DATA JOURNALISM WITH MICROSOFT POWER BI

Covid-19

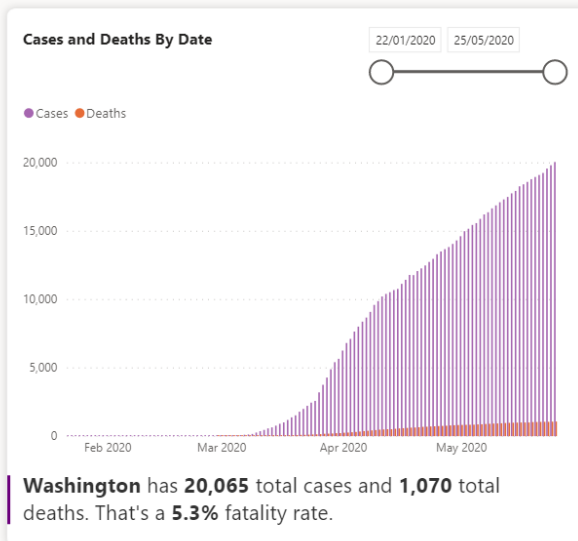### (20min)

Microsoft have developed a Power BI report covering the number of Covid-19 cases and subsequent deaths around the US at both a state and county level. We can leverage this report and use the data model to create a report which tells a story at the county level to enable users to dive a little deeper into their own states and counties.

The report can be downloaded at this link. Feel free to play around with it a little to gain some understanding with how it is built.

In this session we are going to be creating a new page and localizing the data further to empathize with users a little more, so let's get started.

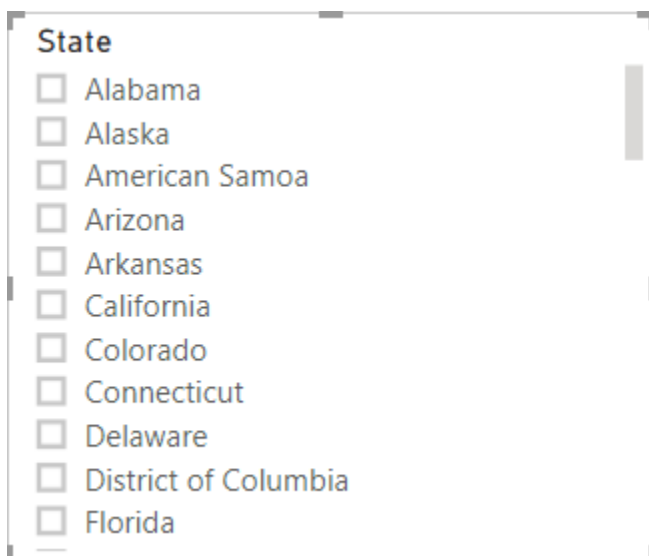To get started, **open the covid report** that you downloaded. Once opened, **create a new page** by clicking the yellow "+" sign at the bottom of the page.

Before we begin creating a report page, we should refresh the dataset so that we have up to date data. To refresh the dataset, find the Refresh button from the Home ribbon. If you find a window appears asking about privacy levels of the data, since this is public data, tick the Ignore Privacy Levels check box and then click Save.
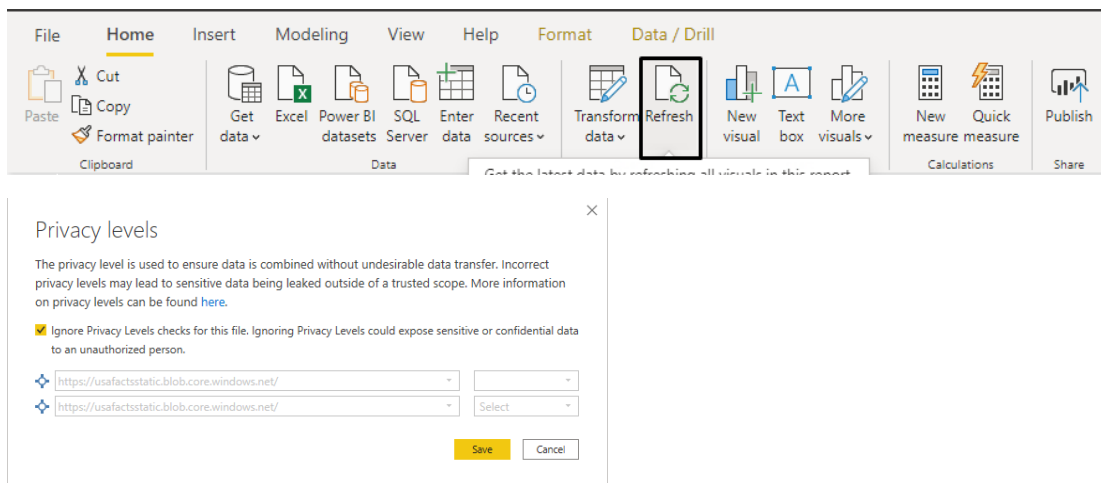

The first thing we are going to do on this page is **add a State filter**. **Create a new Slicer visual** from the Visualizations pane and then from the StateDim table, **drag the State field into the Field bucket**.

Navigate to the Format tab (the paint roller icon) and **expand the Selection controls section**. **Toggle on Single select**. The reason for this is that showing all counties for all states can take time and slow the report down. We are going to only have a single state selected at all times to help with the data loading. Once you have switched on Single select, toggle off the Slicer header, toggle on the Title and type the text "Select a state" into the Title text text box. This will give the user a call to action to let them know they are able to choose different states.
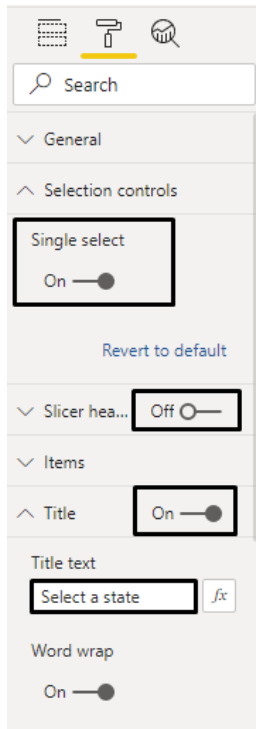

Next, **find the drop down arrow** in the top right corner of the Slicer visual and **change it to be a Dropdown**. Then **select a state of your choice**, in this example we are going to use Washington.
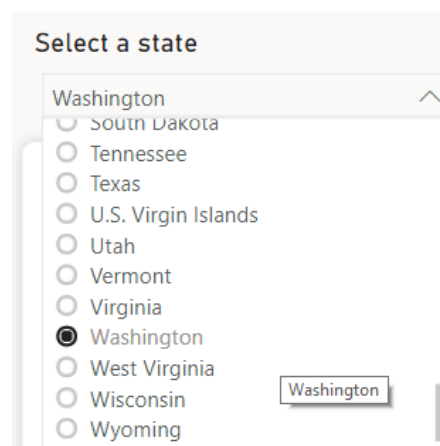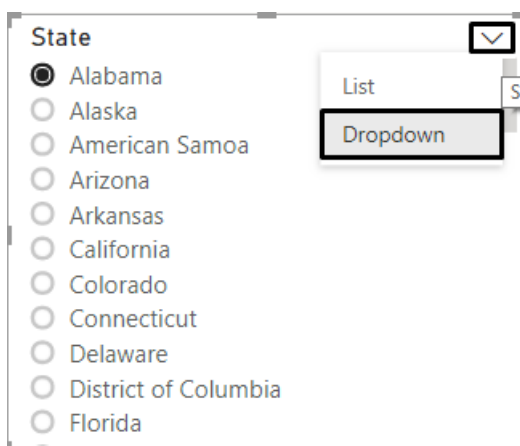
Let's **create a map visual to display cases per county**, within Washington. **Click the Filled Map visual** from the Visualizations pane and **drag the County field from the COVID table into the Location bucket**.
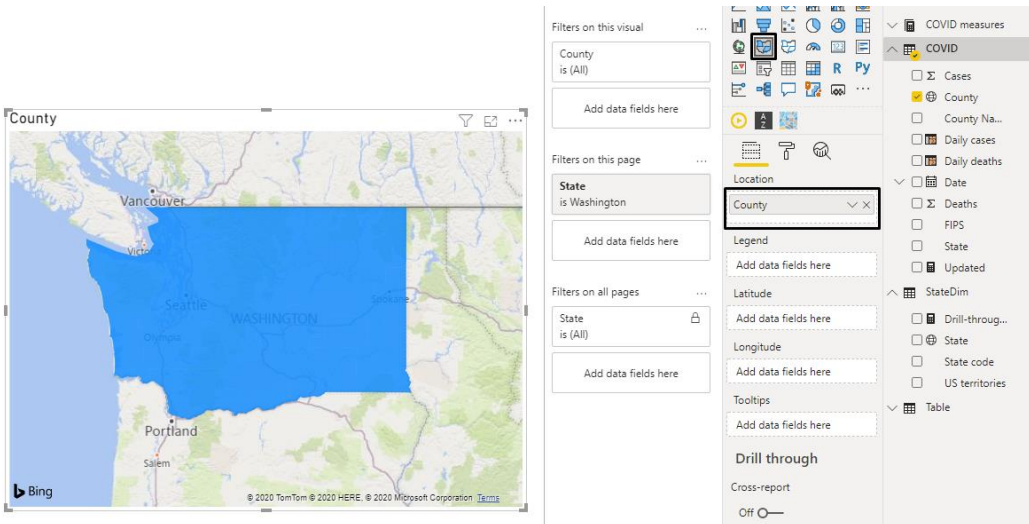
To get the map to display cases per county, **click the Format tab** (the paint roller icon**), expand the Data Colors section** and **click the fx** (function) button.
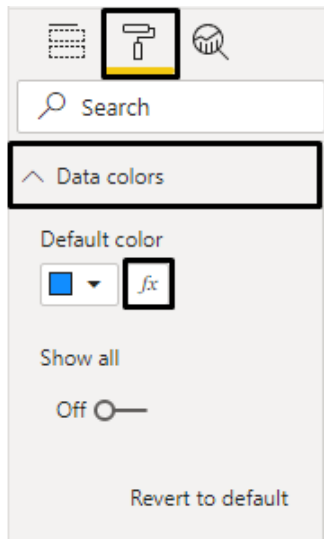
This opens a window where we can create a function that tells the map which color each county should display as, based on some value. In this case the value needs to be the sum of the Cases field. **Change the Minimum color to #c499ca and the Maximum color to #6b007b**, then click OK.

Default color - *Data colors*

Format by

| Color scale ▼ |

Based on field	Summarization	Default formatting ⓘ
Sum of Cases ▼	Sum ▼	As zero ▼

Minimum		Maximum
Lowest value ▼	■ ▼	Highest value ▼	■ ▼
Enter a value		Enter a value

☐ Diverging
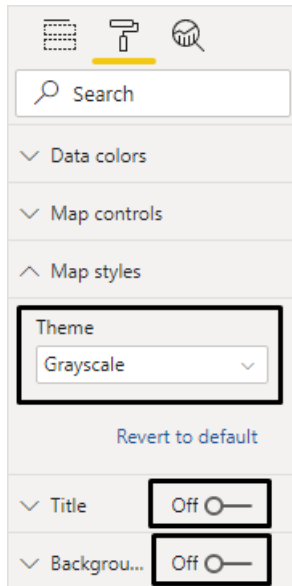
Learn more   OK   Cancel

Then **expand the Map Styles section** in the Format tab and **change the style to Grayscale**. Then **toggle off the Title and Background**.

Microsoft

If you **hover over some of the counties**, you will notice they read as "Statewide Unallocated". Let's **filter these out using the County field**. **Click the drop down next to County**, **change the Filter Type to Advanced Filtering**, from the next drop down **choose "Does not contain"** and **type "Unallocated"** and **click Apply filter**.
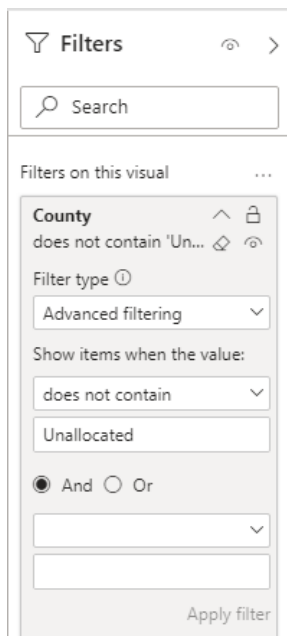

Now **hover over the counties again**, they will now be displaying correctly.

Next, let's add a visual to support the map which shows how cases and deaths have risen over time. **Create a new Clustered column chart** and **drag Date into the Axis bucket**, then **drag Deaths into the Values bucket** and also **Cases into the Values bucket**.

The Date will default to a hierarchy so we will need to change that to the date value instead. **Click the drop down next to the Date field and select Date (above Date Hierarchy).**
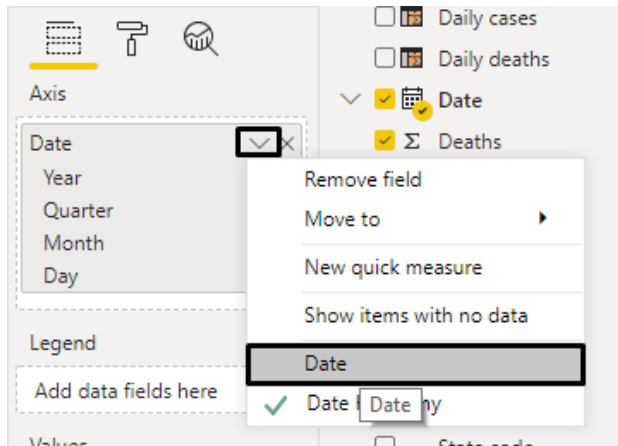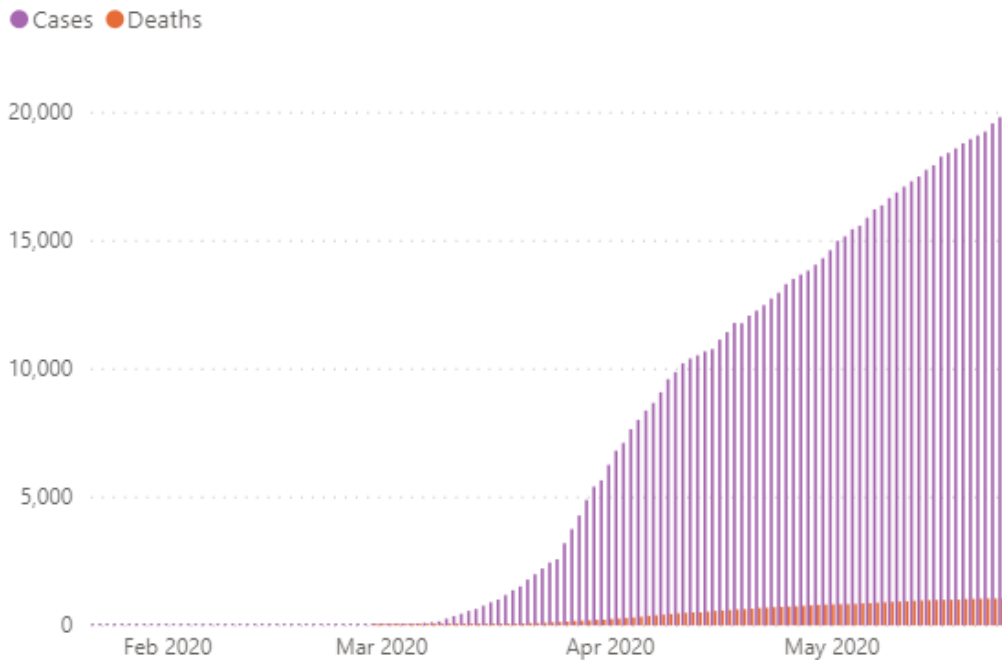

Deaths and Cases by Date
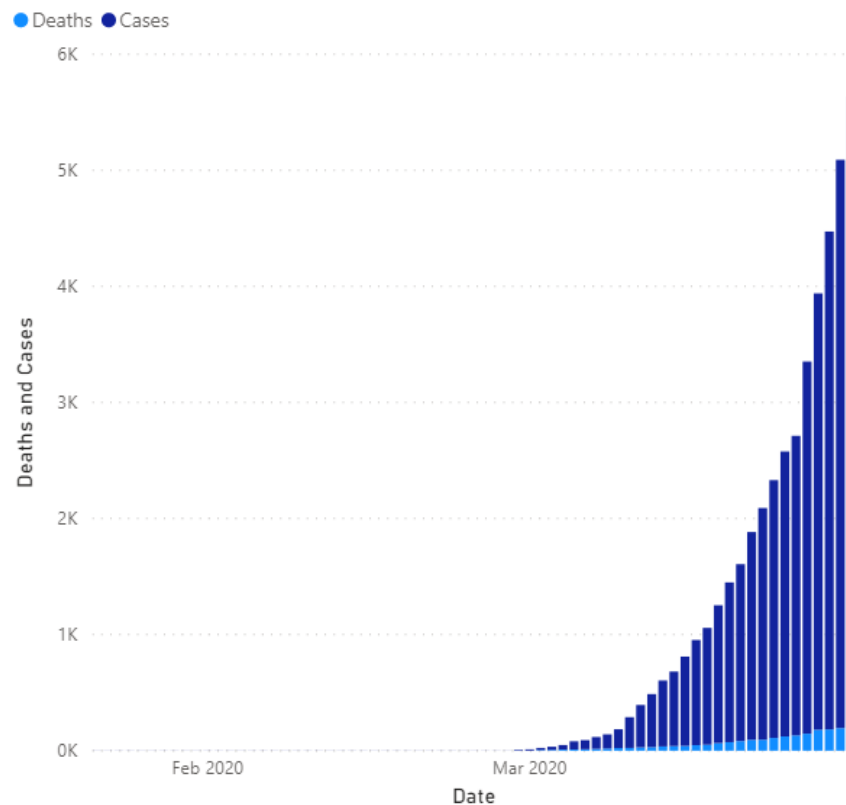
Highlight the new chart and **navigate to the Format tab**, **expand the X axis section** and **toggle off the Title**, then **do the same for Y axis. Expand the Data colors section and for the Cases field choose a purple then for the Deaths field choose an orange.**
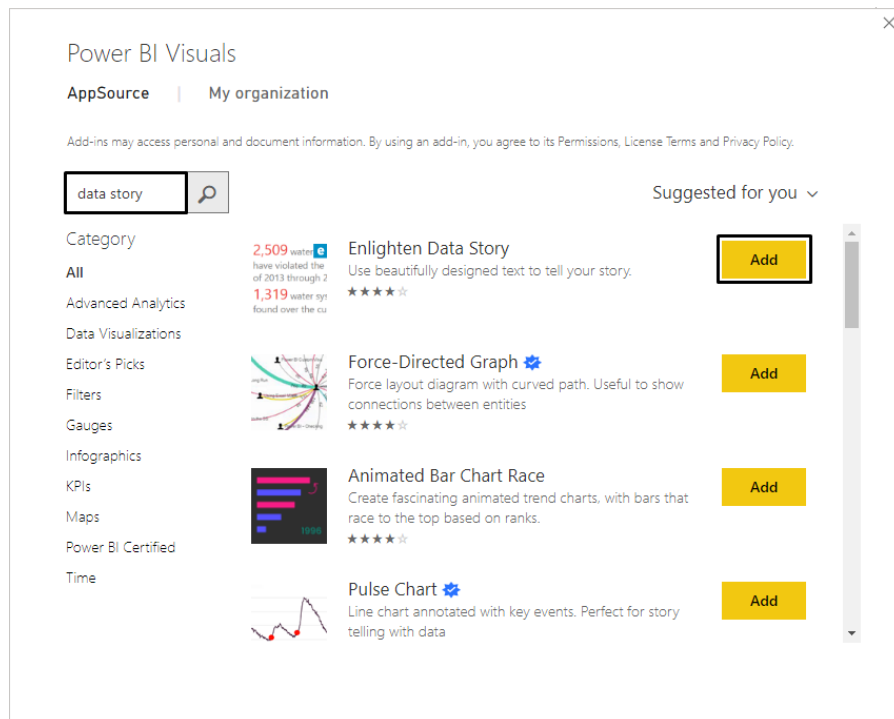

Next let's **add a title to the page** which gives the reader a compelling introduction to the report so that they want to explore the data for themselves. We are going to use a custom visual to do this so from the **Home ribbon**, **open the More Visuals drop down** and **select from AppSource**.
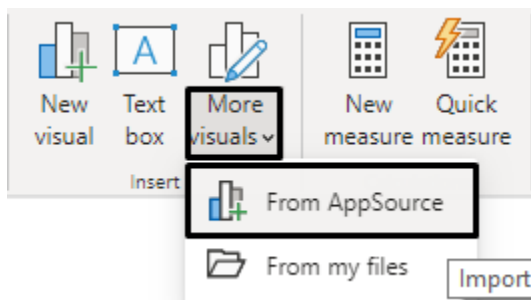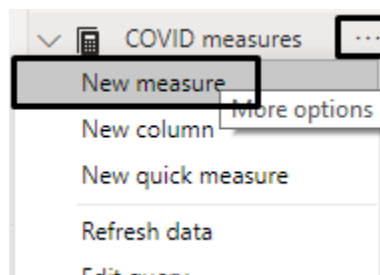

In the search box, **type "data story"** and **add the Enlighten Data Story**.

Then let's add a short, informative message which gives the reader some extra information that isn't displayed in any of the graphics so far. **Create a new measure on the COVID table by clicking the ellipsis icon to the right of the table name**.

Paste in the following formula:

```
County or state = IF(HASONEVALUE(COVID[County]), FIRSTNONBLANK(COVID[County], TRUE()),
FIRSTNONBLANK(StateDim[State], TRUE()))
```

This measure checks to see if the user has filtered to a county level and if so, displays the county name, if not, then it will default to the currently filtered state.

Create a new data story visual and **add the new measure to the Data values bucket**. Then also **add Daily cases, Daily deaths and Case fatality rate** from the COVID table.

Then **paste the following text into the Story section of the Format tab**:

has # total cases and # total deaths. That's a # fatality rate.

Washington has **18,611** total cases and **1,002** total deaths. That's a **5.4%** fatality rate.

Finally, we shoud give the page a nice title that tells the reader what they are about to explore. **Create a new Data story visual** and **drag the County or State measure from the COVID table into the Data values bucket. Navigate to the Format tab** and **expand the Story section**. **In the Text textbox, paste this text in:**

County-level view of reported Covid-19 cases in #

Set the font size to 25 and the color to #333. Then **expand the Data section** and **change the font size and color to match.** Then **toggle off the Title and Background**.

County-level view of reported Covid-19 cases in Washington

As you **click around the map** you will notice that the both the title and message below the bar chart changes based on the location of your selection. This will keep the user intrigued and looking around at different counties.
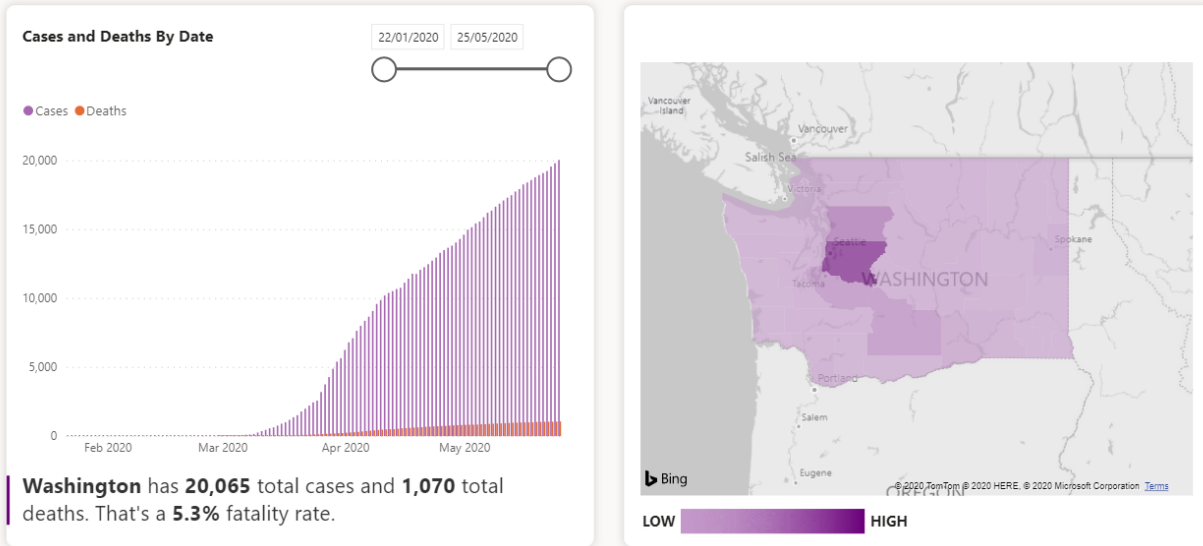
Now let's add the last few elements to the page to finish it off. Firstly, let's **add a background image** which we have provided for you. To add a new background image, make sure nothing on the canvas is selected, **navigate to the Format tab** and **expand the Page background section**. **Click Add image** and **open the background.png file** that was provided to you. **Change the Image Fit to Fit**. You may need to set the transparency to 0 if the image doesn't show.

Once you have the background image set, **place the Map in the box on the left**, **then the bar chart and data story in the box on the right**.
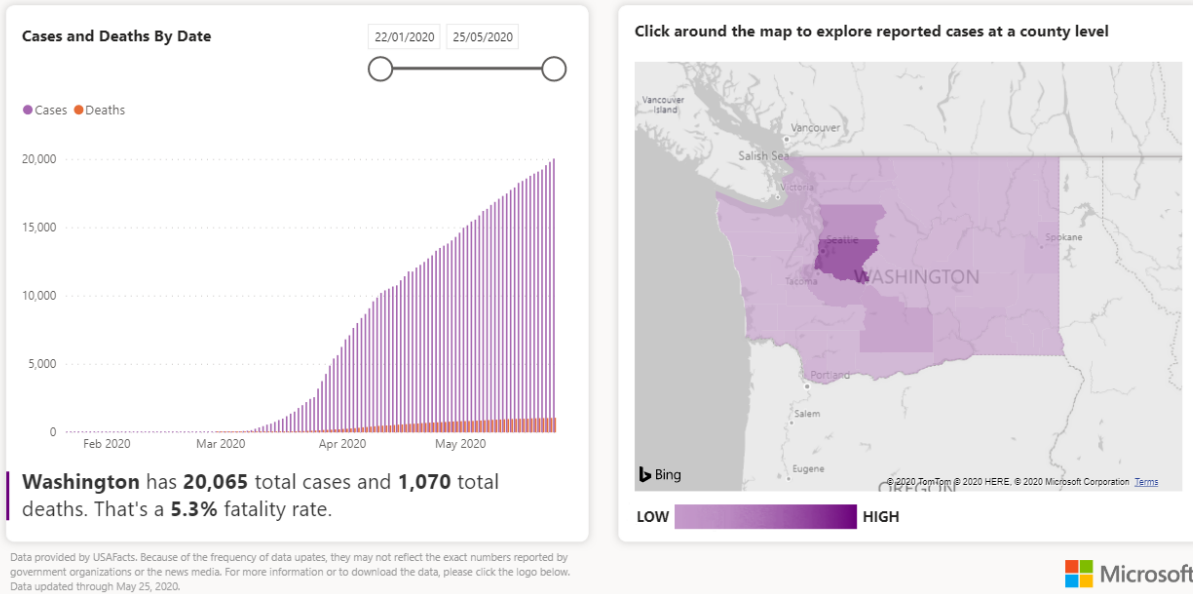
Let's add a call to action to our users so that they know that the map is interactive. **Add a new textbox to the page and type "Click different counties to view their Covid-19 cases". Set the font to Segoe (Bold) and the size to 14.**

Also, we should add a small message regarding the data used in this report. Since this has already been created on the main page of this report, **copy the visual which explains the data** from that page and paste it onto our newly made page. Feel free to **update the text that is displayed by editing the Updated field in the COVID table**.

Good work, you now have a localized report that is dedicated to a state of your choice. You can remove the original pages and publish this report to Power BI Service and from there you are able to share the report between co-workers or even publish it to the web and embed it within website content.