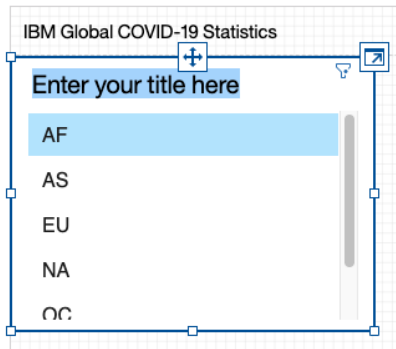
10. Add **CONTINENT_ID** as the **Level one field** for the list by clicking on **CONTINENT_ID**, dragging it to the Fields panel, and dropping it under Level one.



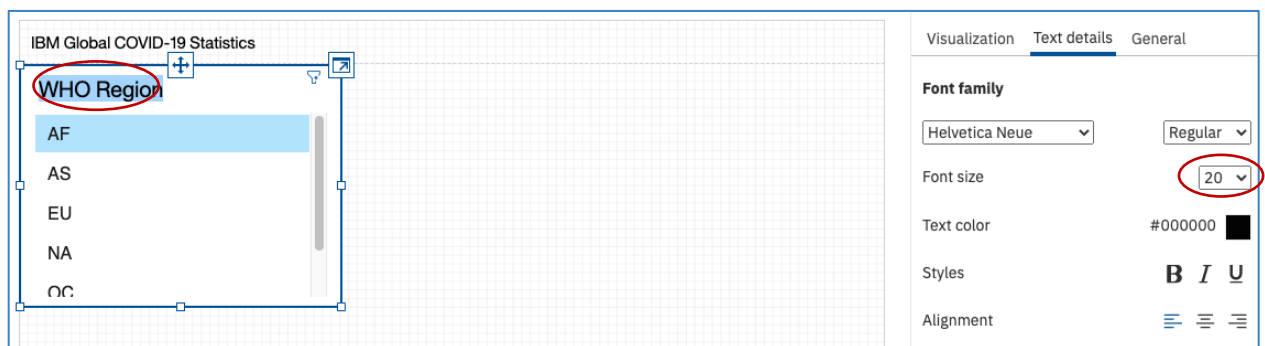
11. For your right-side panel, click on the **Properties** tab, **General**, **Appearance**, and **Show title**.



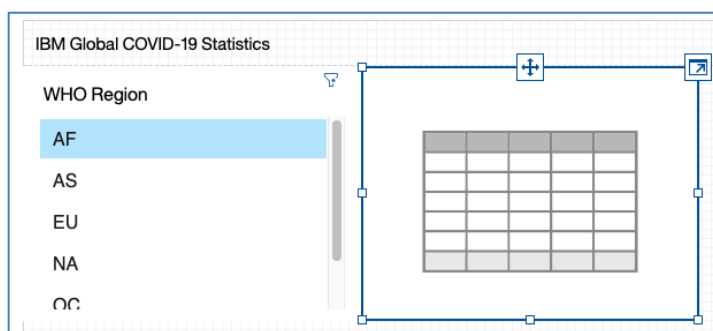
12. Enter “**WHO Region**” as the list title.



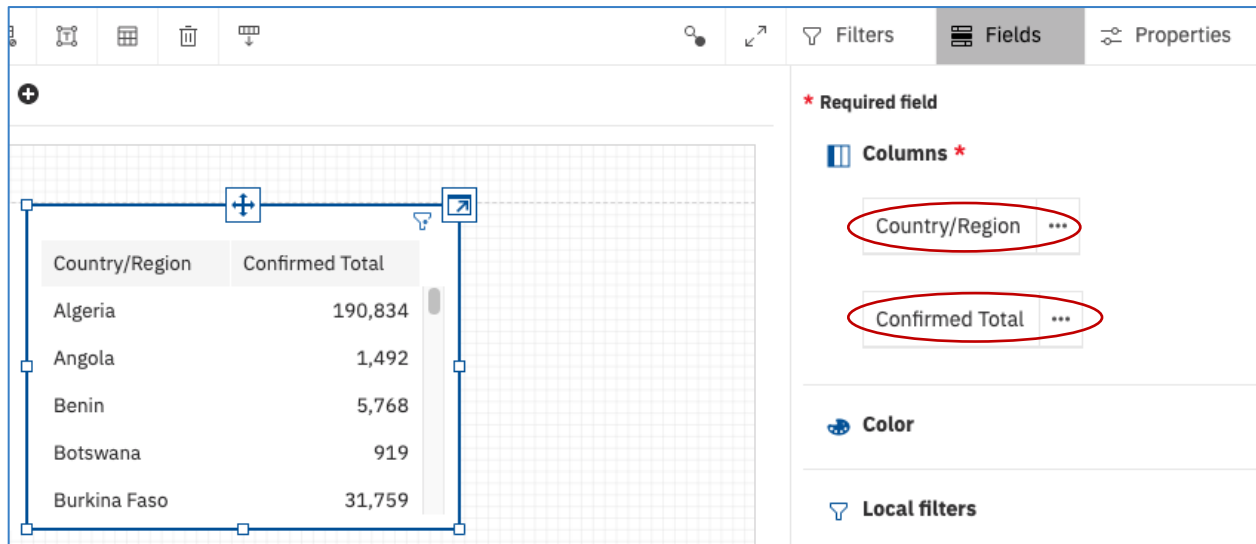
13. Double click on the **title** and adjust the Font size to 16.



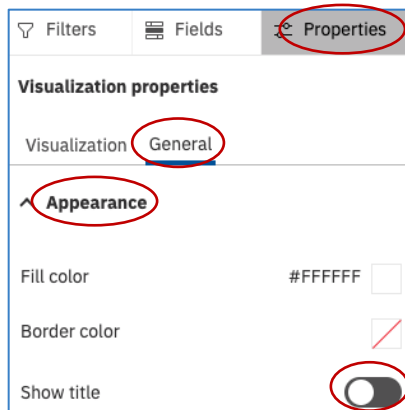
14. Open the **visualizations** (graph) panel, click on **Table**, and add it to the right of your “WHO Region” list.



15. Repeating the process from step 10, add **Country/Region** and **Confirmed Total** to the **Columns** field.

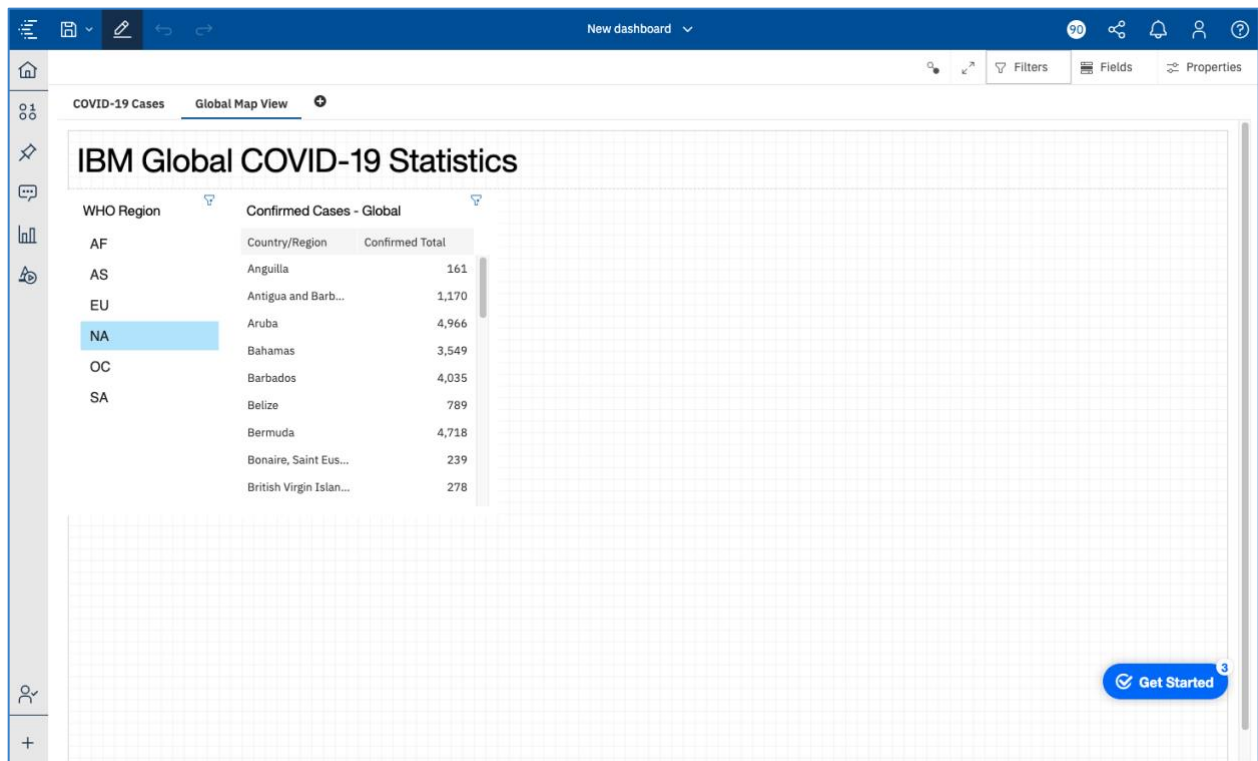


16. Still with the table selected, click on **Properties**, **General**, **Appearance**, and **Show title**.



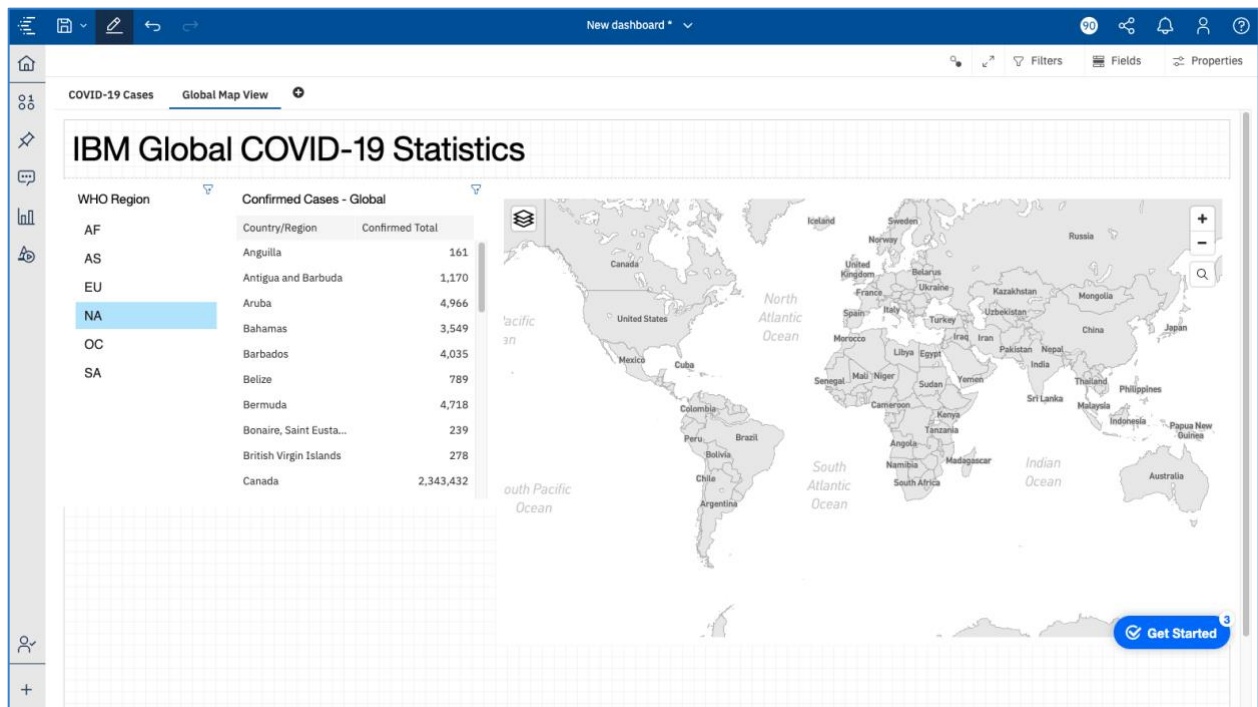
17. Repeating the process from steps 12 and 13, enter “**Confirmed Cases – Global**” as **the title** and set the Font size to 16.

18. Resize your two tiles as needed until they take roughly 1/3 of the width of the total dashboard. Your dashboard should look similar to the following picture.

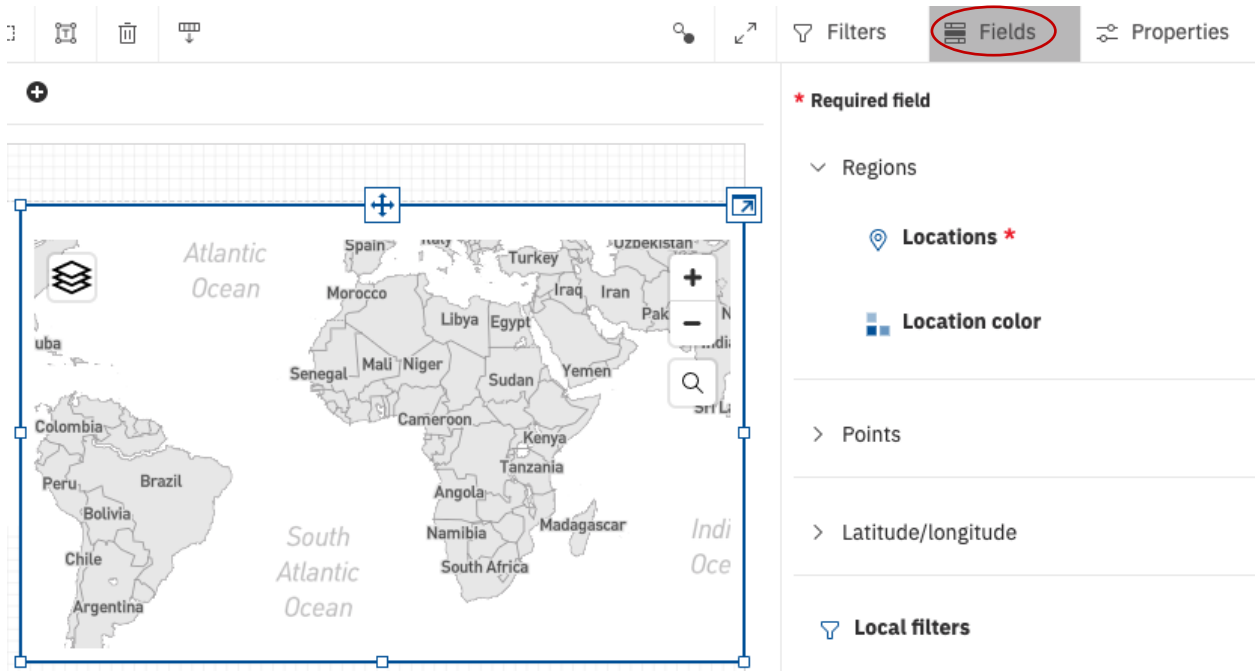


Note that aspects of your dashboard will automatically resize based on the size of your screen.

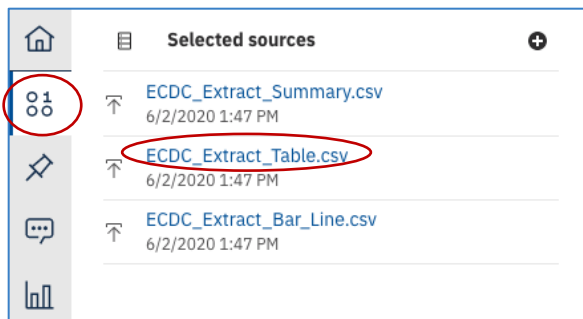
19. Open the **visualization** (graphs) **panel**, click on the **Map tile** and drag it to the **dashboard**. Place or resize as needed so the map takes up the remaining width of the dashboard.



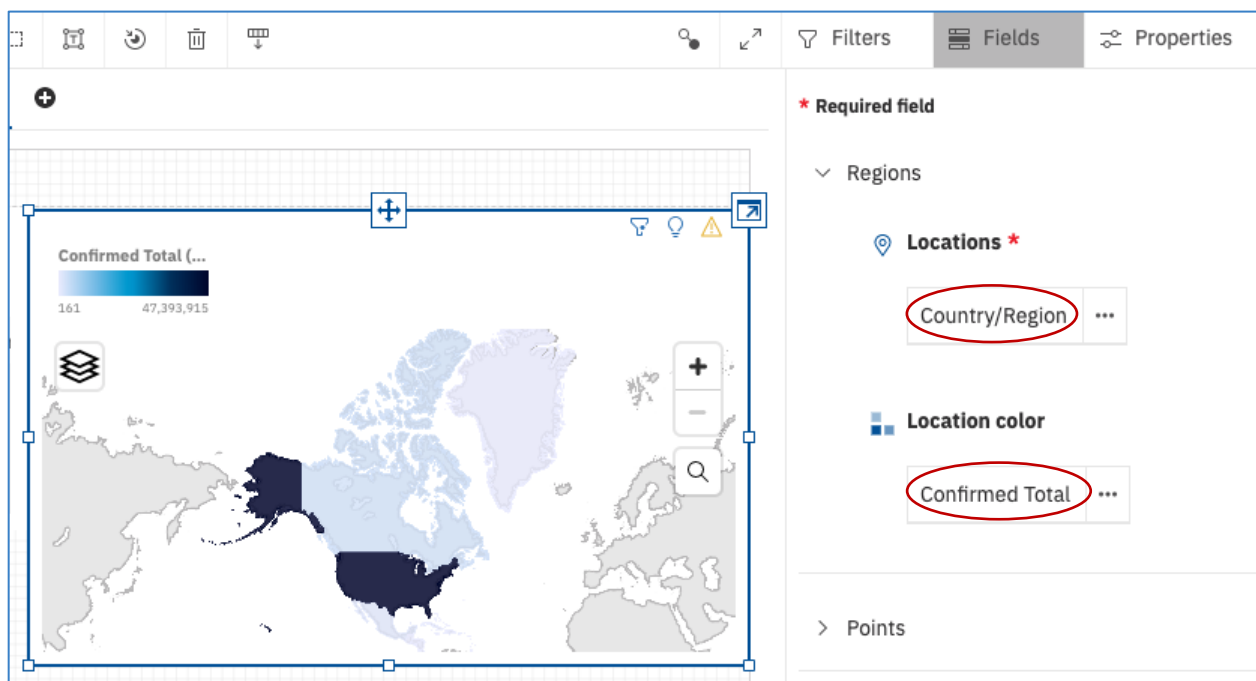
20. Click on your map and open the Fields panel.



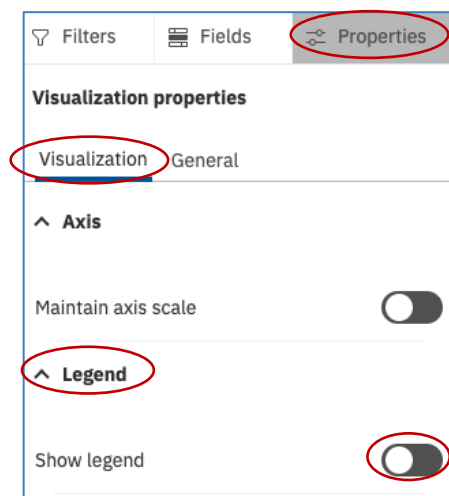
21. Click on the **Selected sources** panel and open the **ECDC_Extract_Table.csv** file.



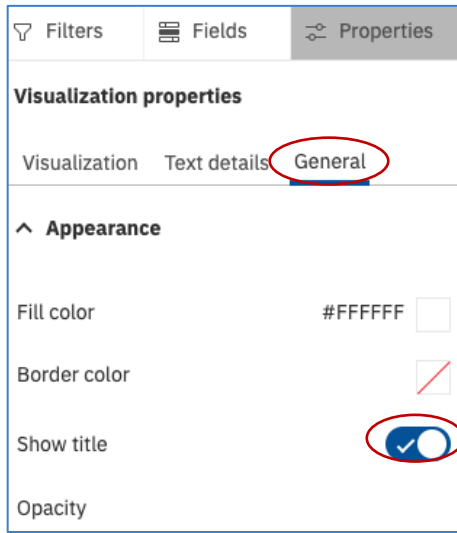
22. Drag **Country/Region** to **Locations** and **Confirmed Total** to **Location color**.



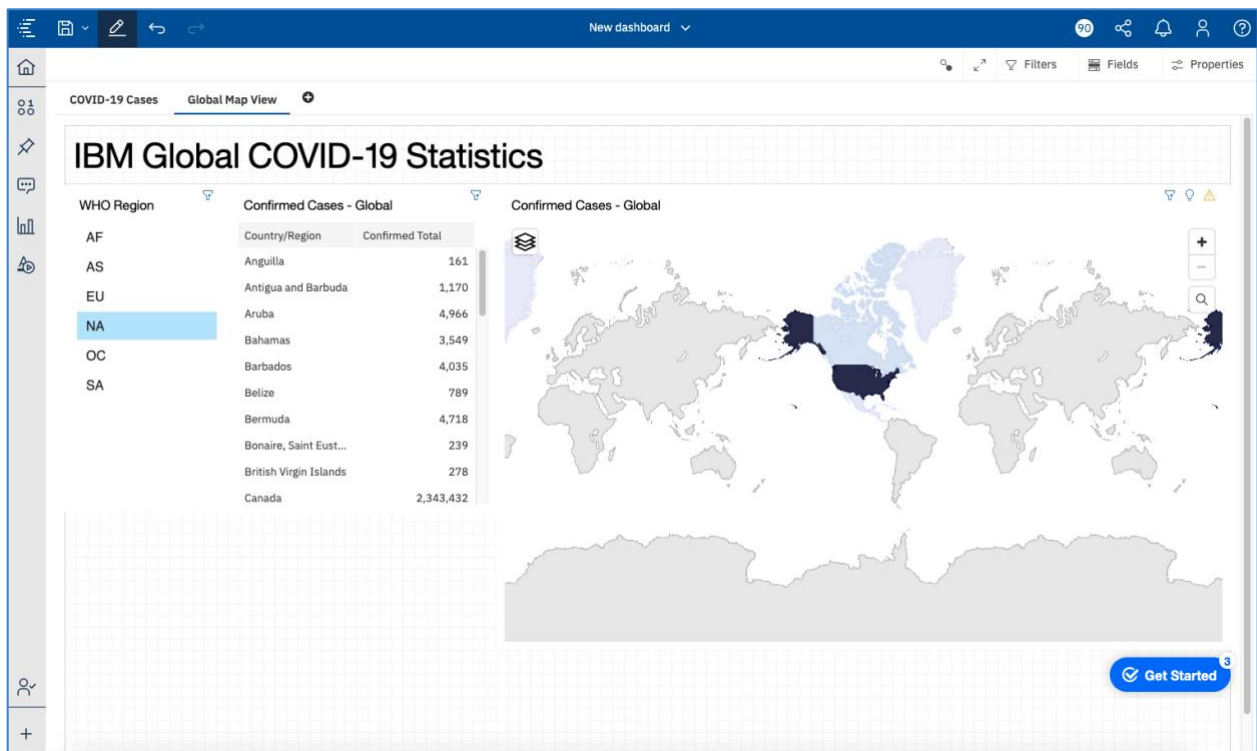
23. Click on **Properties**, **Visualization**, and uncheck **Show legend**.



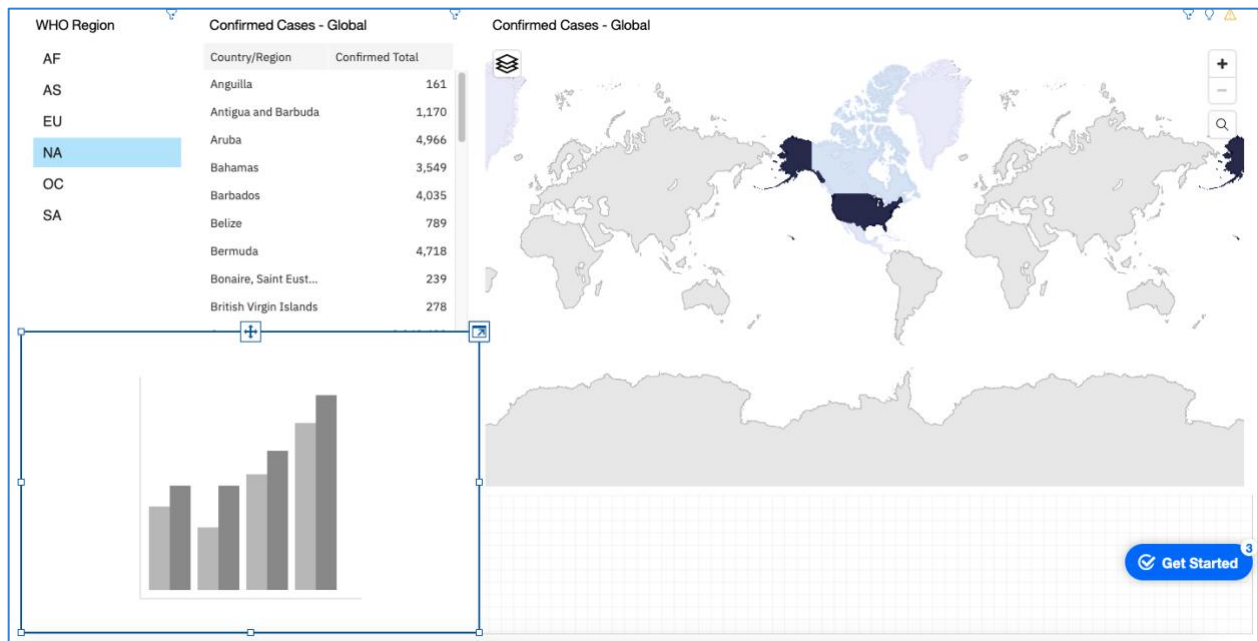
24. Click on **General, Appearance**, and check **Show title**.



25. Enter “**Confirmed Cases – Global**” as the title and set the Font Size to 16. Your dashboard should look similar to the following.



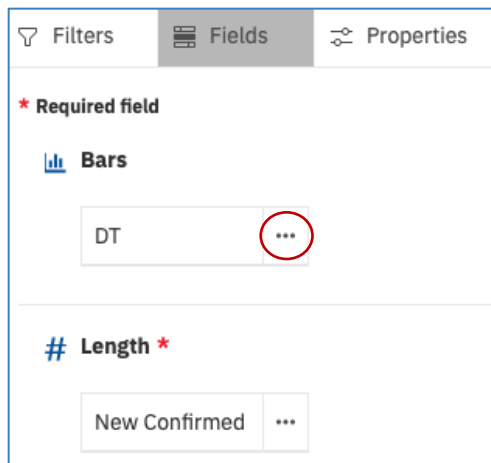
26. Open the visualizations panel, click on the **Column** tile, and drag it under the WHO Region and Confirmed Cases – Global tiles.



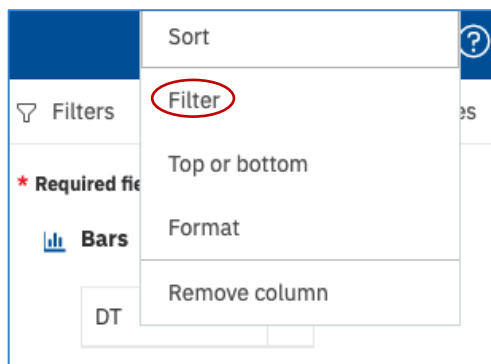
27. Add **DT** as the **Bars** field and **New Confirmed** to the **Length** field.

The 'Fields' tab is active. Under the 'Required field' section, the 'Bars' field is configured with 'DT' as the data source. Under the 'Length' section, 'New Confirmed' is selected as the data source. Both 'DT' and 'New Confirmed' are circled in red in the original image.

28. Click on the **three dots to the right of the DT field**.



29. In the menu that opens up, click on **Filter**.



30. In the Filter menu that opens, select each of the dates, and set:

From

2020-05-06

To

2020-05-20

Then **click Ok**.

Filter

DT

Between

From

2020-05-06

To

2020-05-20

Clear all

OK Cancel

31. Click on **Properties**, **Visualization**, and **Axis**.

Filters Fields Properties

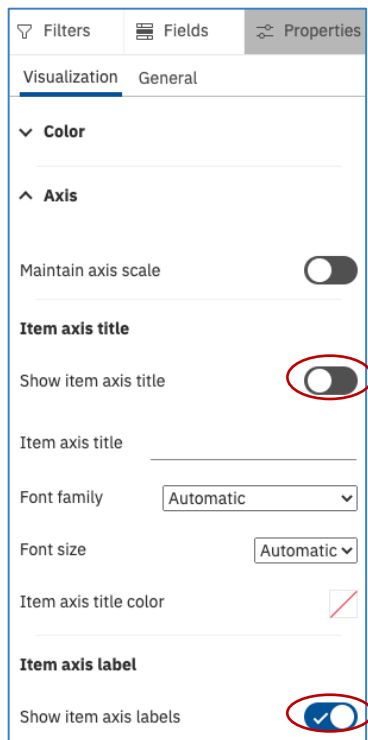
Visualization properties

Visualization General

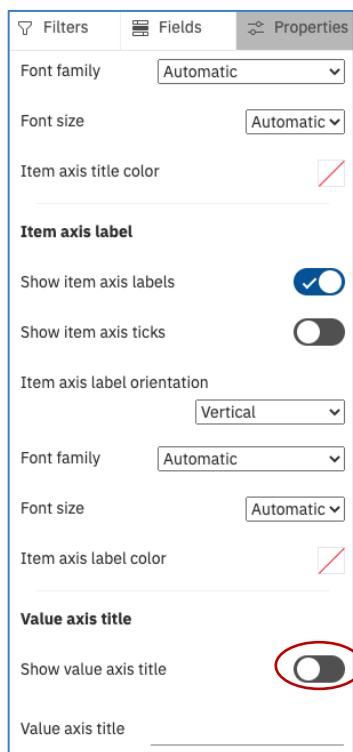
Color

Axis

32. Scroll down, **uncheck Show item axis title**, and set **Item axis label orientation** to **vertical**.



33. Scroll down and **uncheck Show value axis title.**



34. Scroll up, click on **General**, click on **appearance**, and **check Show title.**

Filters

Fields

Properties

Visualization properties

Visualization

General

Appearance

Fill color

#FFFFFF

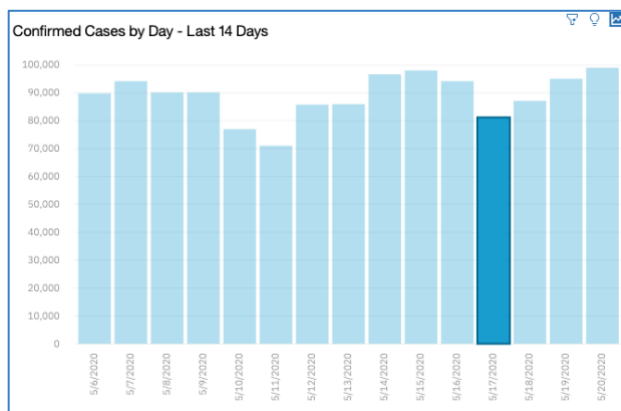
Border color

Show title

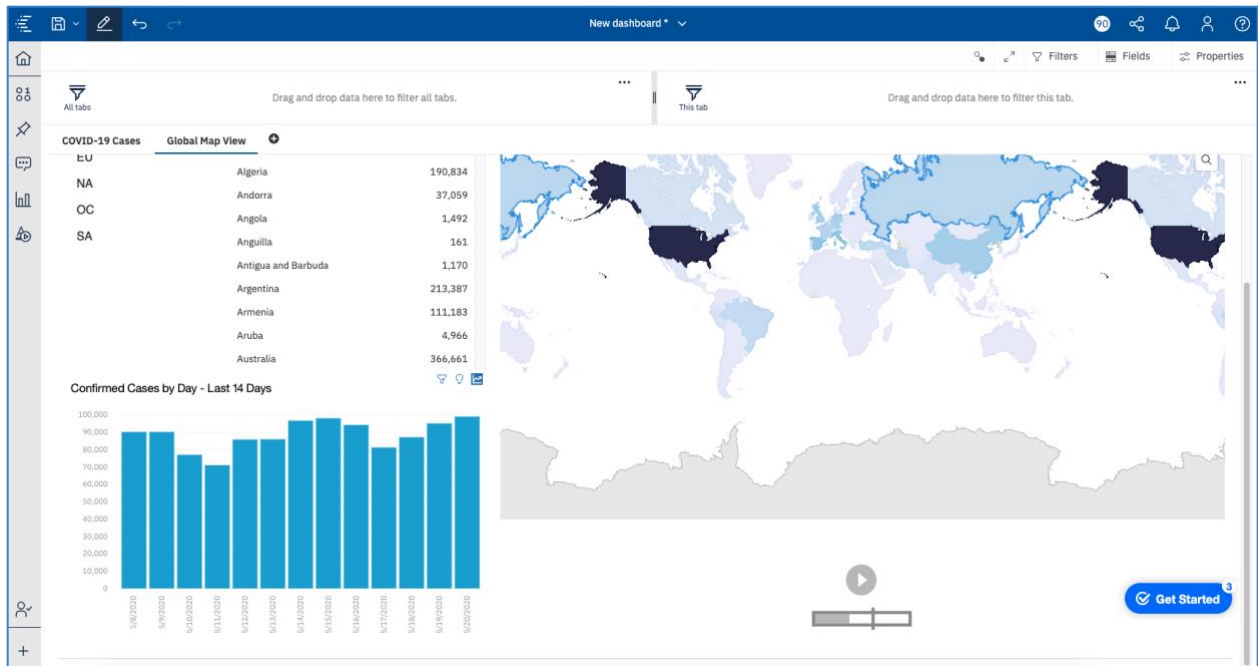
Opacity

35. Enter “**Confirmed Cases by Day – Last 14 Days**” as the title and set the Font size as 16.

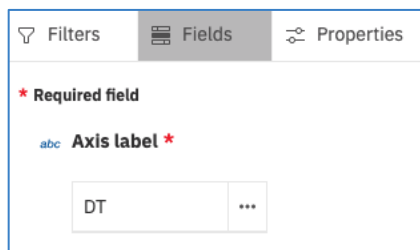
Your column chart should look similar to the following:



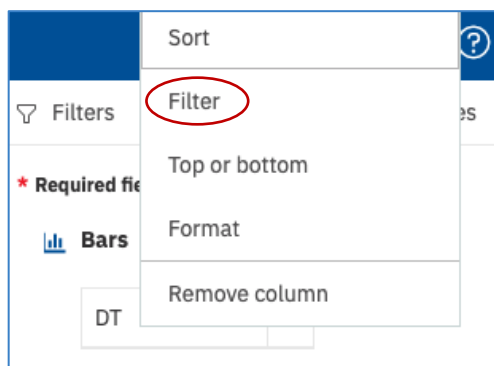
36. Open the **visualizations panel**, click on the **Data player** tile, and **drag it to the remaining space in your dashboard**. Resize the tile as needed.



37. Add **DT** from **ECDC_Extract_Table** source in the **Axis label** field.



38. Click on the **three dots** to the **right of DT** and open the **Filter** popup, and set the date as:

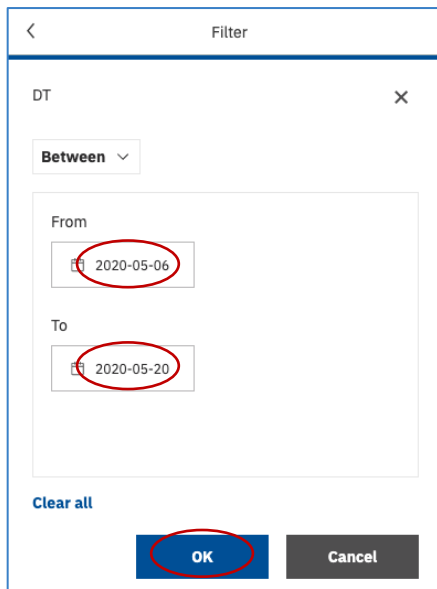


From

2020-05-06

To

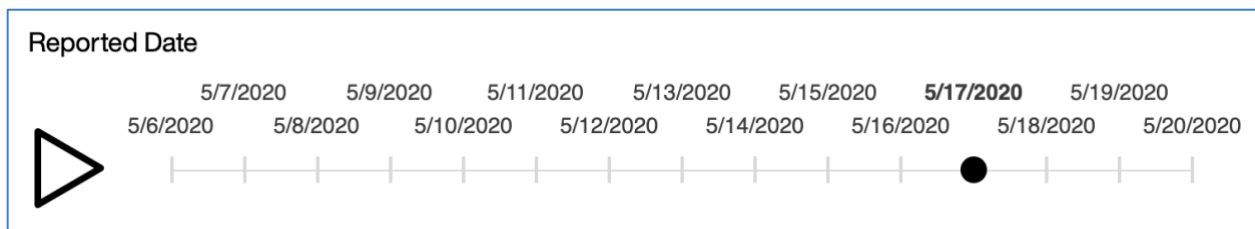
2020-05-20



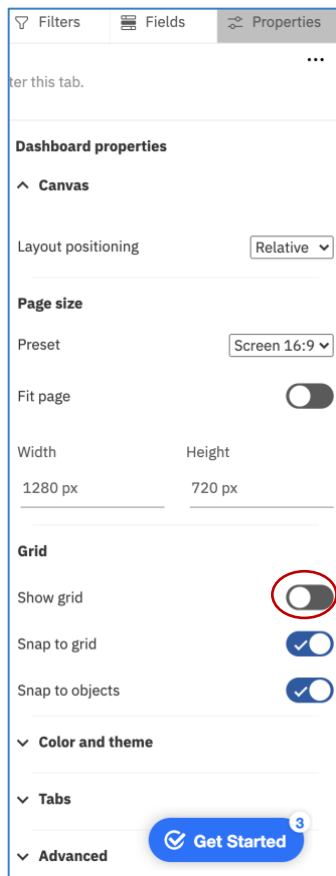
A screenshot of a 'Filter' dialog box for the 'DT' field. The dialog has a title bar with a back arrow and the word 'Filter'. Inside, there's a close button (X) and a dropdown menu set to 'Between'. Below this, there are two date input fields: 'From' with the value '2020-05-06' and 'To' with the value '2020-05-20'. Both date inputs are circled in red. At the bottom left is a 'Clear all' link, and at the bottom right are 'OK' and 'Cancel' buttons, with the 'OK' button also circled in red.

39. Click on **Properties, General, Appearance**, and check **Show title**.

40. Set the title as “**Reported Date**” and set 16 as the Font size. Your tile should look similar to the following:



41. Click on your dashboard (ensure no tiles are selected). Click on **Properties** and unselect **Show grid**.



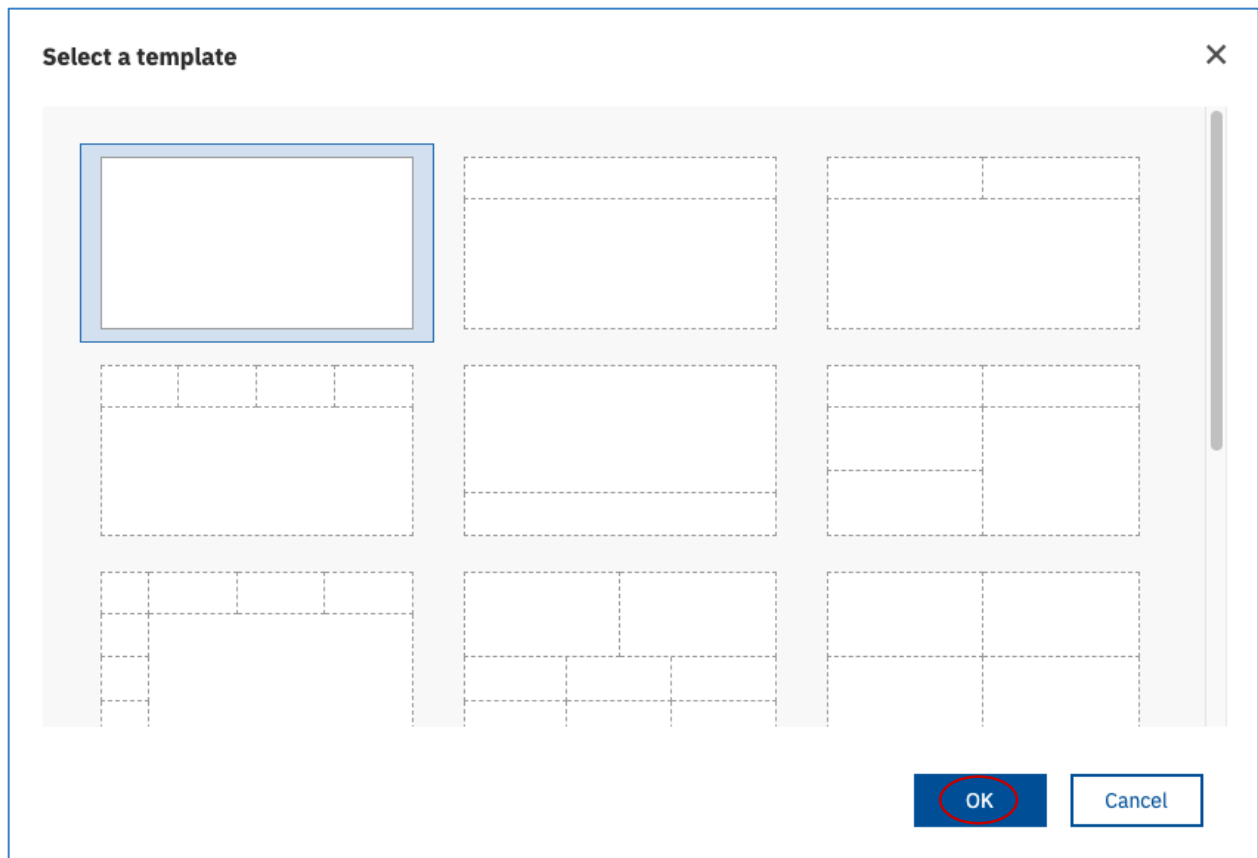
Exercise 4: Add a Webpage Tab.

Now that we completed our Global Map tab, we will include a webpage for easy access.

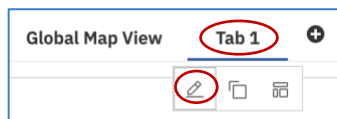
1. To the right of your **Global Map View** tab, **click the plus sign**.



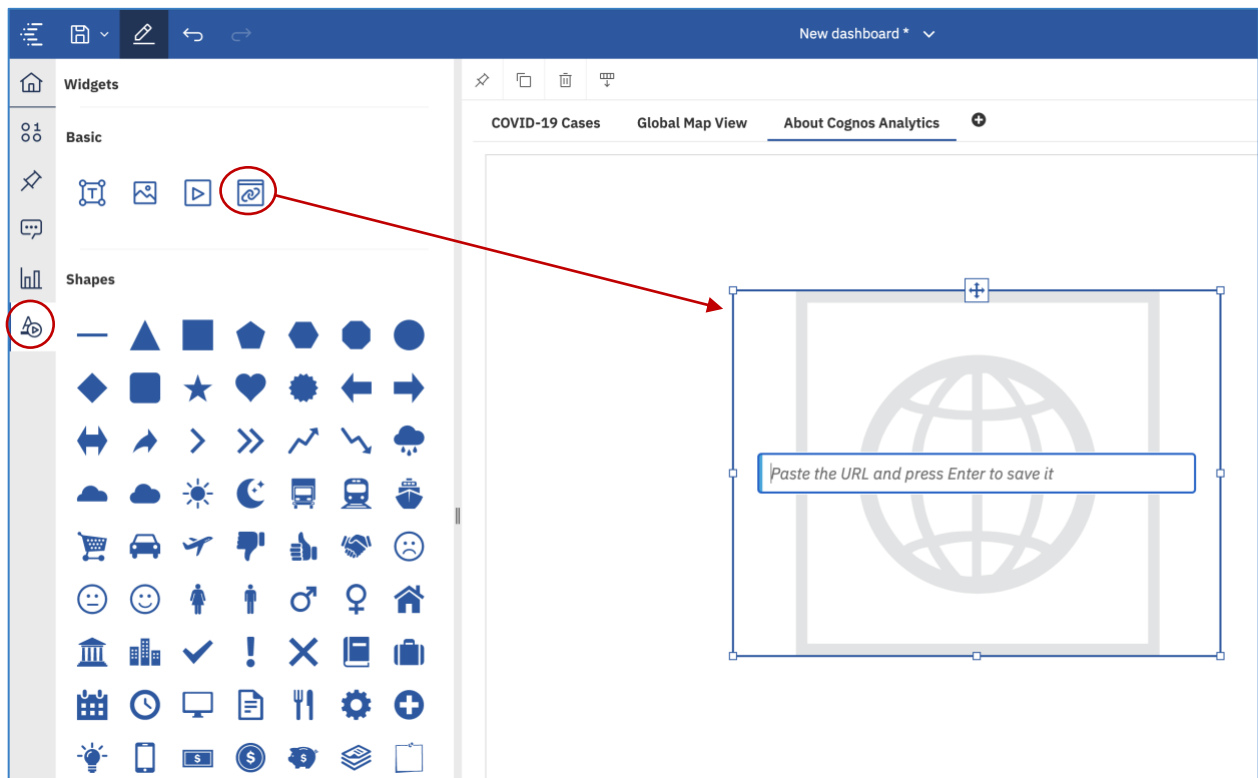
2. Keep the default “blank” template and click **OK**.



3. Click on **Tab 1** and the **Pencil icon**.



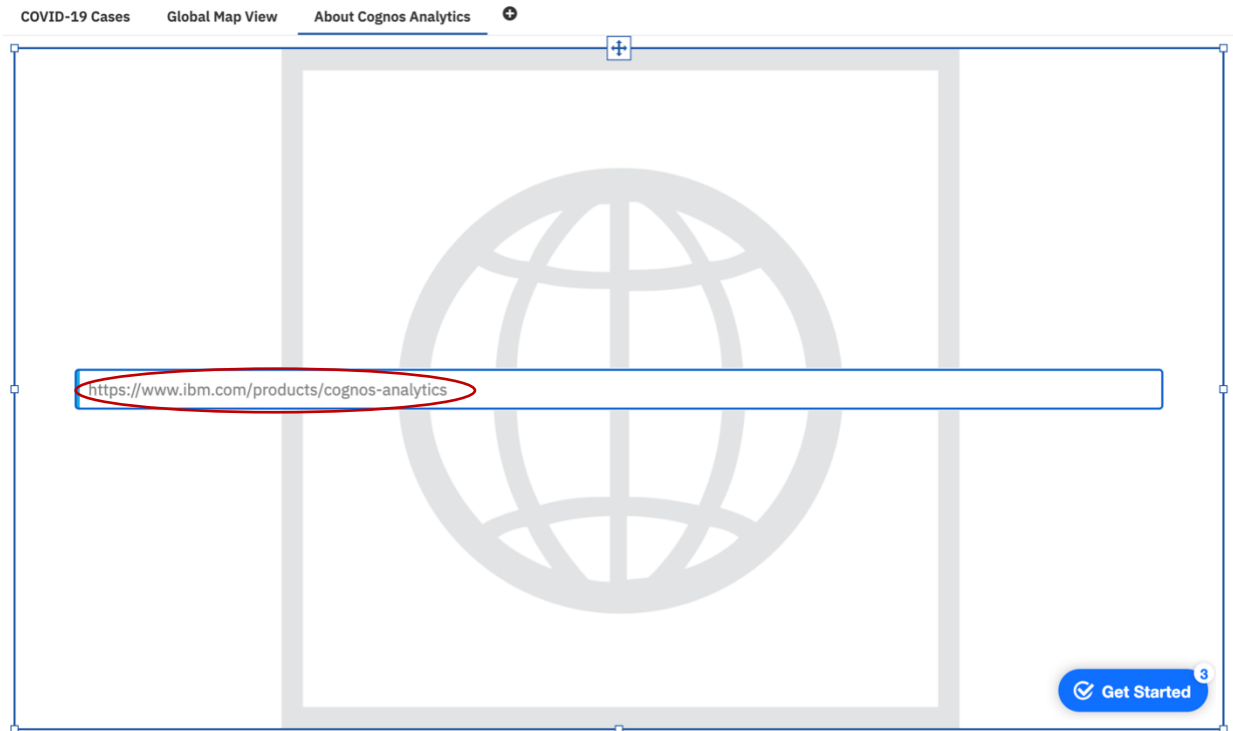
4. Enter “**About Cognos Analytics**” as the new title.
5. Open the **Widgets panel**, click on the **Webpage tile**, and drag the **webpage tile** to the dashboard.




6. Resize the tile to fit the entire page and **enter**

<https://www.ibm.com/products/cognos-analytics>

into the url box.



7. You have now completed the lab, click on the full screen icon  to view your completed dashboard.

