# 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.
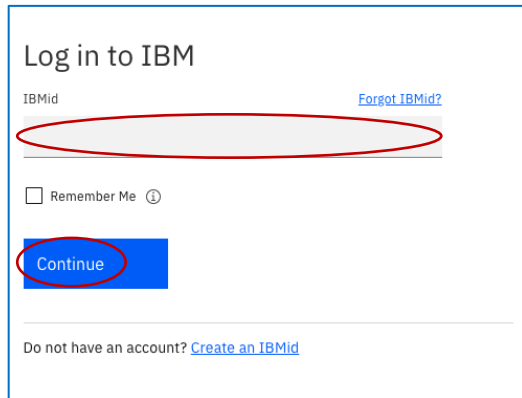
1. Access **https://www.ibm.com/products/cognos-analytics**
2. Click on **Start free 90-day trial.**
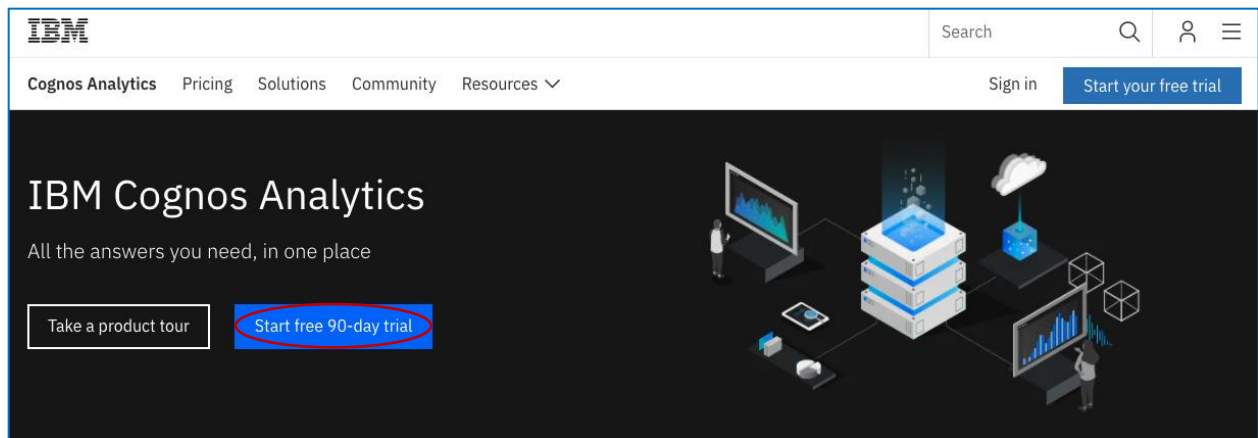
3. If you completed the previous labs, or have an IBM account, click Log in.
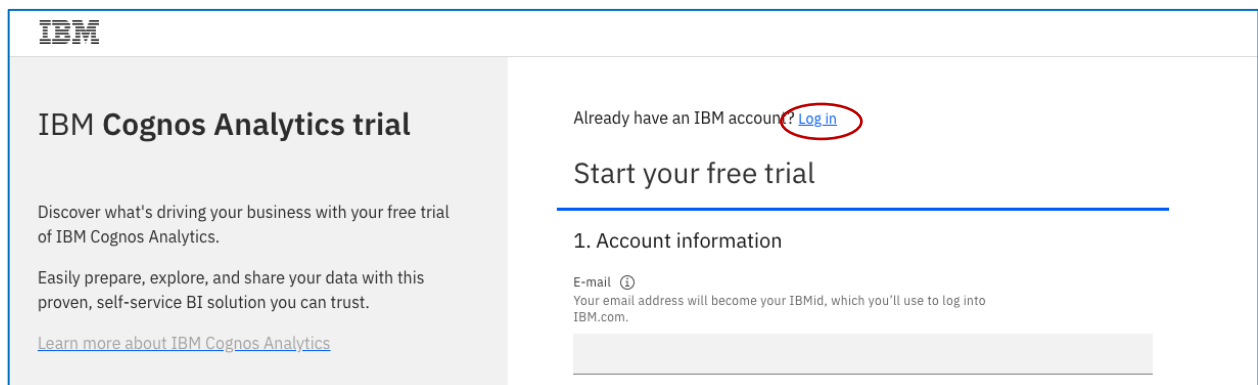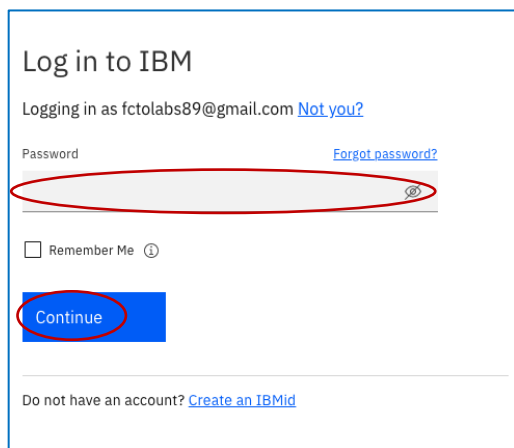
4. Enter your **email** and click **Continue**.



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

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



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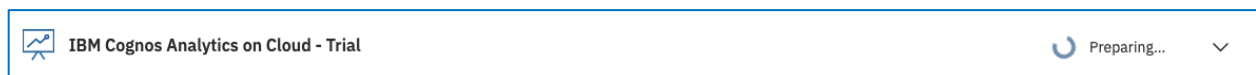


8. Once the "Preparing" prompt changes to "ready to use," <u>scroll down</u> and click **Launch** on IBM Cognos Analytics on Cloud – Trial.
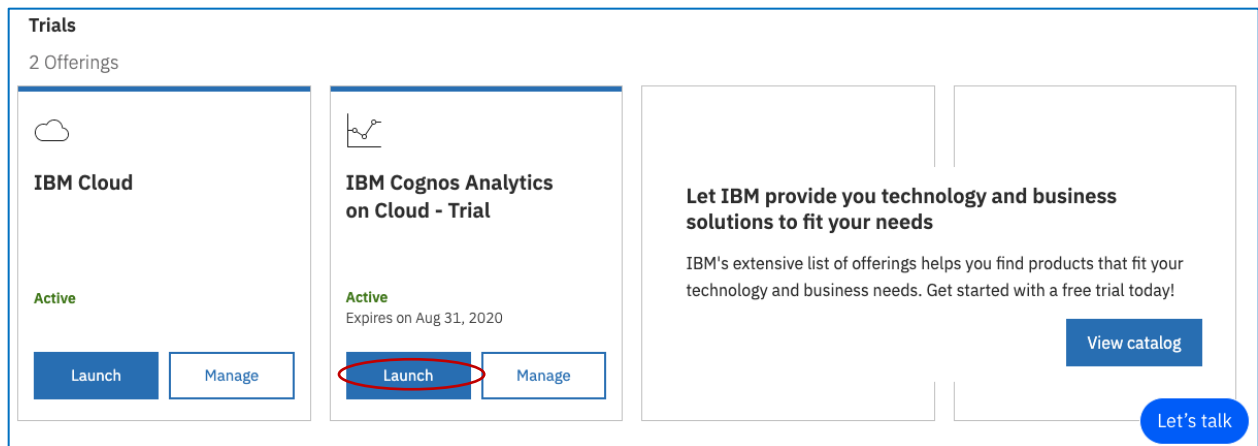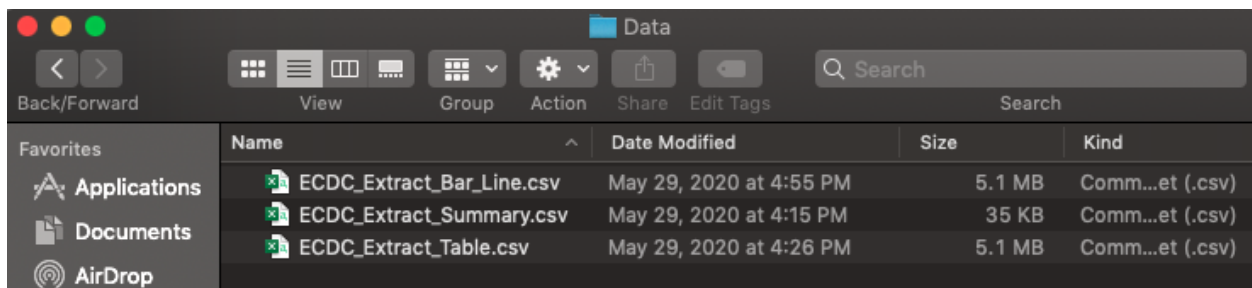
9. Download a zip file of data for the lab by copying the following URL into your Firefox or Chrome browser: https://github.com/bleonardb3/AI_POT_06-11-2020/raw/master/Lab-5/Data.zip.

10. 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.
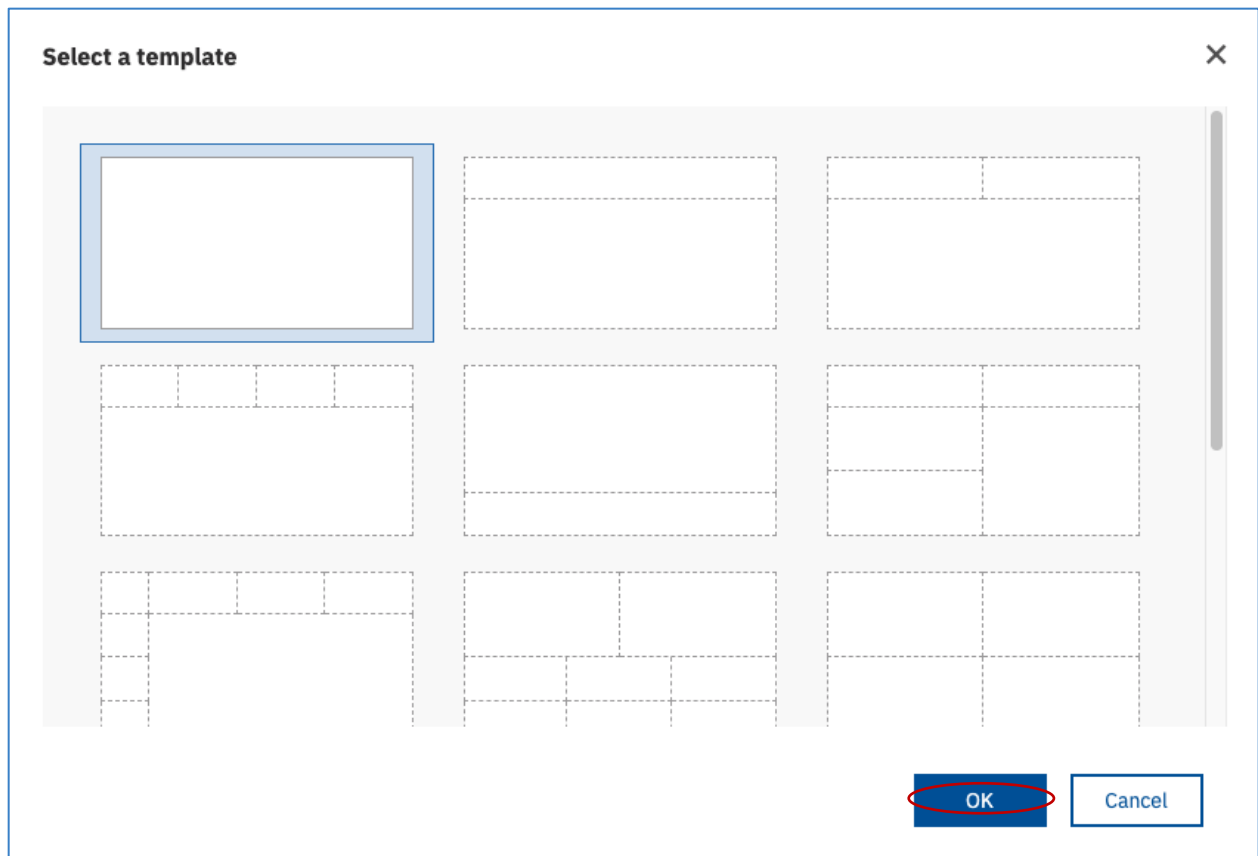
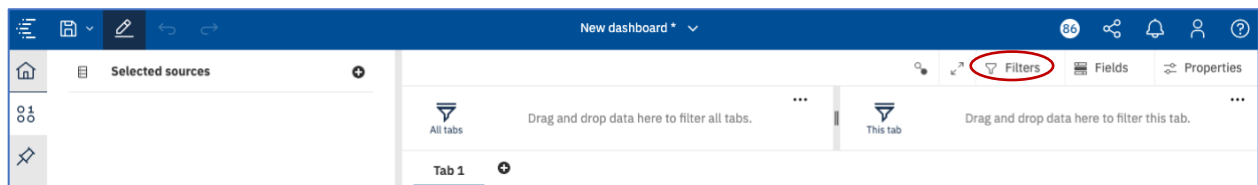1. Click **New (+)** and **Upload Files** and locate the csv folder.
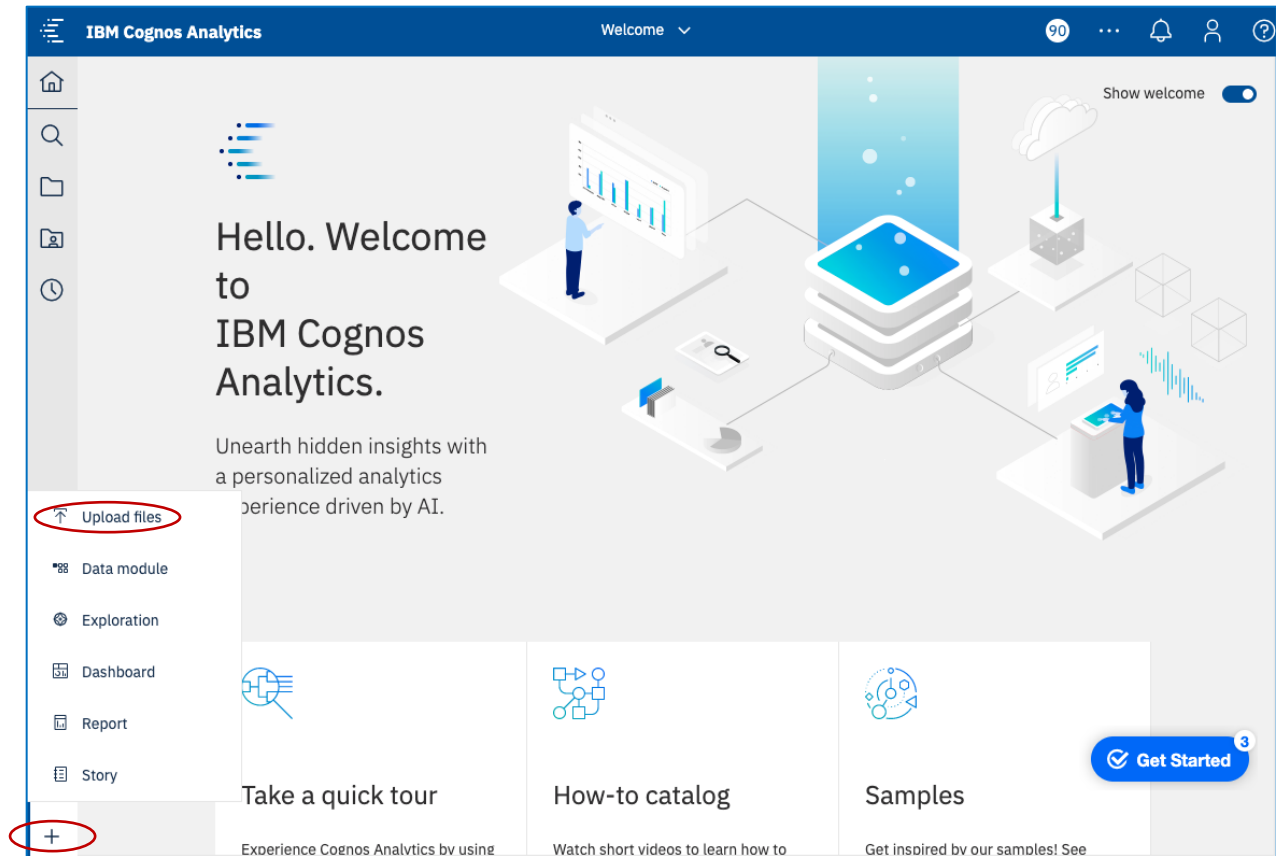
2. Once the files have been successfully uploaded create a new blank dashboard by clicking **New (+)** and **Dashboard**
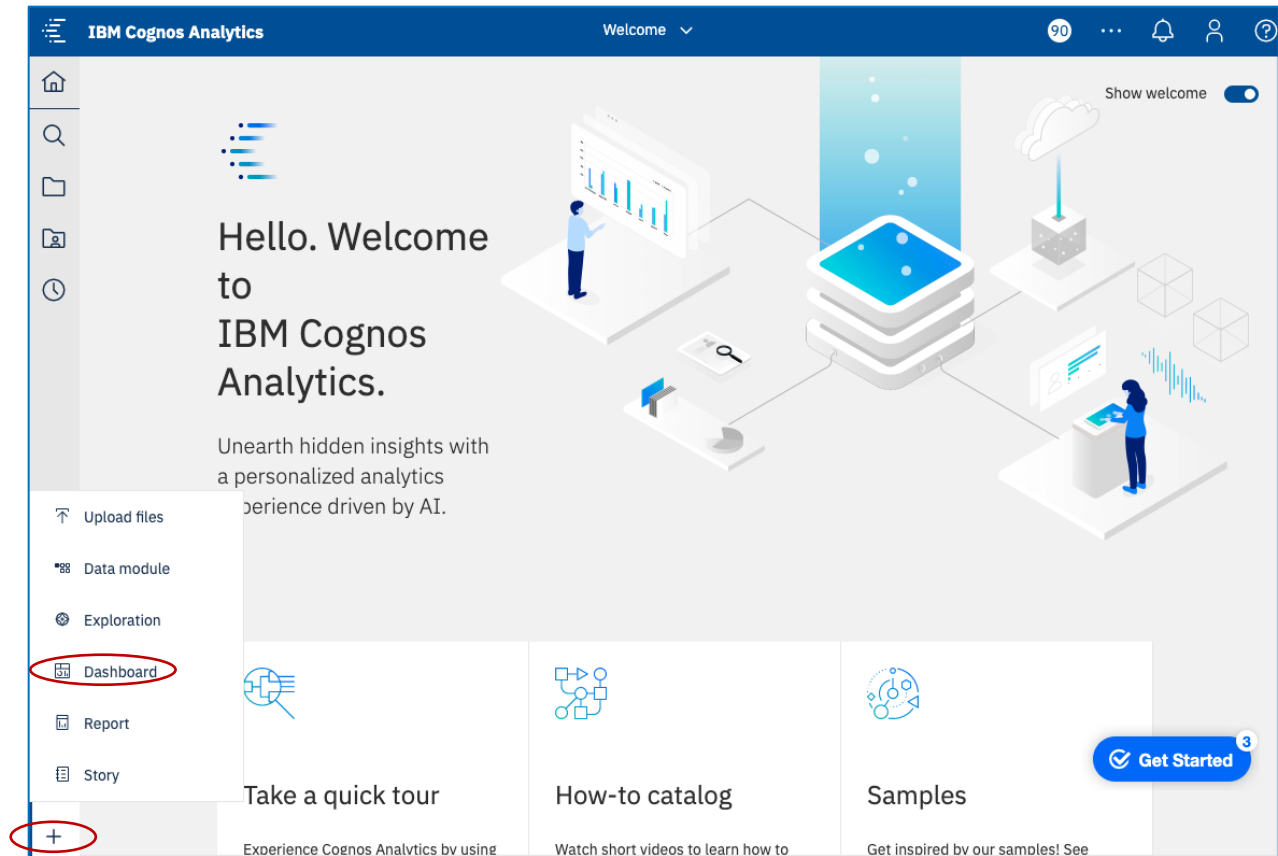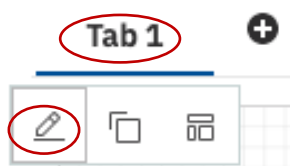
3. Keep the default template and click **OK**.

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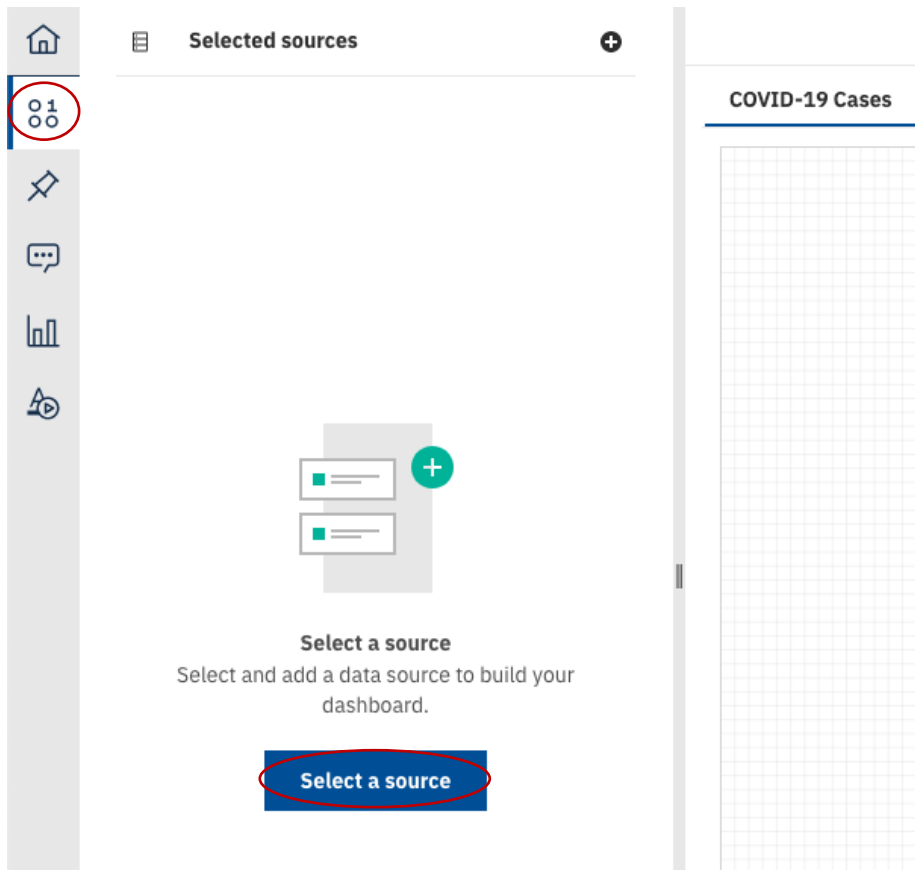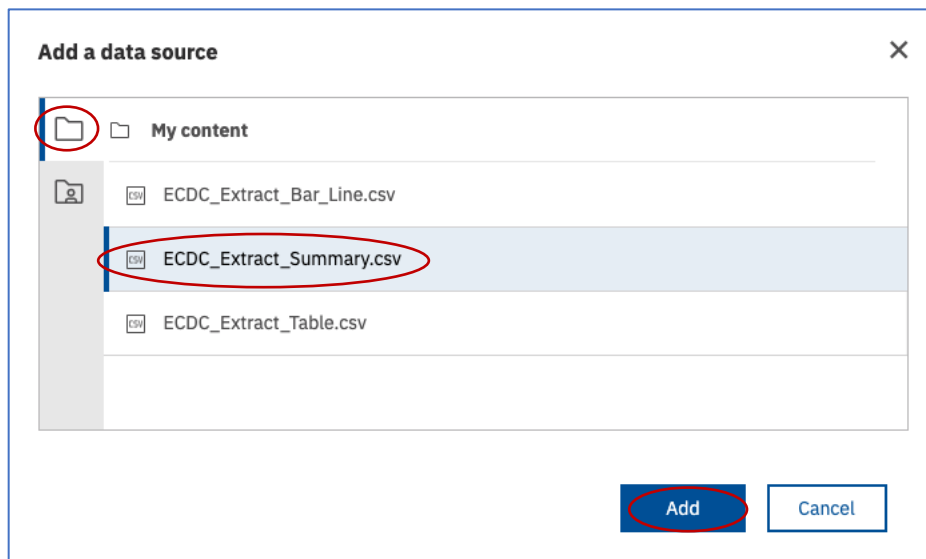


**5. Click on Tab 1**



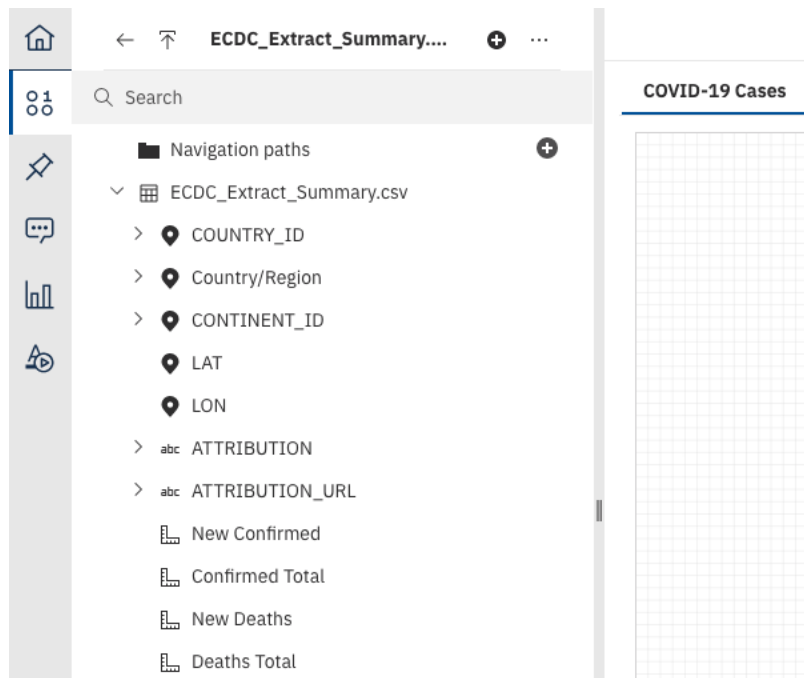6. Enter "**COVID-19 CASES**" as the tab title.

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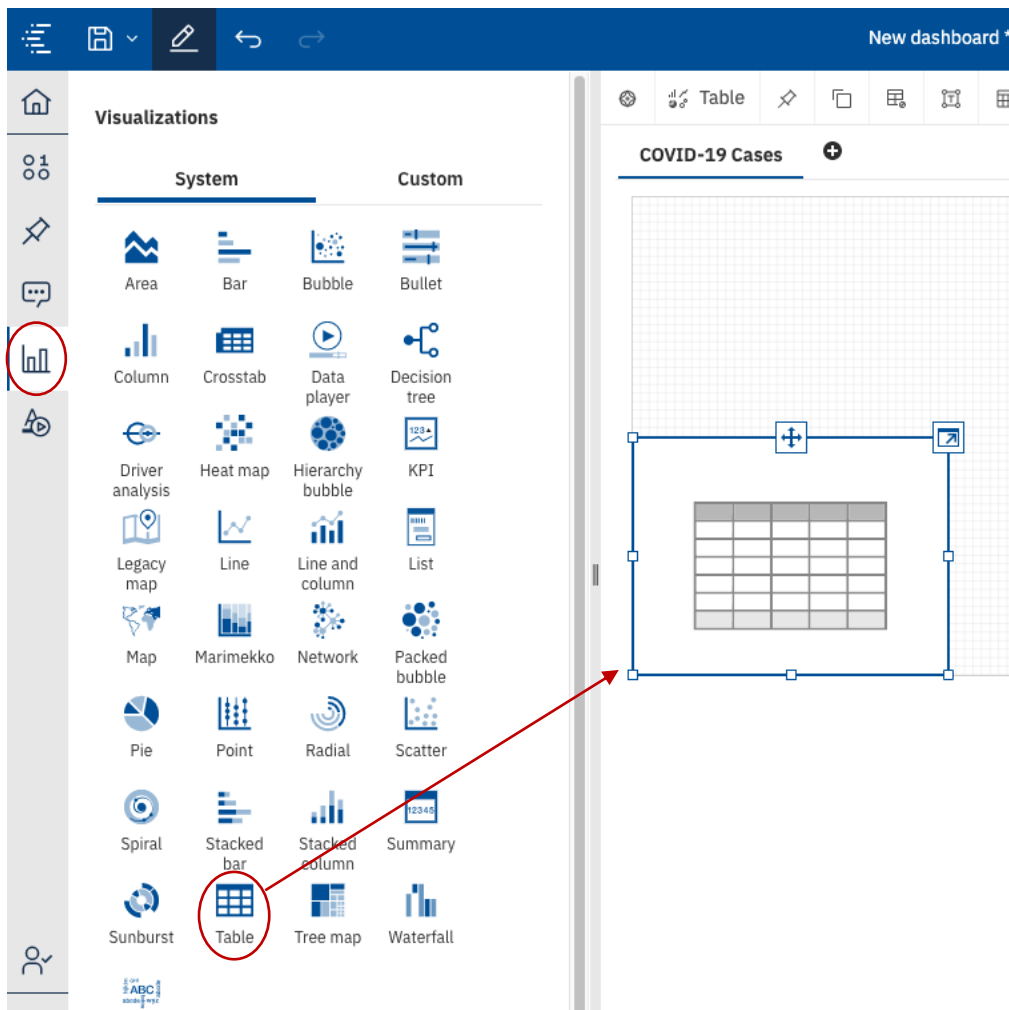
8. Click on the **top folder**, **ECDC_Extract_Summary.csv**, and **Add**.
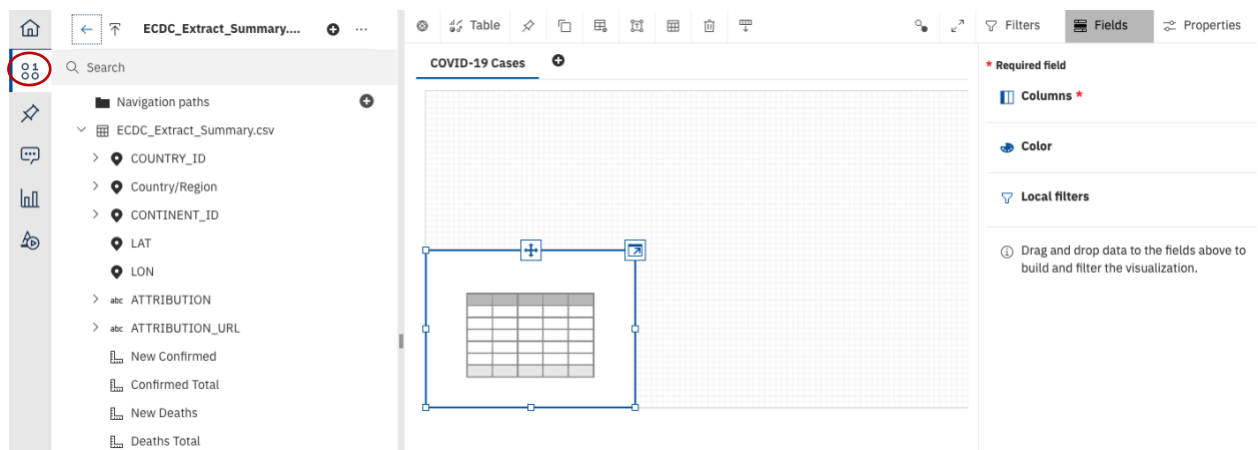


The .csv contents will appear in the side panel.

9. 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)**.
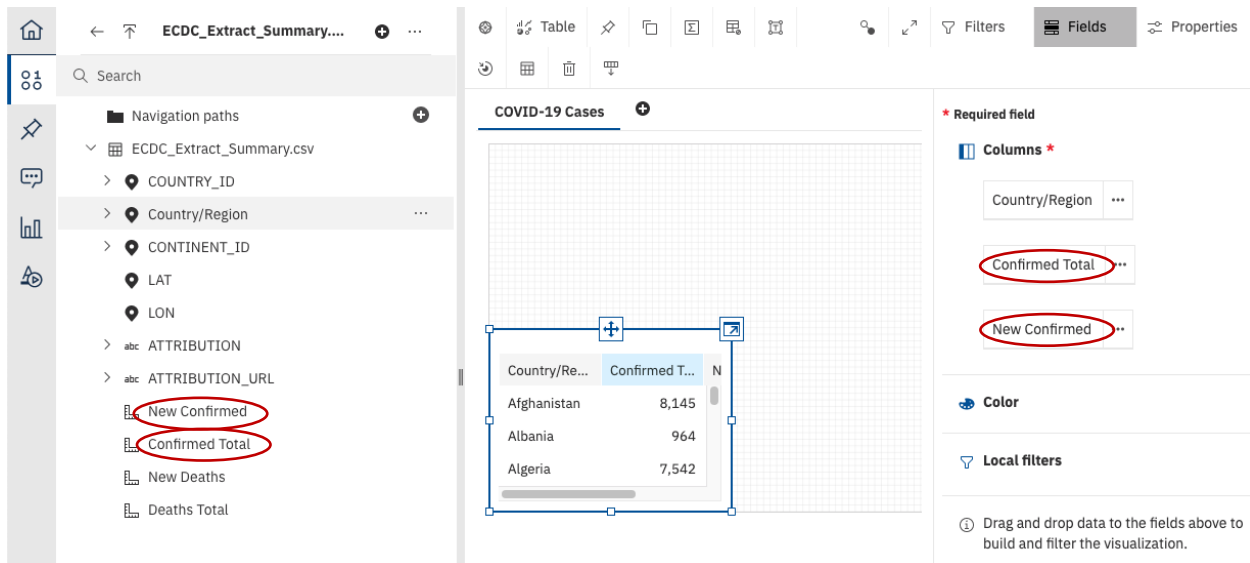
11. Click on **Country/Region** in the sources panel (on the left) and **drag it to the Columns field** in the Fields panel (on the right).
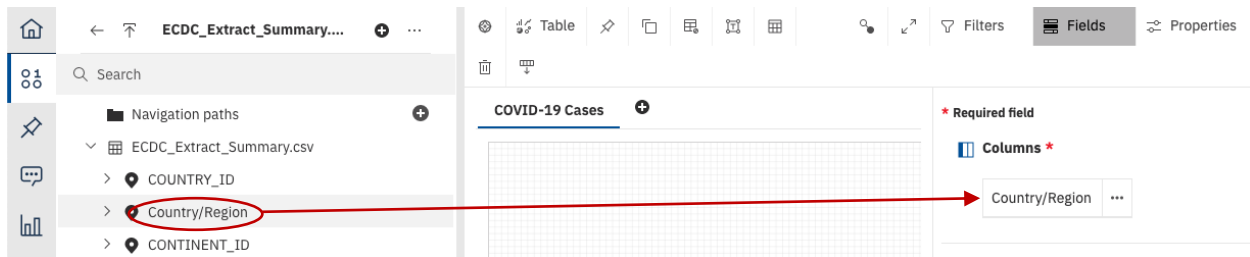


12. Repeat step 11 fo**r Confirmed Total** and **New Confirmed**.
   a. Confirmed is the total number of cases confirmed up to May 20th, 2020
   b. New is the number of new cases on May 20th, 2020



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**.



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



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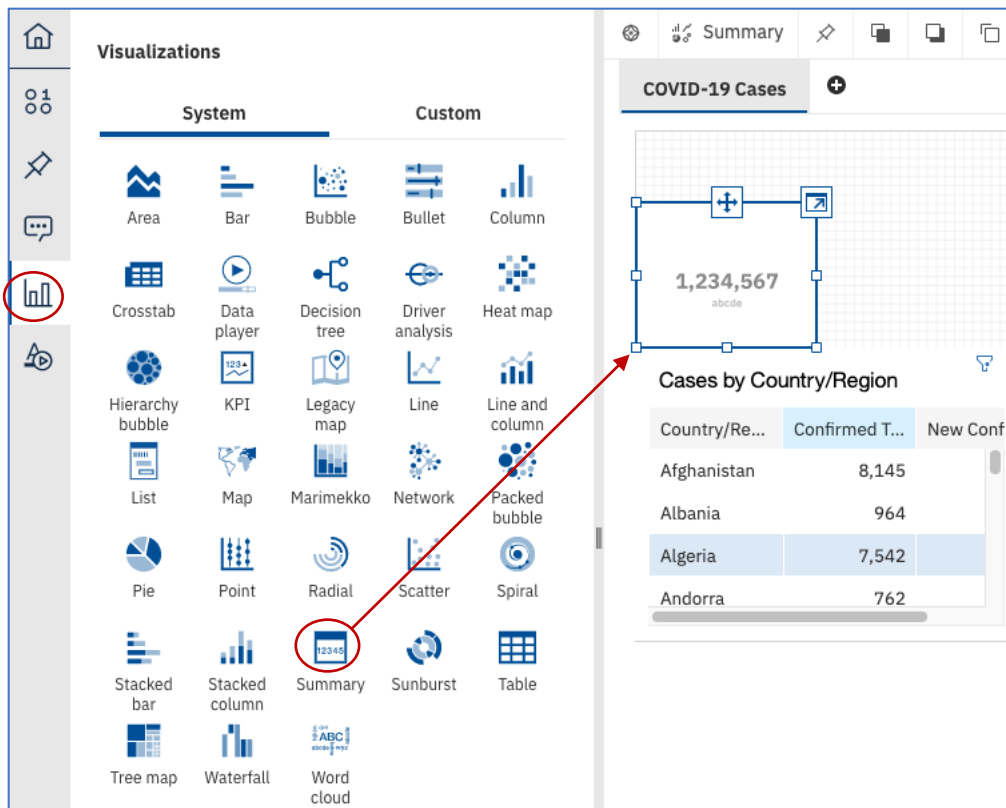
16. Open the **sources panel** and drag **Confirmed Total** to the Value required field.
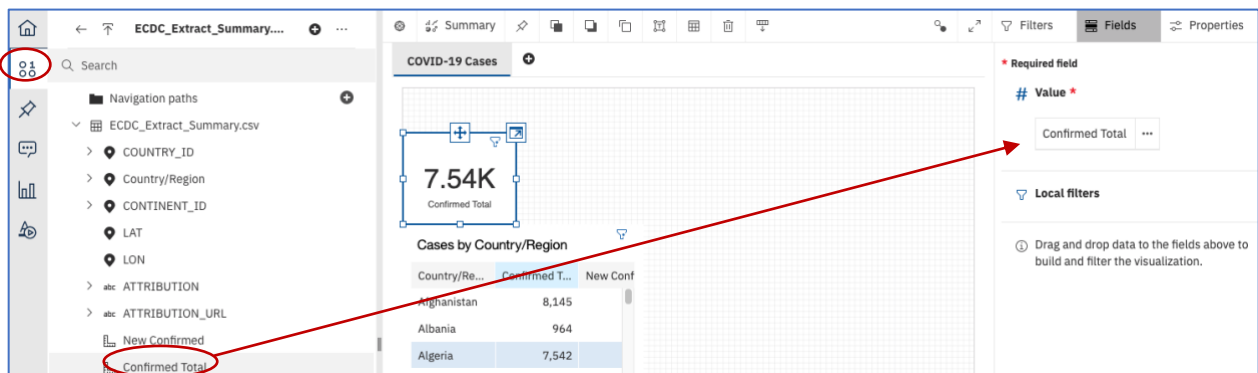


17. Click on the **three dots to the right of Confirmed Total** then click on **Format**.
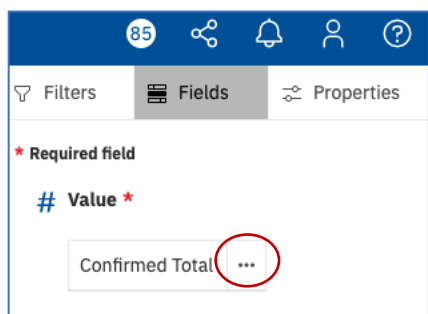
18. Click on **Number** and **uncheck Abbreviate**.



19. Click on the **Properties Tab**, **Visualization**, **Chart**, and change the Label title to "**Confirmed**"
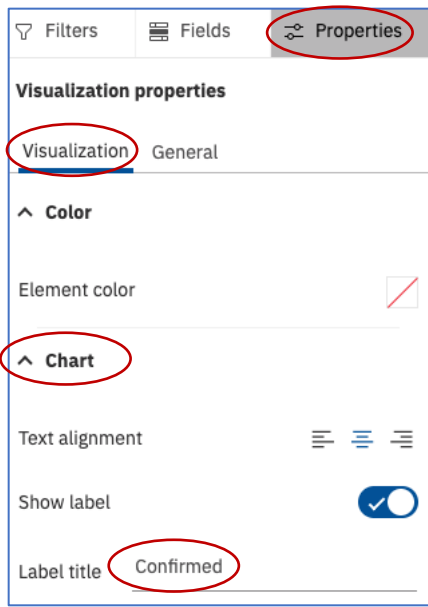
20. On the left side of the screen, click on the **Sources** tile then **click and drag the Deaths Total source to the da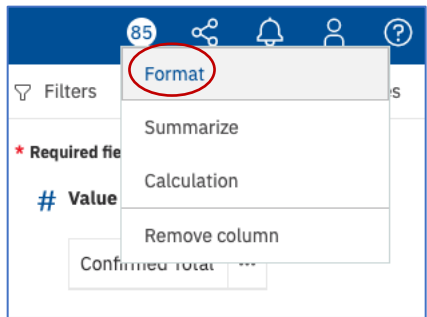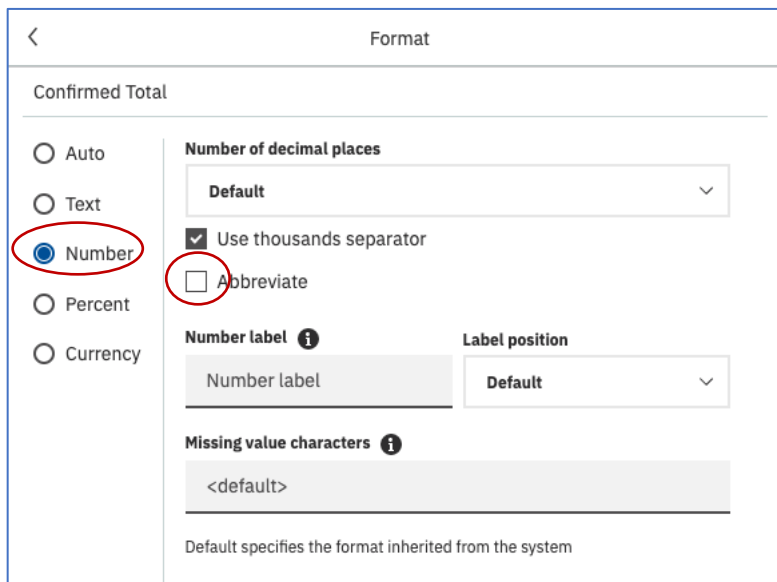shboard**. Cognos will automatically infer the "Summary" title as an appropriate visualization. Move it to the top left above the dashboard beside Confirmed. Resize as needed.
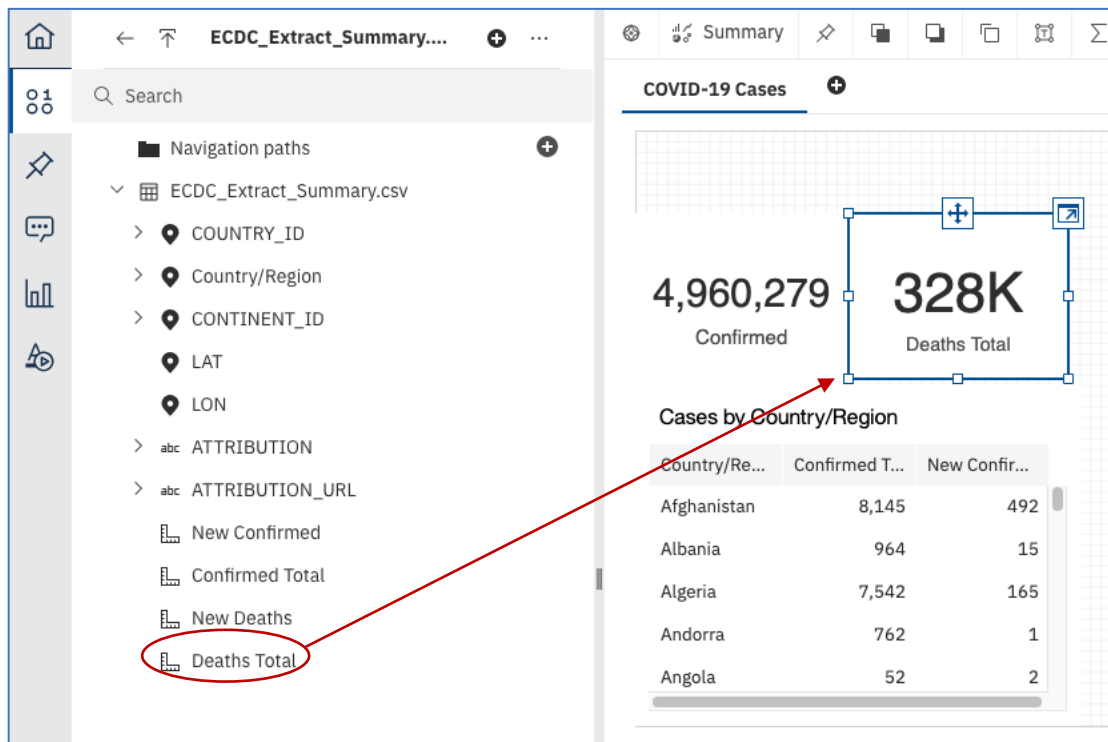


21. **Repeat steps 17 and 18** to **turn off abbreviation** for the **Deaths Total** tab.

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.
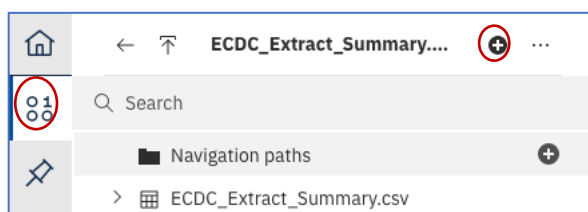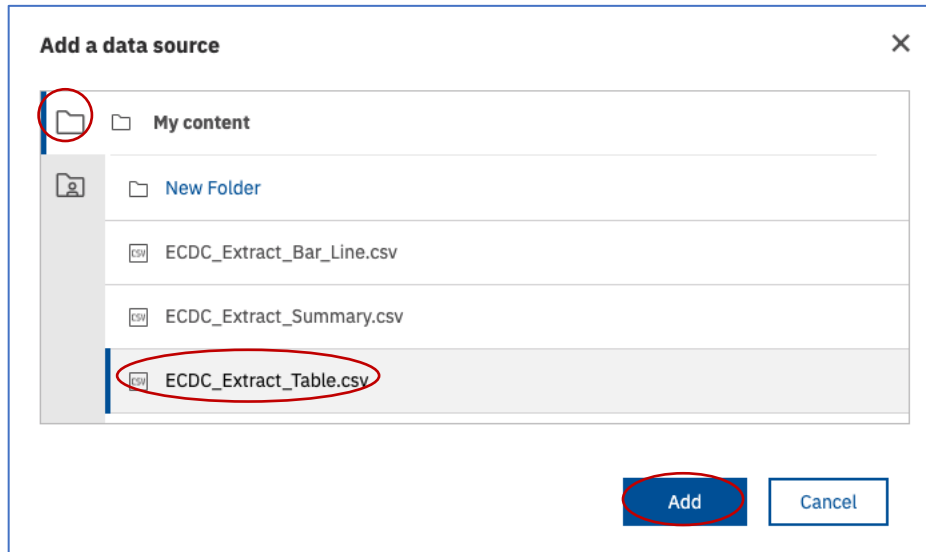


24. Click on the **text to edit** and **change the title** "**IBM Global COVID-19 Statistics**"

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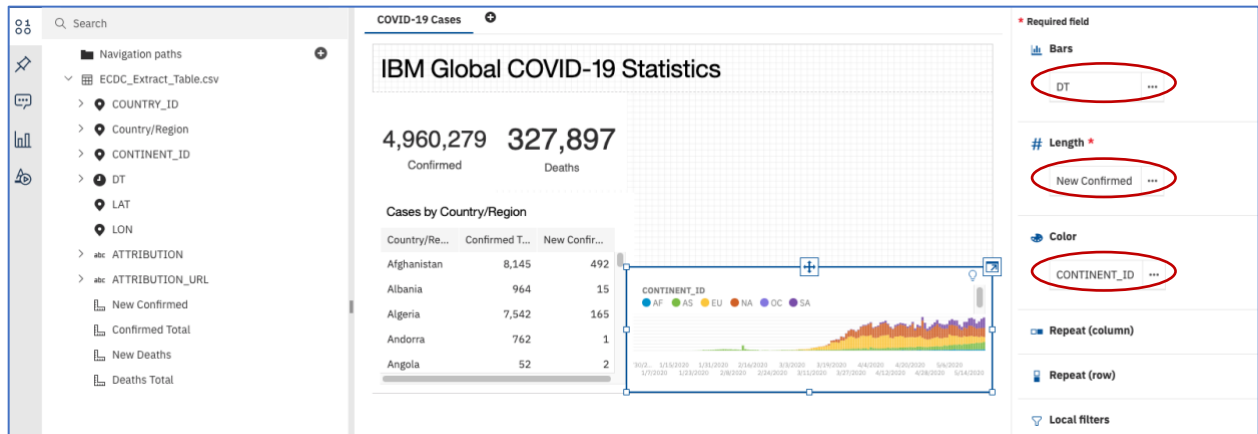
26. Click on **My Content**, **ECDC_Extract_Table.csv** and **Add**.



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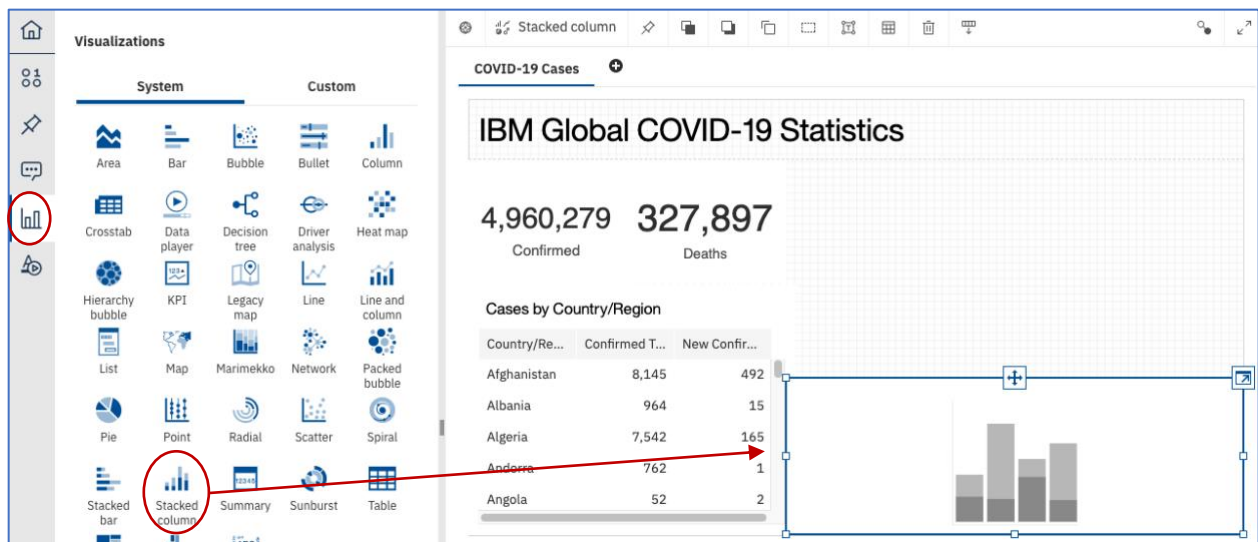


28. Open Source and add the **DT** column to the Bars field, the **New Confirmed** column to the Length field, and the **CONTINENT_ID** column to the color field

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.
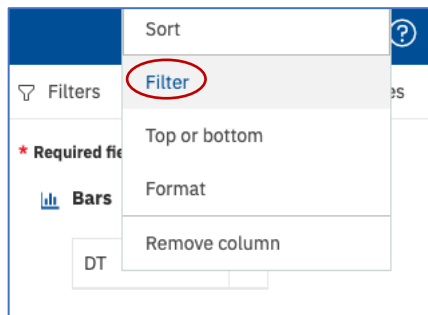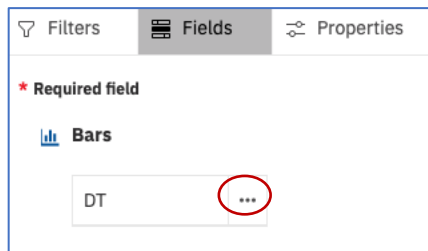




30. Enter the dates:

From

**2020-05-06**

To

**2020-05-20**

And click **OK**.



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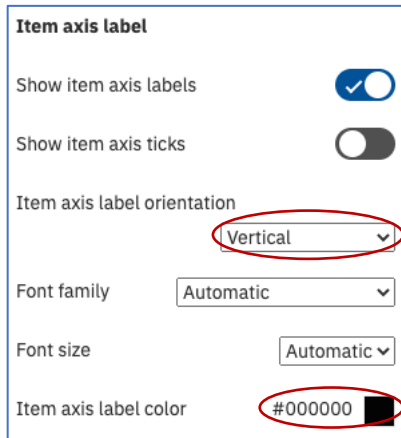
32. Change **Item axis label orientation** to **vertical** and **Item axis label color** to **black**.



**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**.
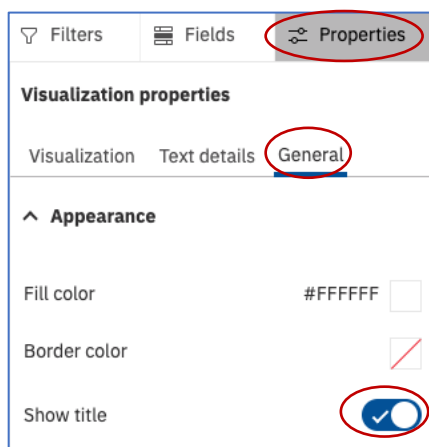




34. Click **custom** and on the colors you see in the same order as the image below (or choose your own colors). Click **Save**.
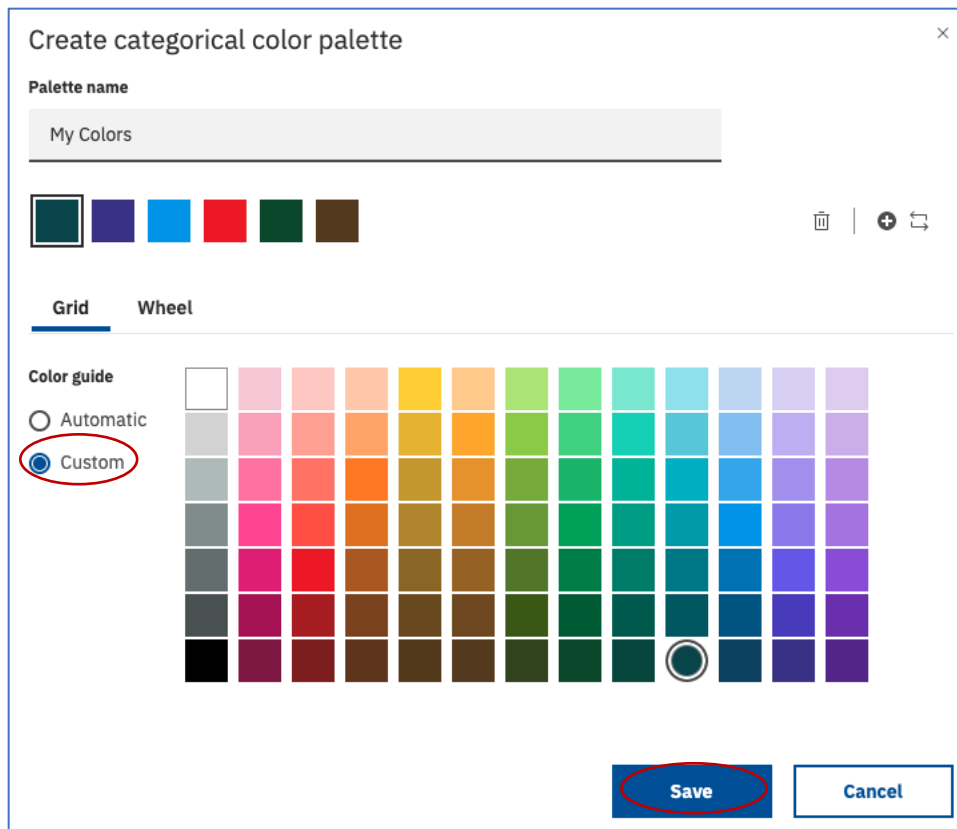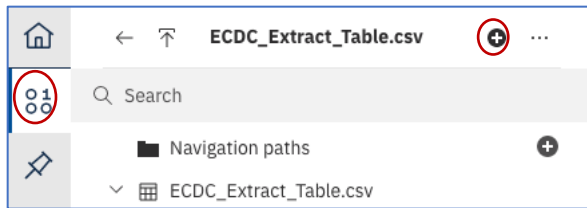
35. Click on **Properties**, **General**, and Show **title**.



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**.
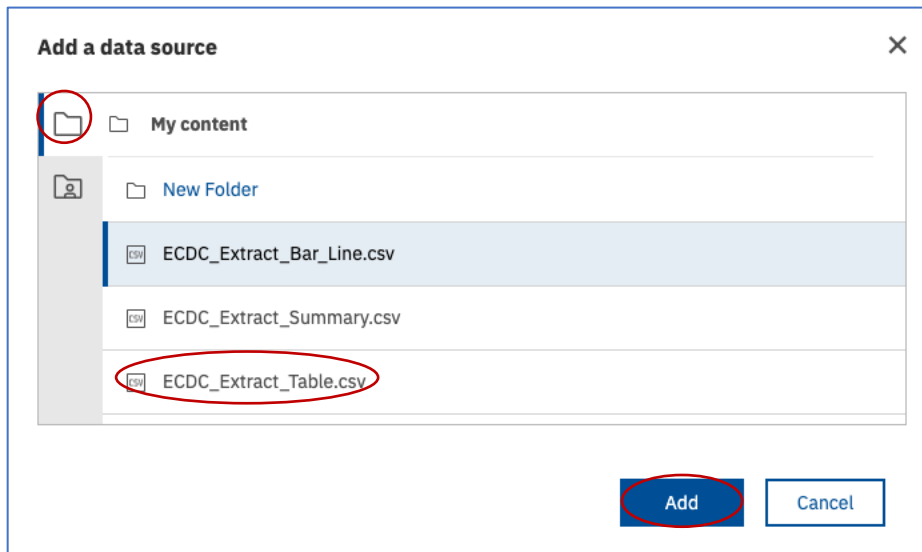


39. Finally, we'll be making a line/bar graph to show how confirmed cases have changed over time. Let's begin by importing ECDC_Extract_Bar_Line.csv. Click on **visualizations** then **drag a Line and Column tile to the remaining space in your dashboard**. Resize as needed.
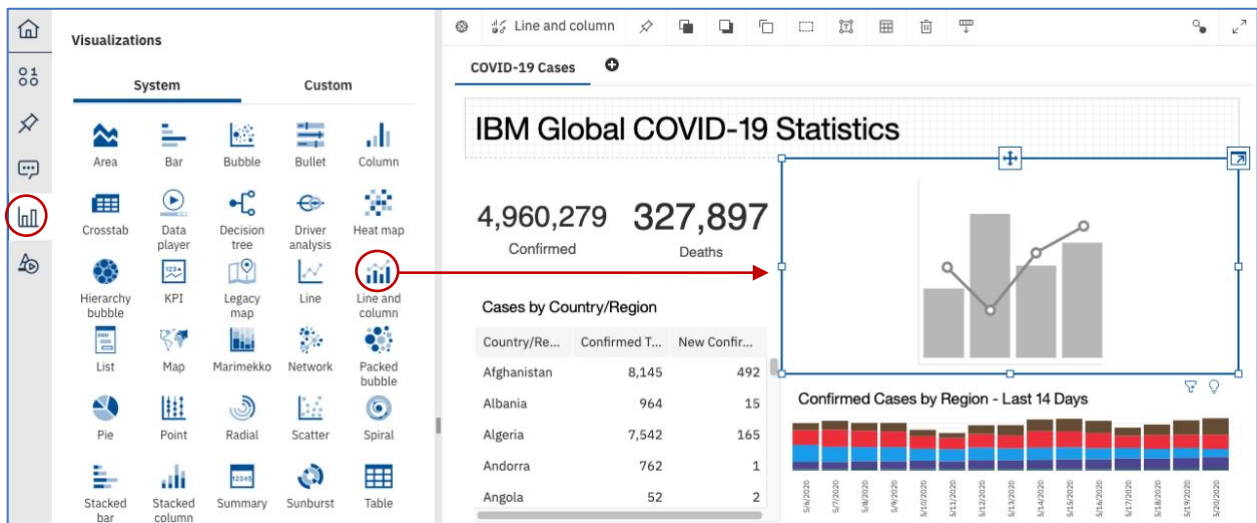
40. Then add the **Dates** column to the x-axis field, **New Confirmed** to the Length field, and **Confirmed Total** to the Line Position
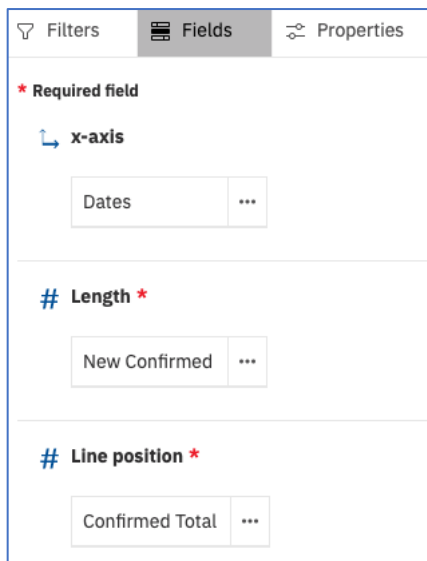


41. Apply a filter to the Dates column so the graph shows information from March 1st to May 20th. Click on the **three dots next to Date** and then click **Filter**.
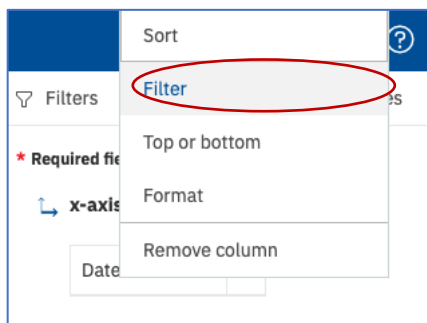


42. Set the filter dates to:

From

**2020-03-01**


To

**2020-05-20**

Then Click **OK**.

43. Click on **Properties** and **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 ⬛

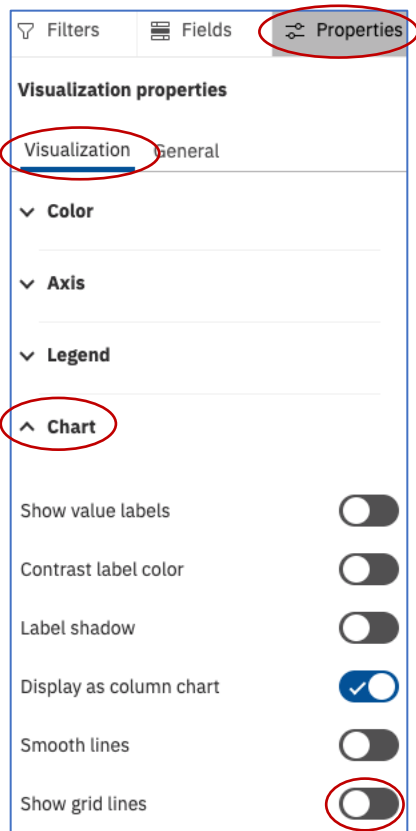**Value axis label**

Show value axis labels  ✓

Show value axis ticks  ◯
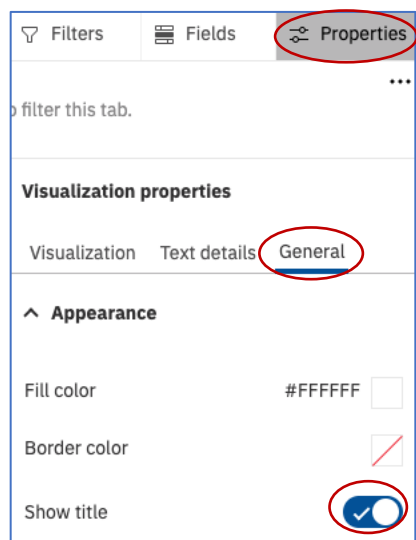
Font family  Automatic ▾
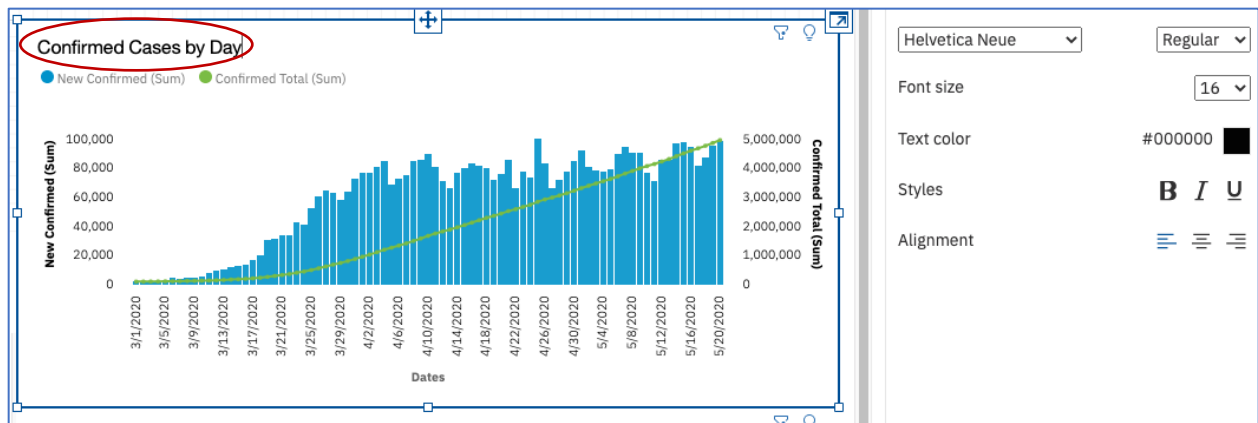
Font size  Automatic ▾

Text color  #000000 ⬛

45. Remove the grid lines by clicking on **Properties, Visualizations, Chart,** and **Toggle Show Grid Lines.**
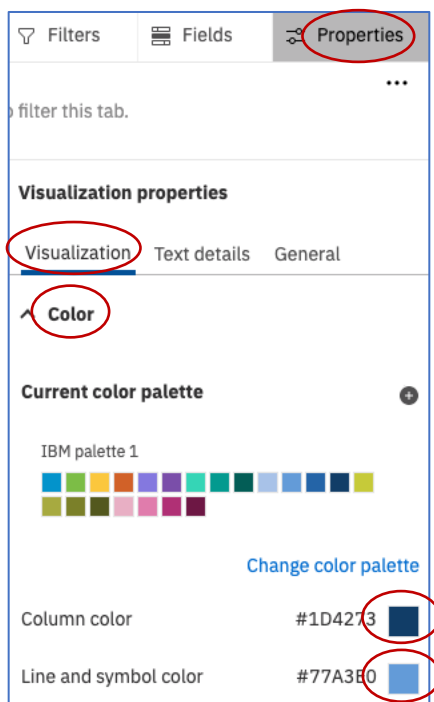
46. Click on **Properties**, **General**, and **Appearance**. Check **Show title**.
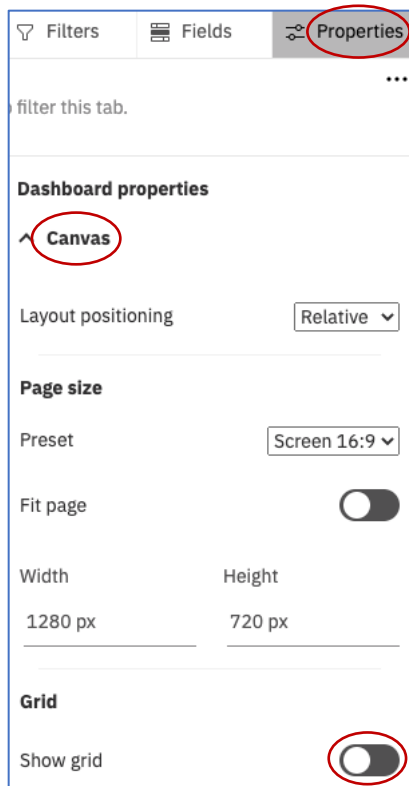


47. Enter "**Confirmed Cases by Day**" as the title and set the font to 16.

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.
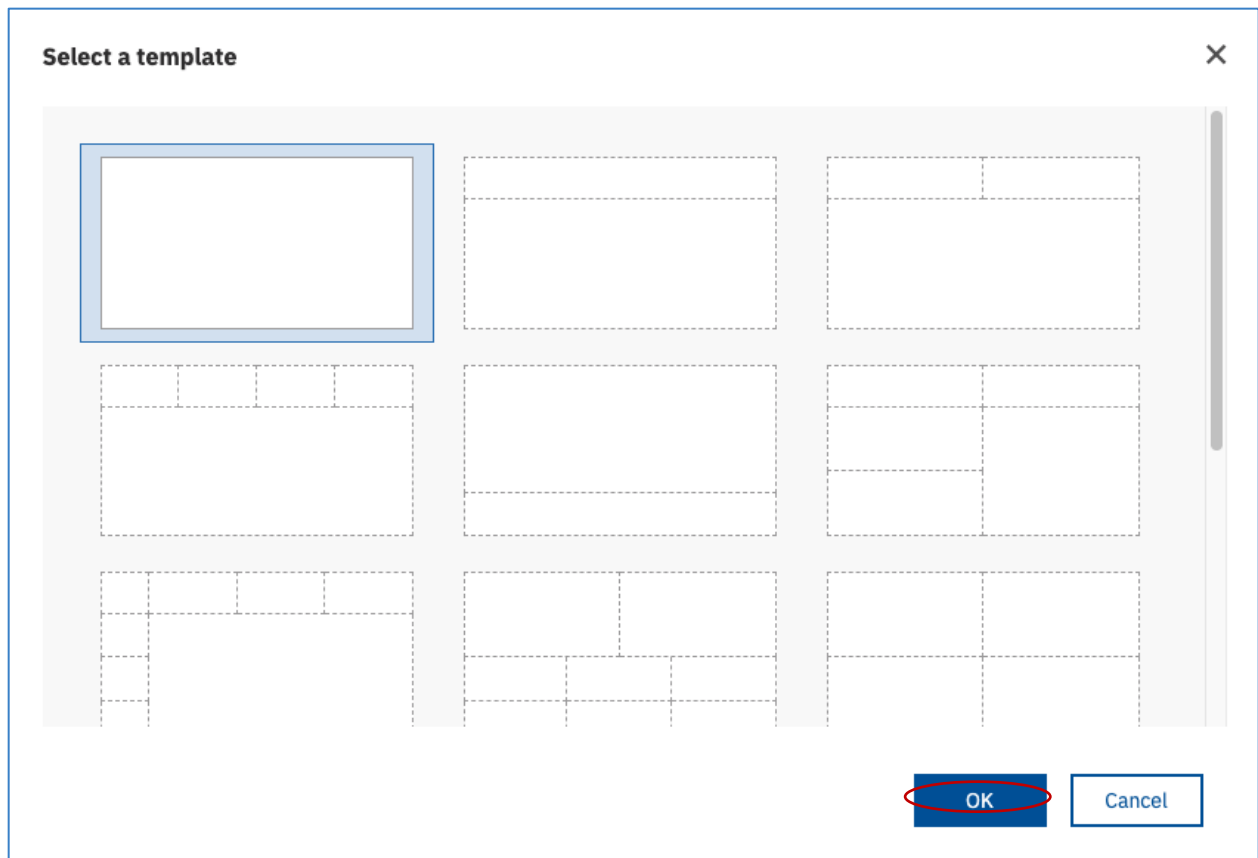
# Exercise 3: Create a Global Map View

Now that we have our primary dashboard, we will create a new tab to view COVID-19 statistics in a regional view.
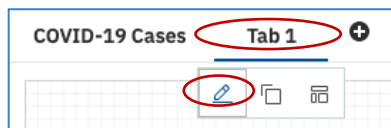
1. To the right of your COVID-19 Cases tab, **click the plus sign**.
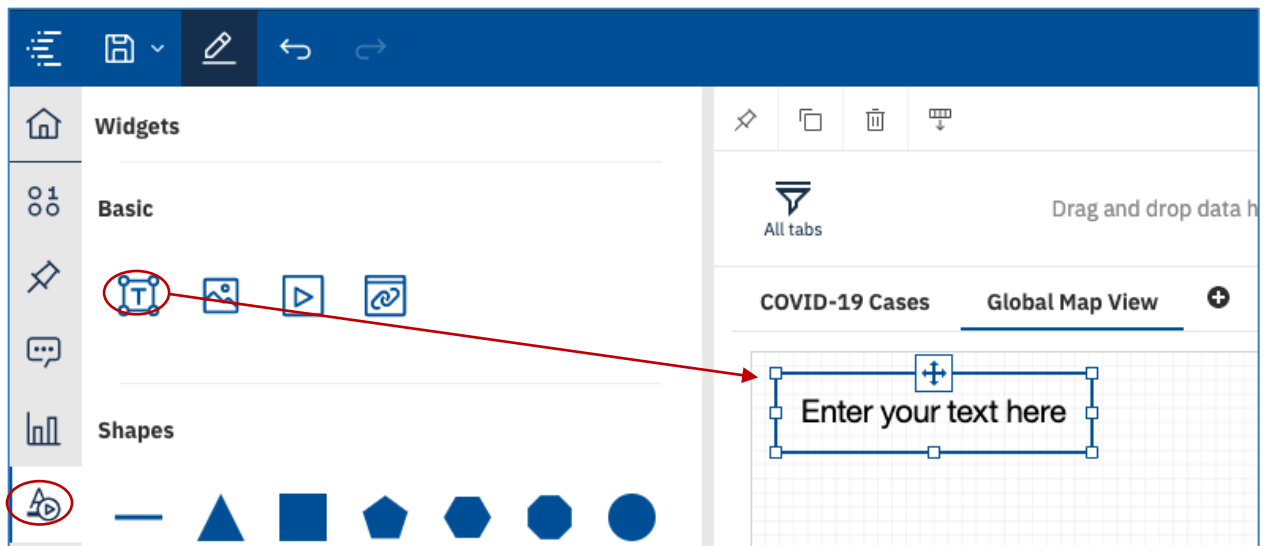


2. **Click the blank template** and click **OK**.

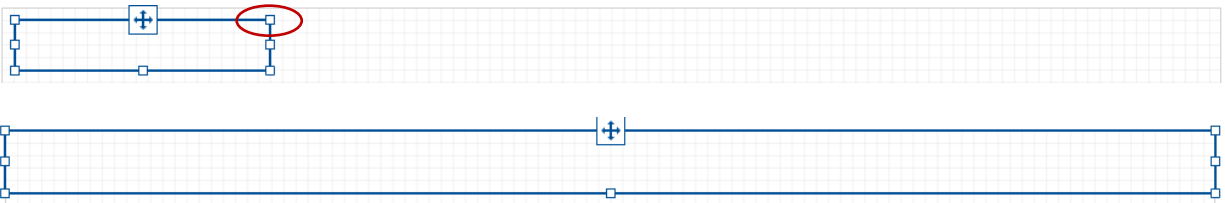Click on **the Tab 1 title** and the **pencil icon**.
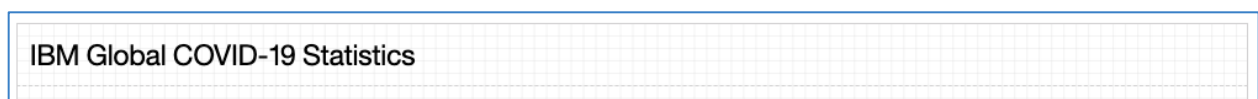


3. Enter the name "**Global Map View**."



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

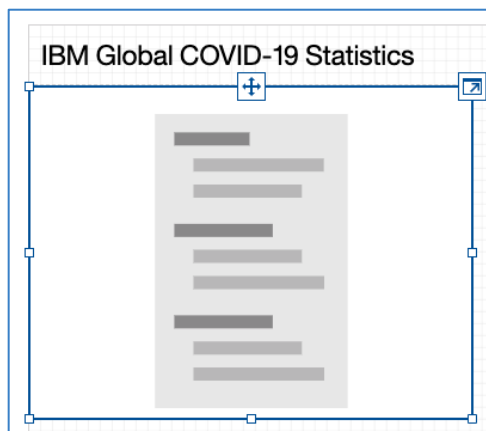5. Click on the white circles on text box and **resize the box to fit the top borders of the screen**.



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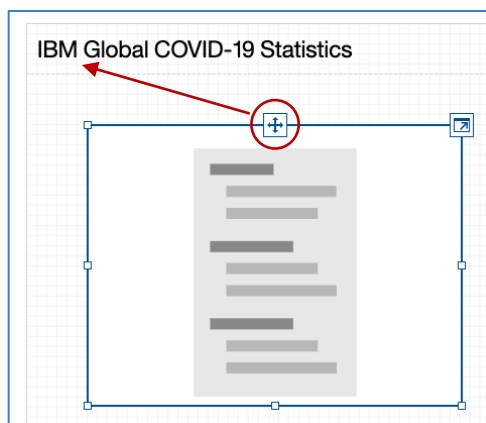
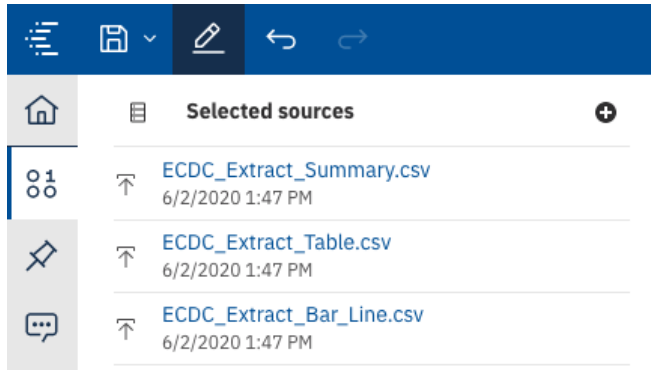IBM Global COVID-19 Statistics

7. Click on the **visualizations** (graph) button, click on the **List icon**, and **drag the icon to the screen** under the dashboard title.
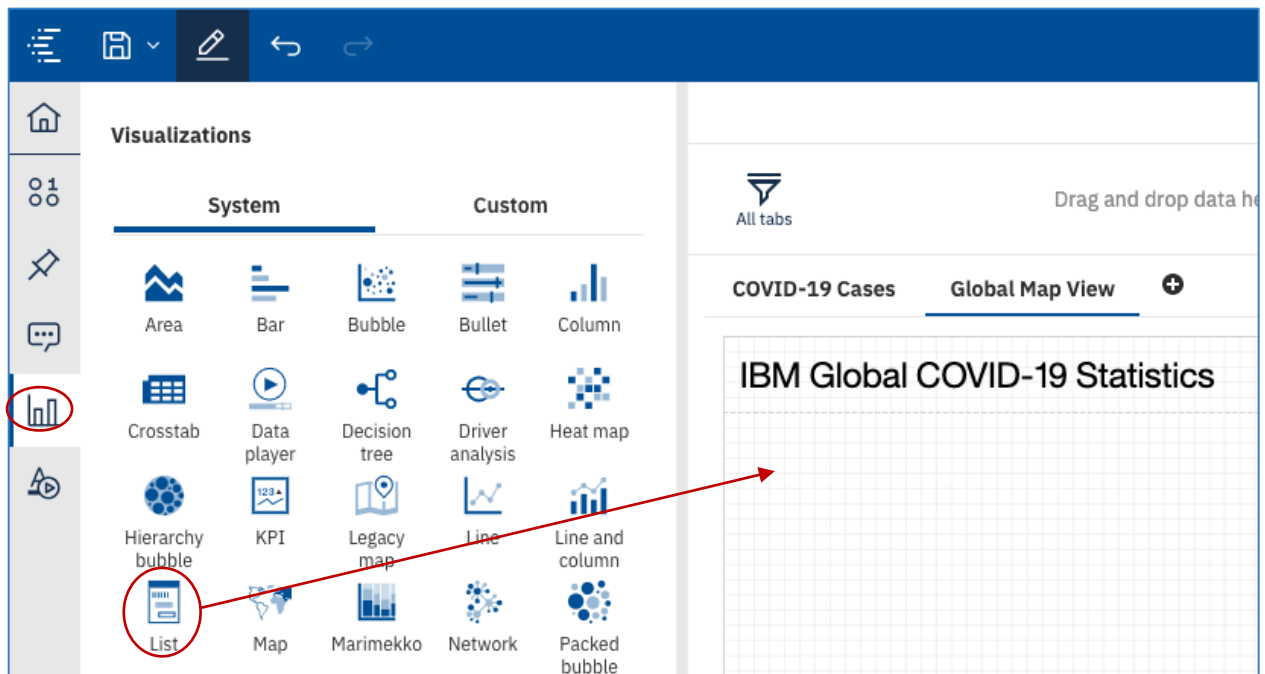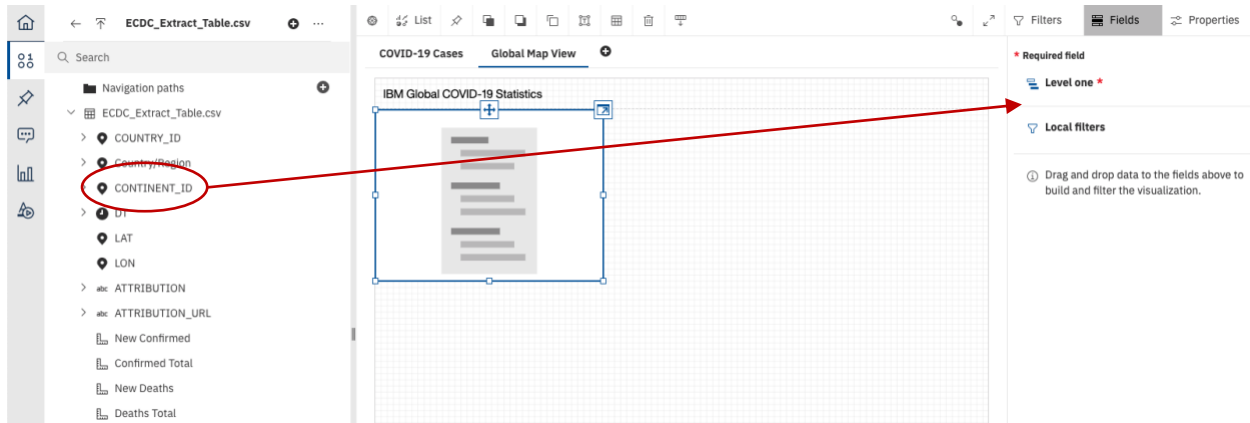
8. Click on the ✛ icon and drag the new list under the left of your title.
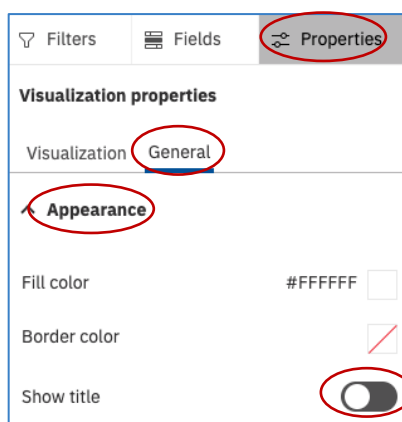
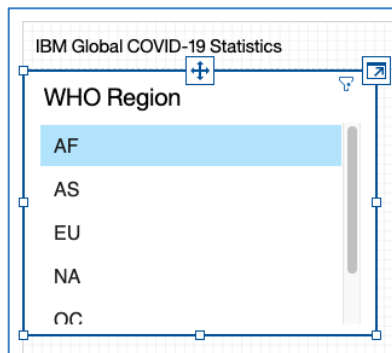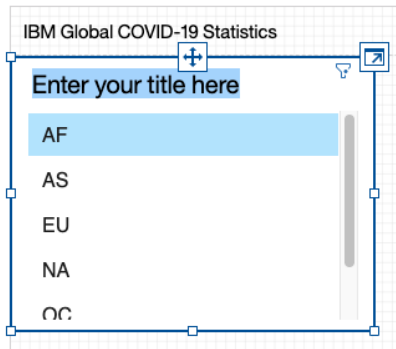9. In your **Selected** sources panel, click **ECDC_Extract_Table.csv**



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.
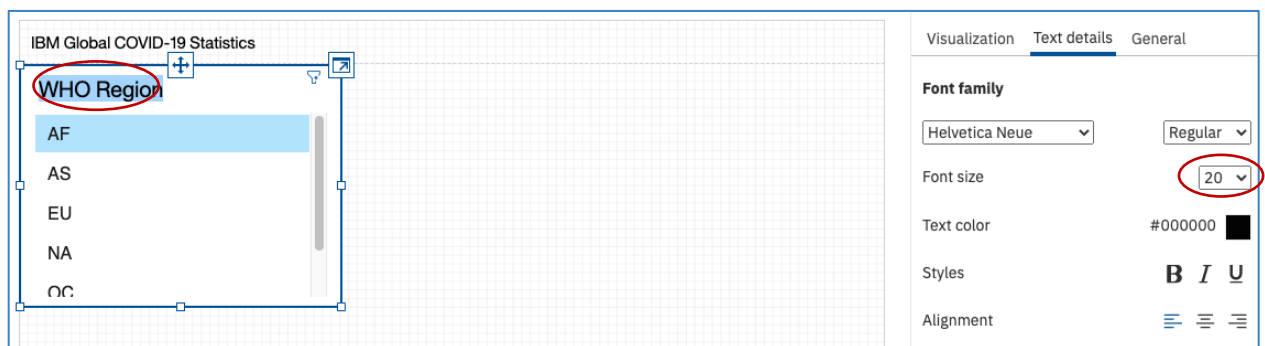


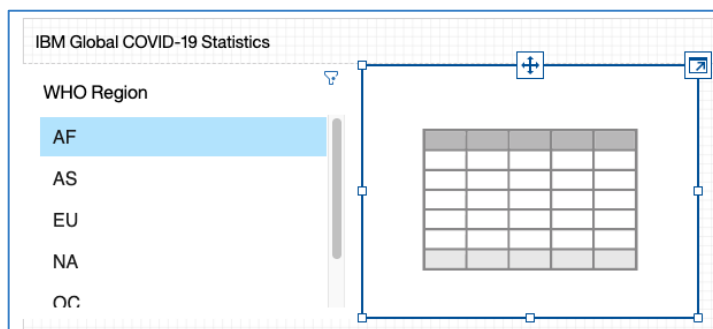11. For your right-side panel, click on the **Properties** tab, **General**, **Appearance**, and **Show title**.
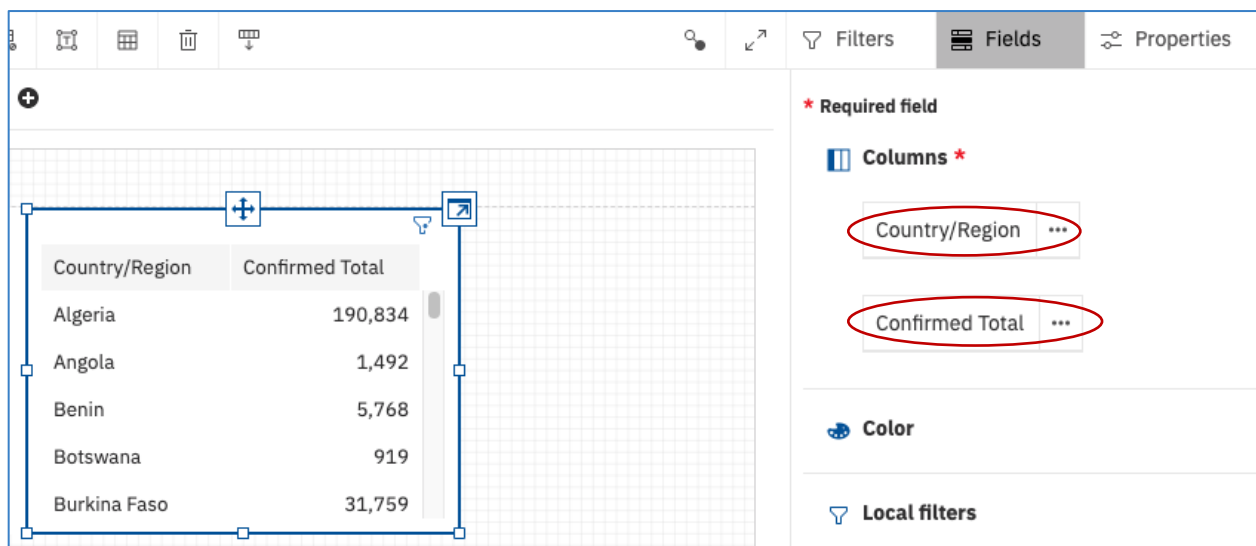


12. Enter "**WHO Region**" as the list title.

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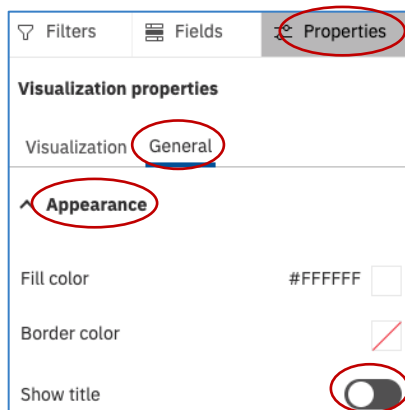


14. Open the **visualizations** (graph) panel, click on **Table**, and add it to the right of your "WHO Region" list.

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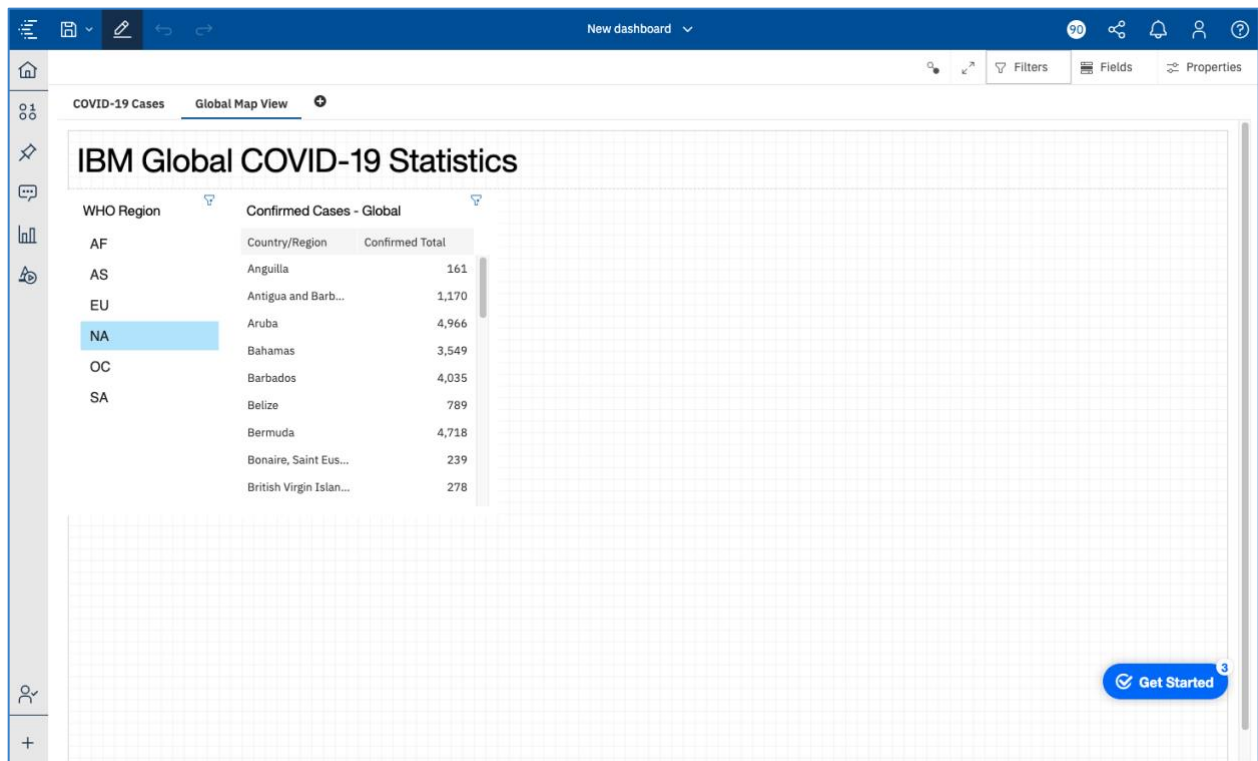


16. Still with the table selected, click on **Properties**, **General**, **Appearance**, and **Show title**.



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.
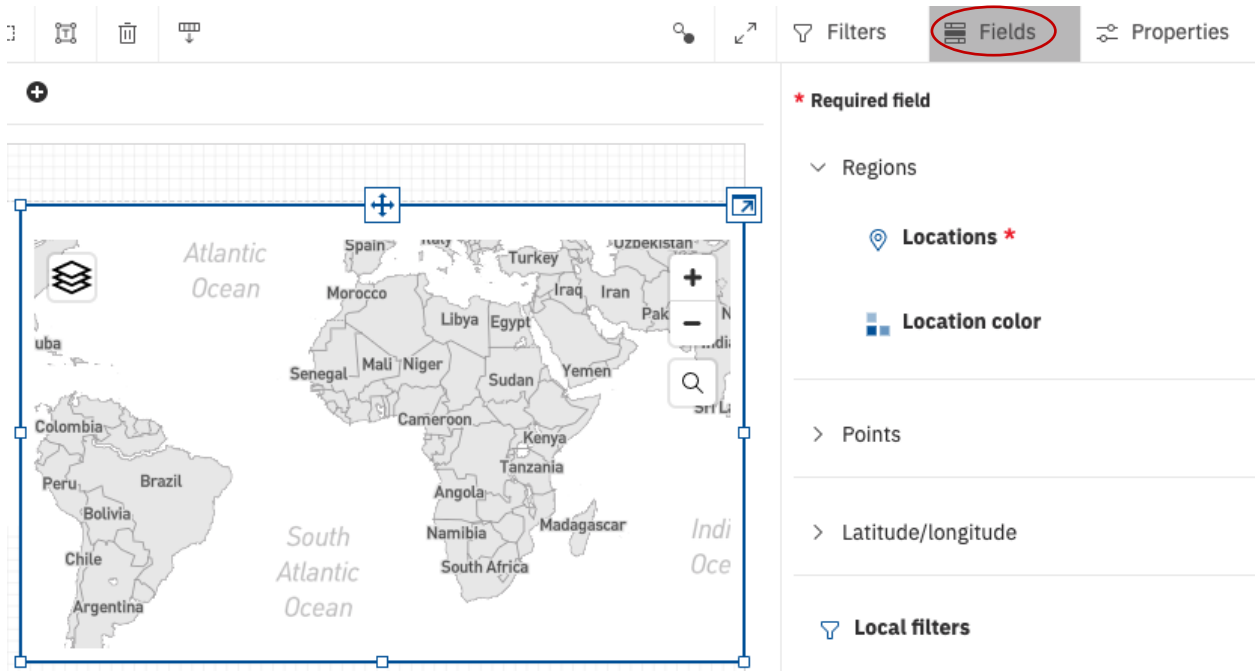
Note that aspects of your dashboard will automatically resize based on the size of your screen.
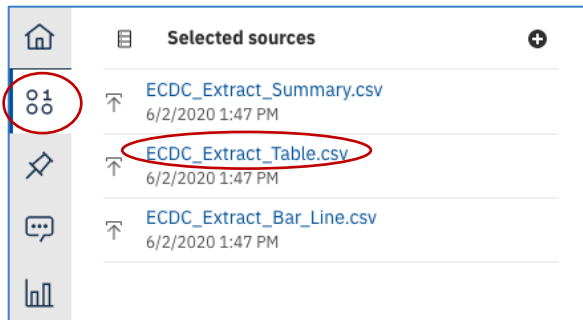
19. Open the **visualization** (graphs) **panel**, click on the **Map tile and drag it to the dashboard**. Place or resize as needed so the map takes up the remaining width of the dashboard.
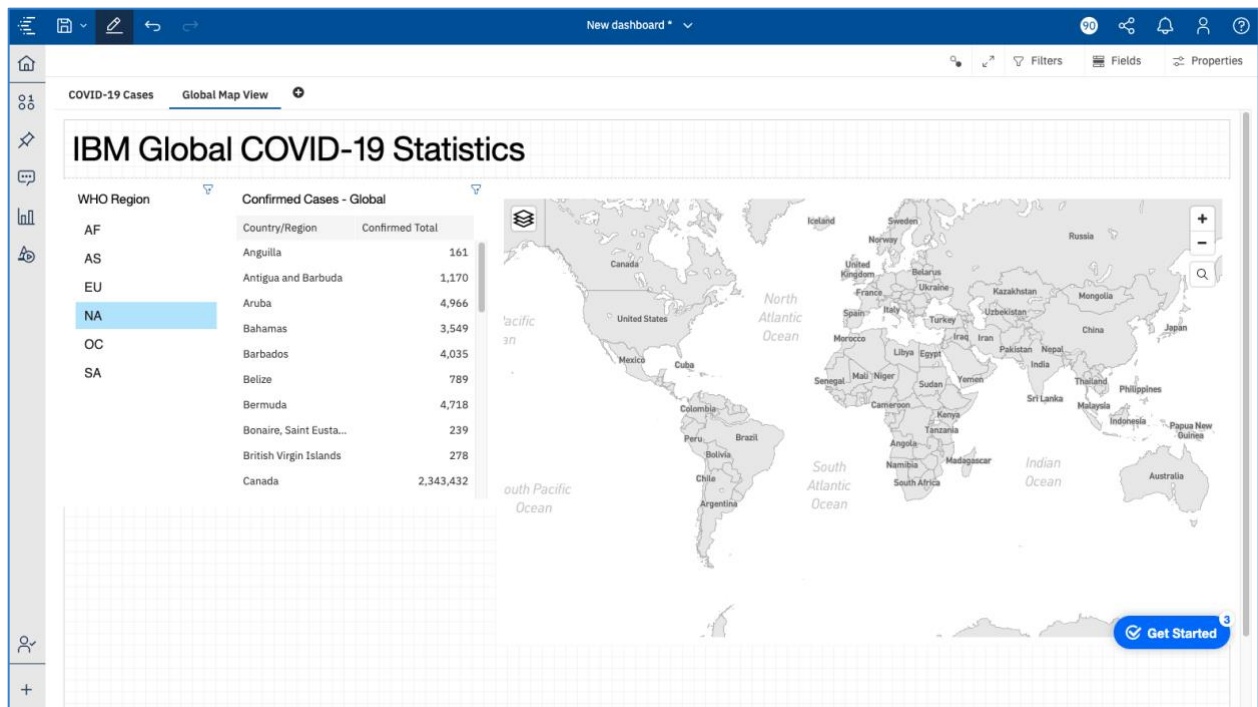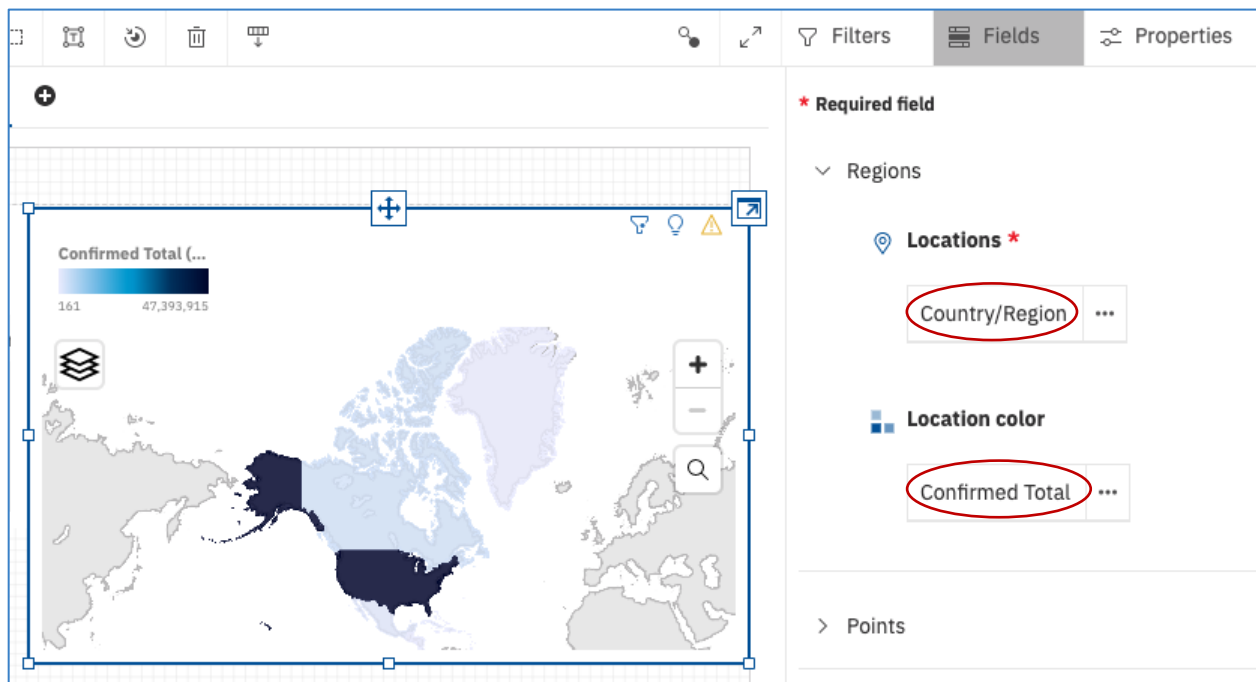
20. **Click on your map** and **open the Fields panel**.
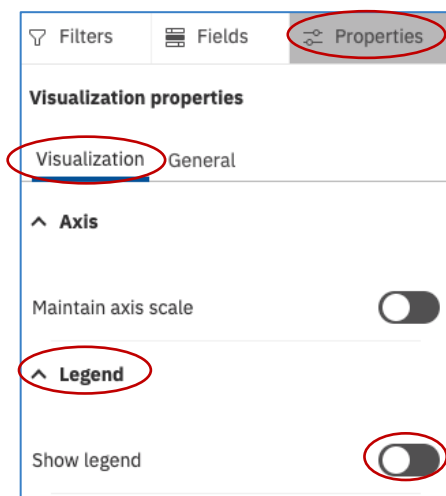


21. Click on the **Selected sources panel** and open the **ECDC_Extract_Table.csv** file.

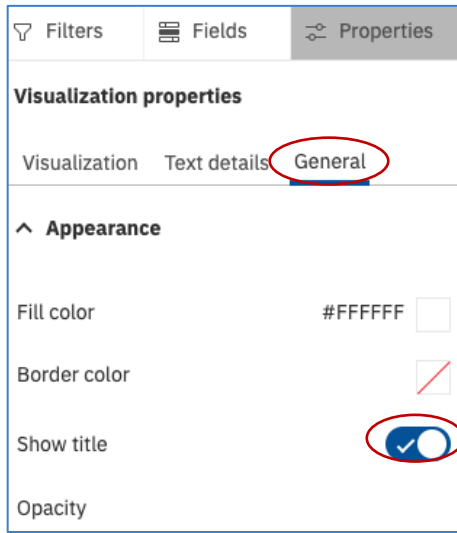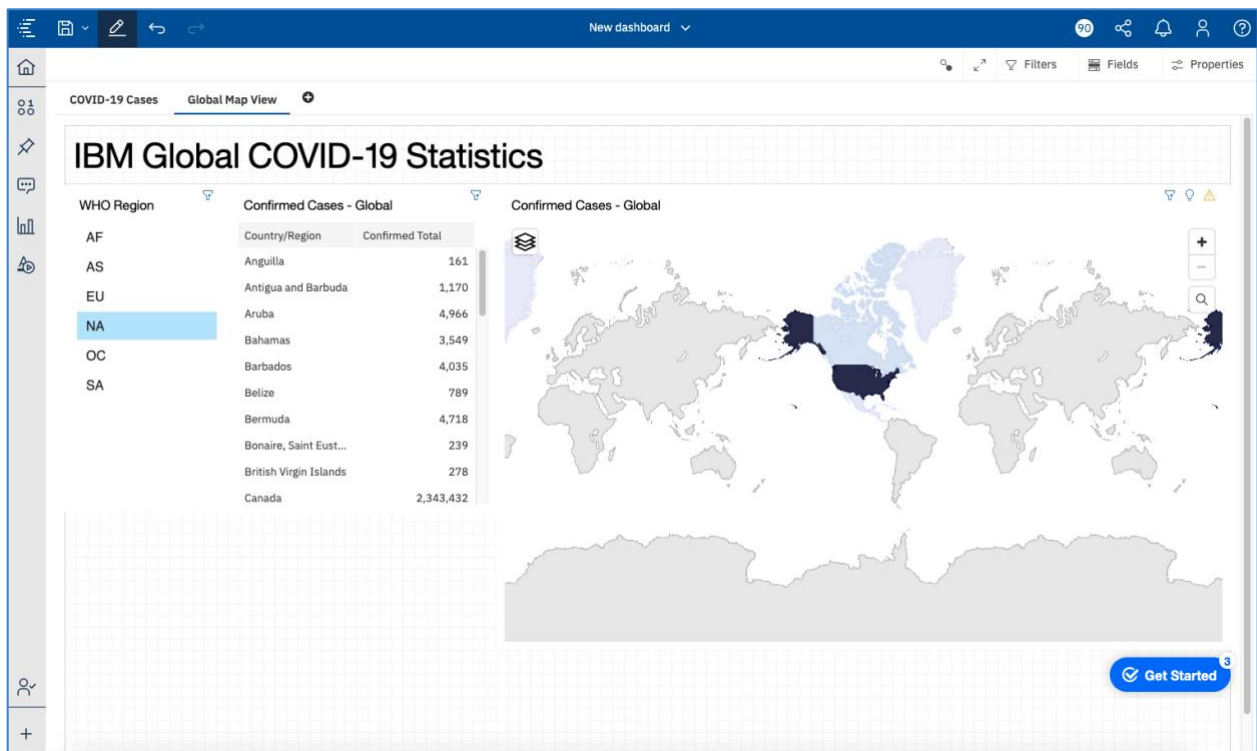22. Drag **Country/Region to Locations** and **Confirmed Total** to **Location color**.



23. Click on **Properties**, **Visualization**, **Legend**, and **uncheck Show legend.**
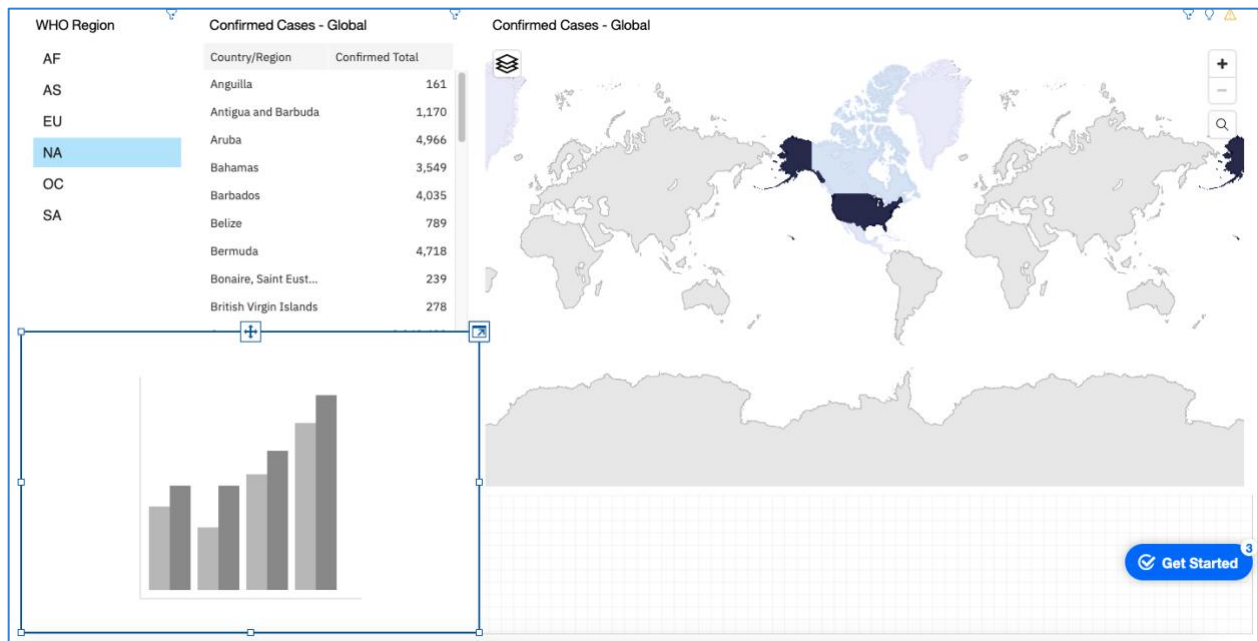
24. Click on **General**, **Appearance**, and **check Show title**.



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.
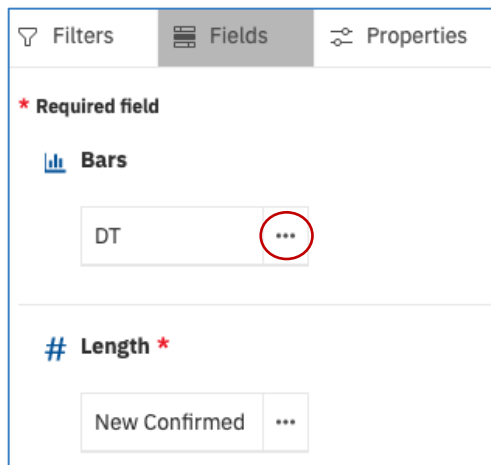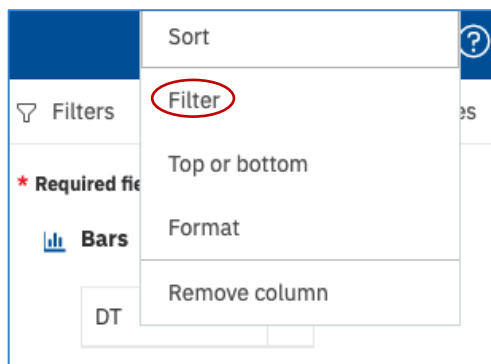


28. Click on the **three dots to the right of the DT** field.

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

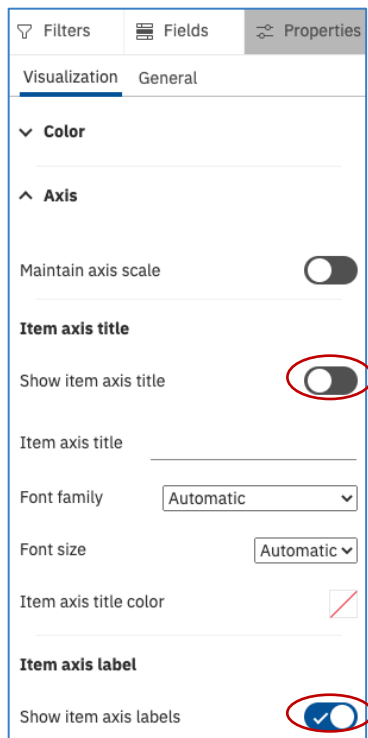**2020-05-06**

To

**2020-05-20**

Then **click Ok**.
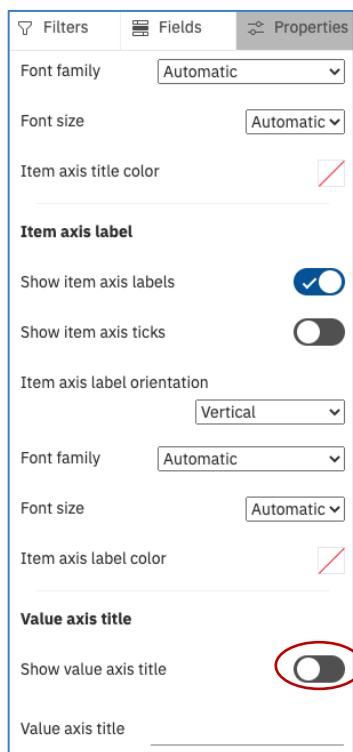
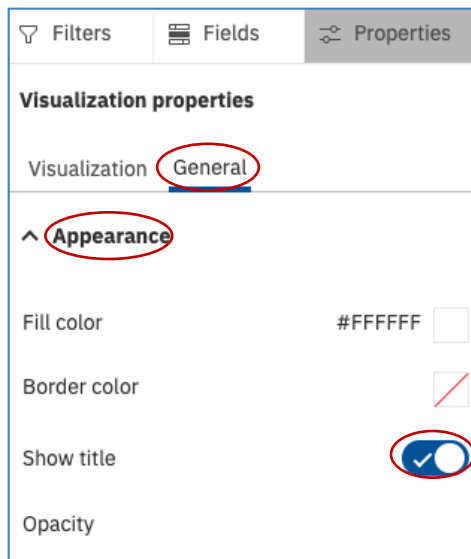31. Click on **Properties**, **Visualization**, and **Axis**.



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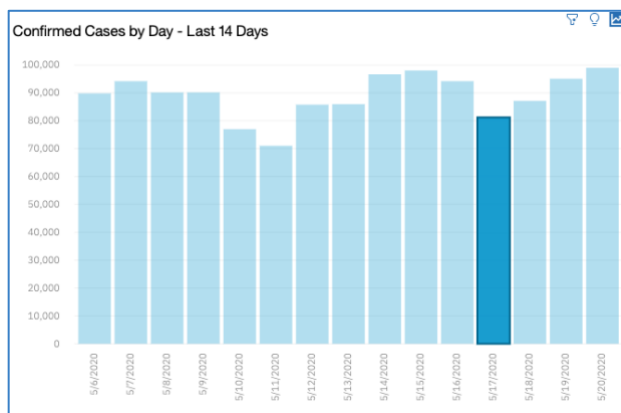
33. Scroll down and **uncheck Show value axis title**.



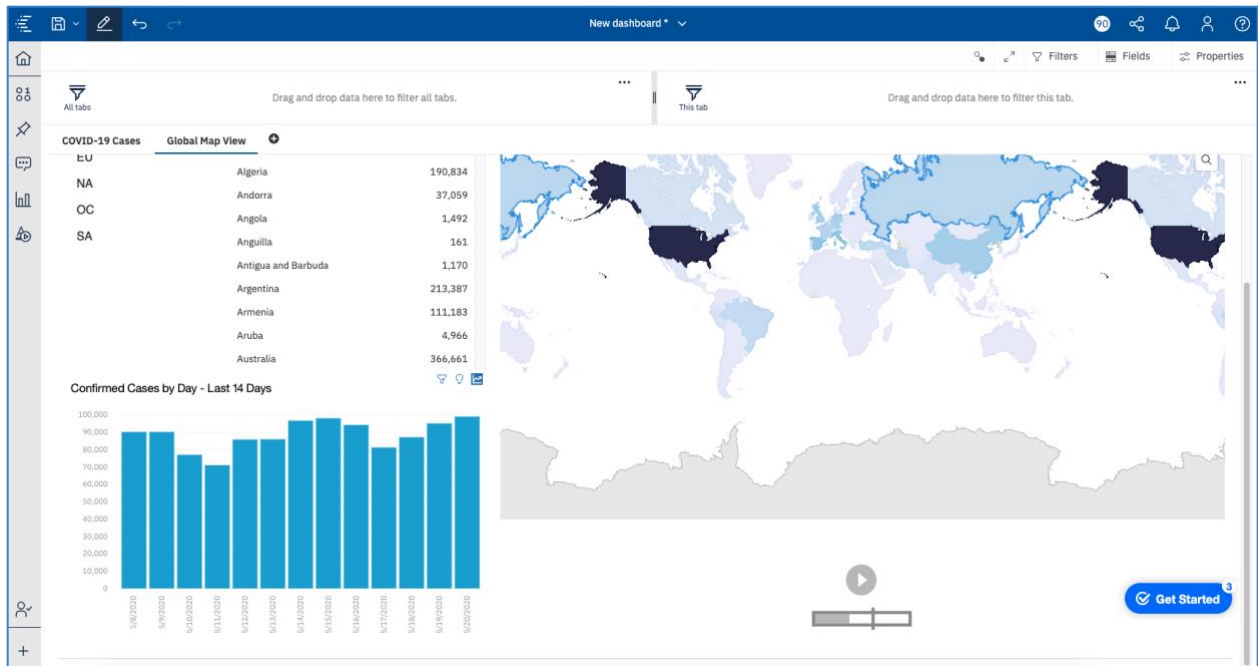34. Scroll up, click on **General**, click on **appearance**, and **check Show title**.

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35. Enter "**Confirmed Cases by Day – Last 14 Days**" as the title and set the Font size as 16.
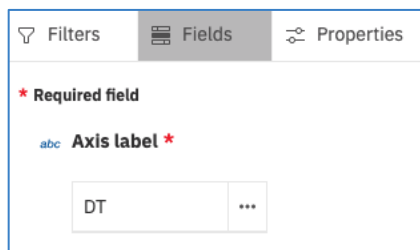
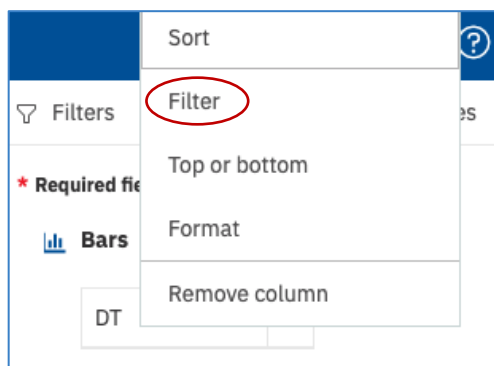Your column chart should look similar to the following:



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**.



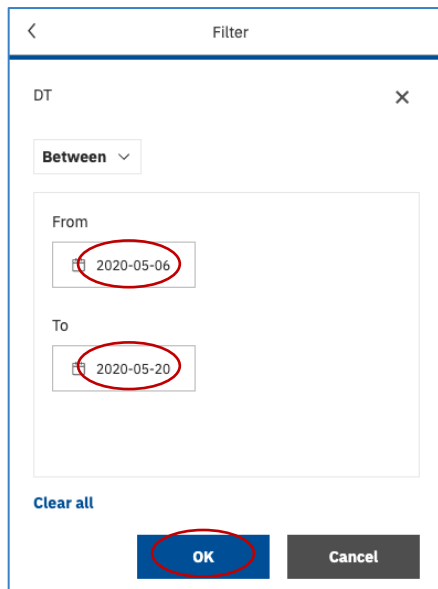38. Click on the **three dots to the right of DT** and open the **Filter** popup, and set the date as:



From

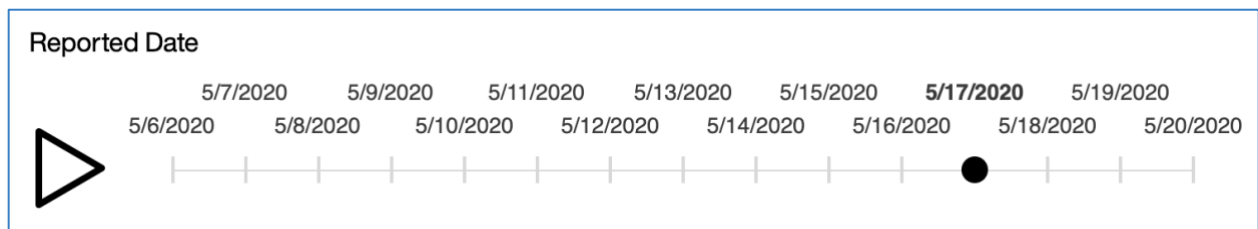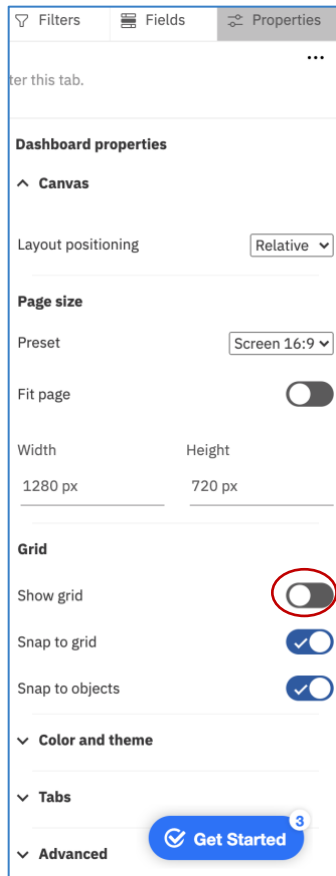**2020-05-06**

To

**2020-05-20**



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:
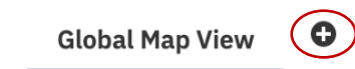


41. **Click on your dashboard (ensure no tiles are selected)**. Click on **Properties** and **unselect Show grid**.
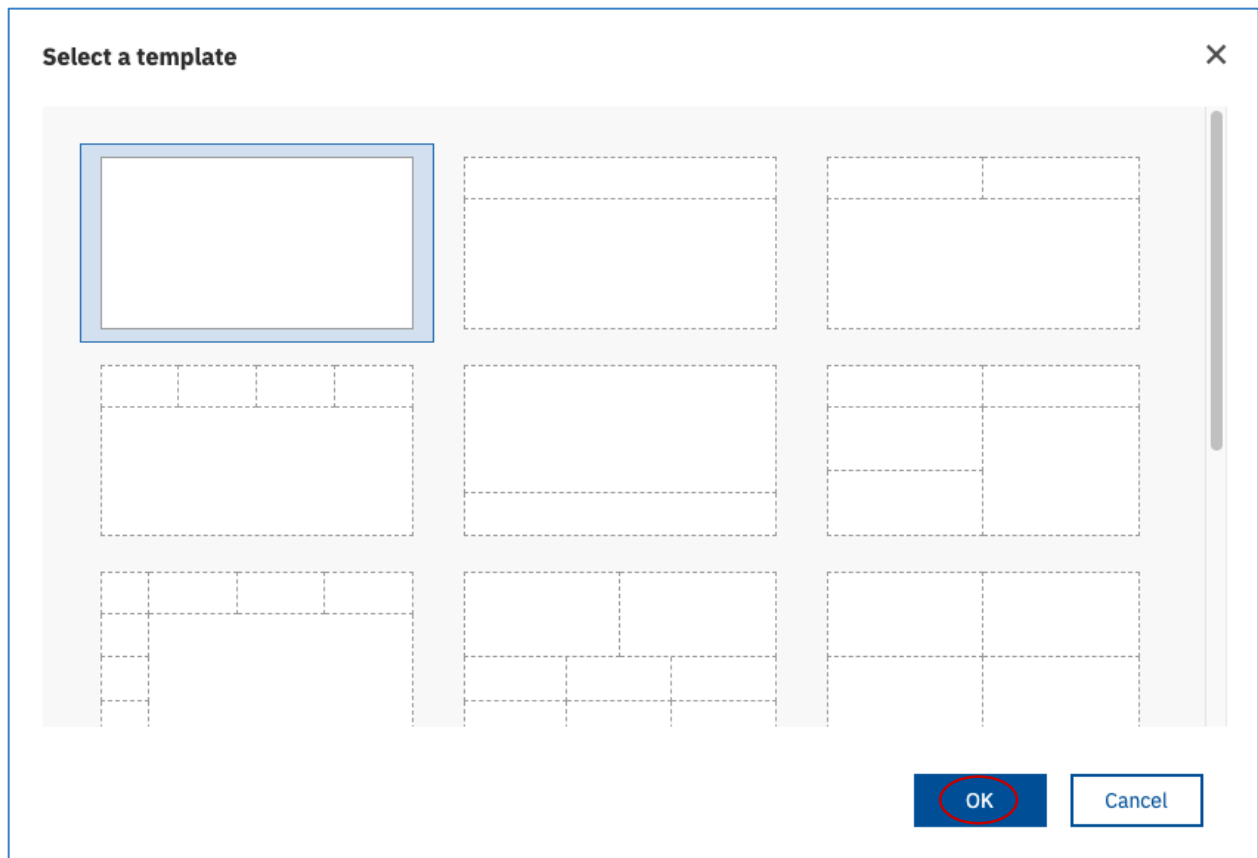
## Exercise 4: Add a Webpage Tab.

Now that we completed our Global Map tab, we will include a webpage for easy access.
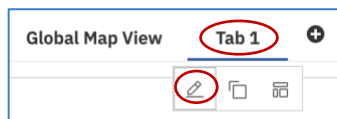
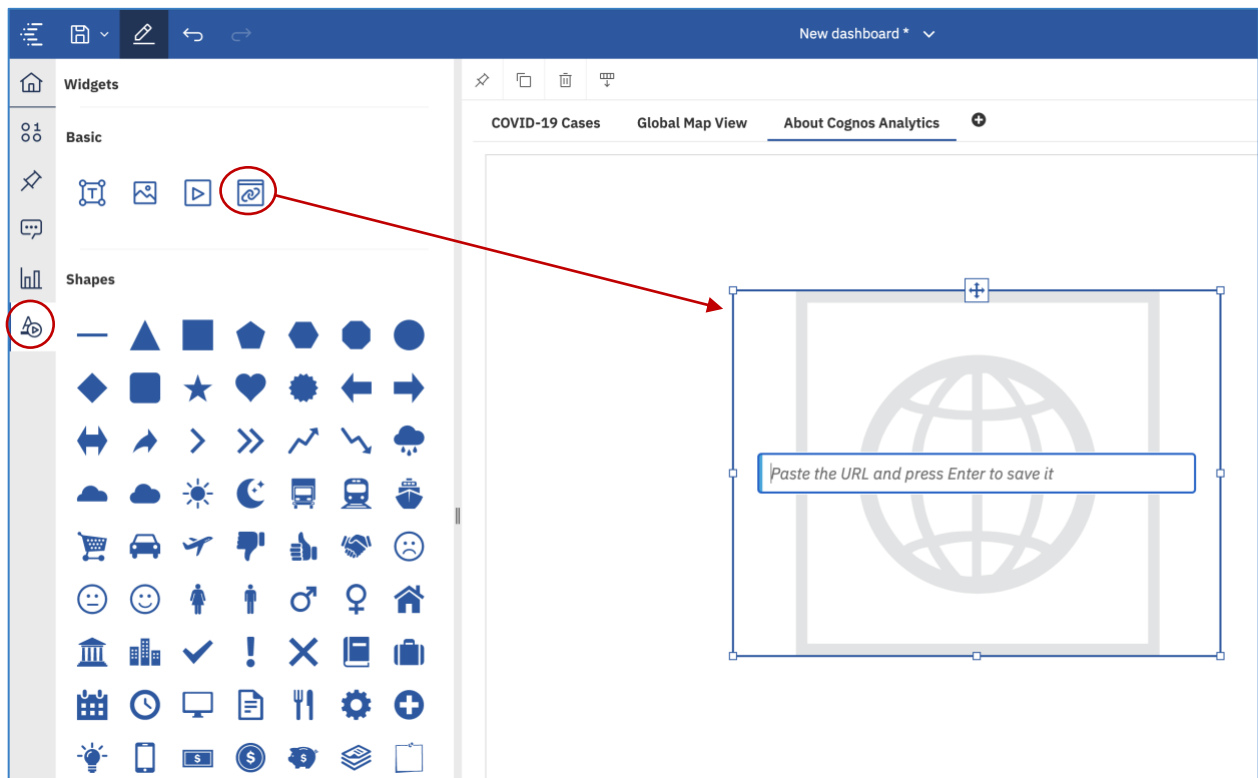1.  To the right of your **Global Map View** tab, **click the plus sign**.



2.  Keep the default "blank" template and click **OK**.

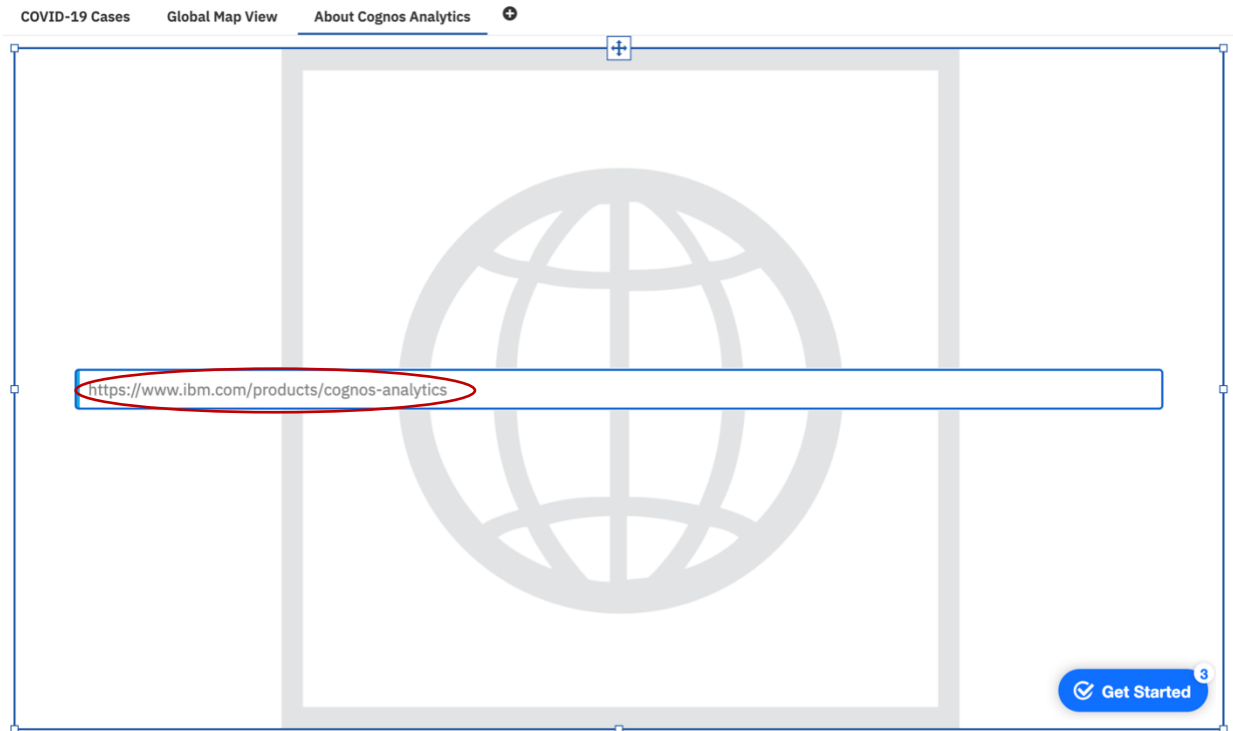3. Click **on Tab 1** and the **Pencil icon**.



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.