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.

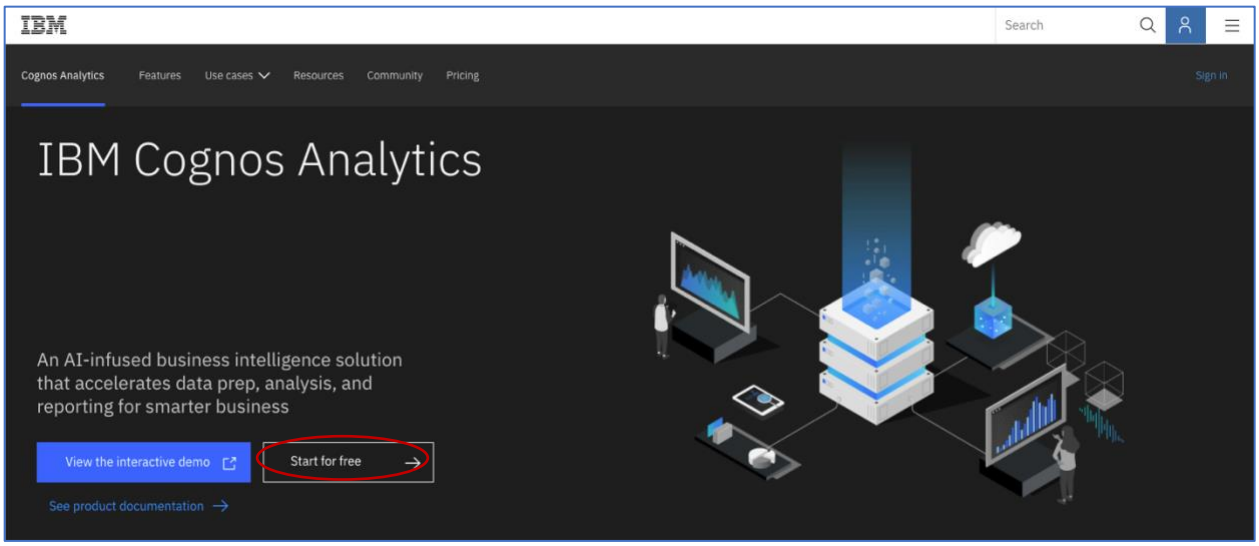
After completing this lab you will be familiar with these features of Cognos Analytics:

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

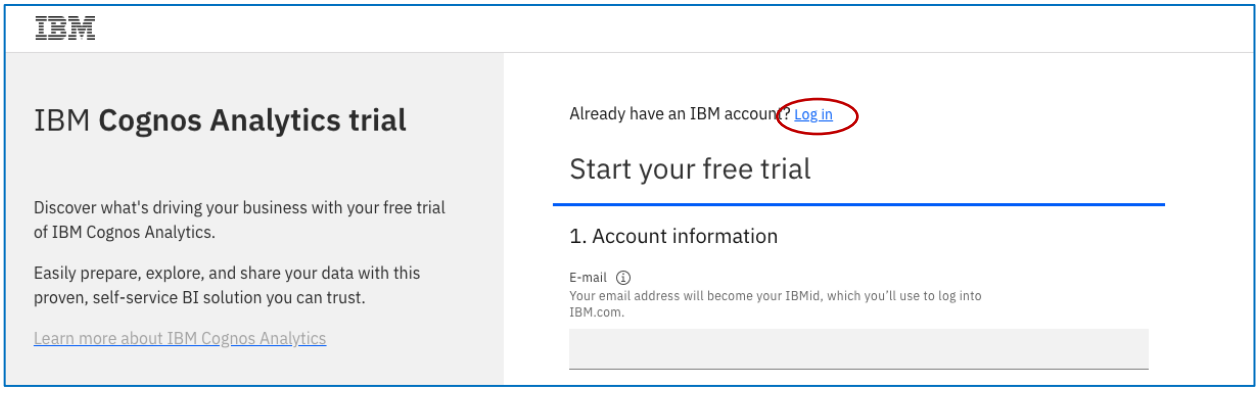
Exercise 1: Access your Cognos Free Trial

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.

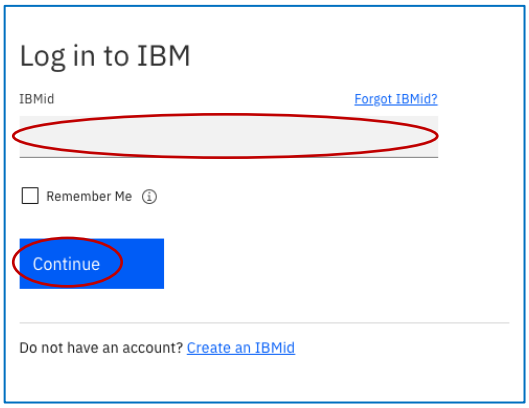
1. Access **https://www.ibm.com/products/cognos-analytics**
2. Click on **Start for free.**



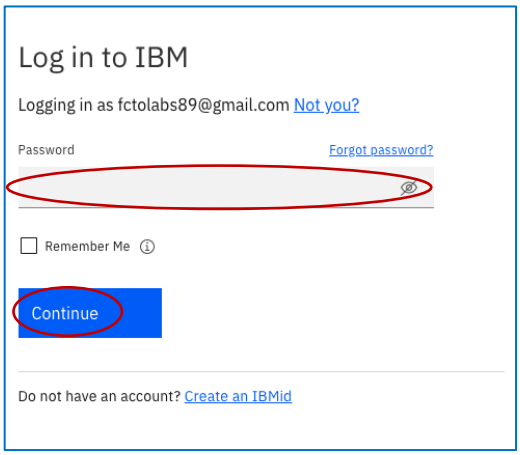
3. If you completed the previous labs, or have an IBM account, click Log in.



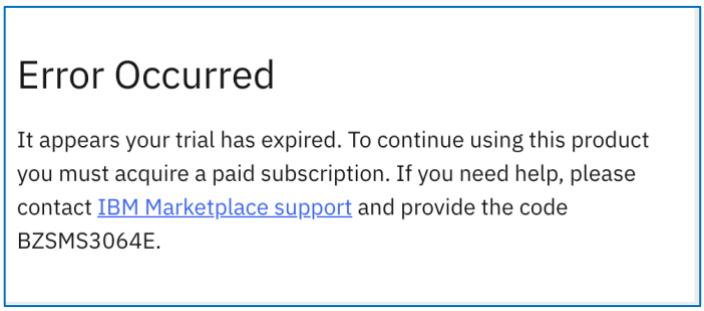
4. Enter your **email** and click **Continue**.



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

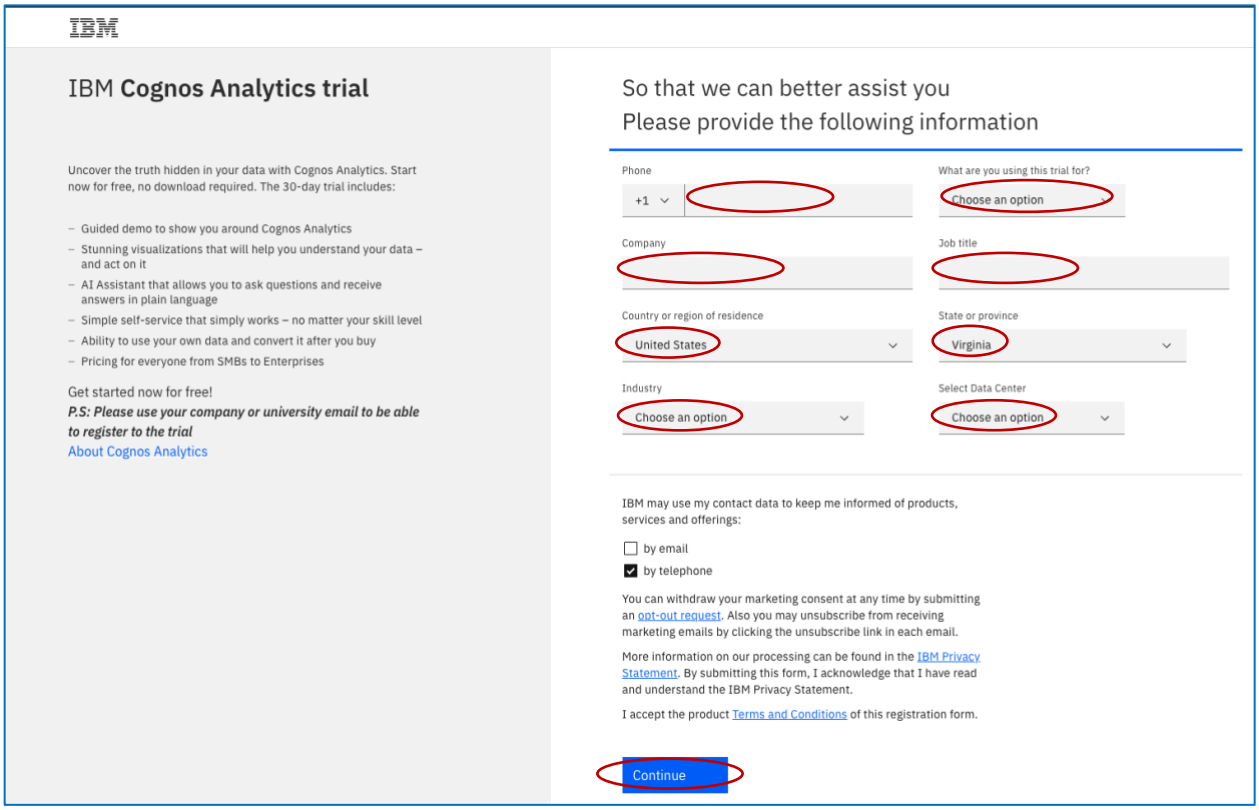


If you already had an existing trial, you will receive an error:



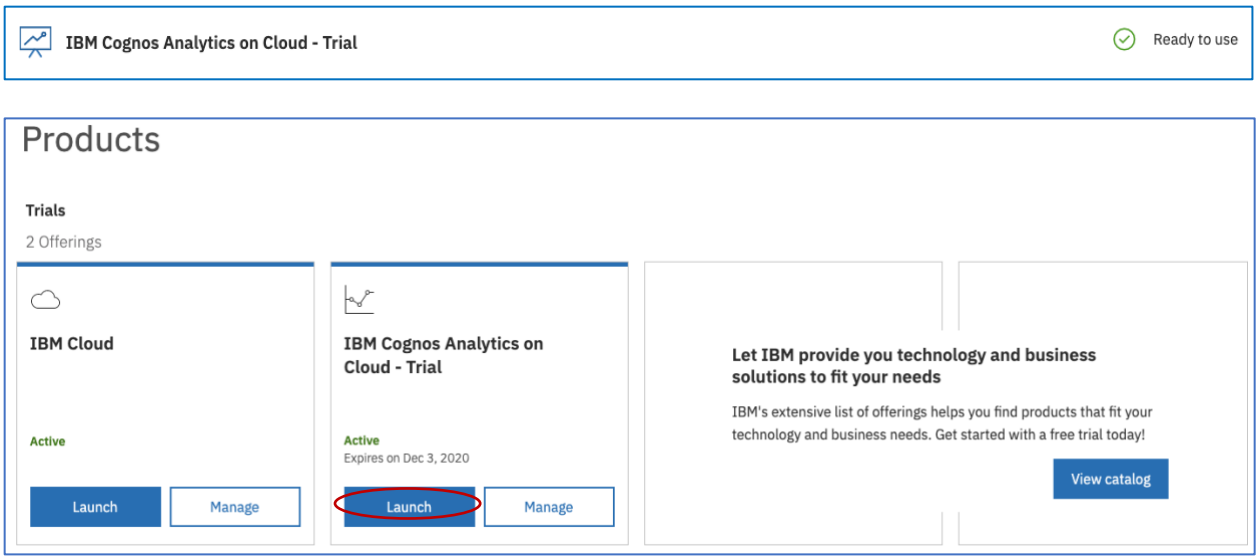
If you received this error, please clear your browser history, and log in with a new email account. If you did not receive this error, continue on to step 6 below.

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

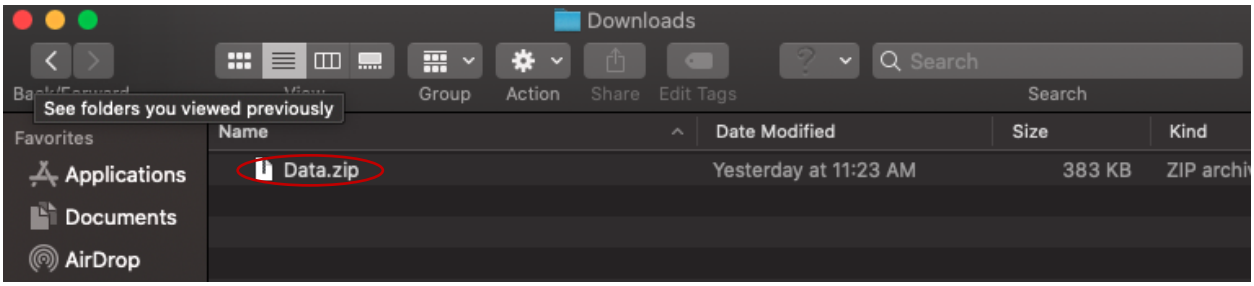


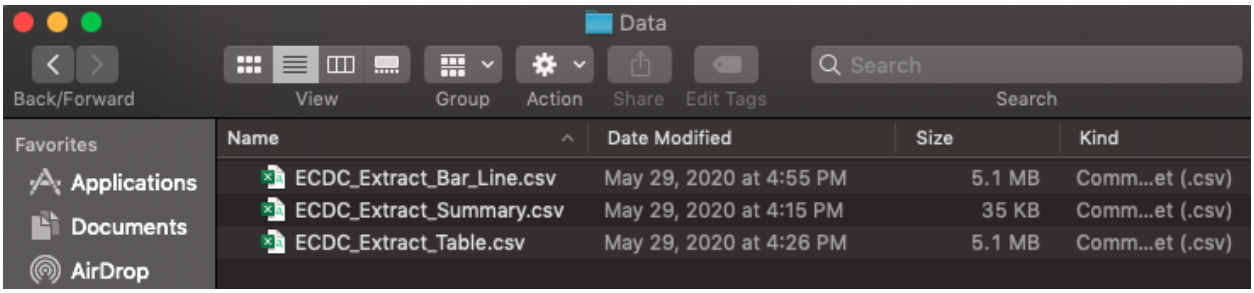
7. Wait a minute for the resource request to finish processing.

8. Once the "Preparing" prompt changes to "ready to use," scroll down 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_11-12-2020/raw/main/Lab-5/Data.zip.
10. Double click on the file to unzip the contents

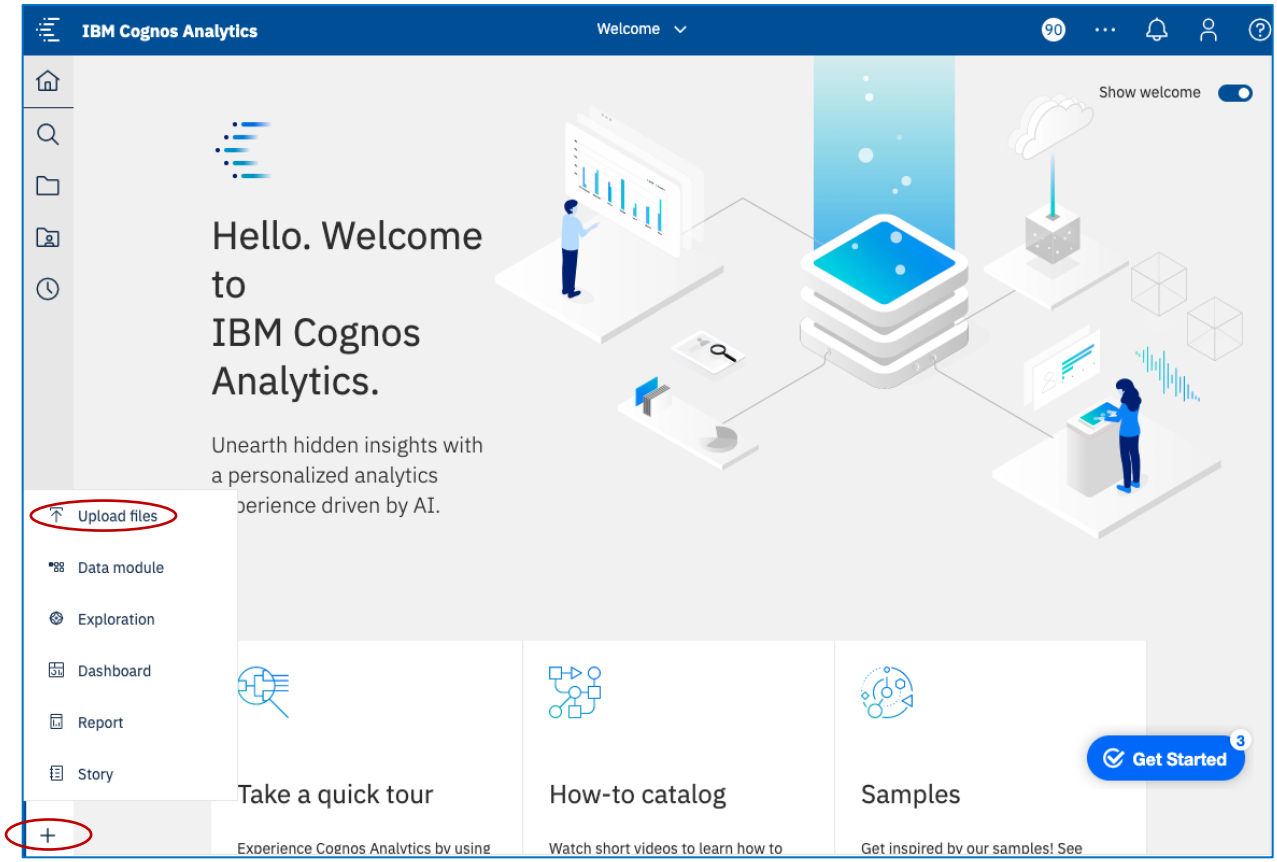




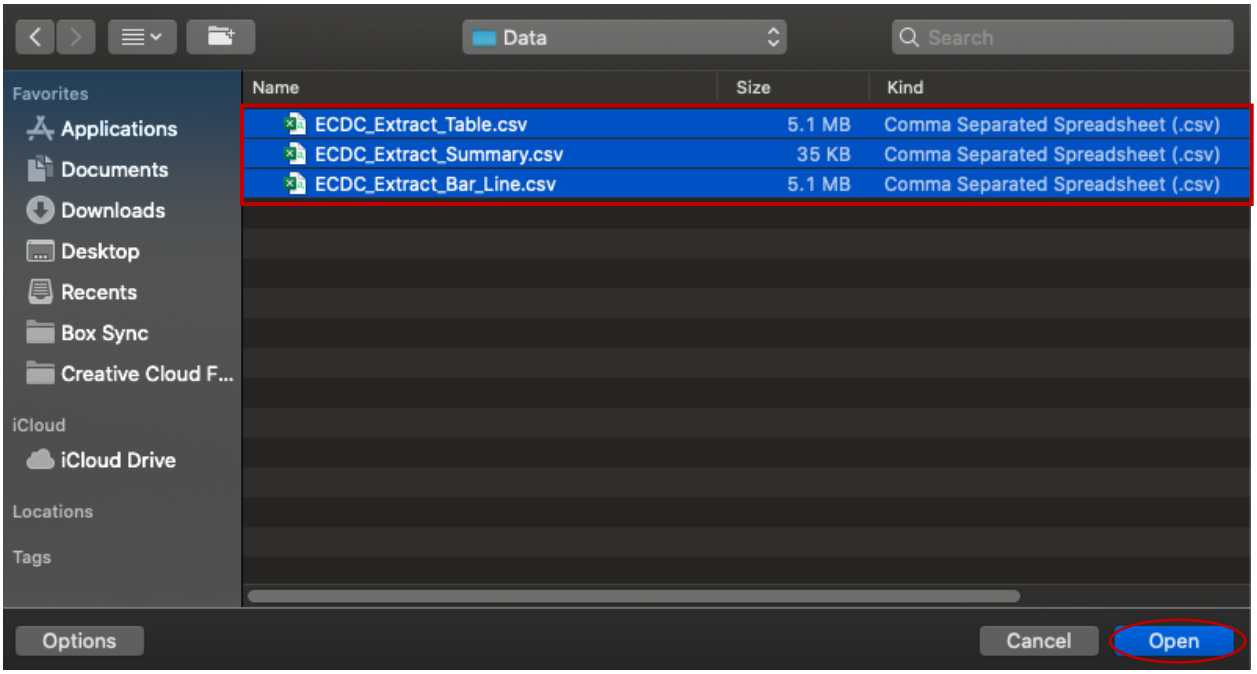
Exercise 2: Create “Covid-19 Cases Dashboard”

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.

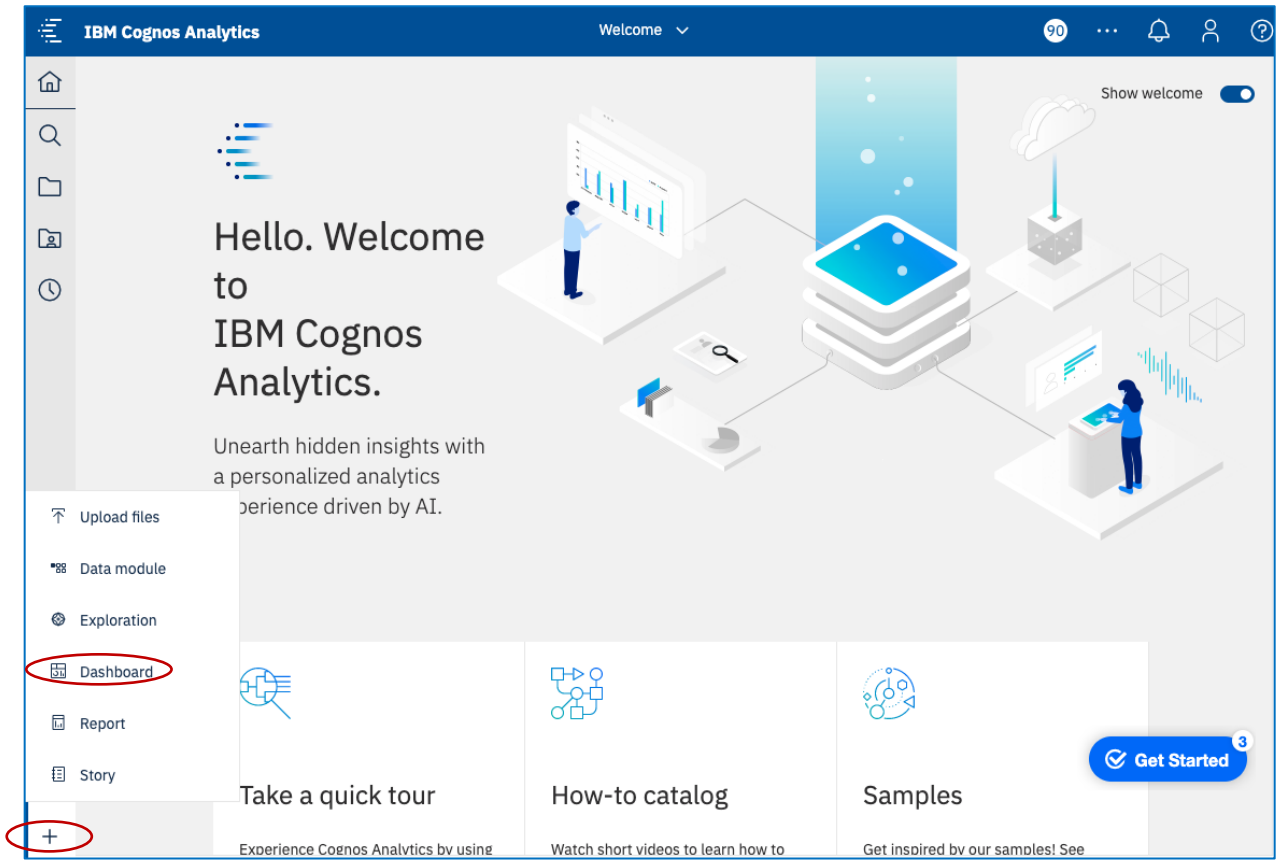
1. Click **New (+)** and **Upload Files** and locate the csv folder.



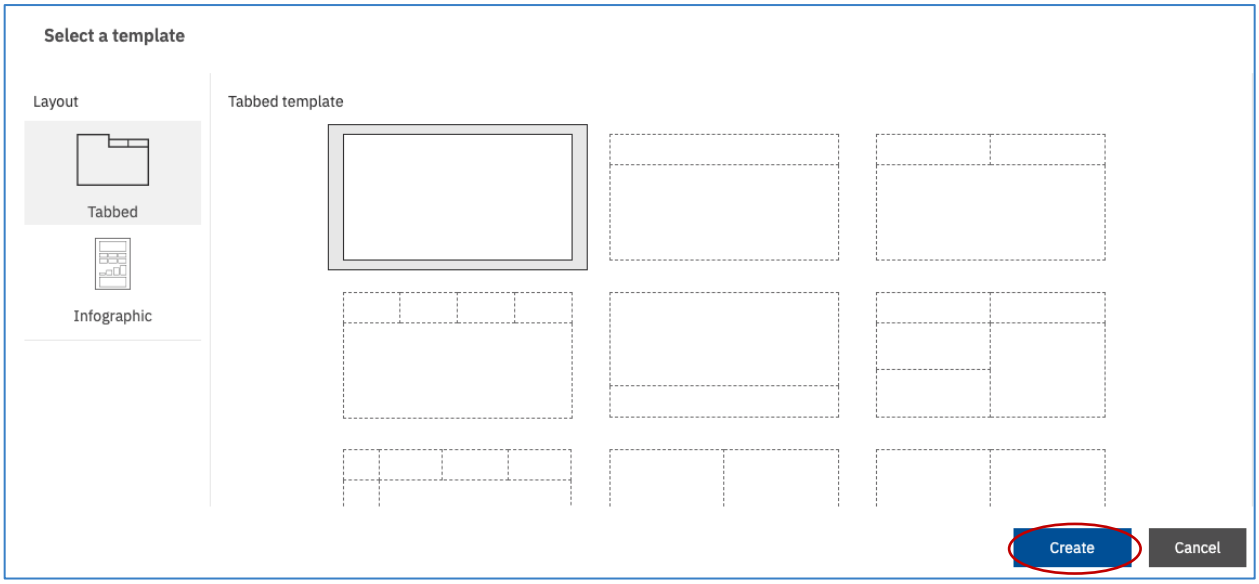
2. Click on the top file, hold shift, and click on the button file to **select all three files**. Then **click Open**.



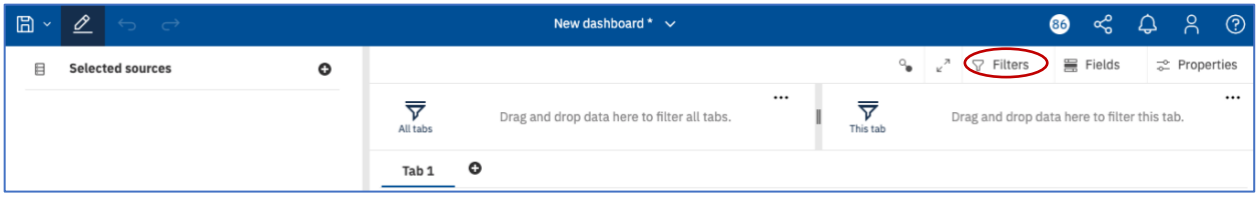
3. Once the files have been successfully uploaded create a new blank dashboard by clicking **New (+)** and **Dashboard**



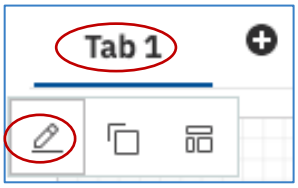
4. Keep the default template and click **Create**.



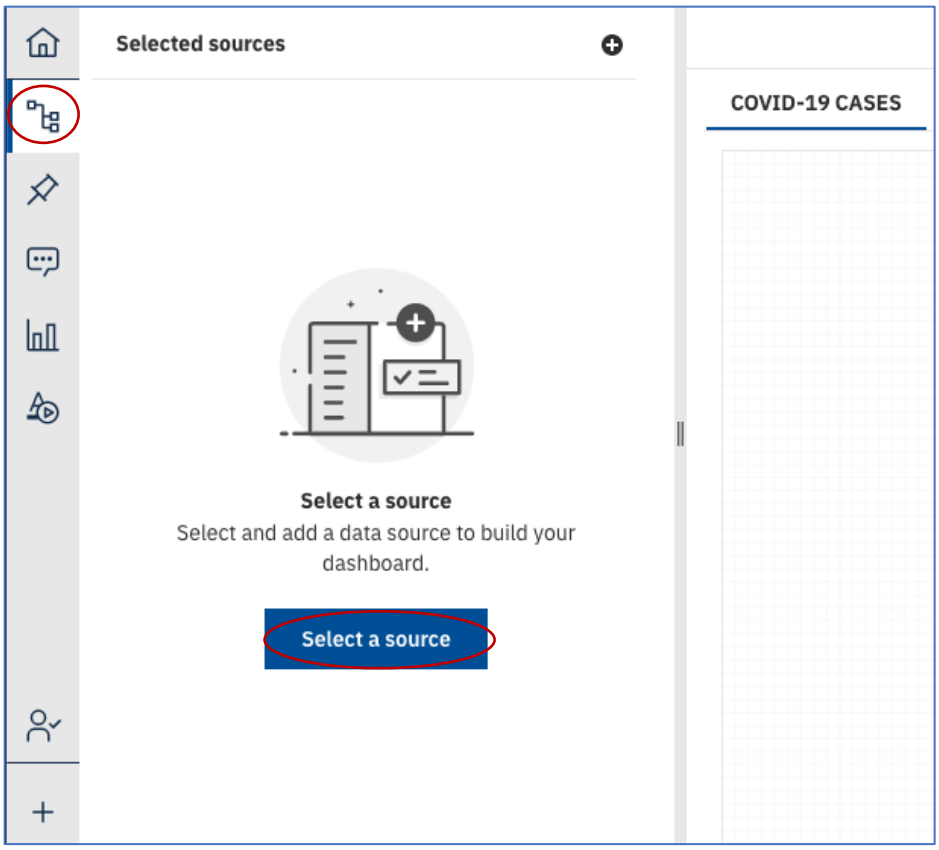
5. Click on the **Filters** button to close the Filters panel.



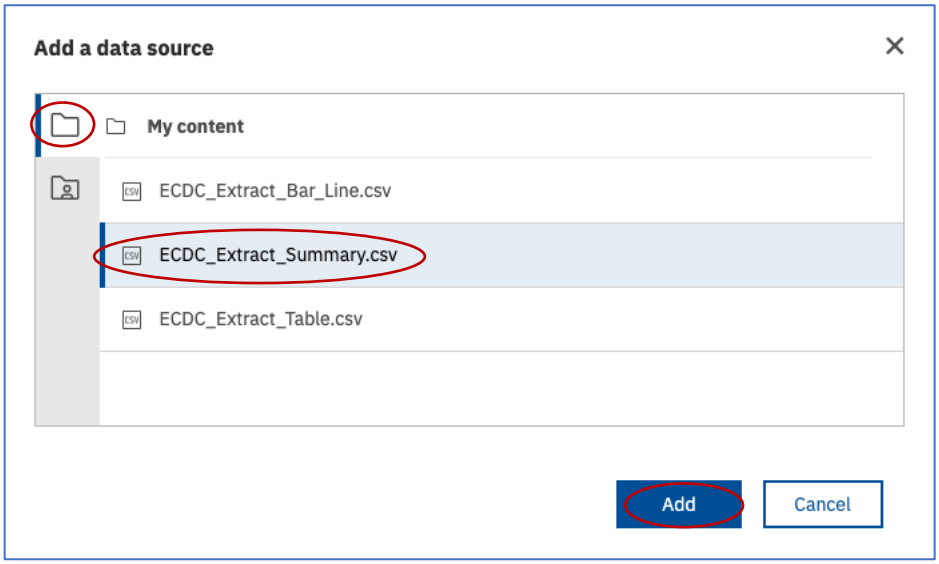
6. **Click on Tab 1**



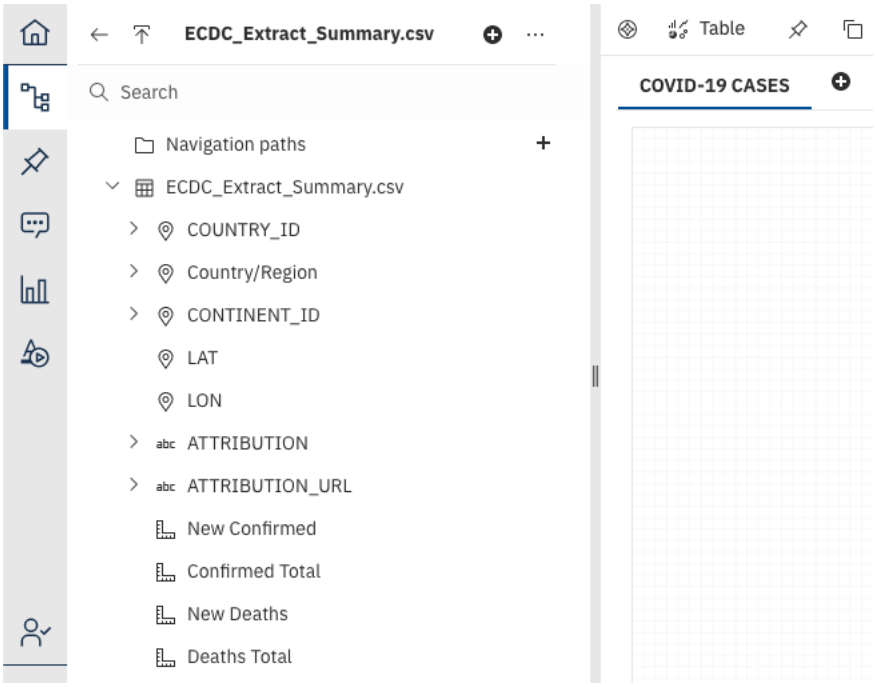
7. Enter "**COVID-19 CASES**" as the tab title.
8. Import ECDC_Extract_Summary.csv into your dashboard project by opening the Sources panel. Click on the **sources** **tile** and **Select a source**.



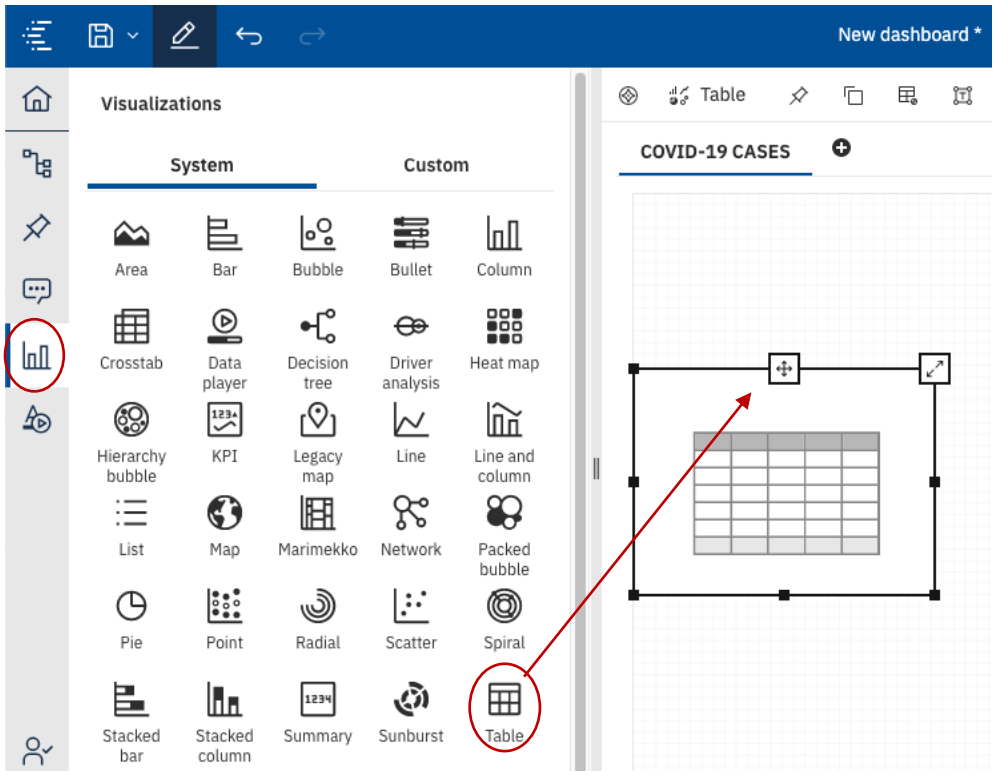
9. Click on the **top folder**, **ECDC_Extract_Summary.csv**, and **Add**.



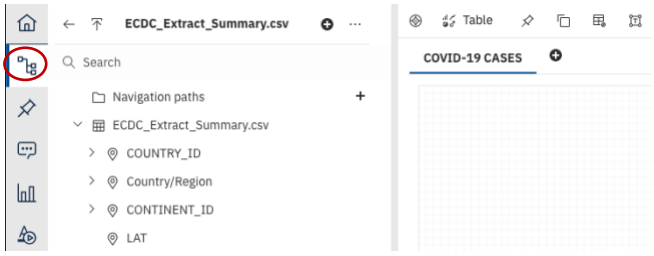
The .csv contents will appear in the side panel.



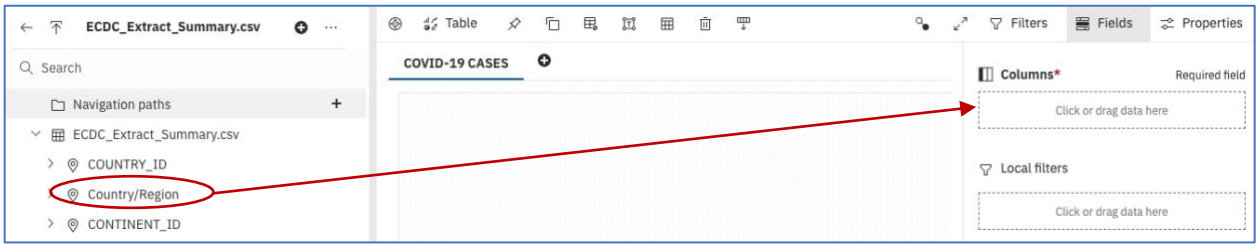
10. Click on the **visualizations** **tile** to open the visualizations panel then **click and drag the Table icon to the bottom left of your dashboard**.



11. With the table tile selected in your dashboard, open the sources panel by clicking on the **sources**  **tile**.

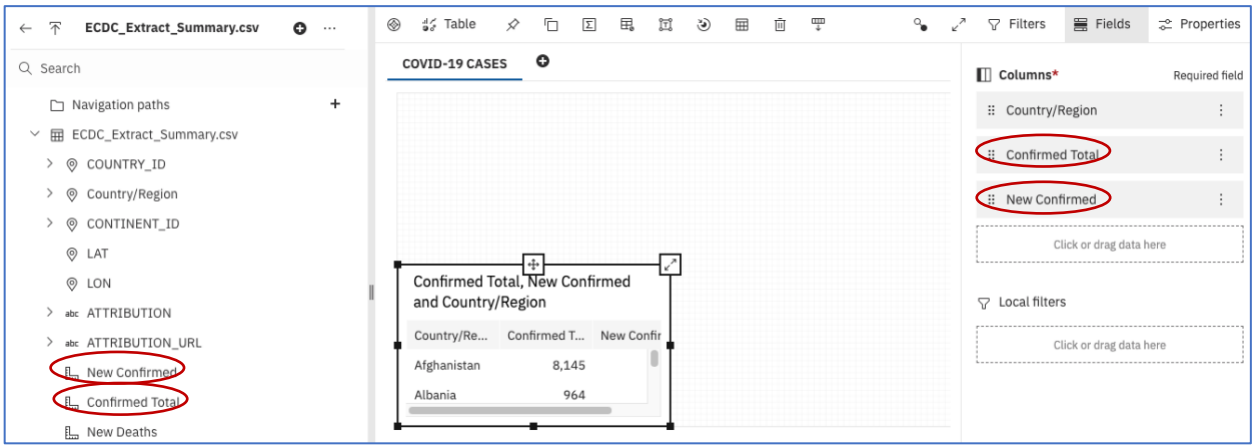


12. Click on **Country/Region** in the sources panel (on the left) and **drag it to the Columns field** in the Fields panel (on the right).

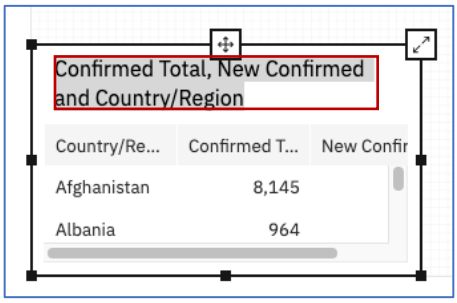


13. Repeat step 11 fo**r Confirmed Total** and **New Confirmed**.
    a. Confirmed is the total number of cases confirmed up to May 20th, 2020
    b. New is the number of new cases on May 20th, 2020

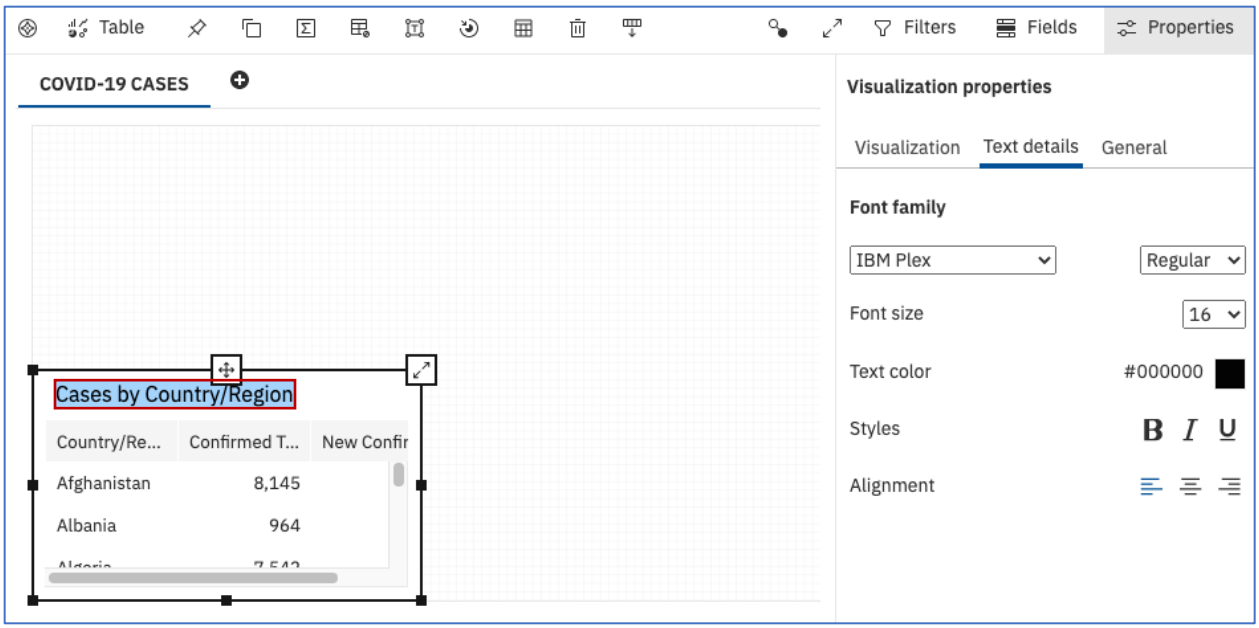
    If needed, click on the white squares on the border of the Table tile to resize. **Resize as needed** so you can view all three columns.



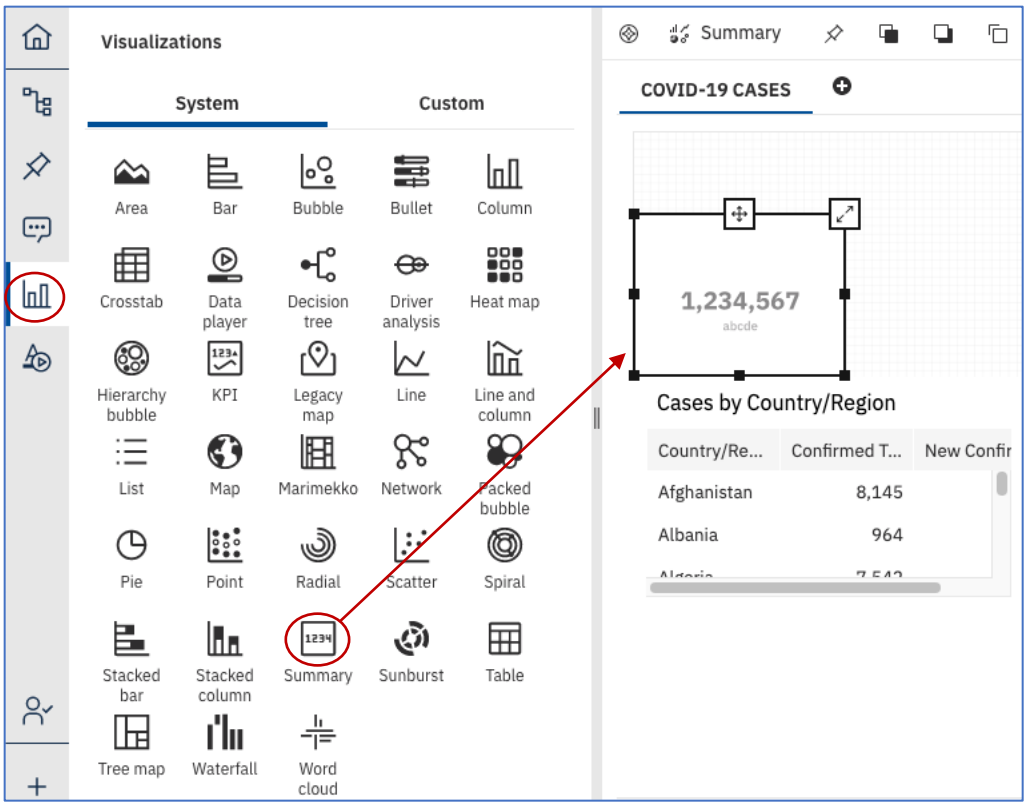
14. **Double click the title of your table** to highlight the title.



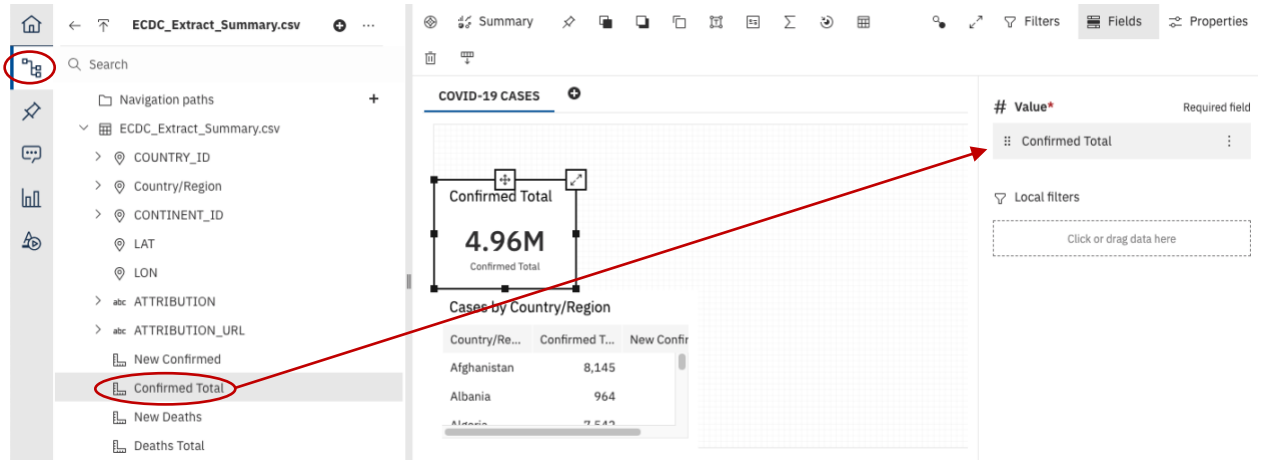
15. Enter "**Cases by Country/Region**" if you want to make other edits to the title, click the Properties in the top right corner while the title is highlighted.



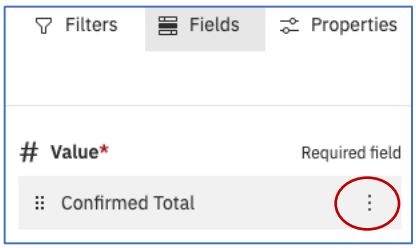
16. Open the **visualizations** panel, click on the **Summary tile** and drag it above your dashboard. Leave some space at the top as we will add a title to the dashboard.

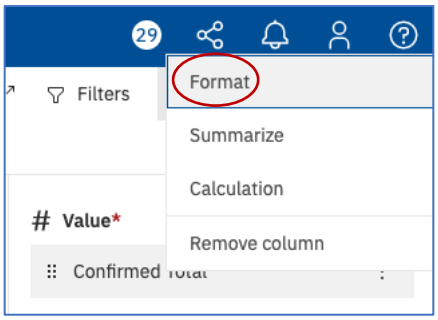


17. With the Summary panel selected, open the **sources panel** and drag **Confirmed Total** to the Value required field.

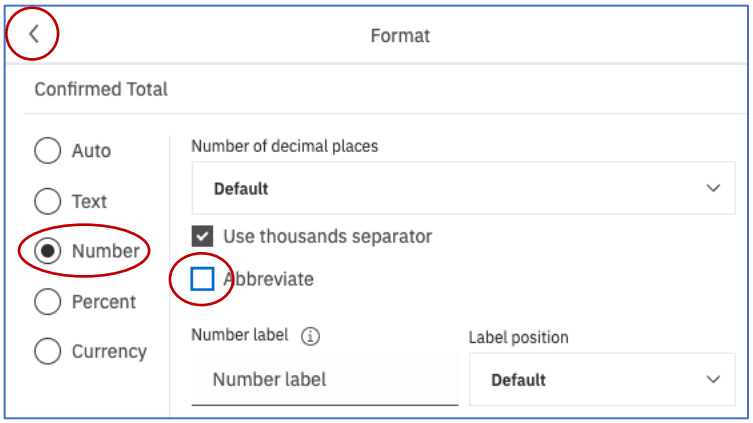


18. Click on the **three dots to the right of Confirmed Total** then click on **Format**.

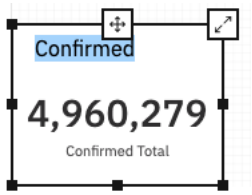


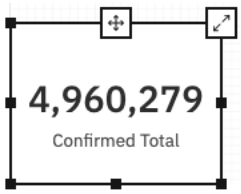


19. Click on **Number**, **uncheck Abbreviate**, and click on the back arrow.

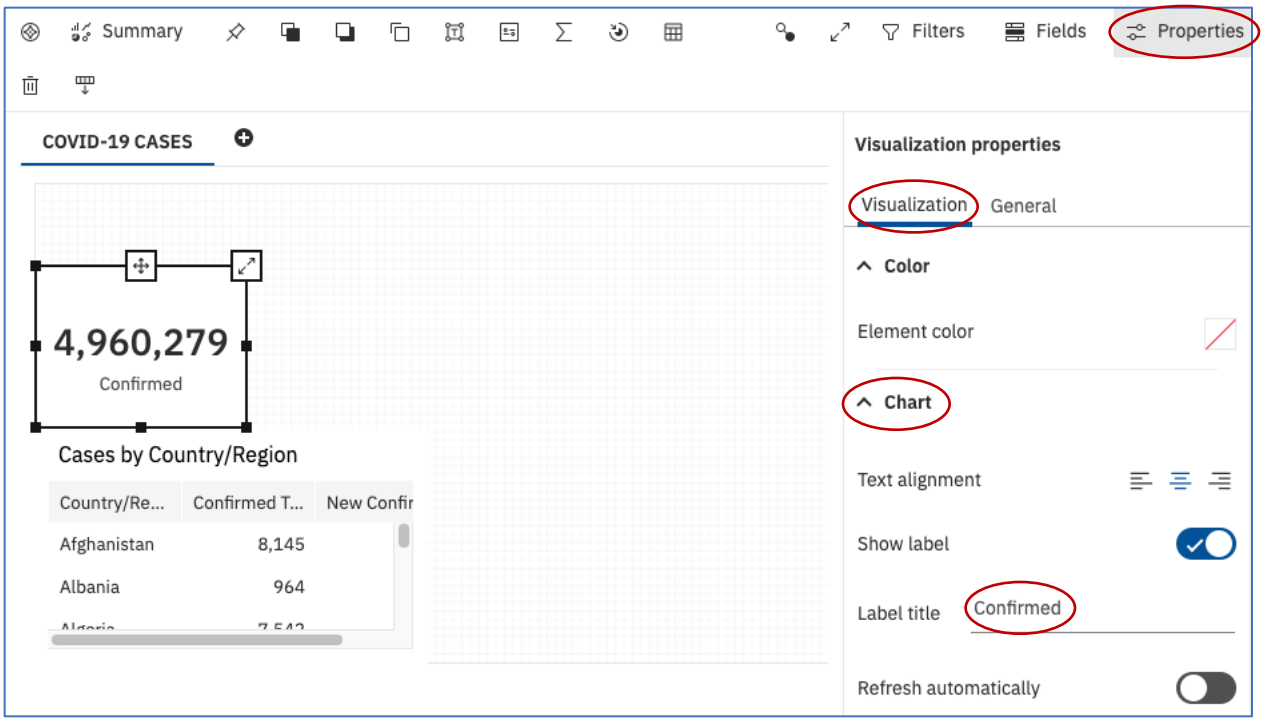


20. Double click on the **title** and **delete the text**.

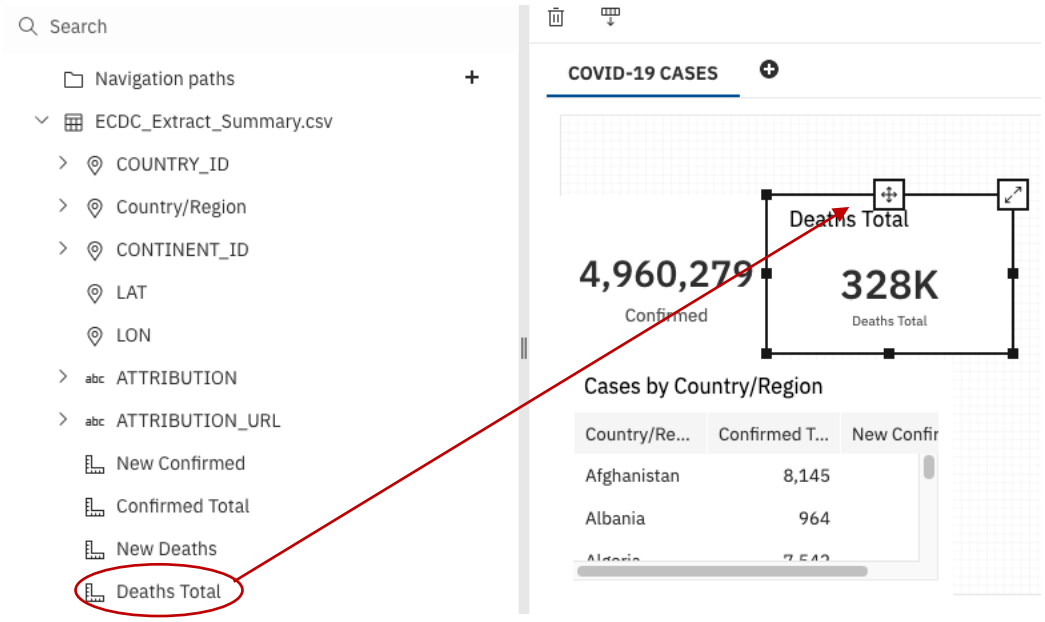




21. Click on **Properties**, **Visualization**, **Chart**, and change the **Label title** to "**Confirmed**

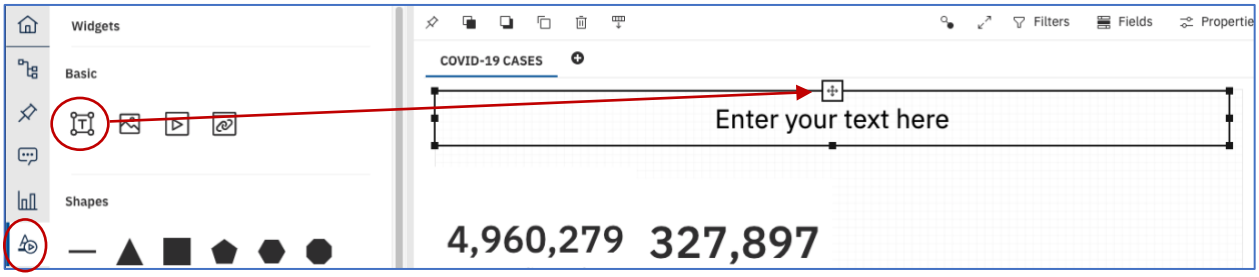


22. On the left side of the screen, click on the **Sources** tile then **click and drag the Deaths Total source to the dashboard**. Cognos will automatically infer the "Summary" title as an appropriate visualization. Move it to the top left above the dashboard beside Confirmed. Resize as needed.

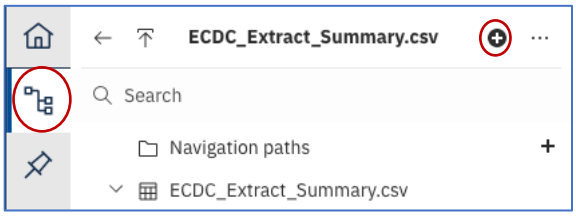


23. **Repeat steps 18 and 19** to **turn off abbreviation** for the **Deaths Total** tab.
24. **Repeat steps 20 and 21** to **delete the title** and **change the Label title** to "**Deaths**"

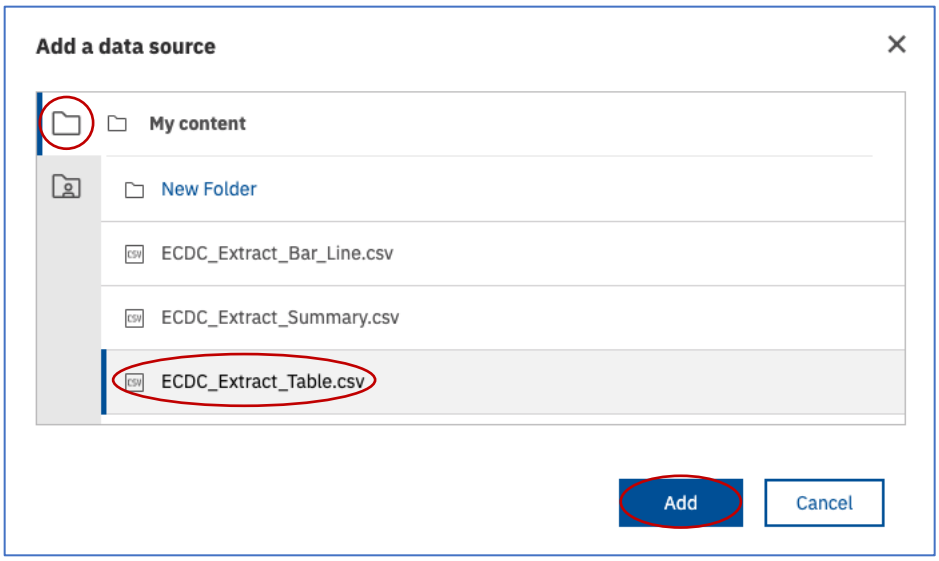
25. Click on the widgets button to open the **Widgets** panel. Then click and drag a **Text icon** to the top of your dashboard. Resize to fit the top of your dashboard.



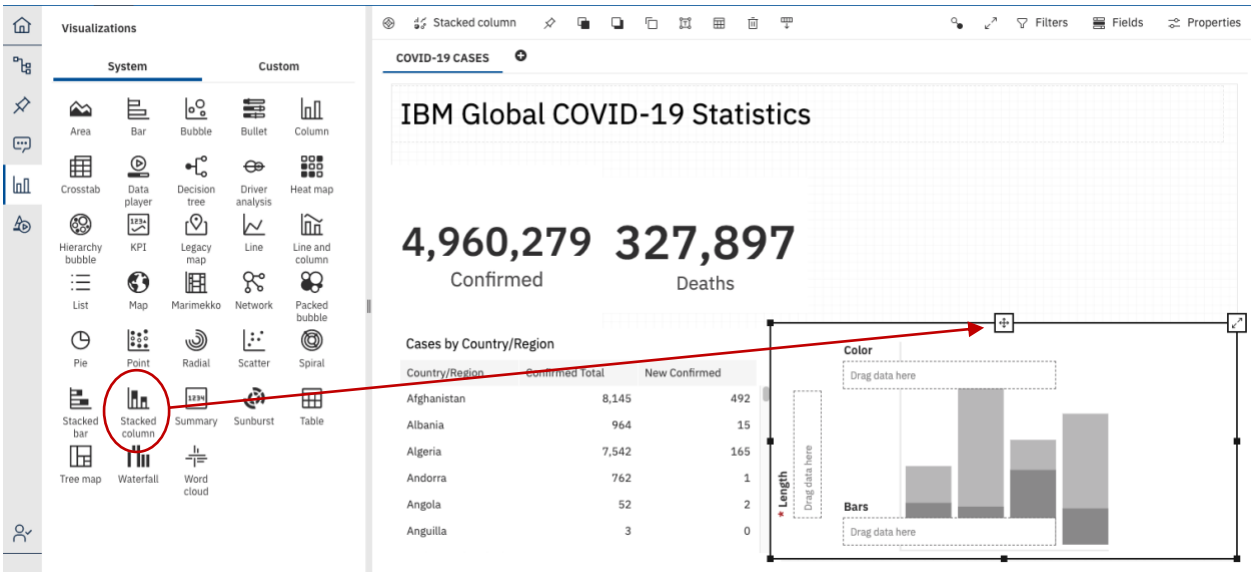
26. Click on the **text to edit** and **change the title** "**IBM Global COVID-19 Statistics**"
27. We will now pull in a different data source to create a stacked bar graph to show the number of cases by region. **Click on Sources icon** to open the Sources panel and **click on the top (+) button** to add a source.



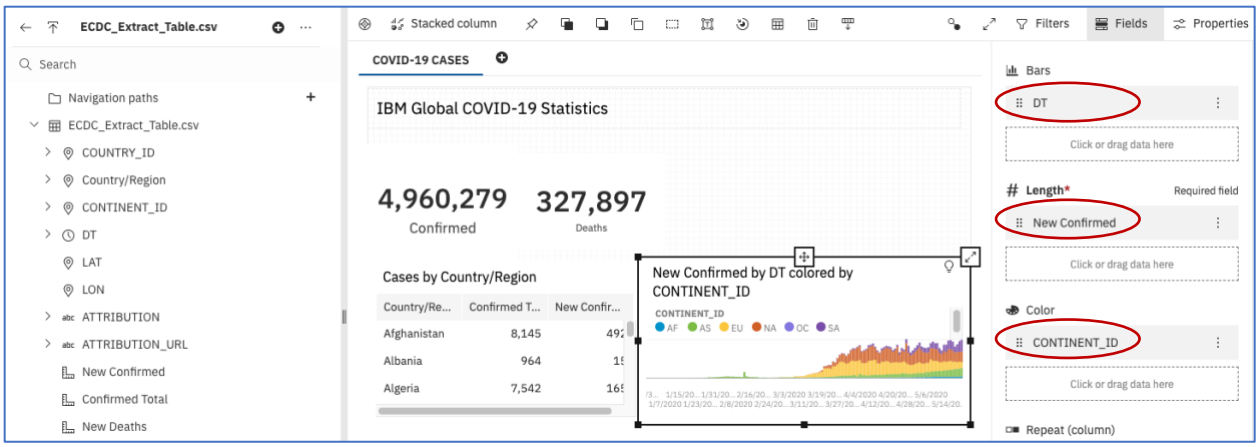
28. Click on **My Content**, **ECDC_Extract_Table.csv** and **Add**.



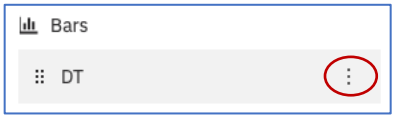
29. Open the **Visualizations** panel, click and drag the **Stacked Column** Visualization to the bottom right quadrant of the dashboard.

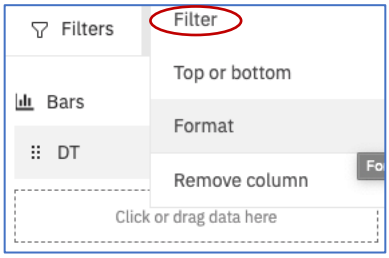


30. Open Source and add the **DT** column to the Bars field, the **New Confirmed** column to the Length field, and the **CONTINENT_ID** column to the color field



31. 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.





32. Enter the dates:

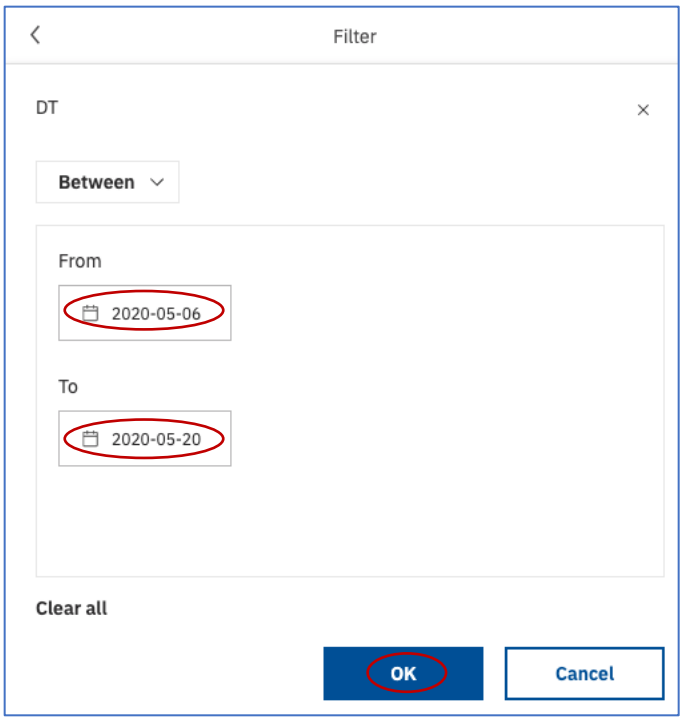
    From

    2020-05-06

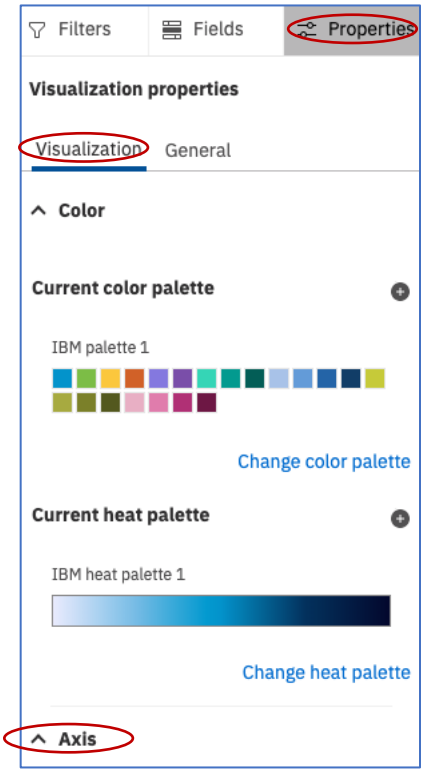
    To

    2020-05-20

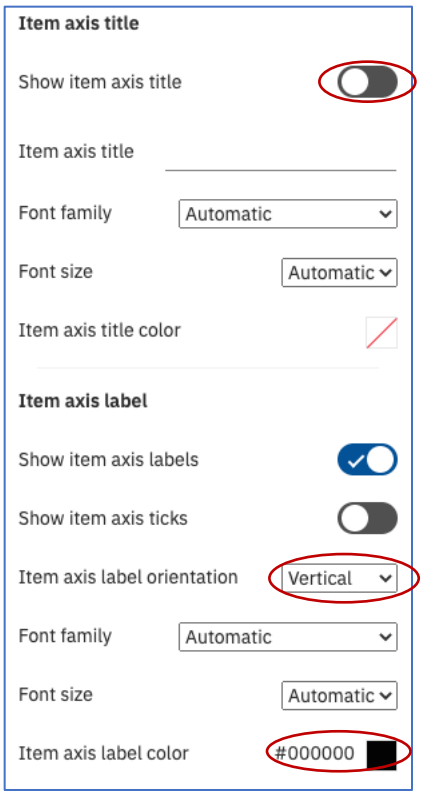
    And click **OK**.



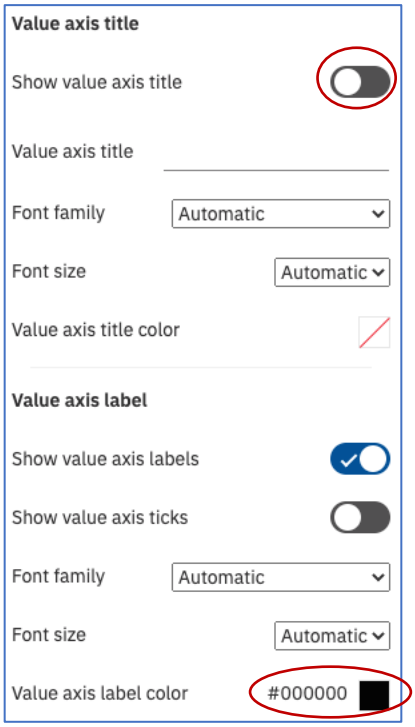
33. Now we'll add styling to the graph, first we'll fix the cluttered dates by making them vertical and making the font color black. Click on **Properties**, **Visualization**, and **Axis**.



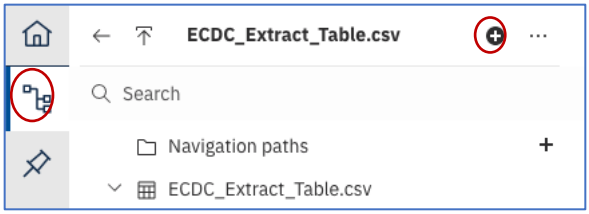
34. Change **Item axis label orientation** to **vertical** and **Item axis label color** to **black**.



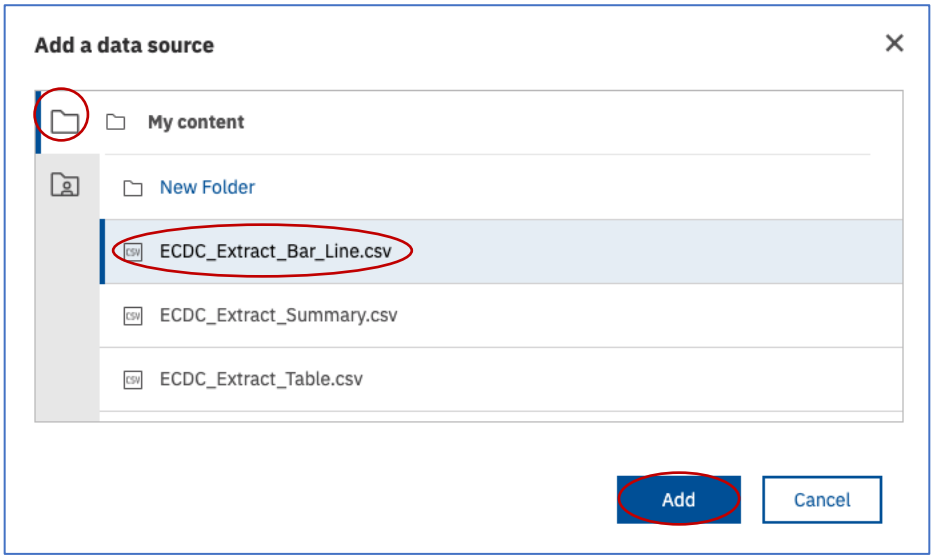
35. Scroll down and **uncheck Show value axis title** and change the **Value axis label color** to **black**.



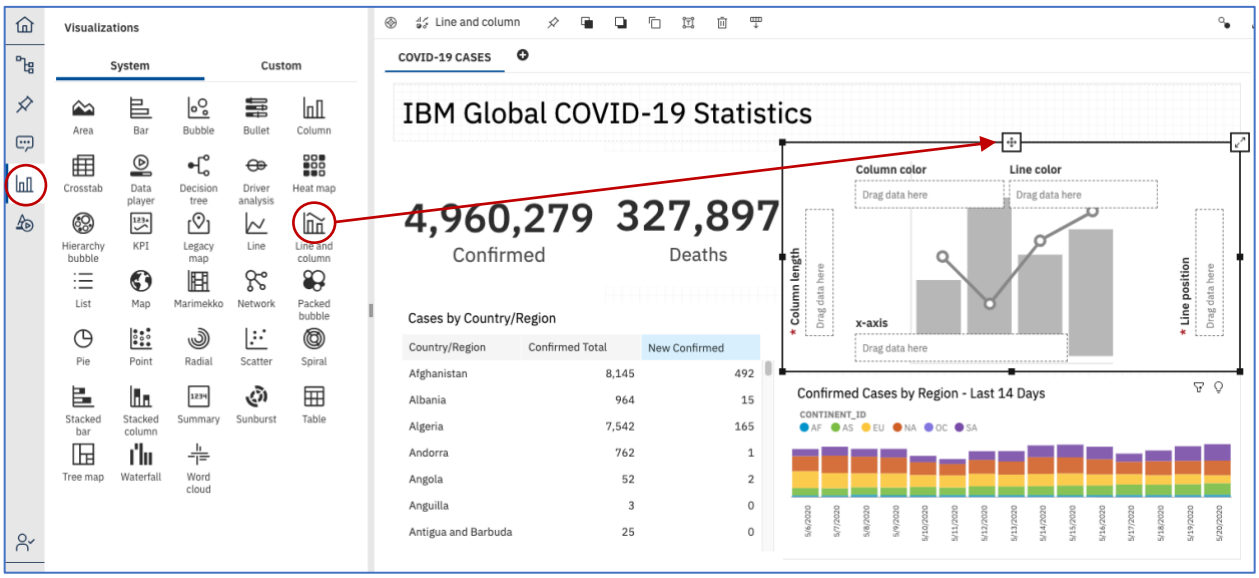
36. Double click on the graph title and type "**Confirmed Cases by Region – Last 14 Days**" as the title.
37. We will now pull in a different data source to create a stacked bar graph to show the number of cases by region. Click on **Sources** button to open the Sources panel **and click on the top (+) button** to add a source.



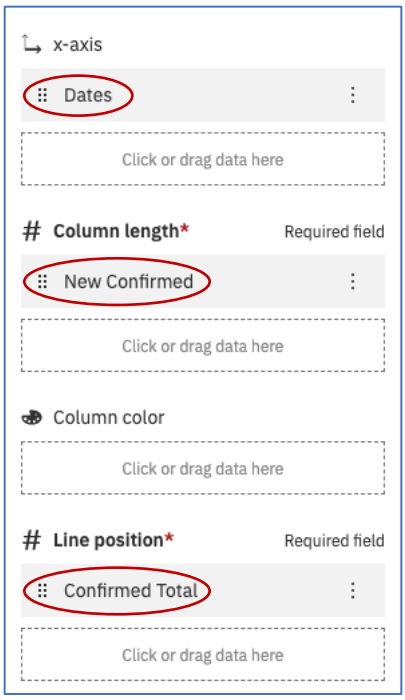
38. Click on **My Content**, **ECDC_Extract_Bar_Line.csv** and **Add**.



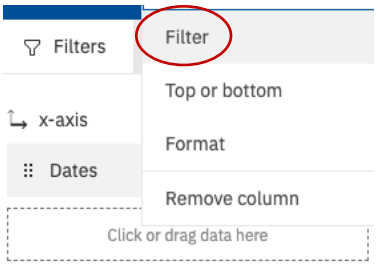
39. Finally, we'll be making a line/bar graph to show how confirmed cases have changed over time. Let's begin by importing ECDC_Extract_Bar_Line.csv. Click on **visualizations** then **drag a Line and Column tile to the remaining space in your dashboard**. Resize as needed.



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:

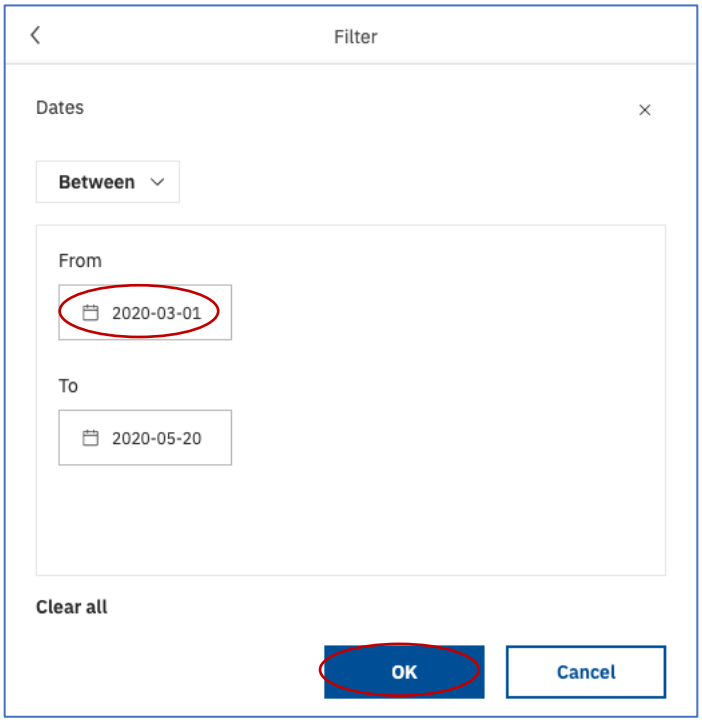
    From

    2020-03-01

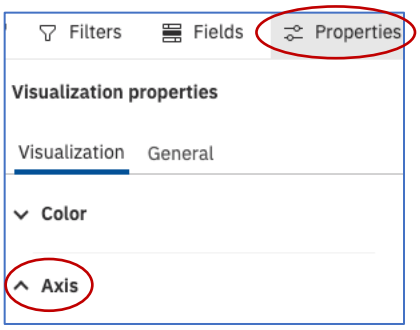
    To

    2020-05-20

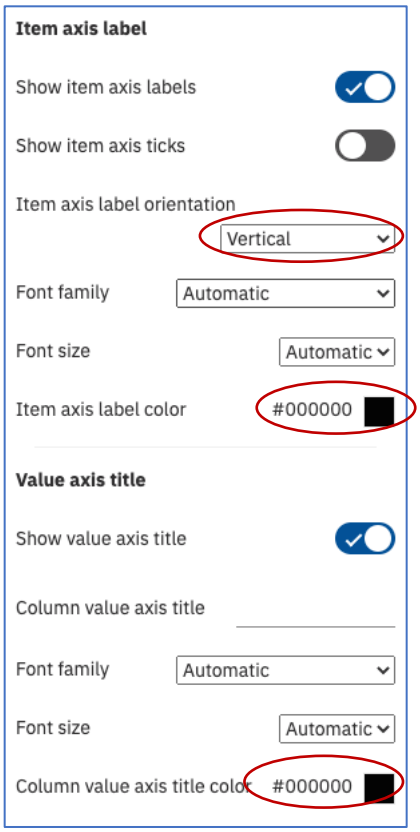
    Then Click **OK**.

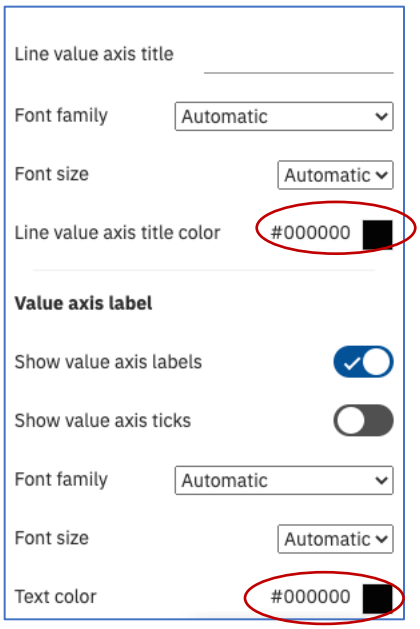


43. Click on **Properties** and **Axis**.

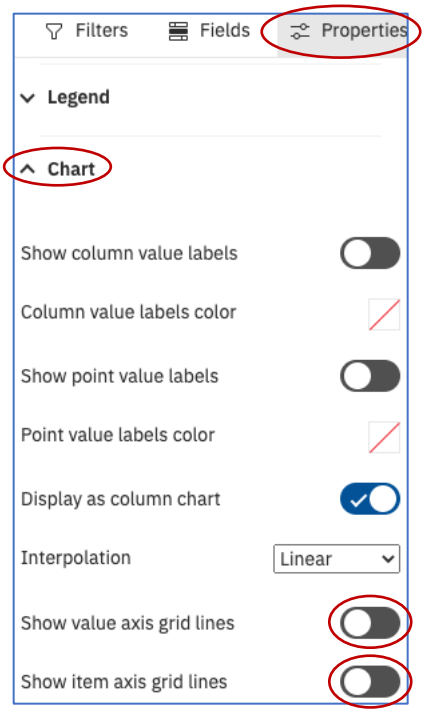


44. Similar to what we did for the stacked bar graph, change the **Item axis label color** to **black**, **Item axis label orientation** to **vertical**. Additionally, change the **Value axis title, Line value axis title color,** and **Value axis label** to **black**.



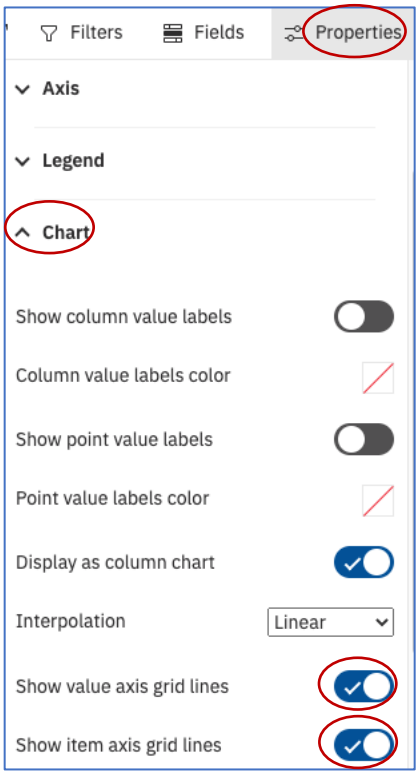


45. Remove the grid lines by clicking on **Properties, Chart,** and **Toggle Show value axis grid lines** and **Show item axis grid lines.**



Change the title to **Confirmed Cases by Day**.

46. Finally, for the finishing touches, select the Dashboard (**click anywhere on the dashboard that is not a tile**) then click on **Properties, Chart,** and toggle **Show value axis grid lines** and **Show item axis grid lines**.



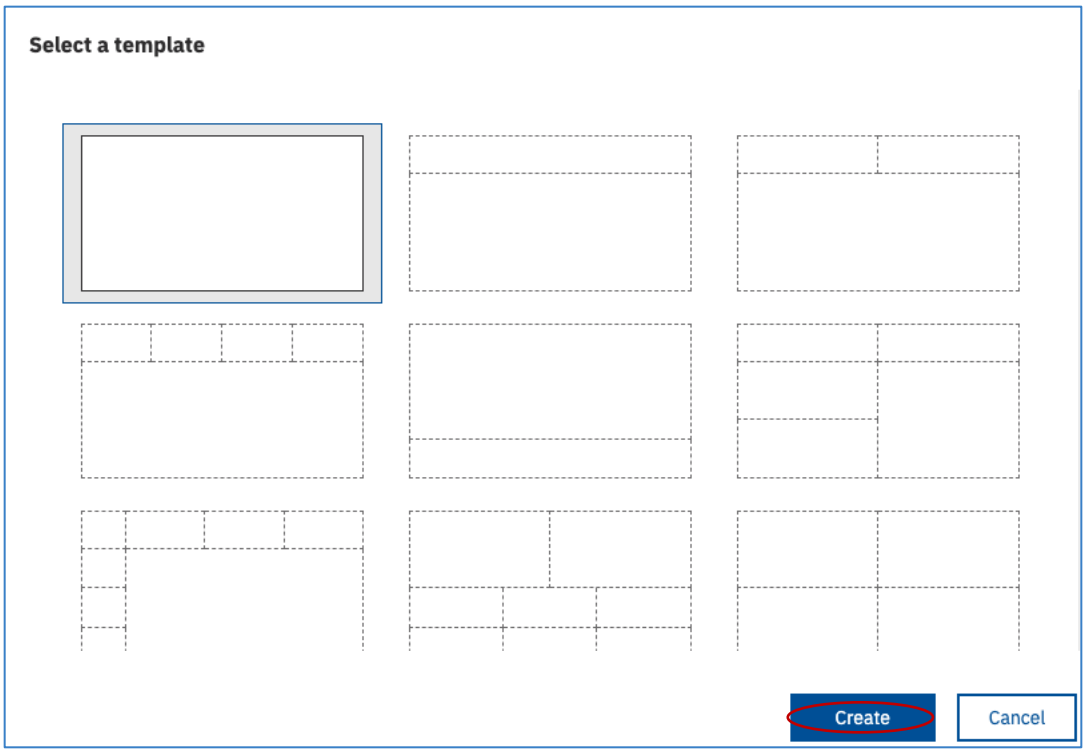
47. Voila! You have successfully created your first tab. Play around with the alignment to make sure everything looks neat and clean. Play around with the data by clicking on different countries and regions.

Exercise 3: Create a Global Map View

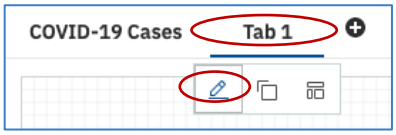
Now that we have our primary dashboard, we will create a new tab to view COVID-19 statistics in a regional view.

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

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



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



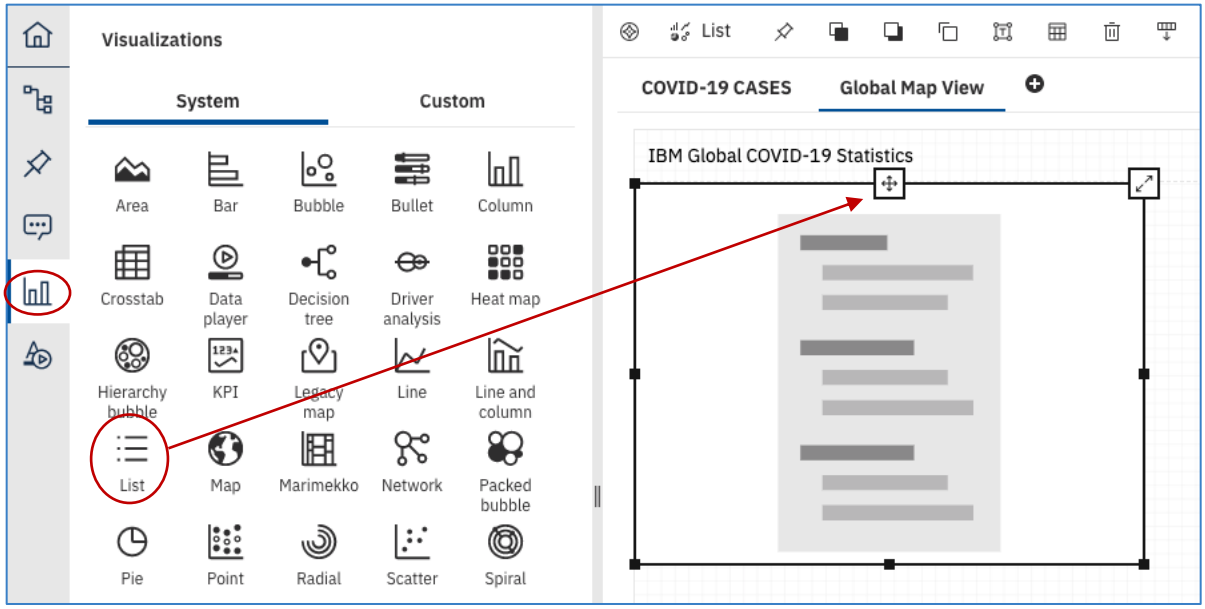
3. Enter the name "**Global Map View**."

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

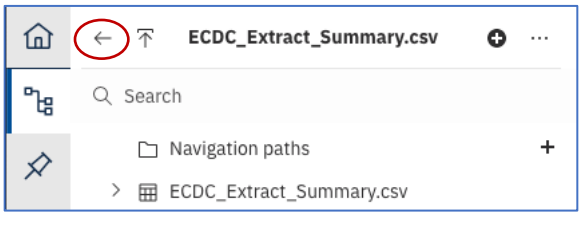
5. Click on the white circles on text box and **resize the box to fit the top borders of the screen**.

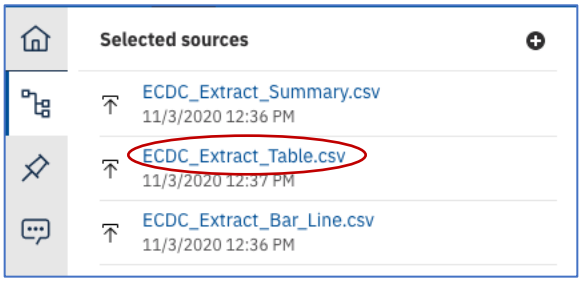
6. Enter the title "**IBM Global COVID-19 Statistics**"

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

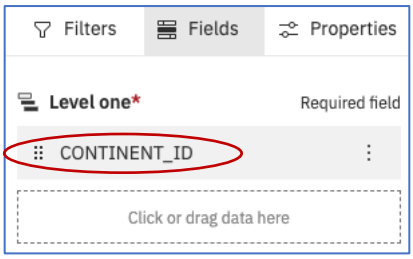


8. In your Sources panel, click the back arrow and select **ECDC_Extract_Table.csv**

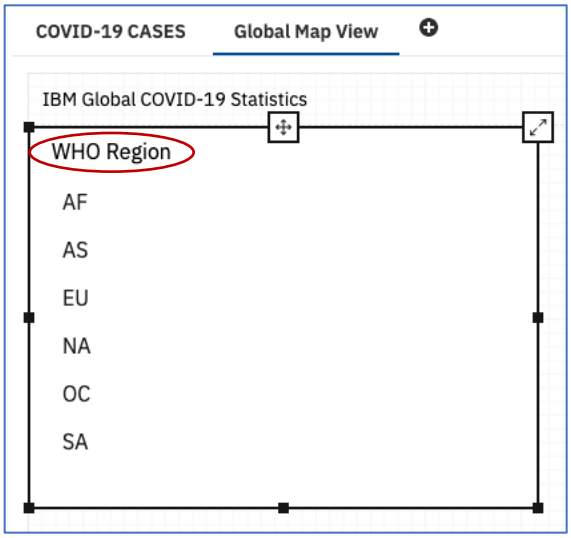




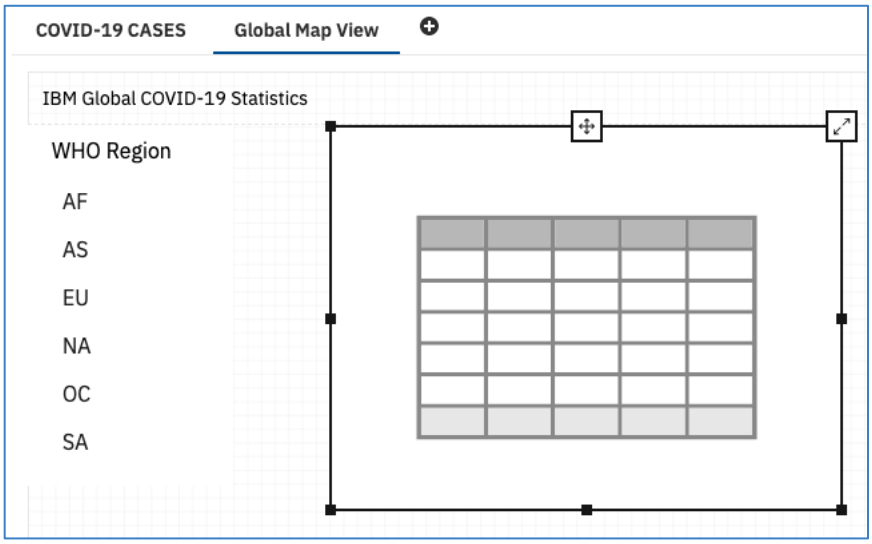
9. Select the table you added to the dashboard and add **CONTINENT_ID** as the **Level one field**.



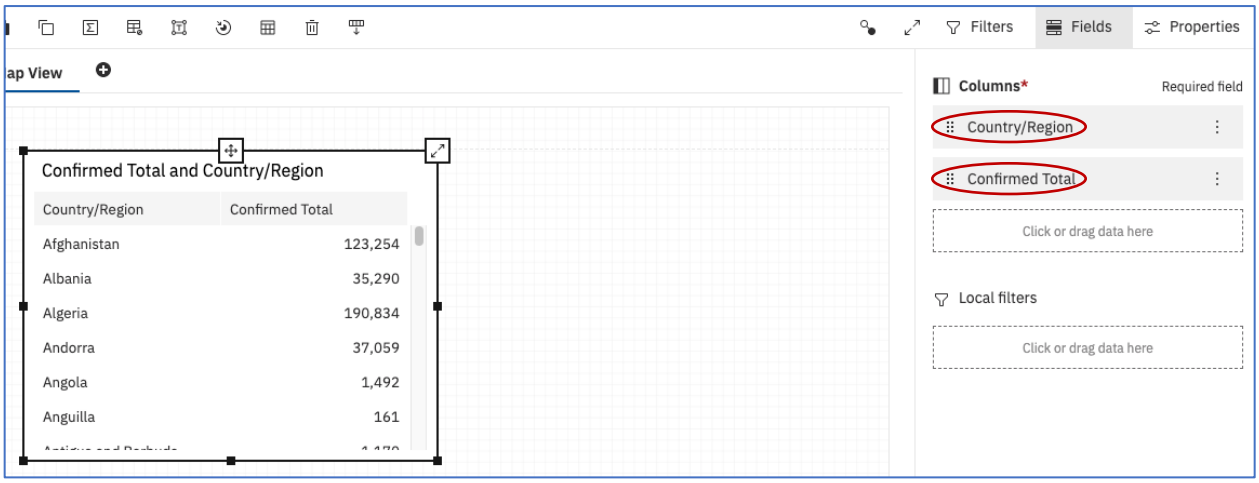
10. Double click on the title and change it to "**WHO Region**"



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



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

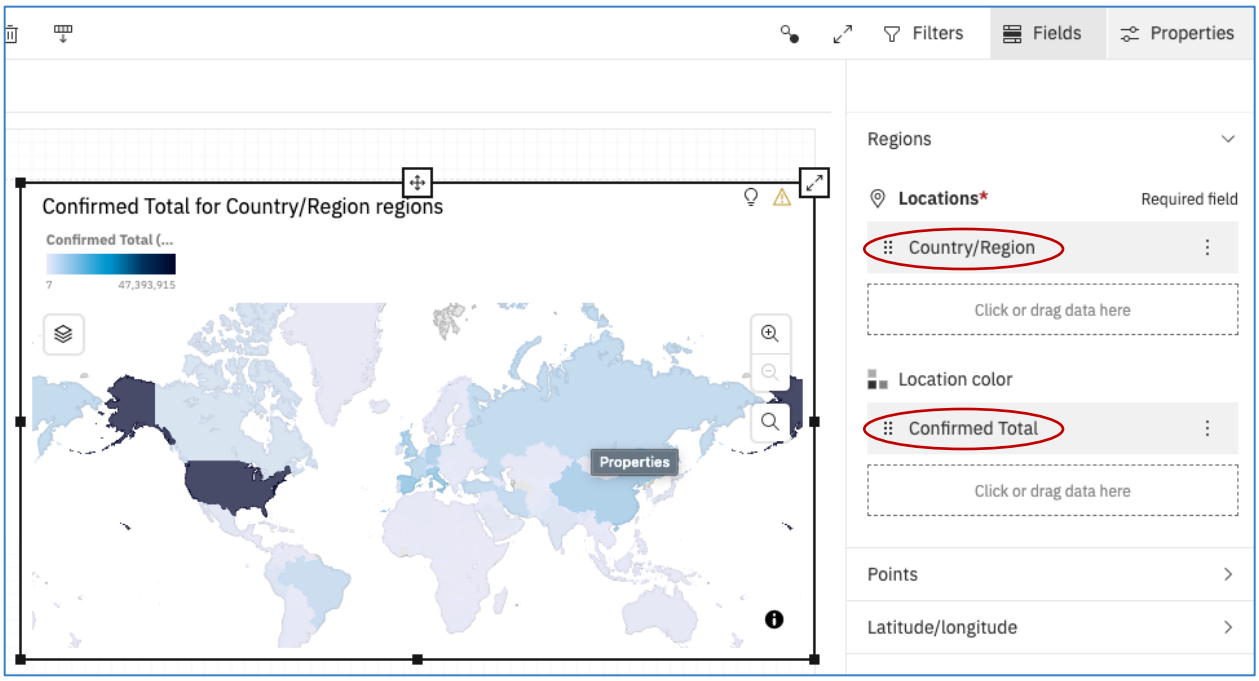


13. Change the title to "**Confirmed Cases – Global**"

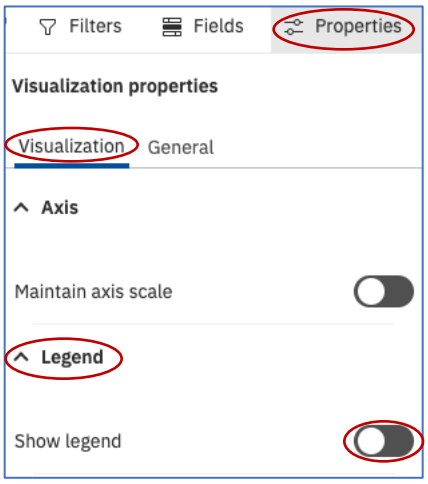
Note that aspects of your dashboard will automatically resize based on the size of your screen.

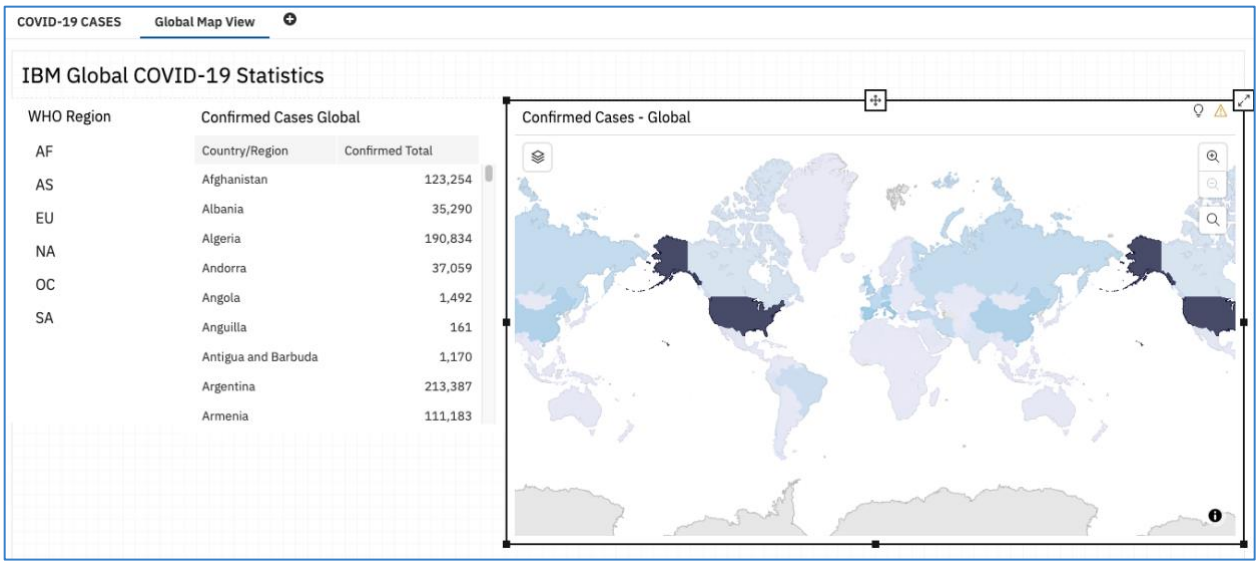
14. Open the **visualization** (graphs) **panel**, click on the **Map tile and drag it to the dashboard**. Place or resize as needed so the map takes up the remaining width of the dashboard.

15. For the Map Fields panel, **set Country/Region to Locations** and **Confirmed Total** to **Location color**.

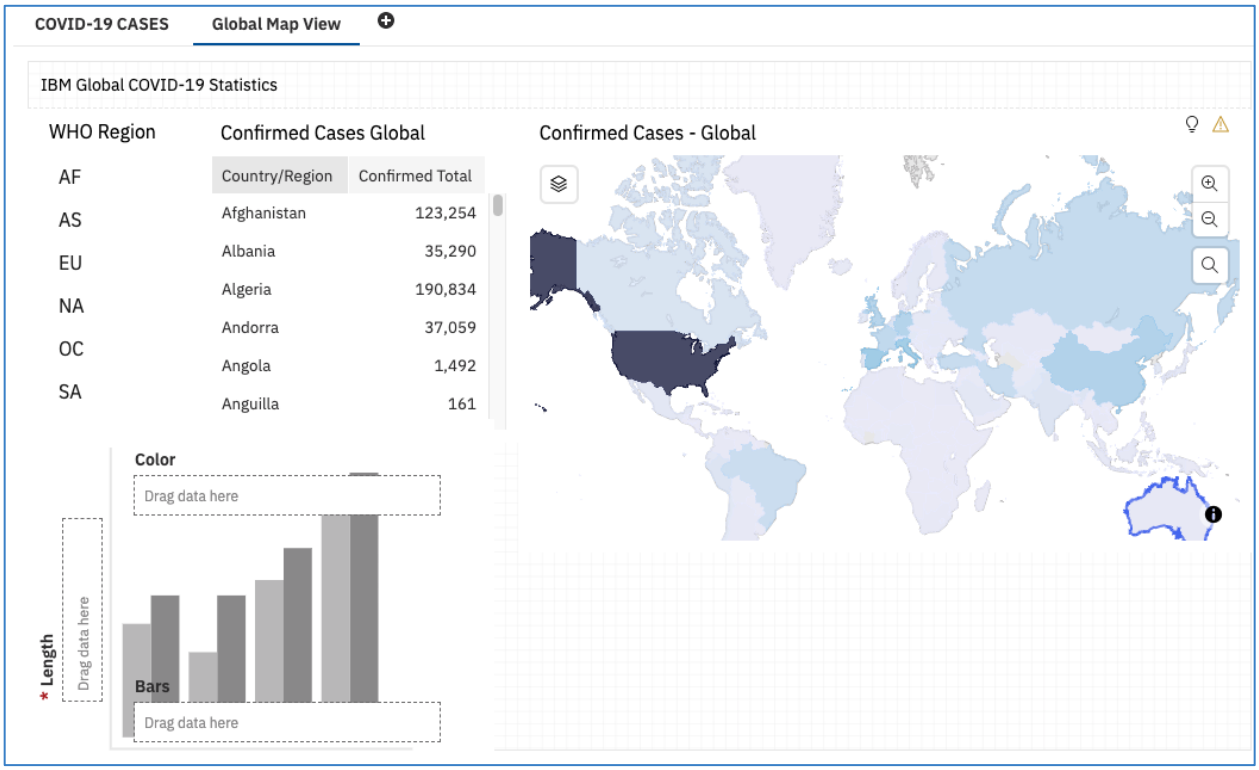


16. Change the Title to "**Confirmed Cases – Global**"
17. Select **Properties**, **Visualization**, **Legend**, and **uncheck Show legend**.

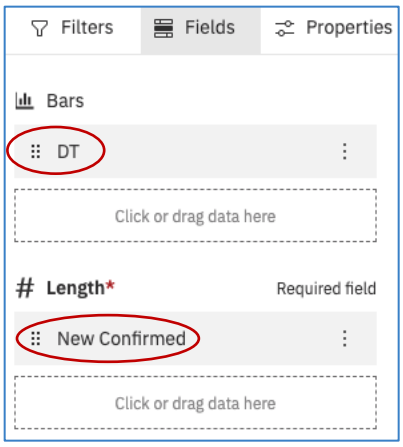




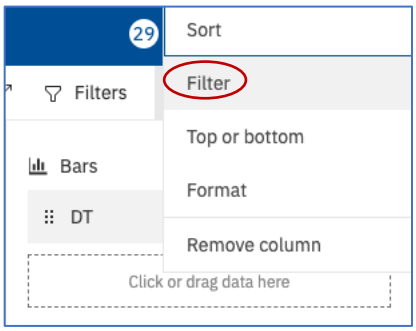
18. **Open the visualizations panel**, click on the **Column tile**, and drag it under the WHO Region and Confirmed Cases – Global tiles.



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



20. Click on the **three dots to the right of the DT** field and open **Filter**.



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

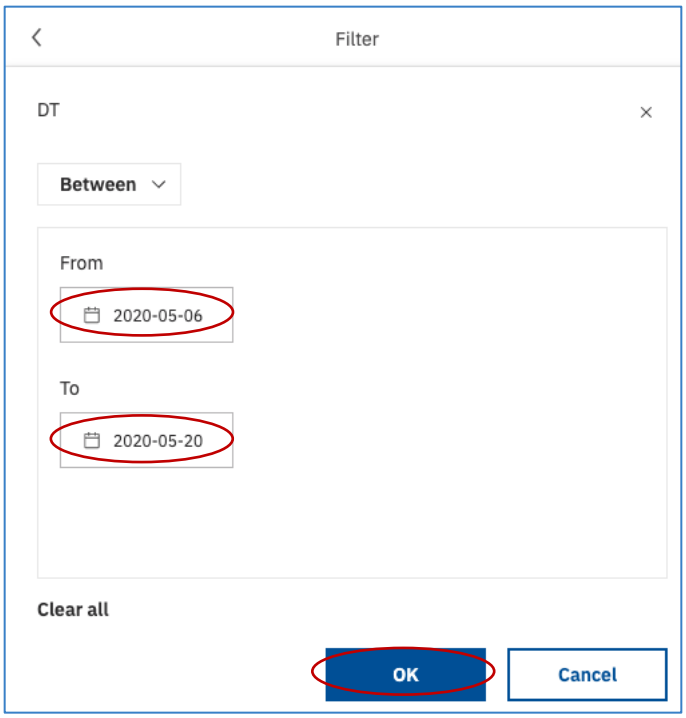
    From

    2020-05-06

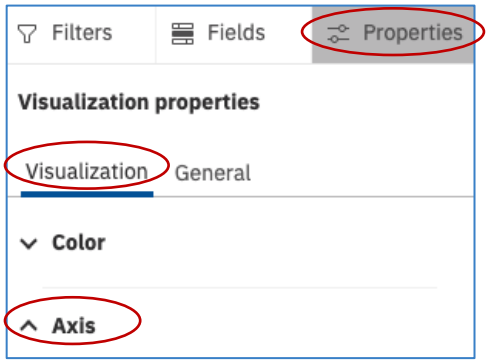
    To

    2020-05-20

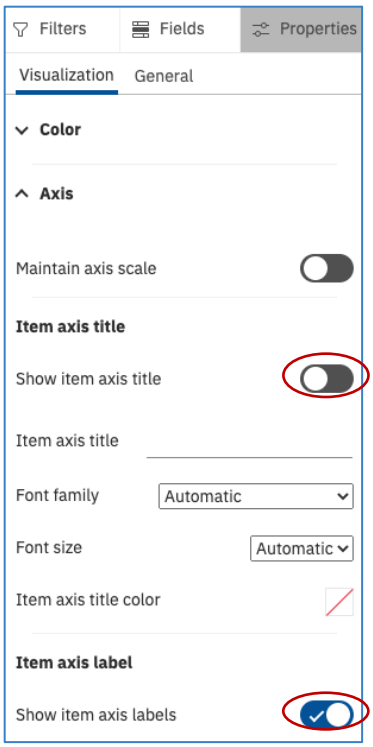
    Then **click Ok**.



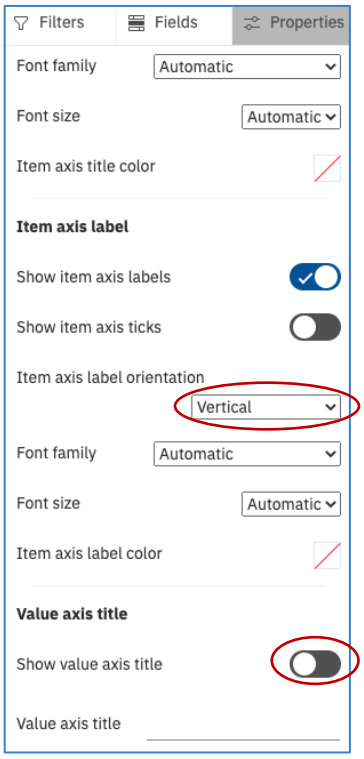
22. Click on **Properties**, **Visualization**, and **Axis**.



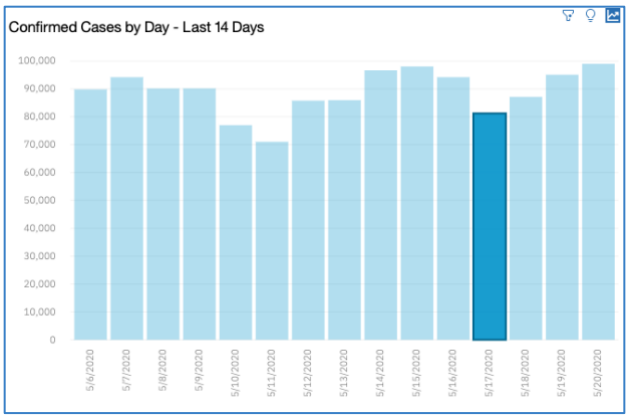
23. Scroll down, **uncheck Show item axis title**, and set **Item axis label orientation** to **vertical**.



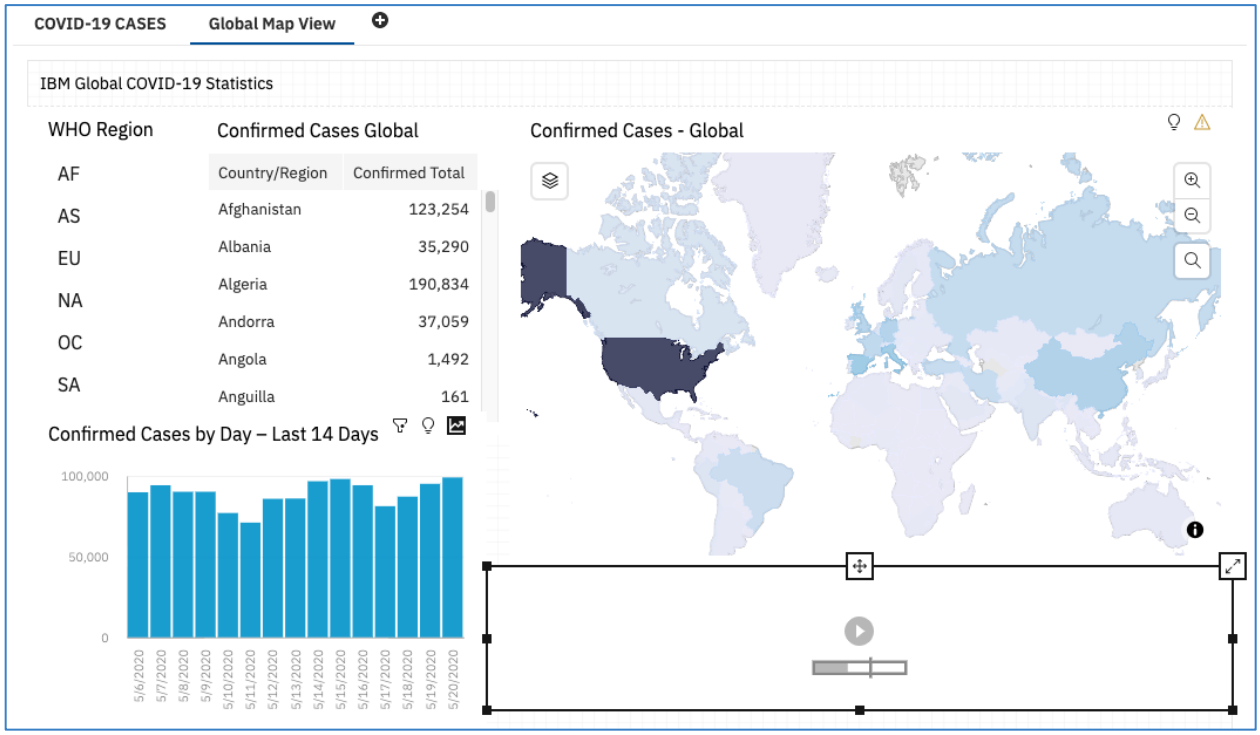
24. Scroll down and **uncheck Show value axis title**.



25. Enter "**Confirmed Cases by Day – Last 14 Days**" as the new title.

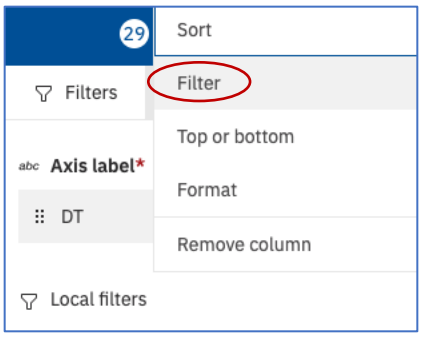


26. Open the **visualizations panel**, click on the **Data player** tile, and **drag it to the remaining space in your dashboard**. Resize the tile as needed.



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

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

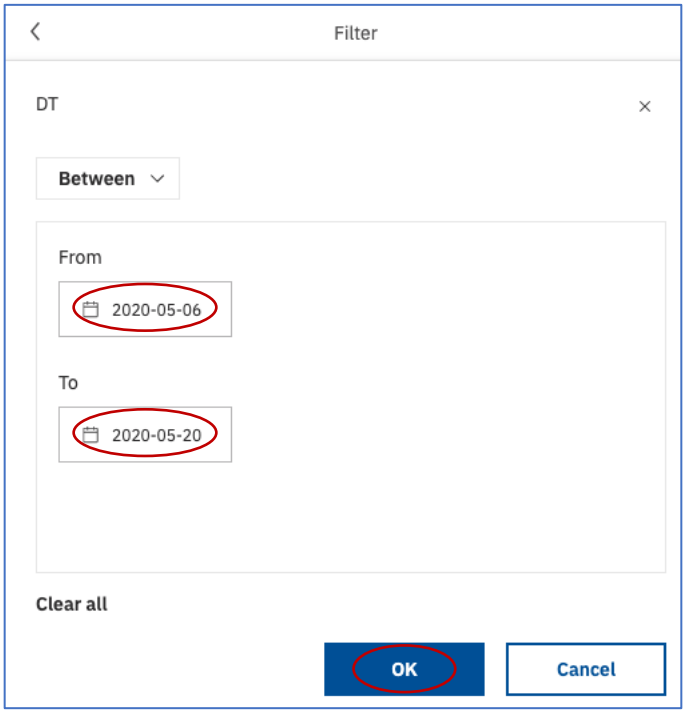


From

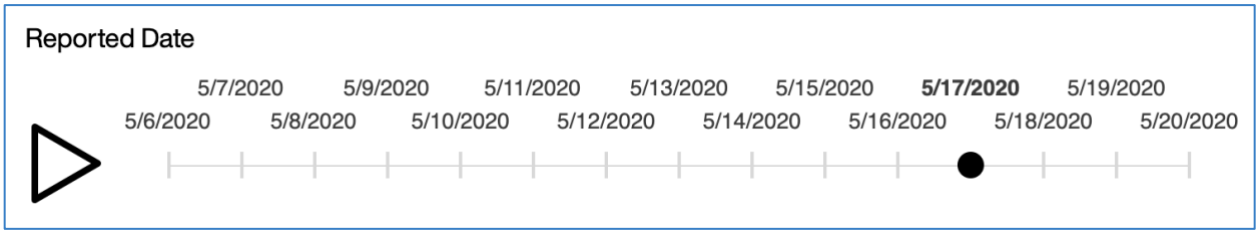
2020-05-06

To

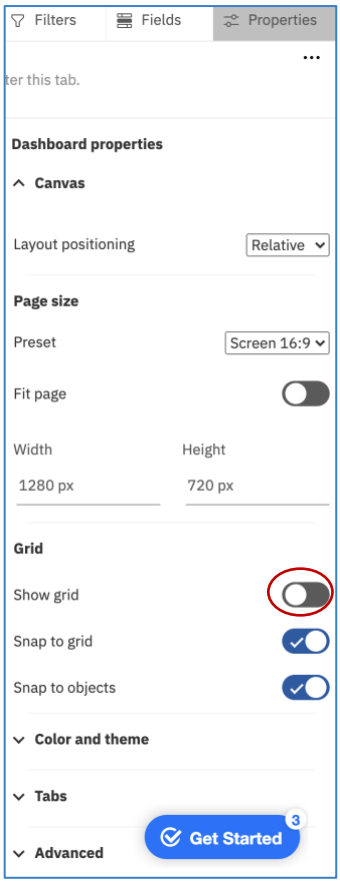
2020-05-20



29. Set the title as "**Reported Date**"



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

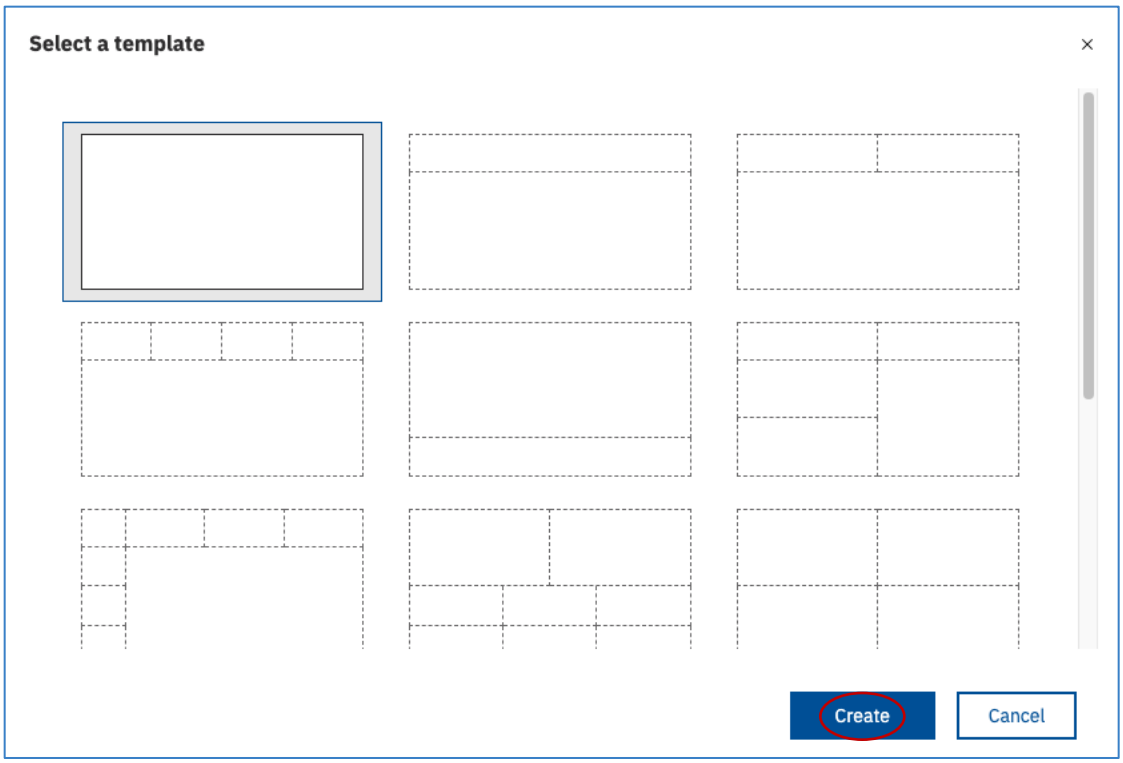


Exercise 4: Add a Webpage Tab.

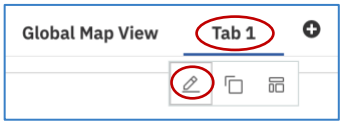
Now that we completed our Global Map tab, we will include a webpage for easy access.

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

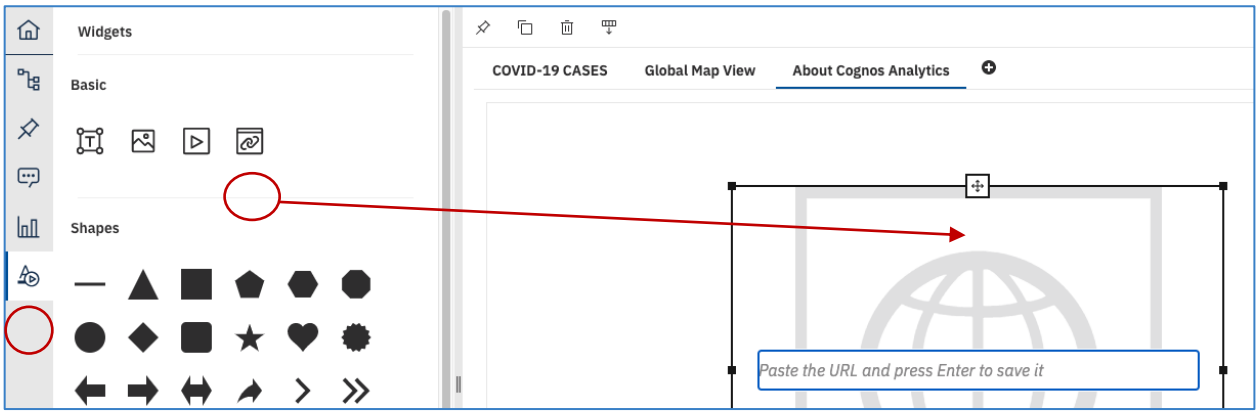
2. Keep the default “blank” template and click **Create**.



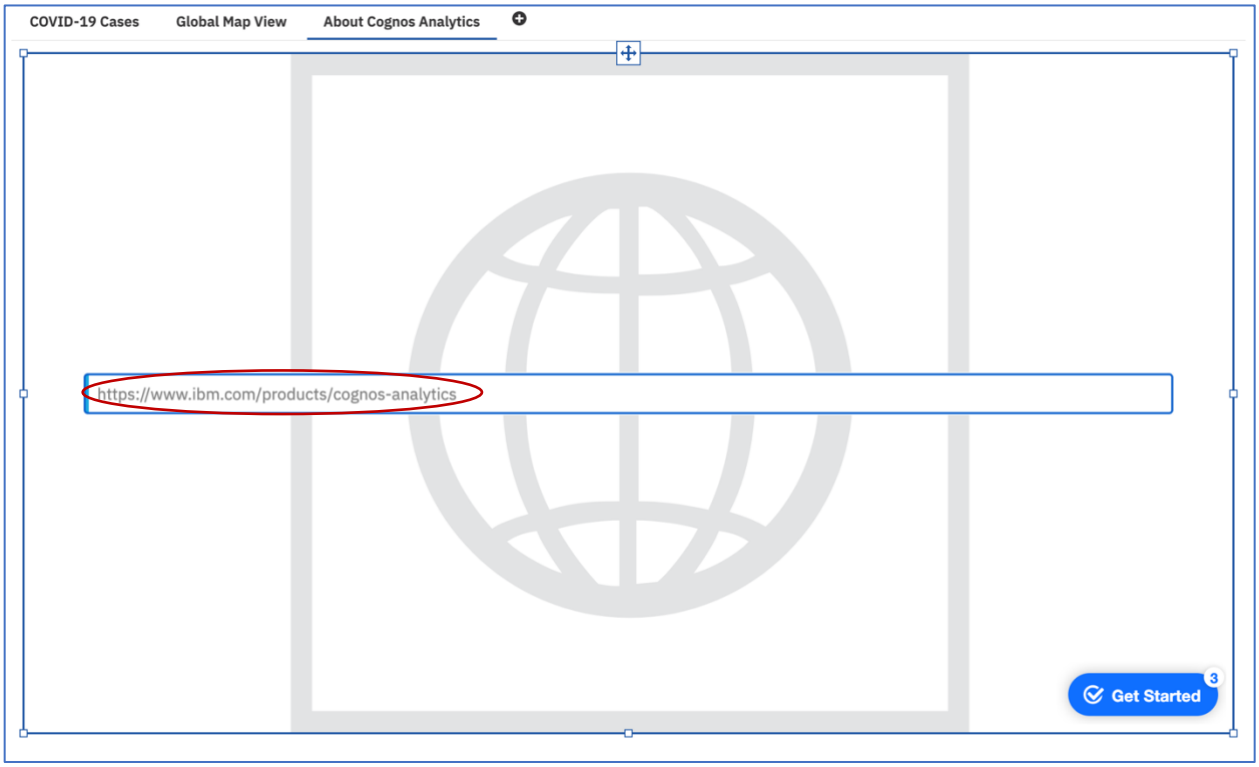
3. Click **on Tab 1** and the **Pencil icon**.



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.