

CONNECTING POWER BI TO GO.DATA

User Guide

***DISCLAIMER: THIS MANUAL IS INTENDED TO GUIDE OUR USERS ON HOW
TO CONNECT GO.DATA TO POWER BI IN ORDER TO GENERATE
TAILORMADE DASHBOARDS***

20 NOVEMBER 2020
V 1.0



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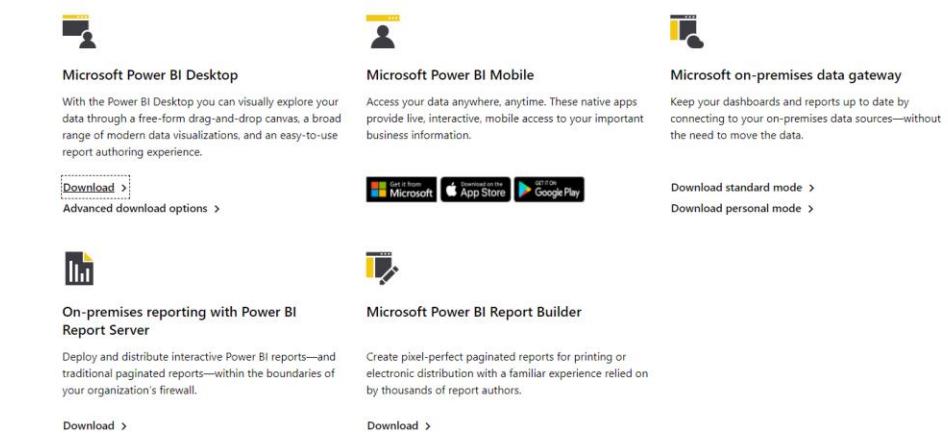
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[1] GETTING STARTED WITH POWER BI

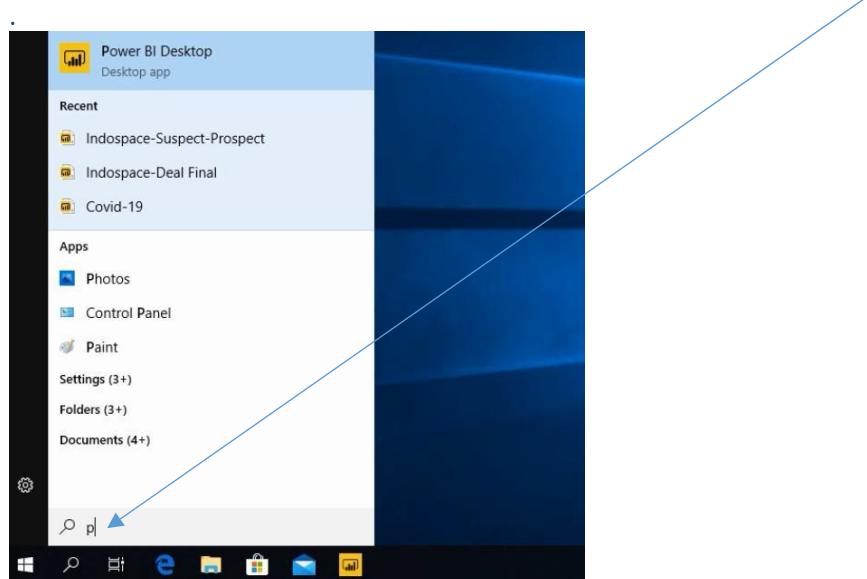
As the first step you need to download the power BI desktop tool from

<https://powerbi.microsoft.com/en-us/downloads/>

Select the option “Microsoft Power BI Desktop”.



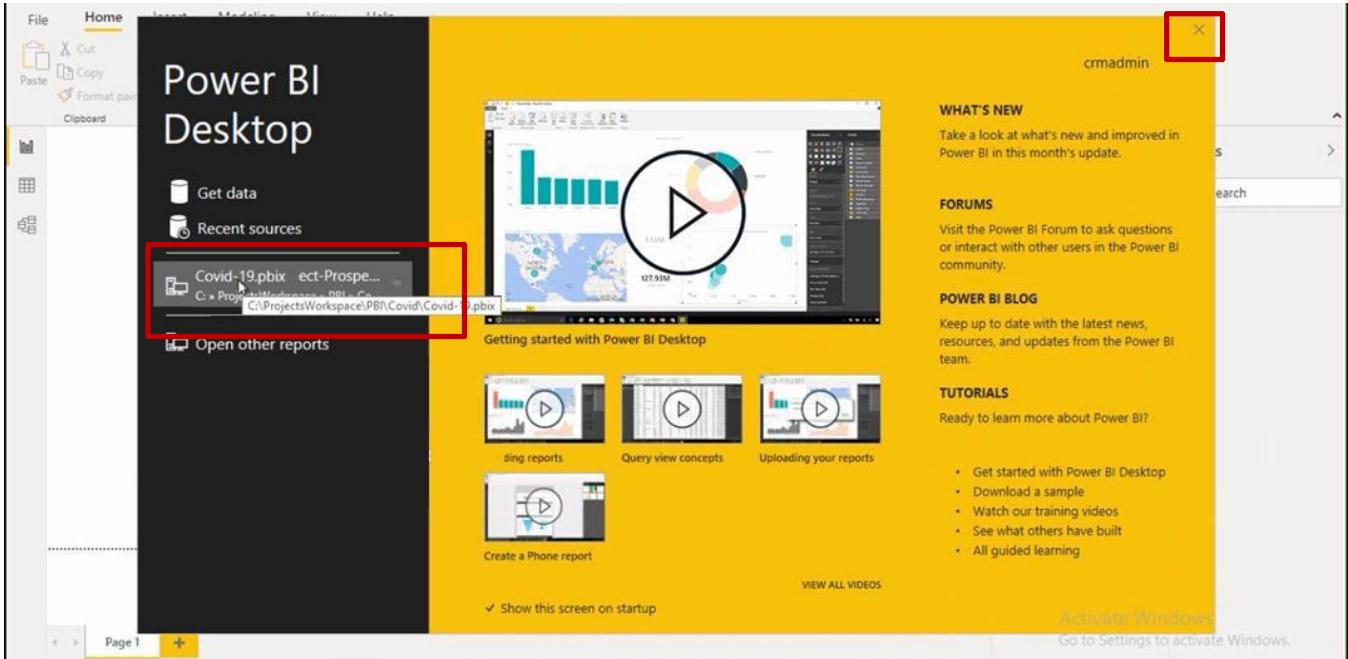
Click on Download. Once the Download has been completed, click on the Launch button to start. You can also start the installed Power BI by going to the windows start menu and writing “power” in the search field. You will get the “Power BI desktop” as one of the options. Click on it



[2] CREATING A NEW PROJECT

[2.1] Power BI Desktop

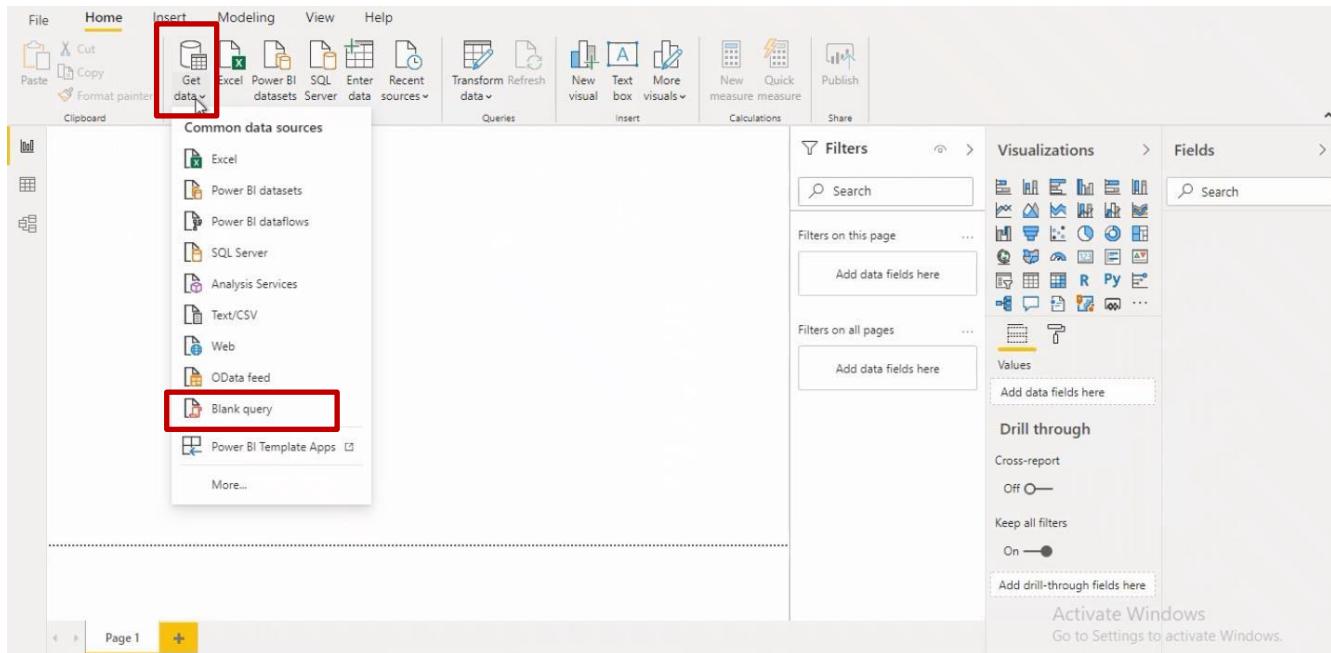
After starting Power BI, you see the “Power BI Desktop”, where you see your existing projects. Of course at the start this list is empty as you will have to create a new project. Close this “Power BI Desktop” by clicking on “X”



Note: All project file formats are in “.pbix”.

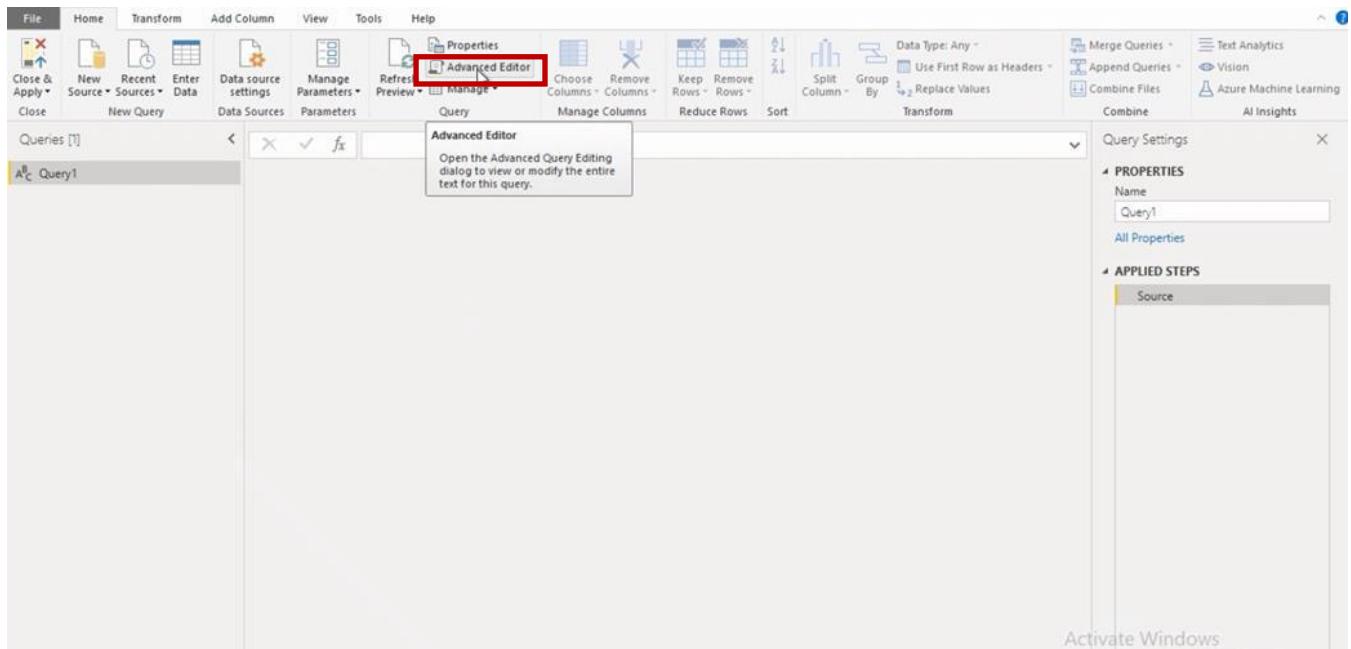
[2.2]Power BI Dashboard

Closing the “Power BI Desktop” opens the “Power BI Dashboard”, where you click on “Get data” to open its sub-heads in a dropdown. Here you click on “Blank query”



[2.3] Blank Query

Purpose: You need blank query to build a query with your own login credentials. The Blank query screen is shown below. Click on “Advanced Editor”



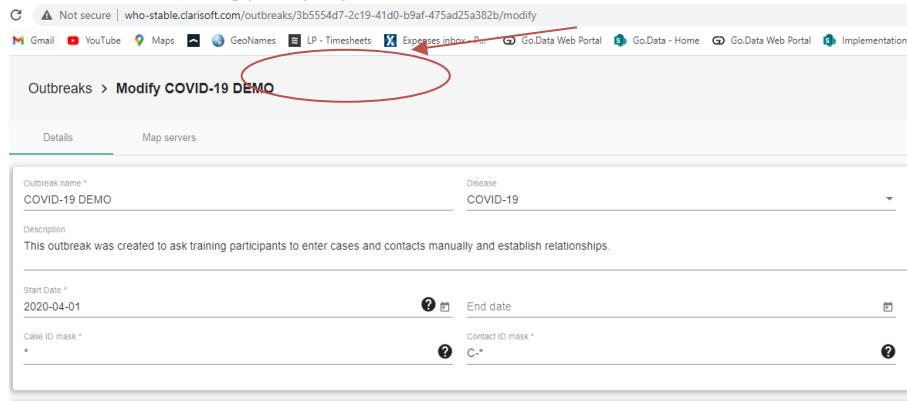
[2.4] Advanced Editor

Set Connection Parameters

To start you need to tell Power BI the specifics of the connection that you will be making (where is the data coming from?). We have written the full code for you in Box 2 which you will find at the end of section 2.4. You just need to copy and paste it into your personal Power BI installation with your own credentials. In the next subsections we will break down each part of this code for your understanding. Feel free to skip to the end of this section to get the written code in full.

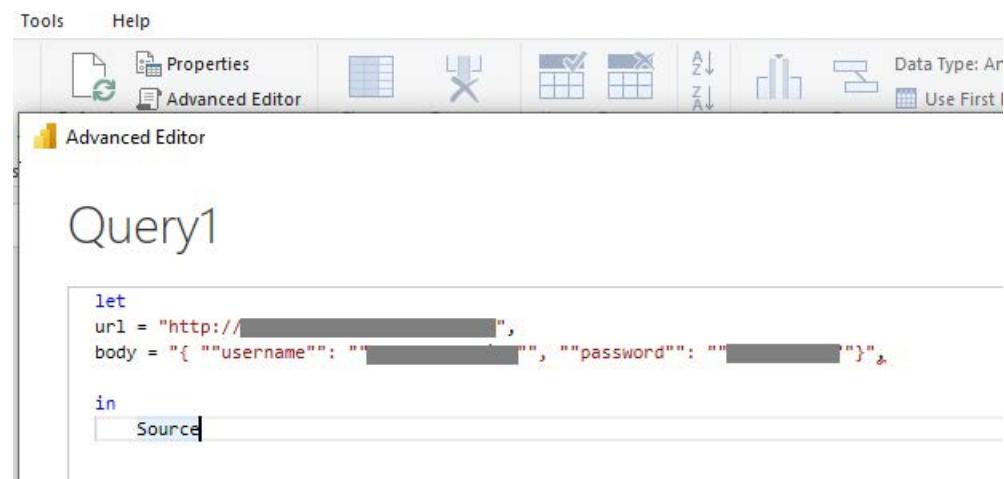
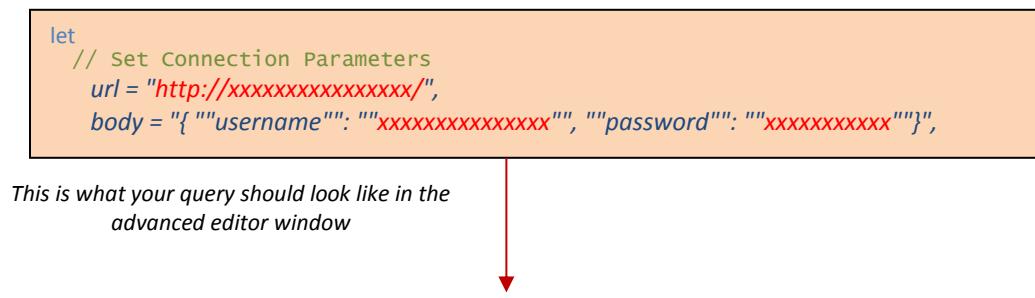
Box 1. Personal Credentials you will need and where to find them

- Username: *This refers to the email address that you use to access Go.Data*
- Password: *The password that is linked to the username above*
- Outbreak ID: *This outbreak ID is found when you enter your go.data installation, go to outbreaks, roll your mouse over the outbreak of interest and select modify. On the URL section, you will see a unique identifier, this is the Outbreak ID that will be used when building your query.*



- url: *The domain/address of the server you are using*

Copy and paste the code below (in the orange box on the left) **and fill in with your own personal credentials**



Get Access token from API

Once you have set your connection parameters we will now proceed to get the access token from the API, we will further expand from the code that you have already written above for the 'Set connection parameters', just copy paste into your query builder the **//Get Access Token** from API code in the orange box below. Remember the first part of the code (**// Set Connection Parameters**) you already entered in the section above

```
let
  url = "http://xxxxxxxxxxxxxx/",
  outbreakid = "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx",

  // Set Connection Parameters
  body = "{ ""username"": ""xxxxxxxxxxxxxx"", ""password"": ""xxxxxxxxxx""}",

  // Get Access Token from API
  TokenResponseAsJson = Json.Document(Web.Contents(url,[Headers = [{"Content-Type": "application/json"}],
    RelativePath= "/api/oauth/token",
    Content = Text.ToBinary(body) ] )),
  AccessToken = try Record.ToTable(TokenResponseAsJson){0}[Value][access_token] otherwise
    TokenResponseAsJson[access_token],
  AccessTokenHeader = "Bearer " & AccessToken,
```

This is what your query should look like in the advanced editor window

The screenshot shows the Power BI Advanced Editor window. The ribbon at the top has tabs for Close & Apply, New Source, Recent Sources, Enter Data, Data Sources, Manage Parameters, Refresh Preview, Properties, Advanced Editor, Query, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Sort, Split Column, Group By, Data Type: Any, Use First Row as Headers, Transform, Text Analytics, Vision, Azure Machine Learning, and AI Insights. Below the ribbon is a list of queries: Covid-Data, Measure-Covid, DimOutcome, DimGender, DimOccupation, DimClassification, DimCountry, DimRegion, DimCounty, DimAgeGroup, Go-Covid-Cases (which is selected), DimPregnancyStatus, Measure-Covid-GoData, Go-Covid-Contacts, and Go-Cases-Lab-Result. The main area is titled 'Advanced Editor' and contains the following code:

```
let
  url = "http://xxxxxxxxxxxxxx/",
  outbreakid = "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx",

  body = "{ ""username"": ""xxxxxxxxxxxxxx"", ""password"": ""xxxxxxxxxx""}",
  TokenResponseAsJson = Json.Document(Web.Contents(url,[Headers = [{"Content-Type": "application/json"}],
    RelativePath= "/api/oauth/token",
    Content = Text.ToBinary(body) ] )),
  AccessToken = try Record.ToTable(TokenResponseAsJson){0}[Value][access_token] otherwise
    TokenResponseAsJson[access_token],
  AccessTokenHeader = "Bearer " & AccessToken,
```

A red arrow points from the orange box containing the code up towards the Power BI interface.

Get Data Access

Finally we will create the pathway from which the data is coming from, here is where you will need the outbreak ID which you can obtain from your go.data (see details in Box 1). We will further expand the code from what has already been written above for the ‘Set Connection Parameters’ and ‘Get Access Token’. An example format of an outbreak ID will look like this: 3b5554d7-2c19-41d0-b9af-475ad25a382b (**please note this outbreak ID will be different for you**)

Box 2. Full Code to be copy and Pasted into your Advanced Editor (All items in red need to be changed to reflect your own credentials)

```
let
    url = "http://xxxxxxxxxxxxxxxxxxxxxx/",
    outbreakid = "xxxxxxxxxxxxxxxxxxxxxxxxxxxx",
    
    // Set Connection Parameters
    body = "{ ""username"": ""xxxxxxxxxxxxx"", ""password"": ""xxxxxxxx""}",
    
    // Get Access Token from API
    TokenResponseAsJson = Json.Document(Web.Contents(url,[Headers = [{"Content-Type": "application/json"}, 
        RelativePath= "/api/oauth/token", 
        Content = Text.ToBinary(body) ] ])),
    AccessToken = try Record.ToTable(TokenResponseAsJson){0}[Value][access_token] otherwise
        TokenResponseAsJson[access_token],
    AccessTokenHeader = "Bearer " & AccessToken,
    
    // Get Data Access
    data_url = url & "api/outbreaks/" & outbreakid & "/cases",
    data_body = "{ 
        ""authorization"": ""& AccessTokenHeader & """",
        ""content-type"": ""application/json"""
    }",
    
    GetGroups = Json.Document(
        Web.Contents(
            data_url,
            [
                Headers = Json.Document(data_body)
            ]
        )
    ),
    #"Converted to Table" = Table.FromList(GetGroups, Splitter.SplitByNothing(), null, null, ExtraValues.Error),
    
in
#"Converted to Table"
```

This is what your query should look like in the advanced editor window



Advanced Editor

Go-Covid-Cases

```

let
    url = "http://[REDACTED]/",
    outbreakid = "[REDACTED]",

    body = "{ ""username"": ""[REDACTED]"" , ""password"": ""[REDACTED]"" }",
    TokenResponseAsJson = Json.Document(Web.Contents(url,[Headers = [{"Content-Type": "application/json"}, {"RelativePath": "/api/oauth/token"}, {"Content = Text.ToBinary(body)"}]])),

    AccessToken = try Record.ToTable(TokenResponseAsJson){0}[Value][access_token] otherwise TokenResponseAsJson[access_token],
    AccessTokenHeader = "Bearer " & AccessToken,

    data_url = url & "api/outbreaks/" & outbreakid & "/cases",
    data_body = "{ ""authorization"": ""Bearer " & AccessTokenHeader & """",
        ""content-type"": ""application/json"""
    }",

    GetGroups = Json.Document(
        Web.Contents(
            data_url,
            [
                Headers = Json.Document(data_body)
            ]
        )
    )
in
    GetGroups

```

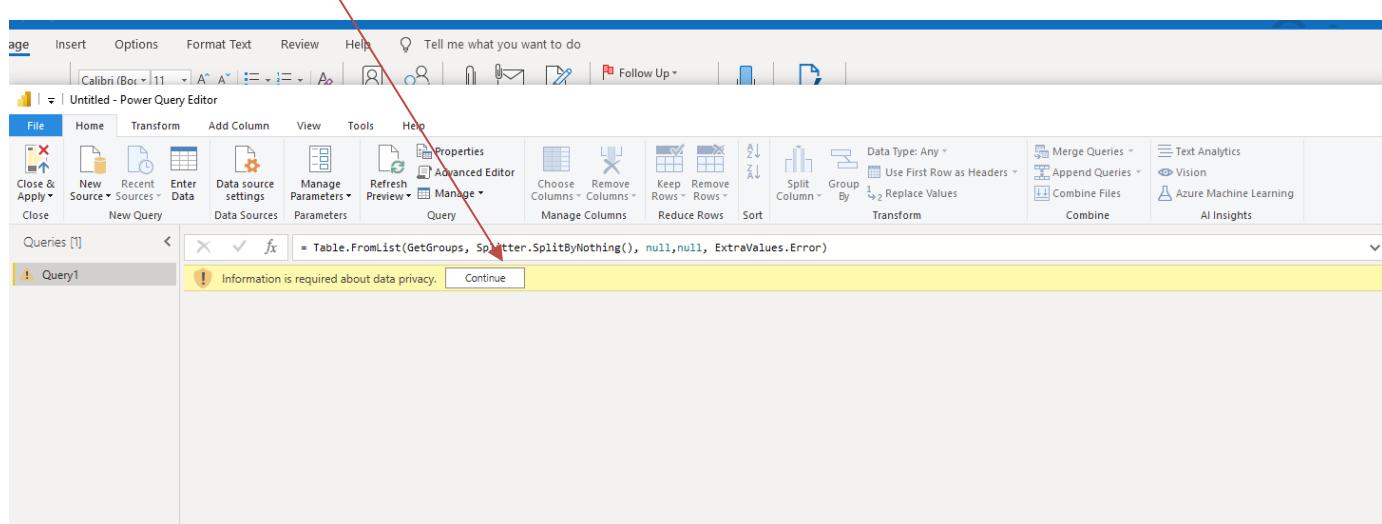
No syntax errors have been detected.

Done Cancel

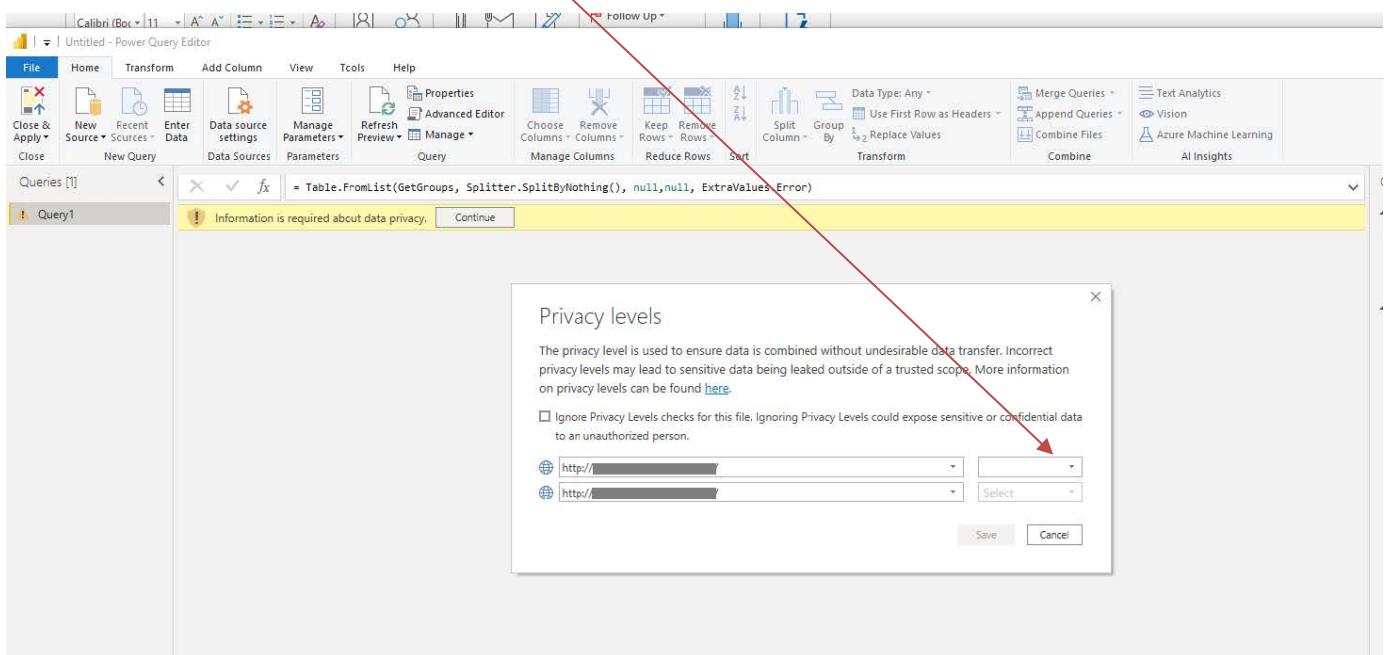
Activate Windows
Go to Settings to activate Windows.

After finishing click on “Done”

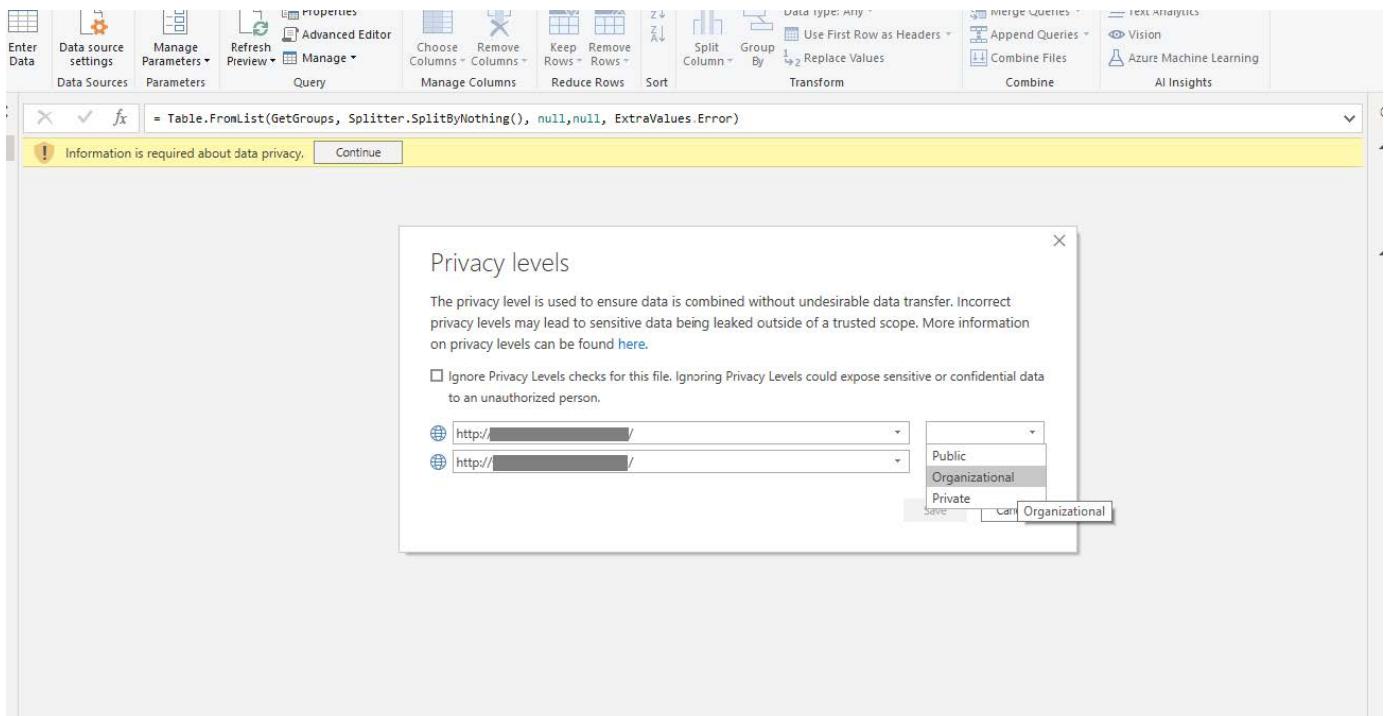
After you click on done, you will be prompted with a warning saying which says “*Information is required about data privacy*”. Click on continue



A new window will pop open with a privacy level feature. You will see that the URL of your server is shown here. We are going to tell the system that we are an organization and as such it should follow organizational privacy levels. Click on the dropdown button for the first URL



Select the “Organizational” option



Click on Save.

After you click on save, the system will populate this table

Home Transform Add Column View Tools Help

New source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Query Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Data Type: Any Use First Row as Headers Merge Queries Append Queries Text Analyze Vision Combine Files Combine Azure Machine Learning AI In

New Query Data Sources Parameters Query Manage Columns Manage Rows Reduce Rows Sort Transform

= Table.FromList(GetGroups, Splitter.SplitByNothing(), null, null, ExtraValues.Error)

1 Record
2 Record
3 Record
4 Record
5 Record
6 Record
7 Record
8 Record
9 Record
10 Record
11 Record
12 Record
13 Record
14 Record
15 Record
16 Record
17 Record
18 Record
19 Record
20 Record

[2.5] Columns in Table

Purpose: You need to select the specific columns you will need in order to ask the system to import that data from Go.Data

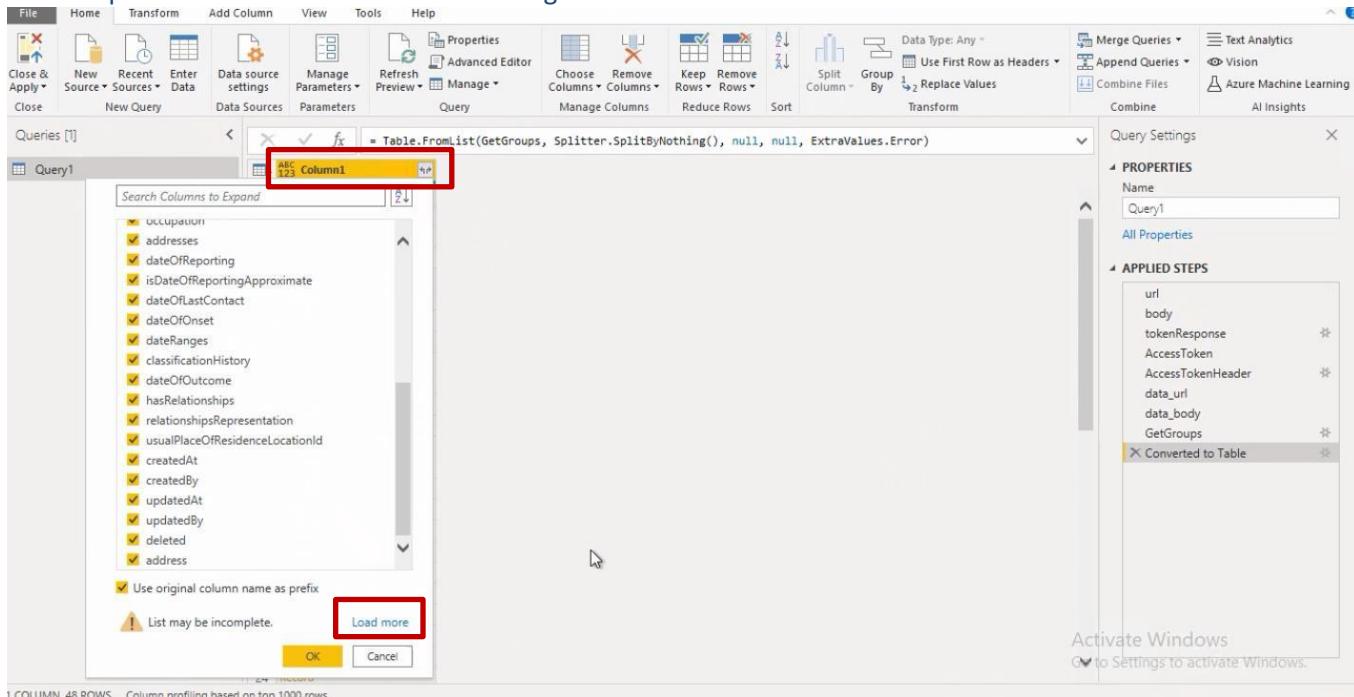
After running our query we have received some data from GoData, this is seen by the column headers. In order to see the data that has been imported after running our query, i.e the column headers, click on the two arrows next to “column 1”

A screenshot of the Power Query Editor interface. The ribbon at the top shows 'File', 'Home', 'Transform', 'Add Column', 'View', 'Tools', and 'Help'. The 'Transform' tab is selected. Below the ribbon, there are various tools for data manipulation like 'Transpose', 'Replace Values', 'Unpivot Columns', 'Merge Columns', 'Split Column', 'Format', 'Extract', 'Parse', etc. The main area shows a table named 'Query1' with 12 rows labeled 'Record' from 1 to 12. The first column is highlighted with a yellow background and labeled 'ABC 123 Column1'. A red arrow points to the rightmost part of the 'Column1' header.

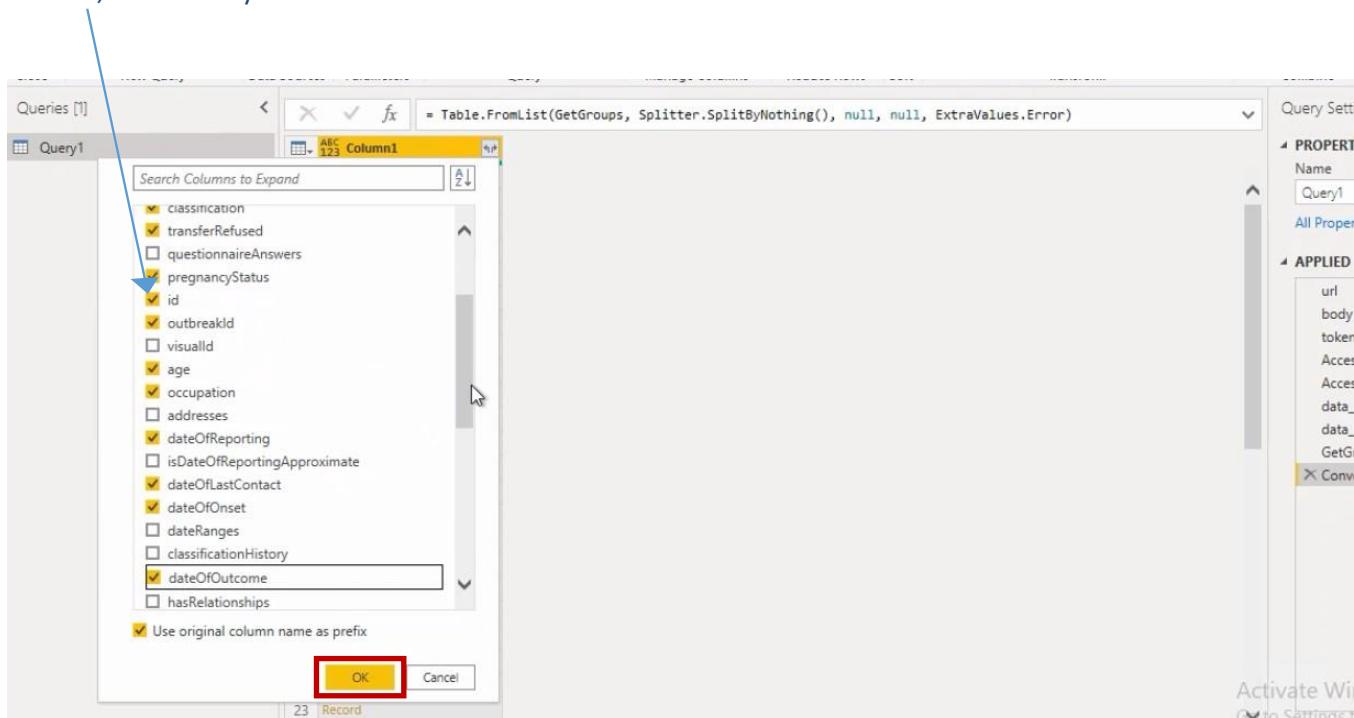
A dropdown menu will appear with the column headers of all the data that has been imported from Go.Data into Power BI

A screenshot of the Power Query Editor interface, similar to the previous one but with a red circle highlighting the list of columns in the dropdown menu. The dropdown lists 25 columns: (Select All Columns), firstName, gender, wasContact, outcomeId, safeBurial, classification, transferRefused, questionnaireAnswers, pregnancyStatus, id, outbreakId, visualId, age, occupation, addresses, dateOfReporting, and a checkbox for 'Use original column name as prefix'. A warning message at the bottom says 'List may be incomplete.' and there are 'OK' and 'Cancel' buttons at the bottom right.

In the dropdown men click on “Load more” to get the full column list.



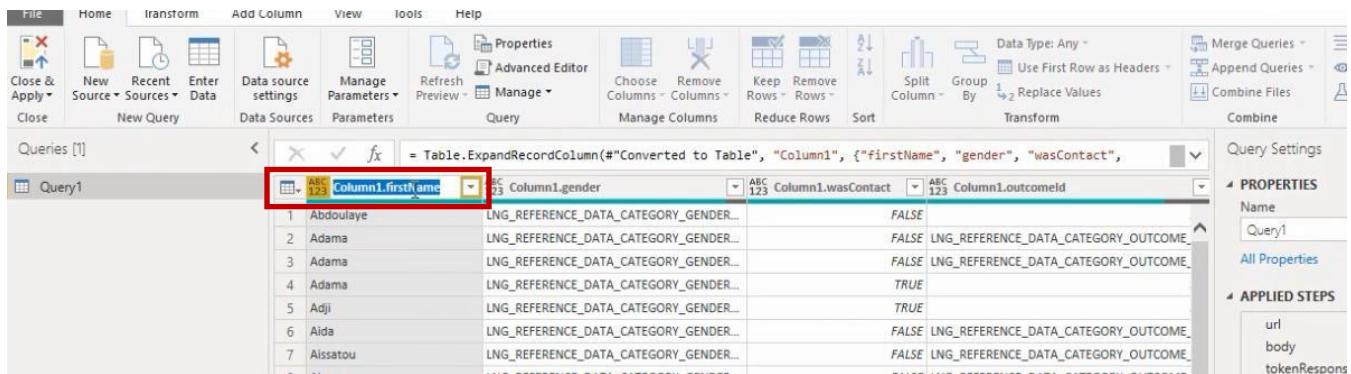
Select the required columns (all the columns that you would like to have) and click on “OK”. If all the data is needed, make sure you select all columns



[2.6] Data in Columns: Change text of column heading

Purpose: The default column heading text are unnecessarily long like “Column1.firstName”. So we can always rename it to an easy “First-Name”, then when you actually create a dashboard, these columns are more readable and clearer to understand. Those which are simple can be kept but those which are very complex you might want to change.

Clicking on “OK” in “column’s dropdown” shows you table with all the selected columns. Now you have got all the data you wanted in the various columns. You need to make the names of the columns (column headers) as clear as possible and you can do so by double clicking on any column heading and changing its text.

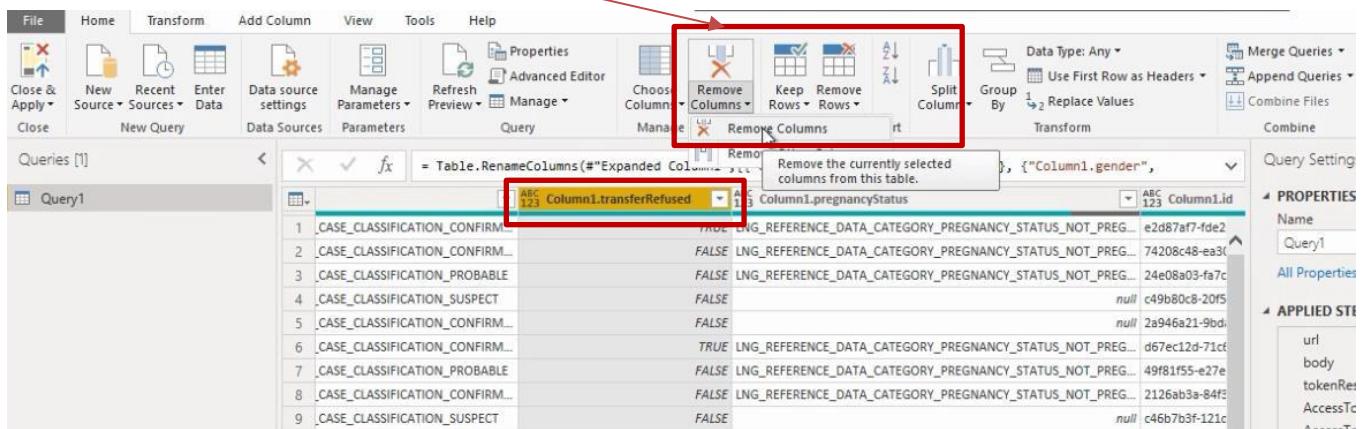


The screenshot shows the Power BI desktop interface with a query named "Query1". The table contains four columns: "Column1.firstName", "Column1.gender", "Column1.wasContact", and "Column1.outcomeId". The "firstName" column is highlighted with a red box. The Power BI ribbon is visible at the top, and the "Transform" tab is selected. The "Manage Columns" button is highlighted with a red box. The "Properties" pane on the right shows the column's properties, including its name and type.

[2.7] Removing a column

Purpose: To delete columns which are not relevant for you, this can be done directly in the table you created

To delete unwanted columns click on the column heading and press the “delete button” in your keyboard OR click on the "Remove Columns" button (under the home menu) and then click on “Remove Column” (from the dropdown menu)



The screenshot shows the Power BI desktop interface with a query named "Query1". The table contains three columns: "Column1.transferRefused", "Column1.pregnancyStatus", and "Column1.id". The "transferRefused" column is highlighted with a red box. A red arrow points from this column to the "Remove Columns" button in the Power BI ribbon. The "Transform" tab is selected. The "Remove Columns" button is highlighted with a red box. The "Properties" pane on the right shows the column's properties, including its name and type.

[2.8] Changing a Query name

Purpose: If you have a query name more relevant to your data you can always change its name. The default name that Power BI gives it is just an ambiguous "Query1". You can change it to your desired liking, for example "Covid-19-Data"

You can rename a query by double clicking on the query name or by changing name under "Properties" on right

The screenshot shows the Power BI desktop interface. The top ribbon has tabs like File, Home, Transform, Add Column, View, Tools, and Help. The 'Home' tab is selected. Below the ribbon is the 'Queries' pane, which lists 'Query1' as the first item. To the right of the queries is the 'Properties' panel. The 'Name' field in the properties panel is highlighted with a red box, showing the value 'Query1'. Other sections in the properties panel include 'PROPERTIES' and 'APPLIED STEPS'.

[2.9] Setting Data Type (by Transformations)

Purpose: Data type should match column data. Date type for a column presenting data in a date format, character type for a column presenting data in character format. If the data type does not match the data then system will throw a "Data Type" error.

Before you proceed you need to set the data type in the various columns. You do this by first clicking on the header of the first column in the table (in the example below that will be First_Name) , then press "ctrl" + "A" in your keyboard, this will select all of the column headers (they will become highlighted in yellow) as well as all the data in the table (this will be highlighted by a color grey).

The screenshot shows the Power BI desktop interface with the 'Transform' ribbon tab selected. In the main area, the 'First_Name' column header is highlighted with a yellow selection bar. The 'Properties' panel on the right shows the 'Data Type' dropdown set to 'Any'. Other columns in the table include 'Column1.gender', 'Column1.wasContact', 'Column1.outcomeId', 'Column1.safeBurial', and 'Column1.classification'. The table contains 13 rows of data.

Then click on the “transform” tab and then on the “Detect Data Type” button.

The screenshot shows the Power BI desktop application. The 'Transform' tab is highlighted in red. Below it, the 'Detect Data Type' button is also highlighted in red. The main area displays a table named 'Covid-19-Data' with four columns: 'First-Name', 'Gender', 'Was-Contact', and 'OutCome'. The 'Gender' column contains values like 'LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE' and 'LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE'. The 'Was-Contact' and 'OutCome' columns contain boolean values ('TRUE', 'FALSE'). The 'Transform' ribbon tab has several options: Transpose, Reverse Row, Detect Data Type (highlighted), Unpivot Columns, Move, Merge Columns, Split Column, Format, Parse, Text Column, Number Column, Date & Time Column, Trigonometry, Rounding, Information, Date, Time, Duration, and Structured Column.

After you click on the “Detect Data Type” button, you will find that all the data types have changed to reflect the type of data structure that is in the columns. For example, all of the columns that deal with dates like “Date of Reporting” are now indicated by the “Date icon” in their column heading. Data that has a text structure will have the “Text icon” (indicated by the text ‘ABC icon’) as the data type, for example gender.

This screenshot shows the same table after the 'Detect Data Type' button was clicked. The data types have been updated. The 'First-Name' column is now labeled with an 'ABC' icon, indicating it is a text column. The 'Gender' column is also labeled with an 'ABC' icon. The 'Was-Contact' and 'OutCome' columns are now labeled with date icons, indicating they are date columns. The data in the table remains the same as in the previous screenshot.

	Occupation	Date-of-Reporting	Date-Of-OnSet	Date-of-Outcome
1	NG_REFERENCE_DATA_CATEGORY_OCCUPATION_WORKING...	8/9/2020 5:30:00 AM	8/9/2020 5:30:00 AM	6/10/2020 5:30:00 AM
2	NG_REFERENCE_DATA_CATEGORY_OCCUPATION_CHILD	7/14/2020 5:30:00 AM	7/14/2020 5:30:00 AM	5/26/2020 5:30:00 AM
3	NG_REFERENCE_DATA_CATEGORY_OCCUPATION_FARMER	8/1/2020 5:30:00 AM	8/1/2020 5:30:00 AM	6/4/2020 5:30:00 AM
4	NG_REFERENCE_DATA_CATEGORY_OCCUPATION_HEALTH_C...	7/8/2020 5:30:00 AM	7/8/2020 5:30:00 AM	7/8/2020 5:30:00 AM

	First-Name	Gender	Was-Contact	OutCome
1	Abdoulaye	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE		FALSE
2	Adama	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE		FALSE LNG_REFERENCE_DATA_CATEGORI
3	Adama	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE		FALSE LNG_REFERENCE_DATA_CATEGORI

[2.10] Data after all Transformations

This is how the data will look after we have done all of the transformations in section 2.9. Up until now, we have you achieved is:

- Used a query to get all of the data from Go.Data and put it in a table structure
- Formatted the data so that:
 - Only columns which are needed stay
 - The query name is changed to something clearer like “Covid-19-data”
 - The name of all the columns change to something clearer to understand
 - The data type is reflected on all the columns via the transform option

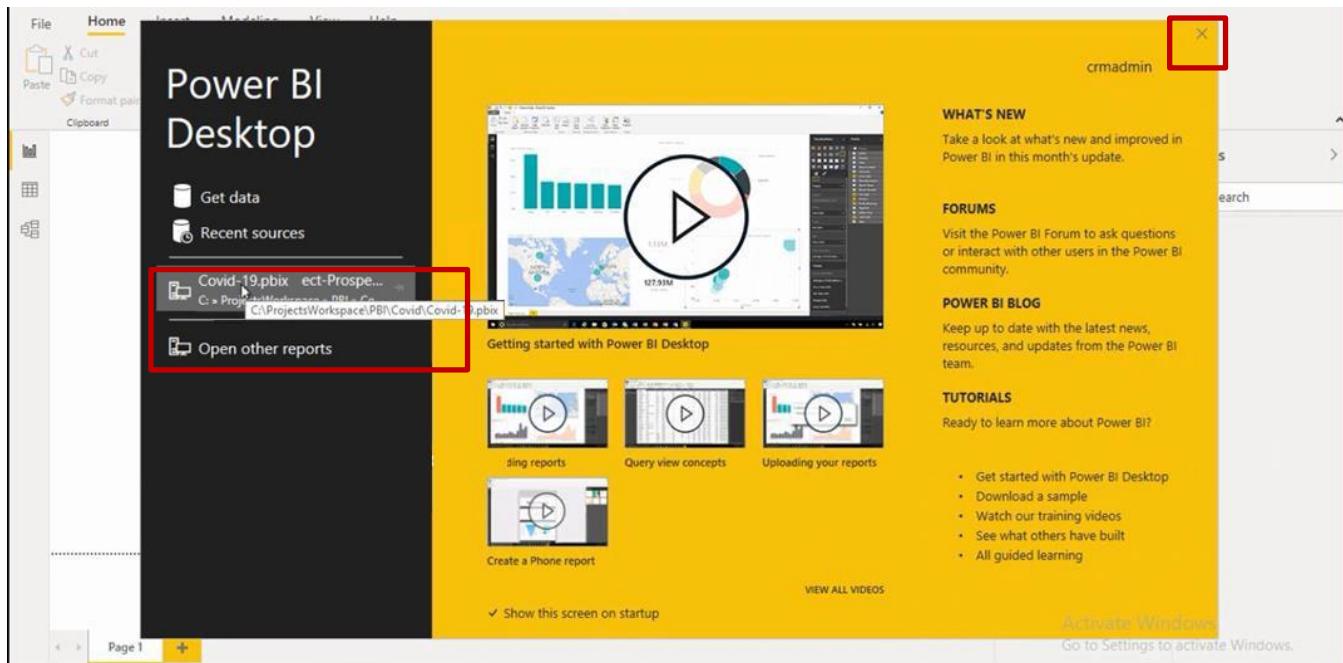
Covid-19-Data

First-Name	Gender	Was-Contact	Outcome
Abdoulaye	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	
Adama	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Adama	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Adama	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	TRUE	
Adjji	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	TRUE	
Aida	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Alassatou	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Alassane	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Alfa	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	TRUE	LNG_REFERENCE_DATA_CATEG
Alfa	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	TRUE	
Alioune	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Alioune	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Amadou	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Amy	null	FALSE	
Amy	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Armand	null	FALSE	
Assane	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Awa	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Bassirou	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Bineta	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	FALSE	LNG_REFERENCE_DATA_CATEG
Boubacar	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Demba	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG
Edouard	LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE	FALSE	LNG_REFERENCE_DATA_CATEG

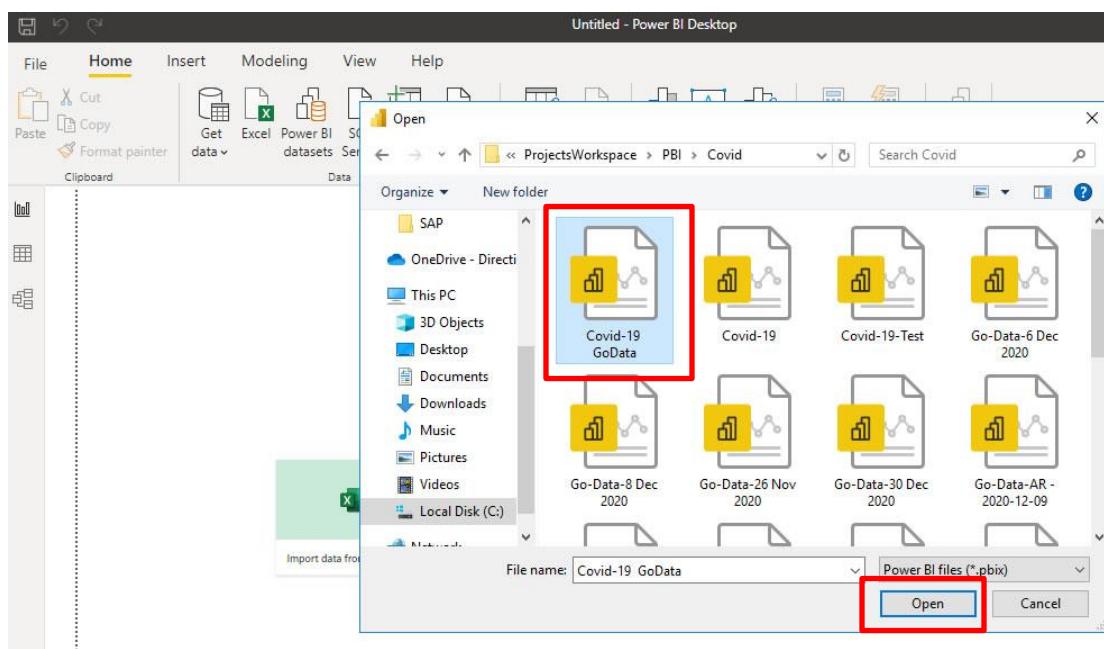
[3] WORK WITH EXISTING TEMPLATE

[3.1] Power BI Desktop

After starting Power BI, you see the “Power BI Desktop”, where you see your existing projects under “Recent Sources”. If your project is not under “Recent Sources” then click on “Open other reports”. You can close this “Power BI Desktop” by clicking on “X”

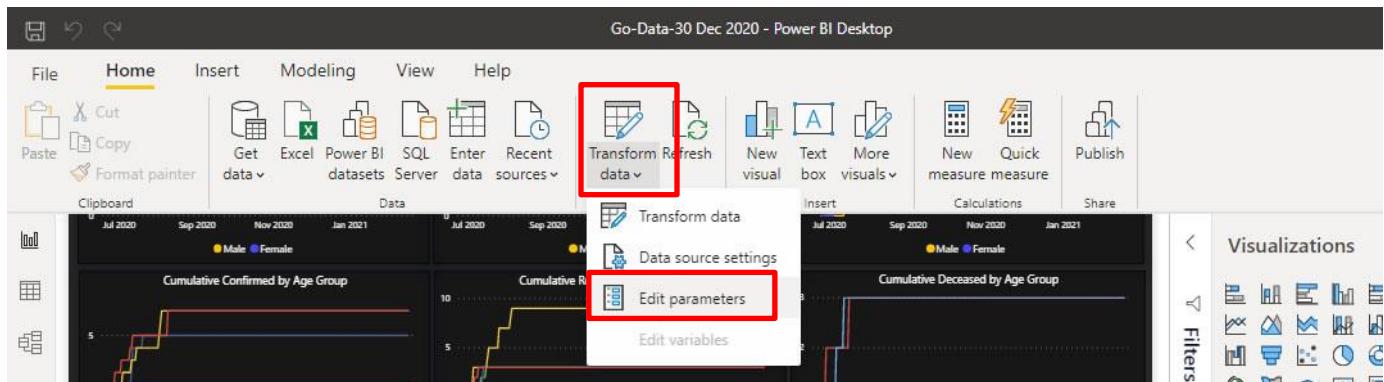


Clicking on “Open other reports” opens the file explorer window where you select your requisite .PBIX file and click on “Open”

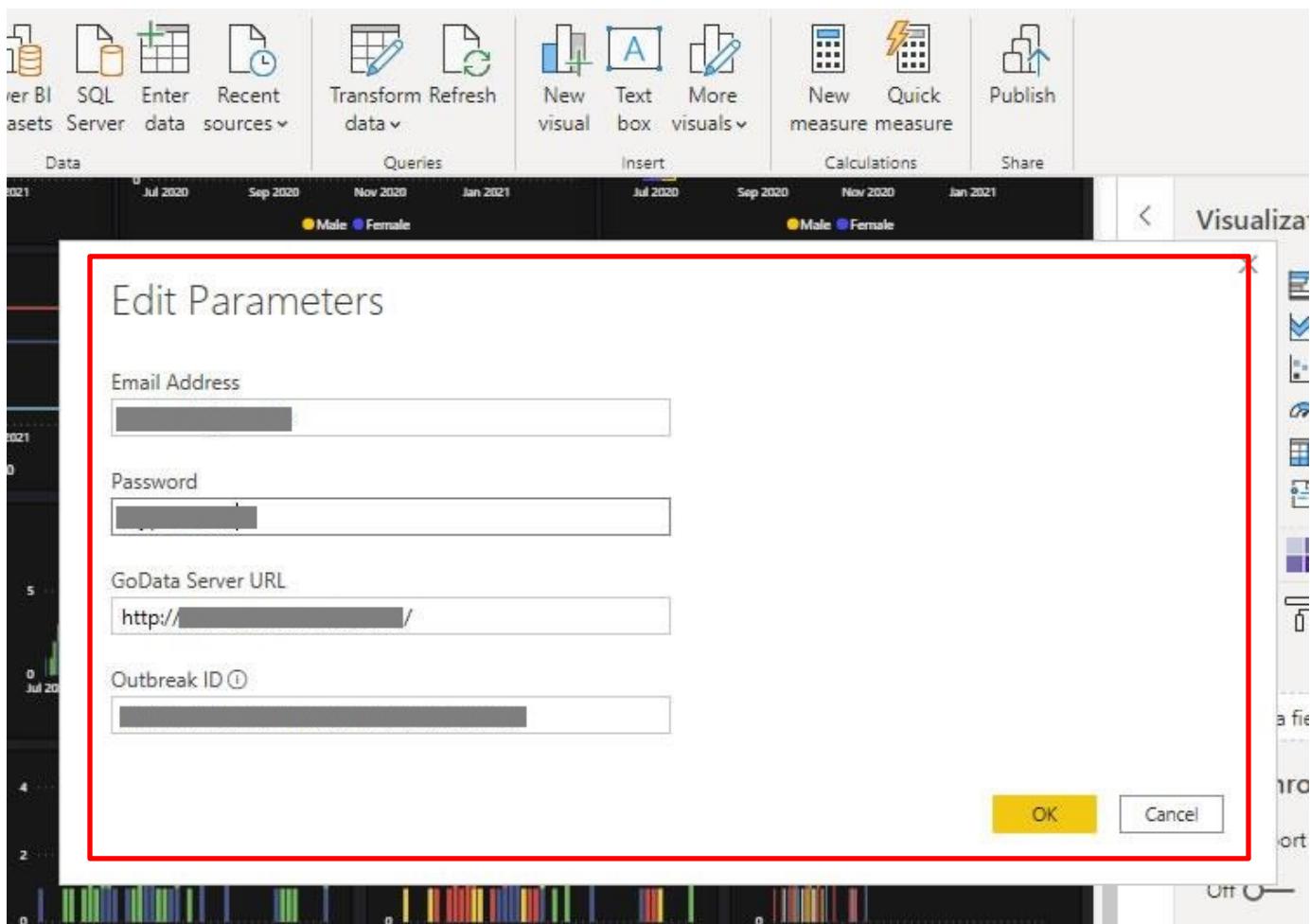


[3.2] Change Parameter

Opening the existing .PBIX file, opens by default the “Visualizations” screen. Here user has to click on “Transform data” button in top menu and then on “Edit parameter” in its dropdown menu. This opens the “Edit parameter” pop-up



In the “Edit parameter” pop-up user needs to update the parameters. The 4 parameters are Email Address, Password, GoData Server URL (Website URL) and Outbreak ID. After filling all the needed data, click on “OK” button. The data gets refreshed with the parameter values.



[4] Making a Master Table

Purpose: Master Table's are used to normalize data which can then reduce its size, make it more concise, and reduce data redundancy.

Let's create an example of a Master Table: We will use data on gender to create a 'Gender Master Table' which can help us run an analysis on, for example, the cumulative number of cases from a disease stratified by gender.

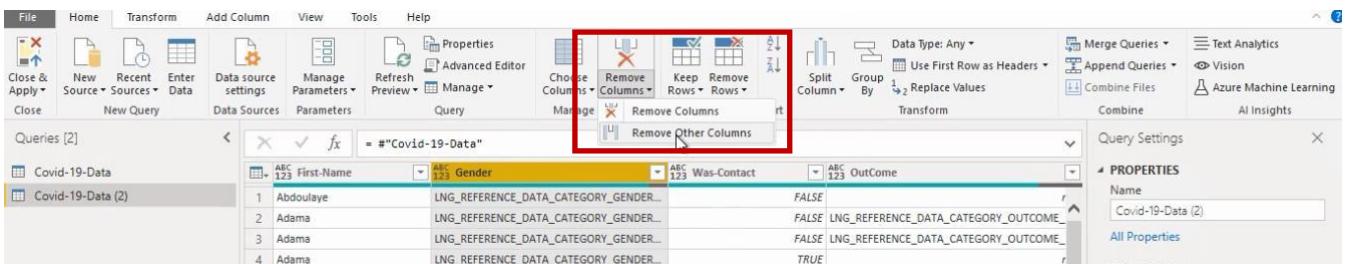
[4.1] Make a copy of your Query

First right click on the Query name and click on "reference" to make a query copy

The screenshot shows the Power BI desktop interface with the 'Queries' list open. The 'Covid-19' query is selected and has a context menu open over it. The 'Reference' option in the menu is highlighted with a red box. The menu also includes other options like Copy, Paste, Delete, Rename, Enable load, Include in report refresh, Duplicate, Move To Group, Move Up, Move Down, Create Function..., Convert To Parameter, Advanced Editor, and Properties... The main area shows a table with columns: First-Name, Gender, Was-Contact, and Outcome. The 'Gender' column contains values like 'LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE' and 'LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE'. The 'Was-Contact' and 'Outcome' columns contain mostly 'FALSE' or 'null' values.

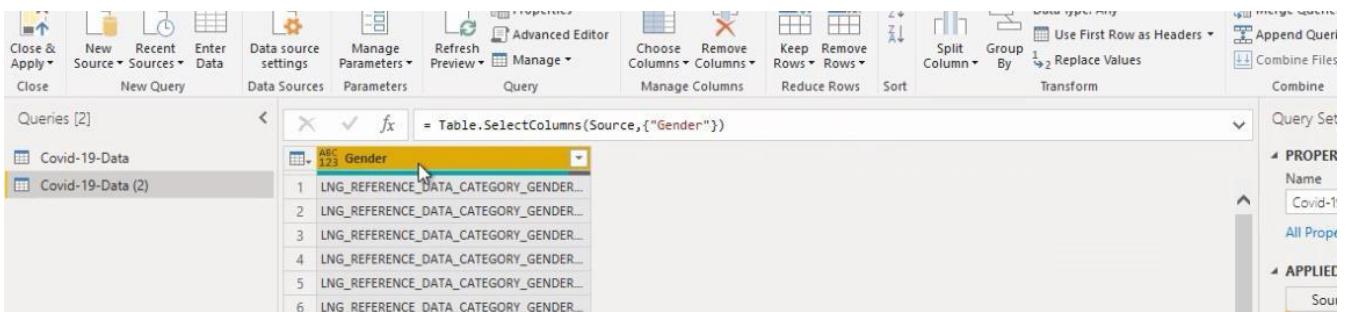
[4.2] Remove unwanted columns in your new Query

As we are working on creating a “Gender Master Table”, we would like to keep data only related to gender, as such we would like to keep the column gender and discard of the rest. Select the column “Gender”, click on “Remove Columns” (on the home menu bar) & then click on “Remove Other Columns” (on the drop down menu)



The screenshot shows the Power BI desktop interface. The ribbon at the top has the 'Transform' tab selected. In the 'Manage' section of the ribbon, there is a dropdown menu labeled 'Remove Columns'. A red box highlights the 'Remove Other Columns' option under this dropdown. Below the ribbon, the query editor shows a table with four columns: 'First-Name', 'Gender', 'Was-Contact', and 'OutCome'. The 'Gender' column is highlighted in yellow. To the right of the table, the 'Advanced Editor' pane displays the M code: = "#Covid-19-Data" and = "Table.SelectColumns(Source,{"Gender"})". The 'Properties' pane on the right shows the query name as 'Covid-19-Data (2)'.

This will remove all of the unwanted columns and only keep the column “Gender”



The screenshot shows the Power BI desktop interface. The ribbon at the top has the 'Transform' tab selected. In the 'Manage' section of the ribbon, there is a dropdown menu labeled 'Remove Columns'. A red box highlights the 'Remove Other Columns' option under this dropdown. Below the ribbon, the query editor shows a table with one column selected: 'Gender'. The 'Advanced Editor' pane displays the M code: = "Table.SelectColumns(Source,{"Gender"})". The 'Properties' pane on the right shows the query name as 'Covid-19-Data (2)'.

[4.3] Remove duplicate values

Keeping the “Gender” column selected, you can remove all duplicate values in it by clicking on “Remove Rows” (on the home menu bar) & then click on “Remove Duplicates” (on the drop down menu)

The screenshot shows the Power BI desktop interface with the 'Home' tab selected. In the ribbon, under the 'Transform' section, there is a 'Remove Rows' button with a dropdown arrow. The dropdown menu is open, showing several options: 'Remove Duplicates' (highlighted with a red box), 'Remove Blank Rows', and 'Remove Errors'. Below the dropdown menu, the status bar displays 'Data Type: Any' and 'Use First Row as Headers'. The main workspace shows a query named 'Covid-19-Data (2)' containing a single column named 'Gender' with five rows of data.

This will lead to having no duplicate data values in the selected column, in our case, the ‘Gender’ column

The screenshot shows the Power BI desktop interface with the 'Home' tab selected. The 'Transform' ribbon section is visible. The main workspace shows a query named 'Covid-19-Data (2)' containing a single column named 'Gender' with three rows of data. The third row contains the value 'null'. A blue arrow points from the text above to this 'null' value in the table.

[4.4] Remove null value

As you will observe in the above image the last data in row 3 is a “null value”. Since we are creating a master data table there should be no null values. So, click on the “down arrow” on the column header and de-select “(null)” in the dropdown menu. Then click on “Ok”.

The screenshot shows the Power BI desktop interface with the 'Home' tab selected. The main workspace shows a query named 'Covid-19-Data (2)' containing a single column named 'Gender' with three rows of data. The third row contains the value 'null'. A context menu is open over the third row, with the 'OK' button highlighted with a red box. The dropdown menu also includes options like 'Sort Ascending', 'Sort Descending', 'Clear Sort', 'Clear Filter', 'Remove Empty', and 'Text Filters'.

[4.5] Add Index column

To add a new “Index” column, click on the “Add Column” tab (on the menu bar). Then click on “Index Column” (home menu bar) and then click on “From 1” (from the drop down menu)

File Home Transform Add Column View Tools Help

Column From Custom Invoke Custom Examples Column Function General

Conditional Column Index Column From 0 From 1

Merge Columns ABC Extract Statistics Standard Scientific Information Date Time Duration Text Analytics

Format abc Parse From Text From Number From Date & Time

Custom... Create a new column with an index starting at 1. Removed Duplicates, each ([Gender] <> null))

Covid-19-Data Covid-19-Data (2)

ABC Gender

1 LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE

2 LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE

This adds a new “Index” column next to the “Gender” column you had already in your Master Table. Double click on its column heading to change its name

Column From Custom Invoke Custom Examples Column Function Duplicate Column General

Format abc Parse Statistics Standard Scientific Information Date Time Duration Text Analytics AI Insights

Queries [2]

Covid-19-Data Covid-19-Data (2)

ABC Gender

1 LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE

2 LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE

= Table.AddIndexColumn(#"Filtered Rows", "Index", 1, 1, Int64.Type)

Index

Change the name of the new Index column to, for example, “Gender ID”, since we are making the “Gender Master Table”

General From Text From Number From Date & Time AI Insights

Queries [2]

Covid-19-Data Covid-19-Data (2)

ABC Gender

1 LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE

2 LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE

= Table.RenameColumns(#"Added Index", {"Index", "Gender-ID"})

Gender-ID

[4.6] Change name of the query

Also double click on the query name & change the name of the query to for example “Dim-Gender”, since we are making the “Gender Master Table”

General From Text From Number From Date & Time AI

Queries [2]

Covid-19-Data Dim-Gender

ABC Gender

1 LNG_REFERENCE_DATA_CATEGORY_GENDER_MALE

2 LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE

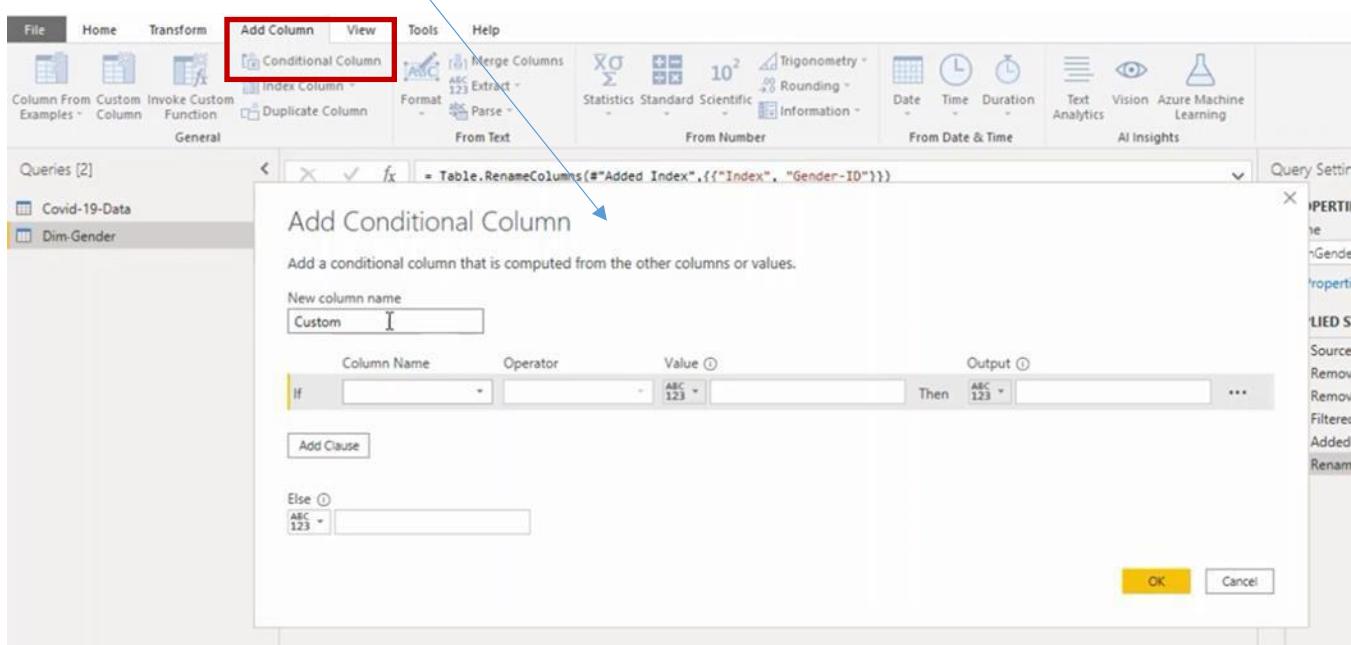
= Table.RenameColumns(#"Added Index", {"Index", "Gender-ID"})

Gender-ID

[4.7] Add a Conditional Column with short Data names

Purpose: A Conditional Column is used for when you want to make user friendly displays of long strings.

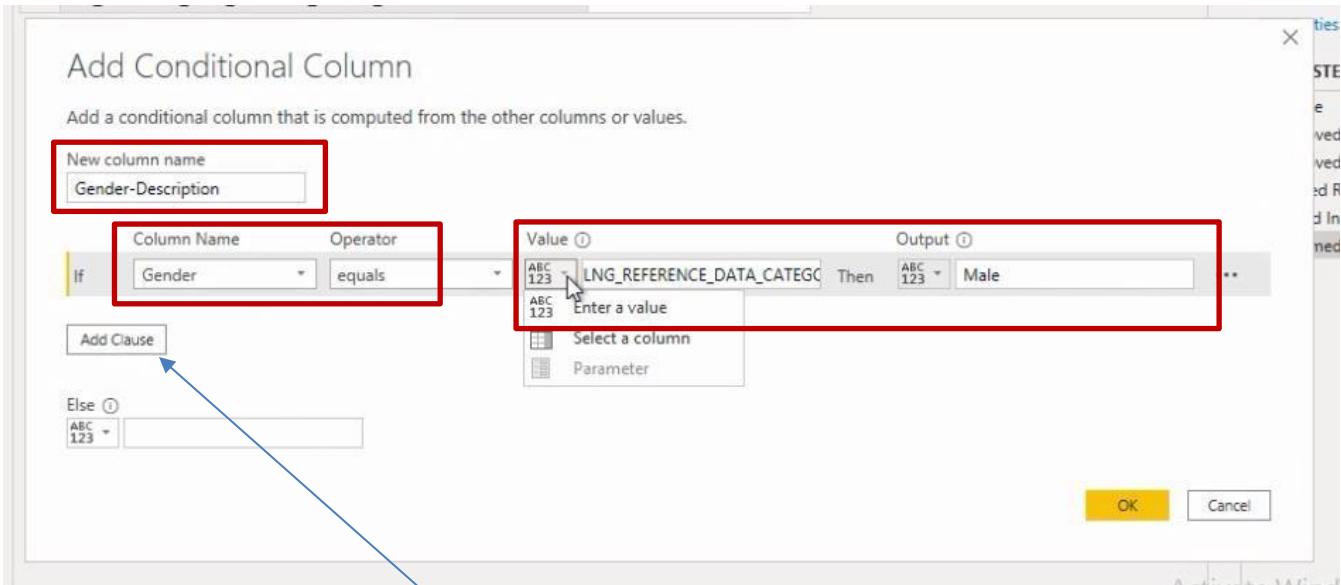
As you can see from section 3.6, the data in the rows from the first column (“Gender”) are very long, as such, we need to make them shorter. Go to the “Add Column” tab & click on the “conditional column” button. This opens the “Add Conditional Column” pop-up



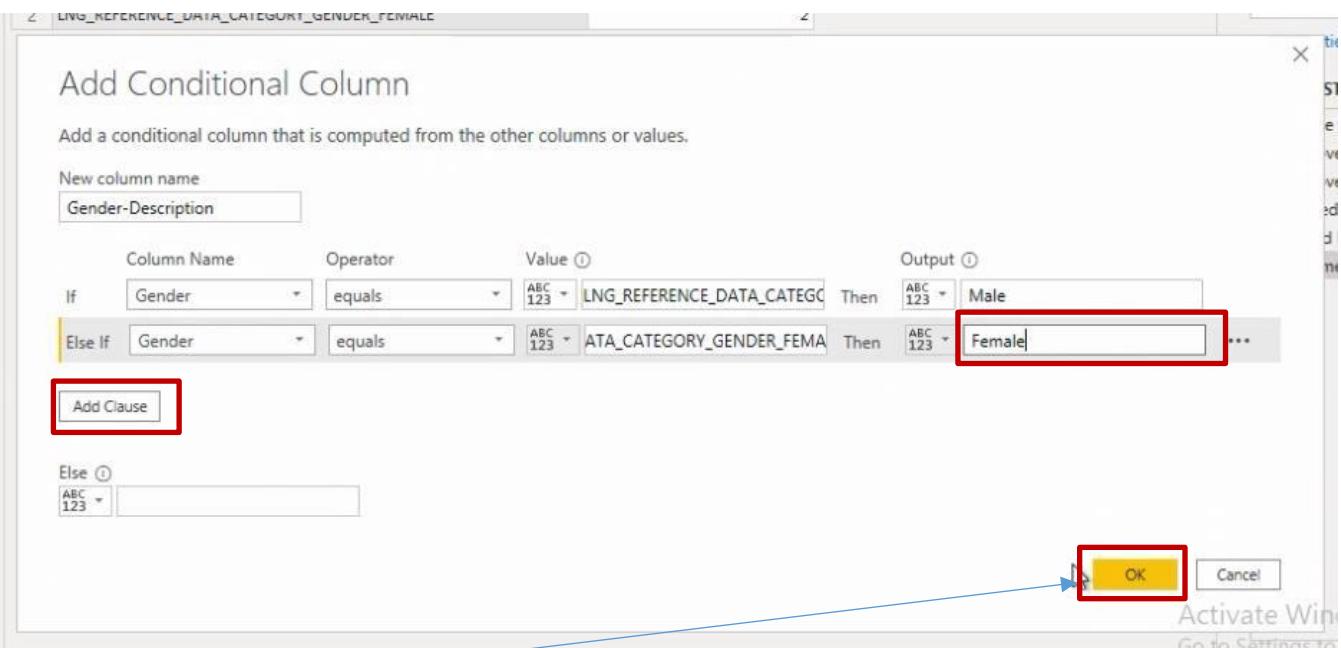
In this pop-up, first enter the column name in the ‘New column name’ box, for example “Gender-Description”.

The conditional column is computed from other columns or values. So first for the “Column Name”, select from the drop down menu the name of the Gender variable (in our case its “Gender”).

In the operator box select “Equals” from the dropdown menu. Under the Value & Output (ABC/123 icon) columns select “Enter a value” from the dropdown menu. Then under the “Value box” enter the existing data name from the column that you will like to change (in our example that would be LNG_REFERENCE_DATA_CATEGORY, this is the text in the first row of the column Gender) and enter the new or equivalent data text that you would like to appear instead under ‘output column’, in our example, enter “Male” under “Output column”



Similarly we click on the button “Add Clause” to add another row in this conditional column, creating the new data name “Female”

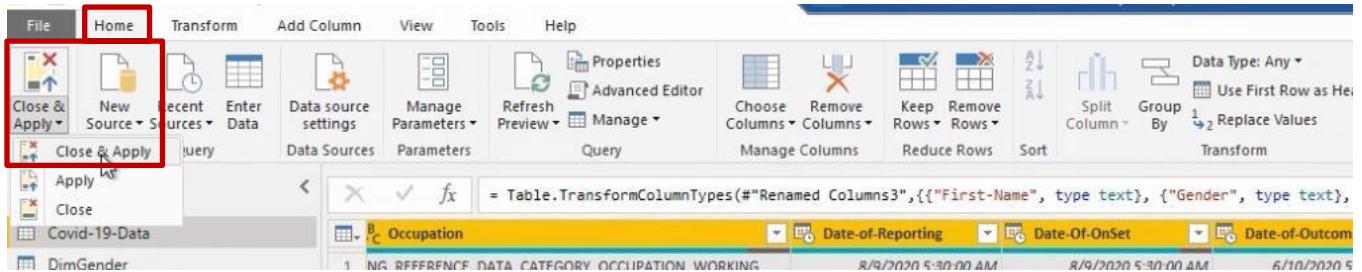


Then click “OK”, and you will get the new column “Gender-Description” with new data names “Male” & “Female”

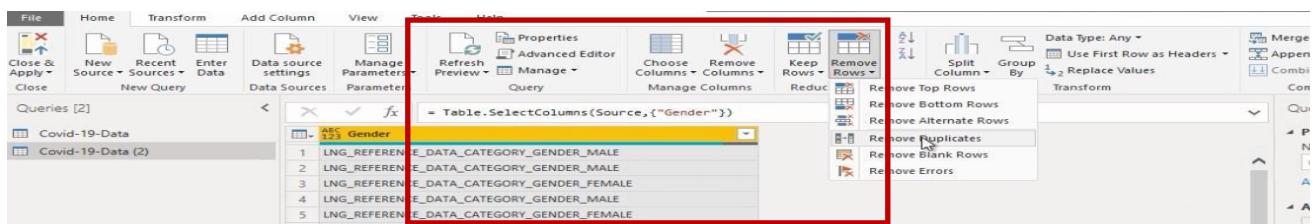
Covid-19-Data	Gender	Gender-ID	Gender-Description
Dim-Gender	1	LNG_REFERENCE_DATA_CATEGORY_GENDER_MA	Male
	2	LNG_REFERENCE_DATA_CATEGORY_GENDER_FEMALE	Female

[4.8] Close & Apply

Similarly you can create Master Data Tables for all the other Variables received from GoData (those with fixed values), like Occupation, Outcome, Classification, DAgeGroup. After you have completed creating all the Master Tables like we did for Gender, go to “Home” on the menu bar and click on “Close & Apply” (home menu bar), then click on “Close & Apply” (in the dropdown menu)



You will then be prompted with a “Apply Query Changes” pop-up which shows the progress of applying the query to the data and loading it. This have then finished getting the data and making the master table.



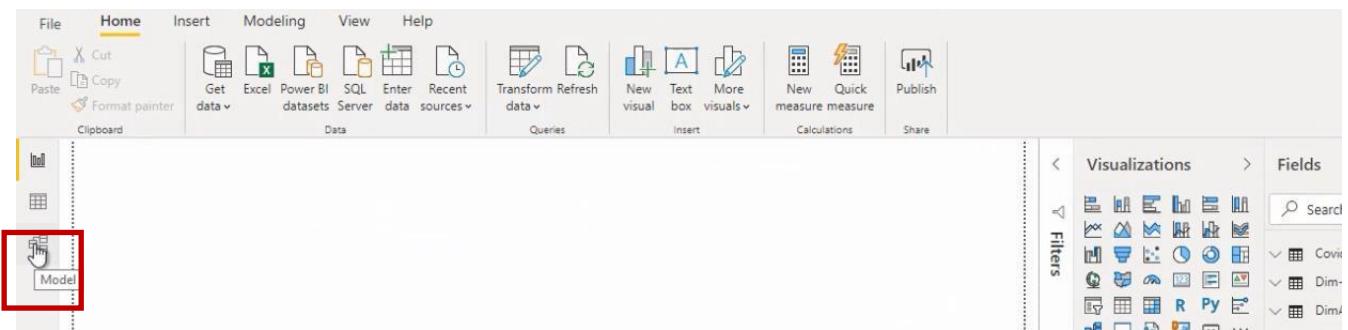
[5] Data Modelling

Purpose: In Data modelling we are only setting the relationship between the “Master Data Tables” generated (from our example that would be ‘Covid-Data’ and ‘Dim-Gender’). If you created more “Master Data Tables” (i.e occupation, outcome, classification, age group etc) you can similarly create a relationship amongst them. Here we are going to set up relationships between the variables in the Covid-Data “Master Data Table” and variables in other “Master Data Tables”. Once the relationships are created and set then you can work on how you would like to visualize your data in a dashboard

[5.1] Open “Data Modeling” dashboard

After creating all “Master Data Tables” like we did for gender and clicking on “Close & Apply” you get a blank screen. In this blank screen is where we can start our “Data Modelling”.

In the left panel you see 3 icons: Report, Data & Model. Click on "Model"



You get this “Data Modelling Dashboard” (screen below) where you see all the “Master Data Tables” that you have created.

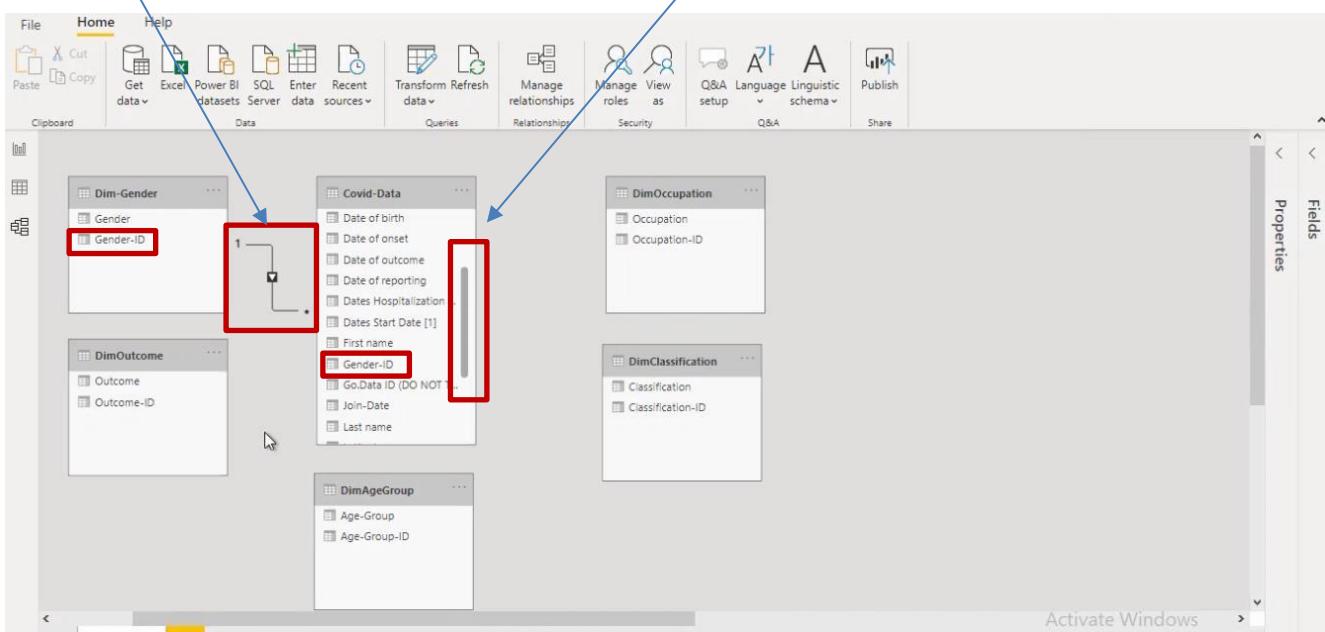
Now in this screen you need to manage the relationships between these different “Master Data Tables”. Note that each box relates to one of the “Master Data Tables” you created

A screenshot of the Power BI Data Modelling Dashboard. The ribbon shows 'Home' selected. The main area displays a grid of master data tables. Each table is represented by a box with a grid icon and a name: 'Dim-Gender', 'Covid-Data', 'DimOccupation', 'DimClassification', 'DimOutcome', and 'DimAgeGroup'. The 'Covid-Data' table box is expanded, showing its detailed fields: Age / Years, Age Group-Sort, Age-Group-ID, Case ID, Classification-ID, County-ID, Date of birth, Date of onset, Date of outcome, Date of reporting, and Dates Hospitalization A vertical 'Properties' pane is visible on the right side of the dashboard.

[5.2] Set relationships using the drag-n-drop method

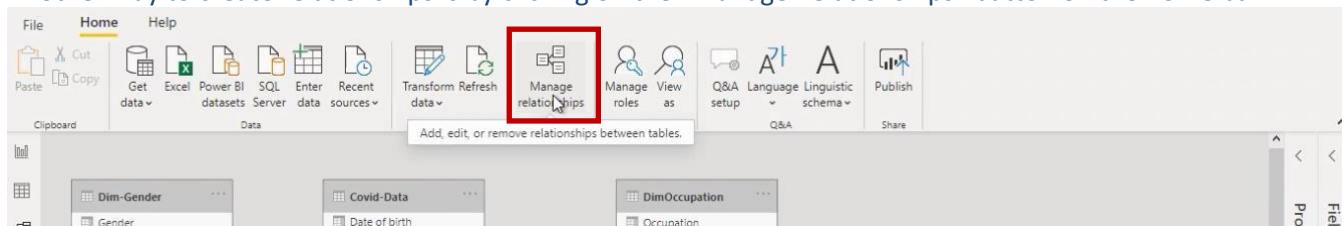
To set relationships between variables in the different “Master Data Tables” generated (for example, Gender-ID (variable of “Master Data Table” DIM-Gender) and Gender- ID (variable of Covid -data “Master Data Table”) scroll to get both “Gender- ID” variables in each “Master Data Table” visible within their respective tables, then drag “Gender-ID’ from “Master Data Table” (for example DIM-Gender) and drop onto the “Gender ID” from the other “Master Data Tables” (the Covid-data).

A relationship will be formed as can be seen in the image below.

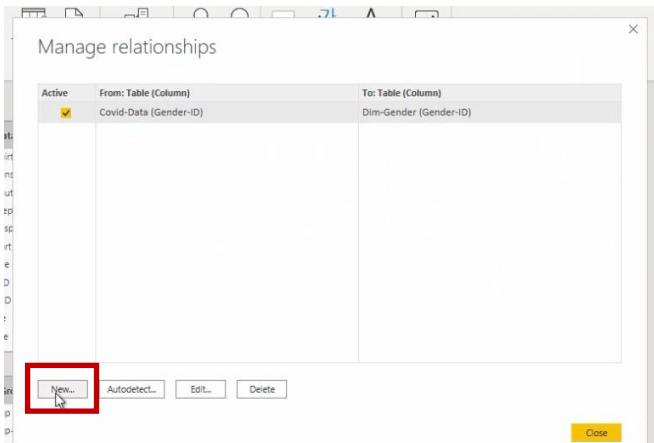


[5.3] Set relationships using the “Manage Relationships”

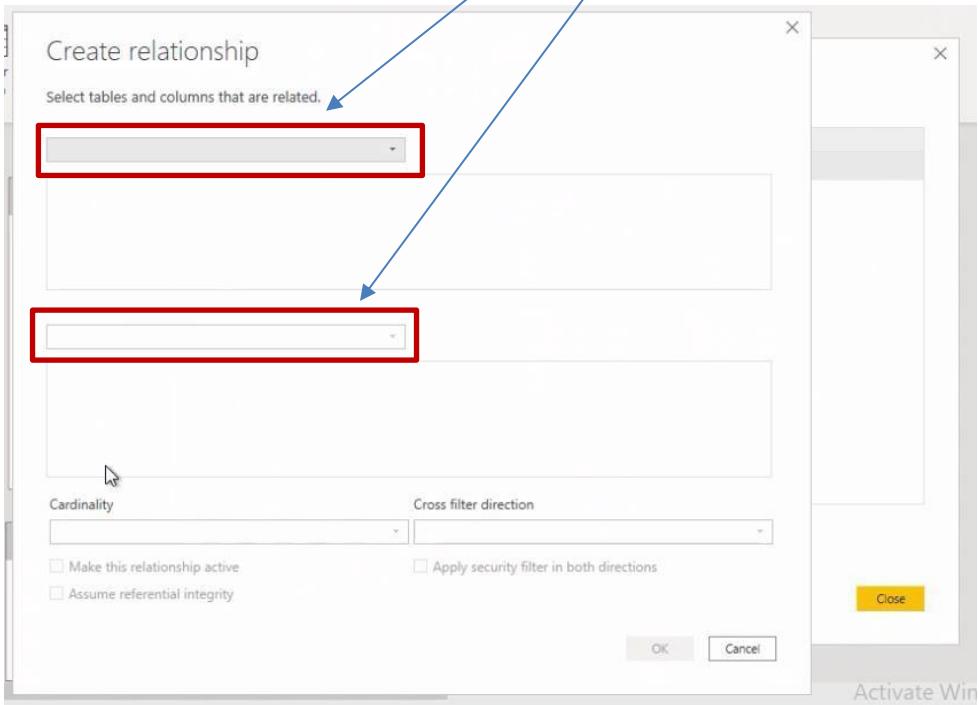
Another way to create relationships is by clicking on the “Manage Relationships” button on the home bar.



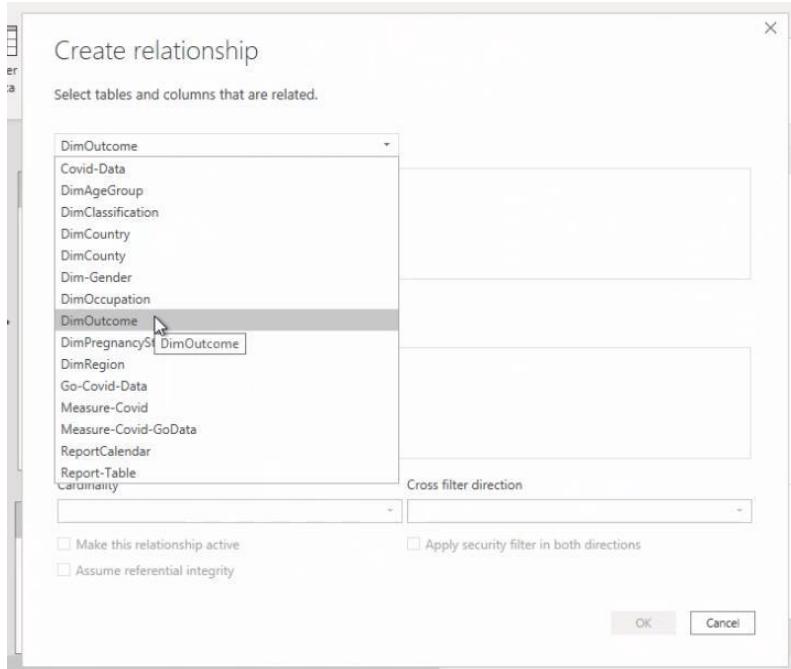
This opens the “Manage relationships” pop-up which has one column labeled “From: Table (column)” and one column labeled “To: Table (Column)”. These will show what relationships have already been built. To build a new relationship, click on the “New” button to open the “Create relationship” pop-up



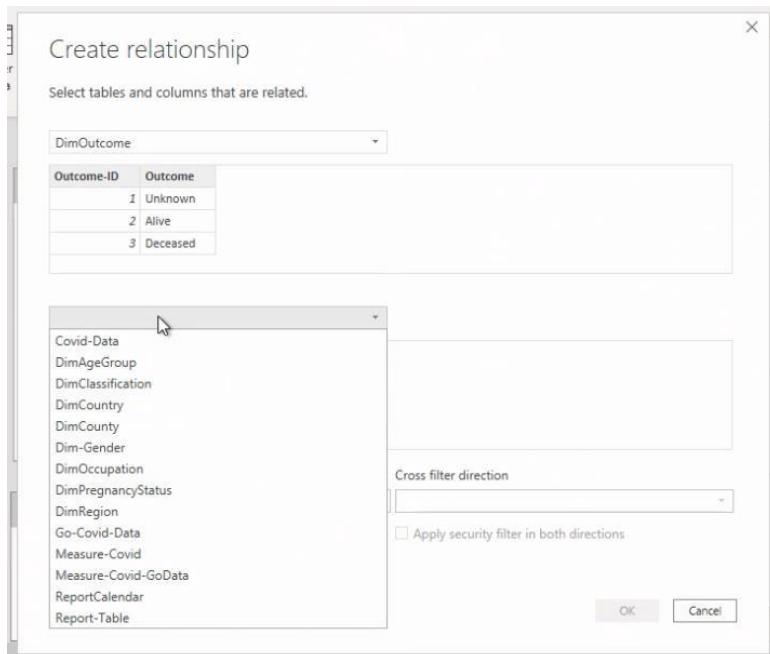
In the “Create relationship” pop-up, first select which “Master Data Tables” you will want to set the relationships between, these “Master Data Tables’ can be selected from the two dropdown menus. Once you select the two “Master Data Tables” you will see that the data in each of the “Master Data Tables” will appear in the box just below them. Then go ahead and select the variables in each of the “Master Data Tables that you would like to build that relationship amongst.



Select the “Master Data Table” from the first drop down menu (in this dropdown menu you will find a list of all the “Master Data Tables” you created). Then select the second “Master Data Table” from the second drop down menu

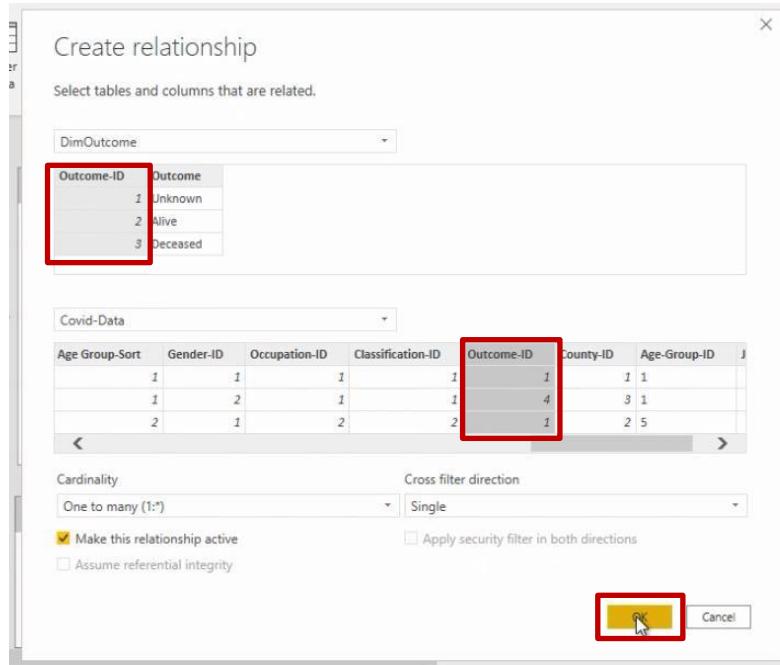


Then select the second “Master Data Table” from the second drop down menu .

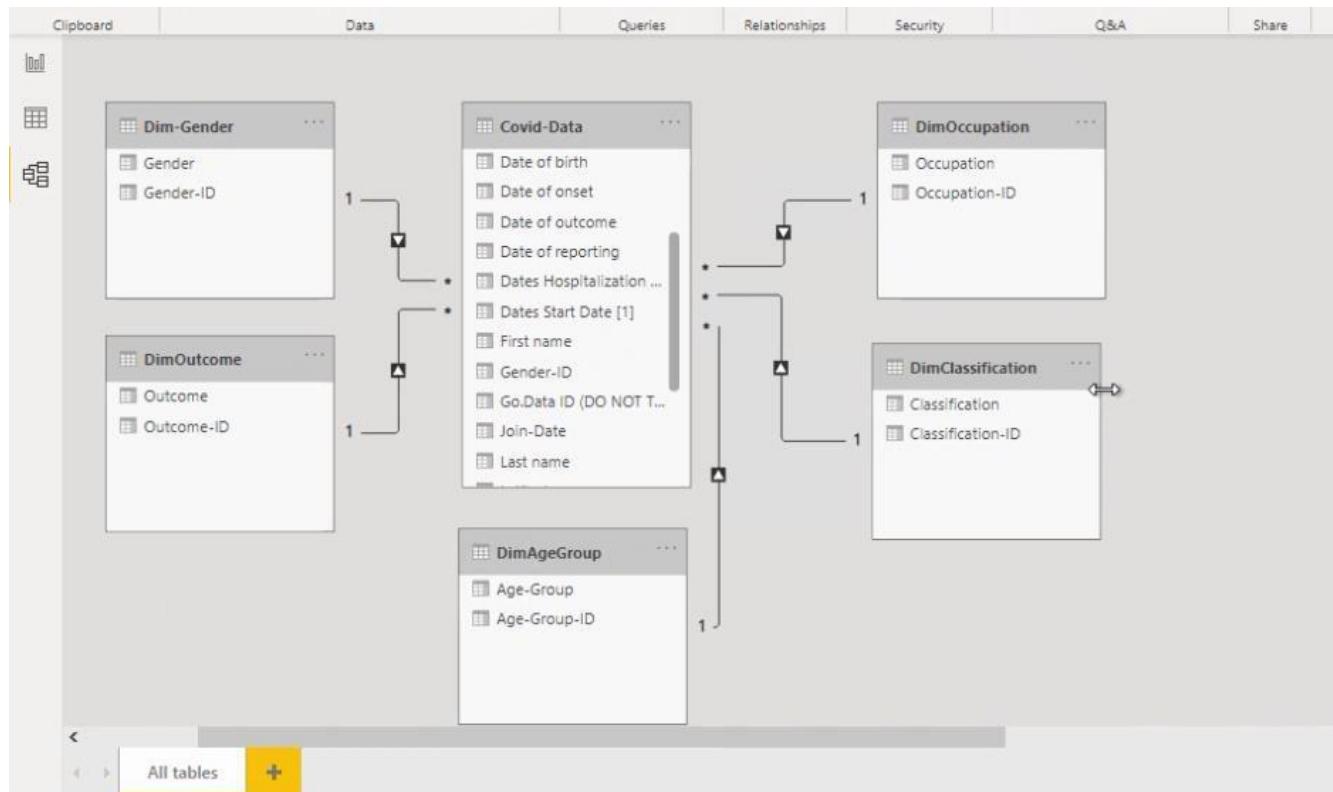


You will see that the available data under each “Master Data Table” will become available in the box below them.

Select the columns in each of the “Master Data Tables” that you want to build the relationships between, you will see that when you select on the column it will be highlighted in light grey. and click on “OK”



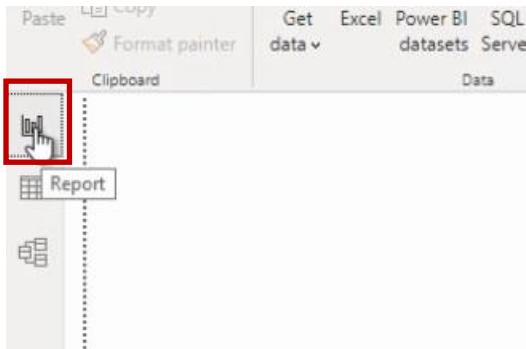
This will create a relationship between the selected columns from the two “Master Data Tables”. Continue creating relationships between all of the variables that you need so that you end up with a final diagram of relationships, something that could look like the image below.



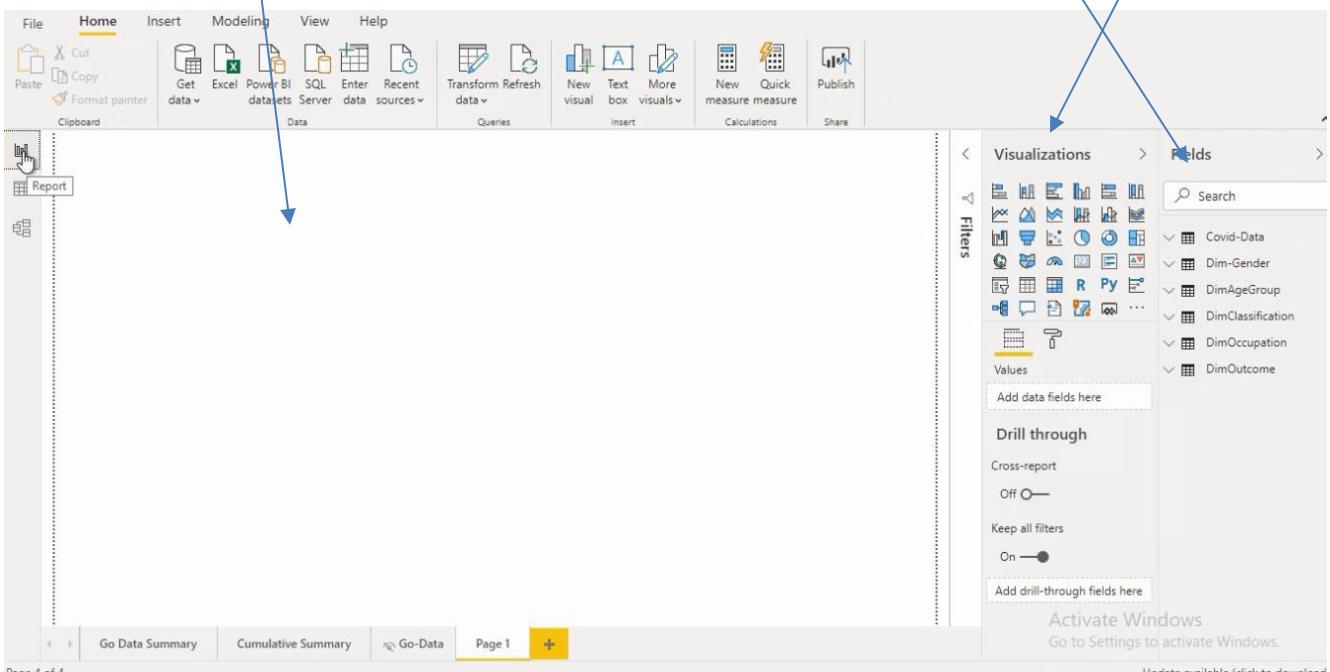
[6] Reports as Visualizations'

[6.1] Open “Reports” homepage

After creating relationships click on the “Reports” icon in the left panel



You will then see a blank screen on your “Reports” homepage, where you see table names and visualization on right, and a blank canvas on the left. In this blank canvas is where we will start creating visuals and building our dashboard (visually).



Click on “Table name” and create its related visuals in the canvas. You will see there are different ways to visualize that table in the “Visualization” tools. Play around with the different visualization tools by clicking on them to see which best reflects how you are trying to visualize the data from the table you have selected. The visualization you have selected will be populated in the blank canvas on the left hand side.

The screenshot shows the Power BI desktop interface. On the left, a donut chart titled "Count of Case ID by Gender" is displayed, showing 19 (42.22%) Male and 26 (57.78%) Female. The Fields pane on the right lists various fields from the "Covid-Data" table, including "Case ID" and "Count of Case ID". A red box highlights the "Case ID" field in the Fields pane. Another red box highlights the "Count of Case ID" value in the Values section of the Fields pane. Arrows point from the highlighted areas in the Fields pane to the corresponding items in the visualization and the visualization itself.

As an example, for the above visual in the left canvas, first you need to select this visualization icon. Then pick out “Case-ID” from “Covid-Data” table and “Gender” from “Gender-ID” table. Select the “Gender: Values” as “Count of Case ID”. Then you will get the resultant visual in the left canvas

[6.2] Save your project

After you finish creating all of your visuals and building your dashboard, you want to make sure you save it. Click on “ctrl” + “s” in your keyboard OR click on “File > Save as” and save this project to your hard disc, in .pbix format

The screenshot shows the Power BI desktop interface with a "Save As" dialog box open. The dialog box allows saving the project to "Local Disk (C:) > Projects\Workspace". The "File name" field is set to "Covid-19 GoData" and the "Save as type" is set to "Power BI file (*.pbix)". A red box highlights the "File name" field. To the right, the Fields pane is visible, showing the "Covid-Data" table with "Case ID" and "Count of Case ID" selected. The visualization on the left canvas is a donut chart titled "Count of Case ID by Gender".

[7] Refresh Data

Purpose: Data will continue to be updated routinely in your Go.Data, so in order for you to be able to see new data and refresh the current graphics you will need to use the “Refresh” feature

You can refresh data by clicking on the “Refresh” button in the top menu of the home bar.

Data can be refreshed as often as you want, but we advice that you discuss with your colleagues at what time the dashboard will be updated (either daily, weekly, monthly etc)



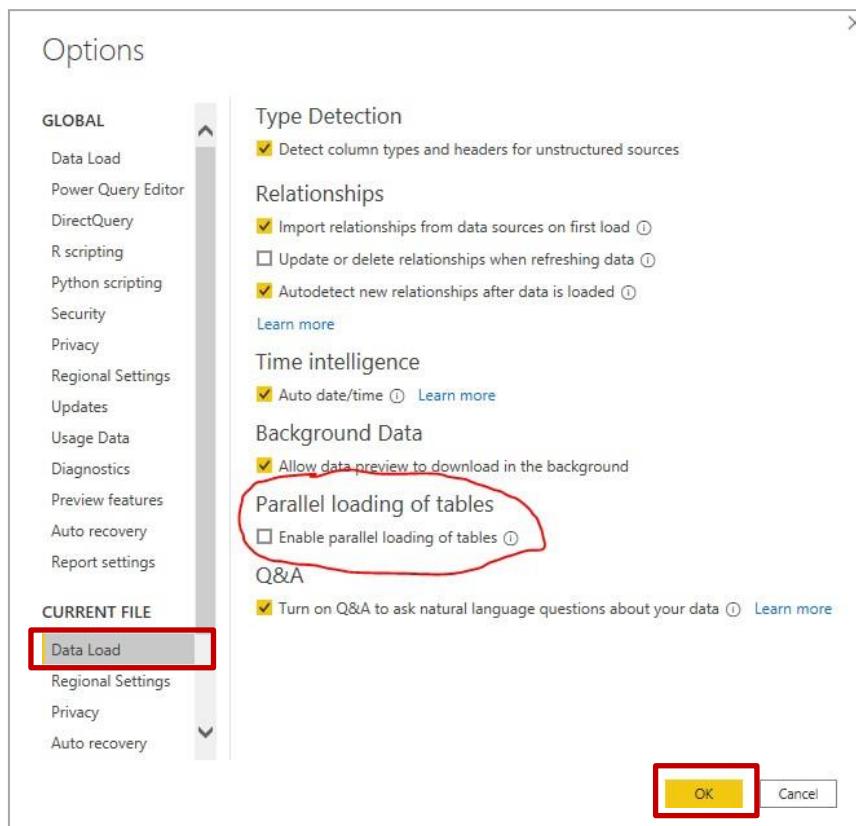
[8] Power BI Features: Disable parallel loading of tables to Access multiple GoData API

If you want to access multiple GoData API's at a time, then you need to disable the parallel loading feature

Disabling this option forces power BI to run the data queries in series instead of in a parallel way. That will prevent the API access tokens from being confused if two requests are submitted simultaneously.

To do this:

1. Open Power BI Desktop
2. Click File >> Options and settings >> Options
3. In the pop-up Options Window, click on the “Data Load” tab on the left hand side
4. Make sure the “Enable parallel loading of tables” box is **UNCHECKED**.
5. Finally click on “OK”



[9] Creating a Project From an Existing Template

[9.1] Opening the Go.Data Dashboards in PowerBI

Section 2 through 7 guided you on how to connect your Go.Data server to Power BI in order to generate your own dashboards. In this section we will go over how you can connect your Go.Data server to dashboard templateS that have already been generated for you in Power BI.

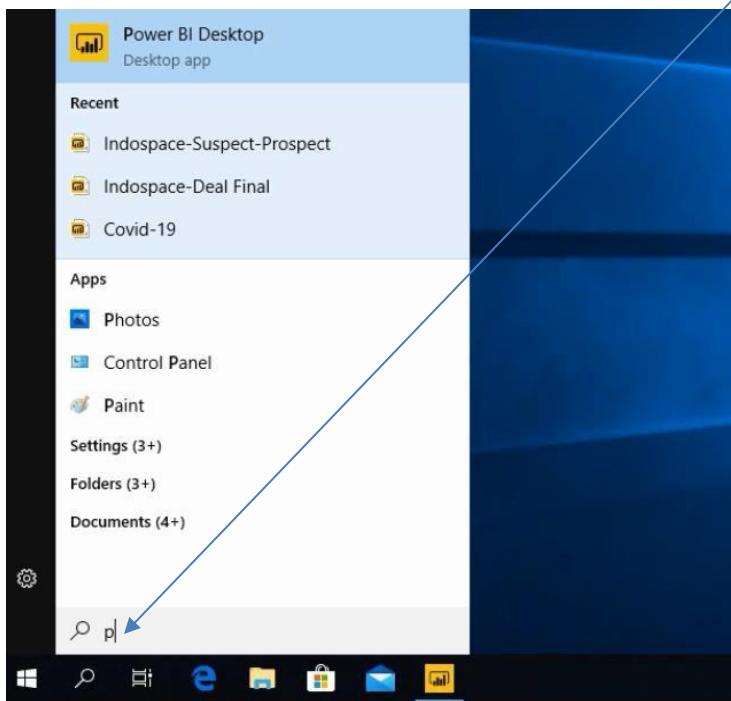
The Go.Data team has generated 6 different dashboard templates with a diverse number of indicators for you to choose from. We will go into detail of what each dashboard template contains on a later section, however the dashboard templates have been named and organized as follows:

- **Case dashboard:** all case related data and epidemiological indicators
- **Contact dashboard:** all contact related data and epidemiological indicators
- **Contact Follow-up dashboard:** all contact follow-up data and follow-up status
- **Laboratory dashboard:** all laboratory related data for cases and contacts
- **Visualization dashboard:** all relationship based data such as chains of transmission and all map/location related data
- **General dashboard:** selected case, contact, follow-up, laboratory and visualization data

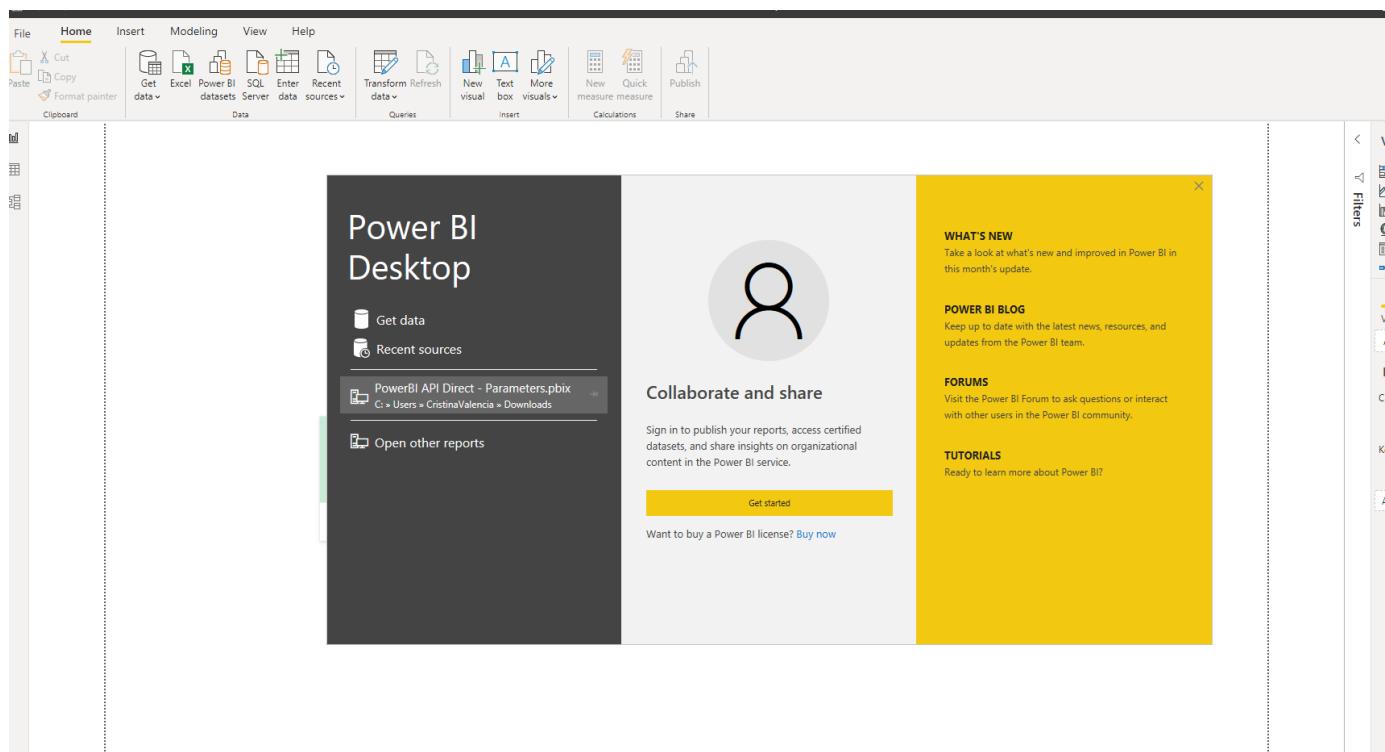
First, access the Go.Data Github (<https://worldhealthorganization.github.io/godata/>) to download the "Go.Datadashboards.pbix" file. You can find a link to this file on the "PowerBI" page.

The screenshot shows the Go.Data Docs Site interface. On the left, there's a sidebar with a navigation menu. Under 'Analytics & Dashboards', the 'PowerBI' option is highlighted. The main content area features a title 'Go.Data Analytics Add-Ons & Dashboards' above a central diagram. The diagram illustrates the integration of various tools with the Go.Data platform, represented by a large 'G' logo at the top. Dashed arrows point from the 'G' to icons for Power BI (bar chart), R (blue 'R'), Python (Python logo), Google Data Studio (blue 'U' logo), Tableau (map pin icon), QGIS (green 'QGIS' logo), knitr (red house icon with a quill pen), and rmarkdown (red house icon with a plus sign). A search bar and navigation links for 'GoData on GitHub' and 'Community of Practice' are also visible at the top right.

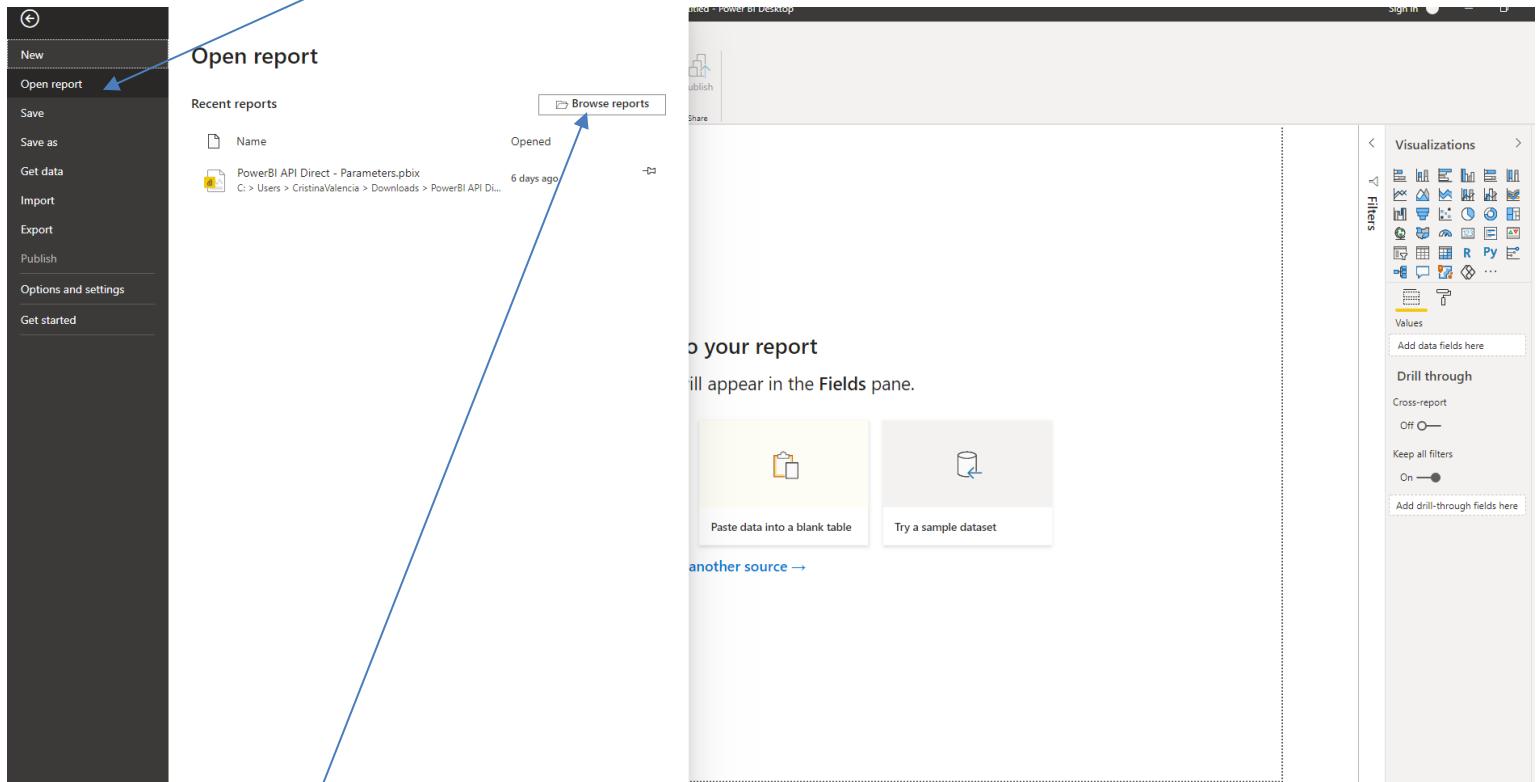
Once you have downloaded the “Go.Datadashboards.pbix” file, start Power BI (refer to section 1 if you have not installed it yet) by going to the windows start menu and writing “power” in the search field. You will get the “Power BI desktop” as one of the options. Click on it



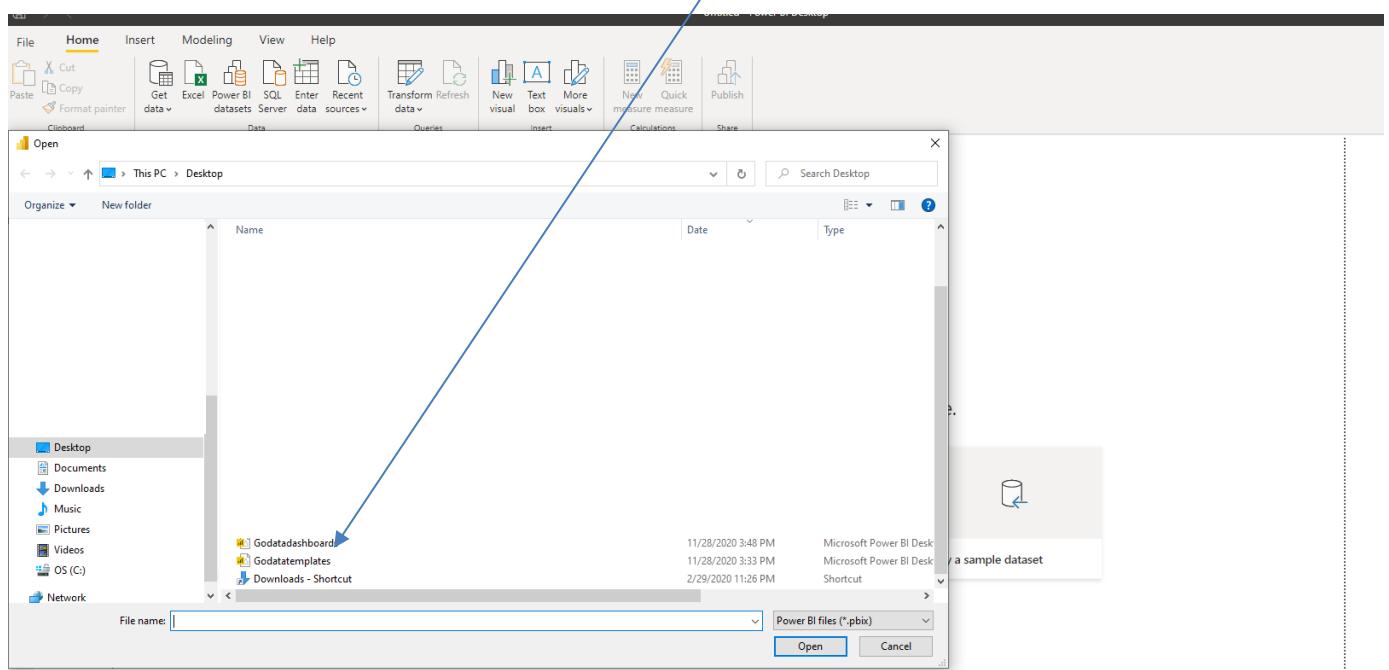
You will see the following screen which will prompt you to open a project



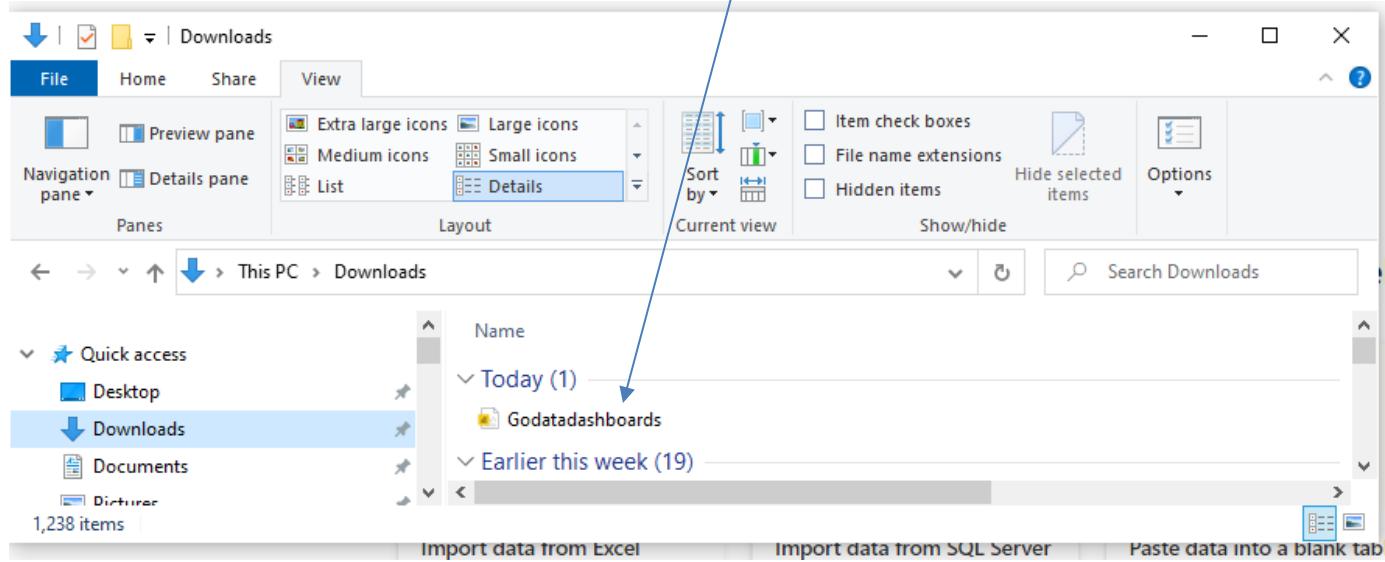
Click on File - - - > and then open report



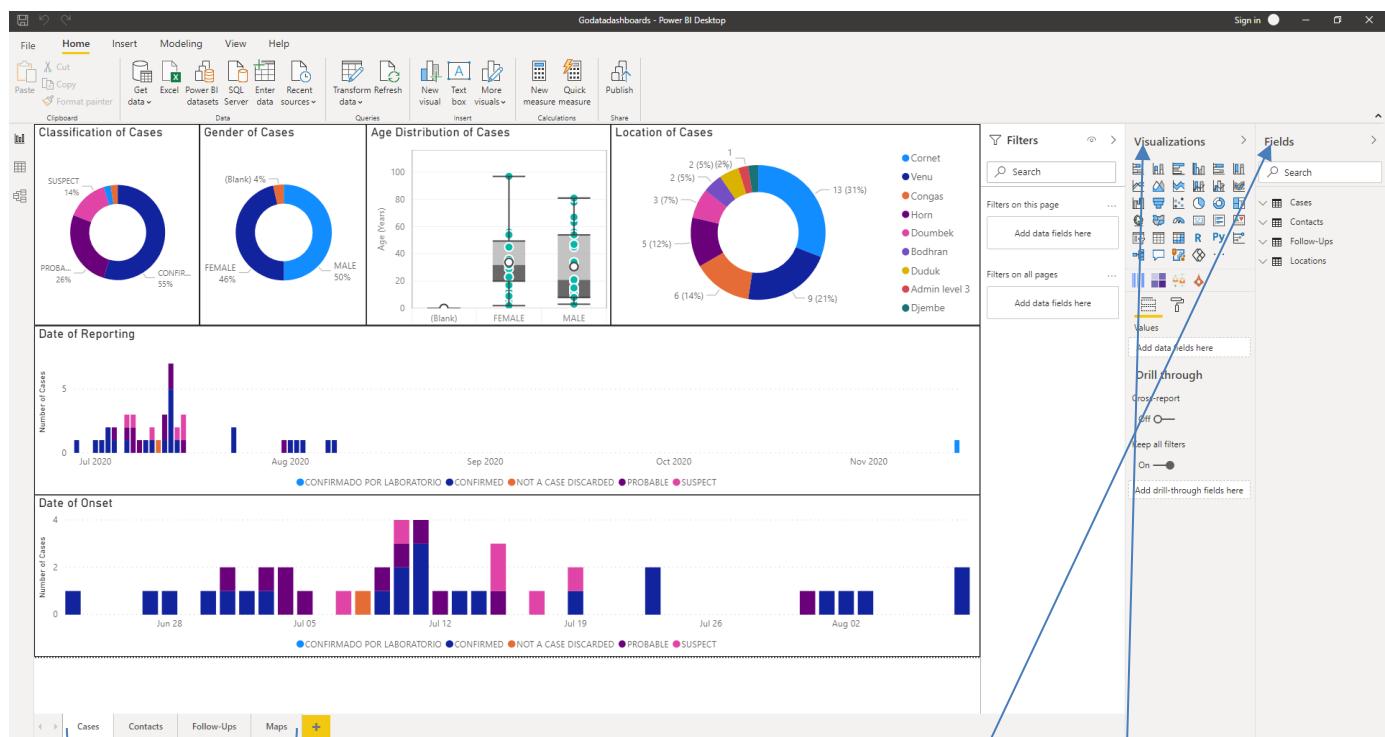
Click on Browse reports in order to find the “Go.Datadashboards.pbix” file you downloaded and click on it



Alternatively, you can also click directly on the “Go.Datadashboards.pbix” file in your download folder. This will automatically open the project in Power BI.



Once the “Go.Datadashboards.pbix” file opens, you will see this default screen appear



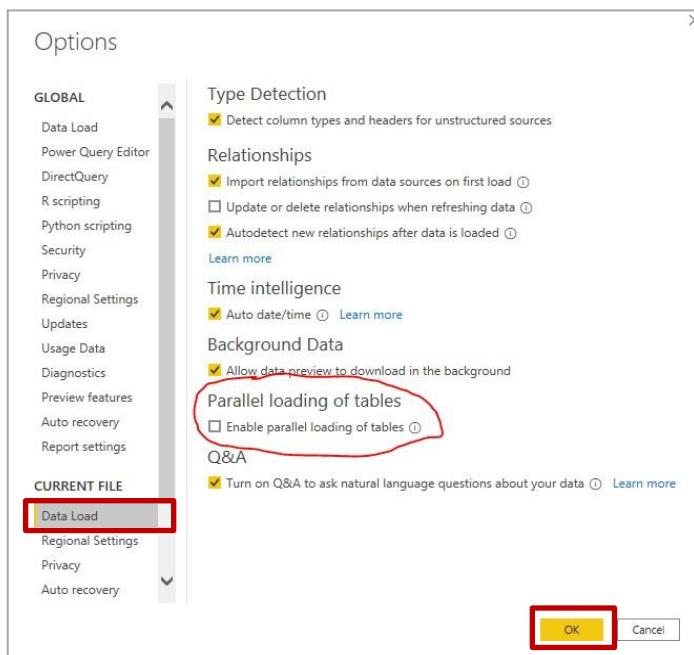
Note that in the bottom of the page you will see 6 tabs (cases, contacts, follow-ups, laboratory, visualization and all), each tab refers to one dashboard. So for example, the first tab “cases” is a dashboard for all case related data and indicators. On the far right hand side, you will see a section named “Fields”, this will have 6 different table icons each labeled cases, contacts, follow-ups laboratory and visualization, each table contains all of the variables that have been imported from Go.data. Next to “Fields”, you will find a section titled “Visualizations’ where you will find different icons of ways in which each of the tables can be visualized, think of this as when you create a table in excel.

IMPORTANT: All of this initial populated data is just dummy data that has been used to generate the templates, note you will have to connect your server to this file in order for your data to be populated into these graphs

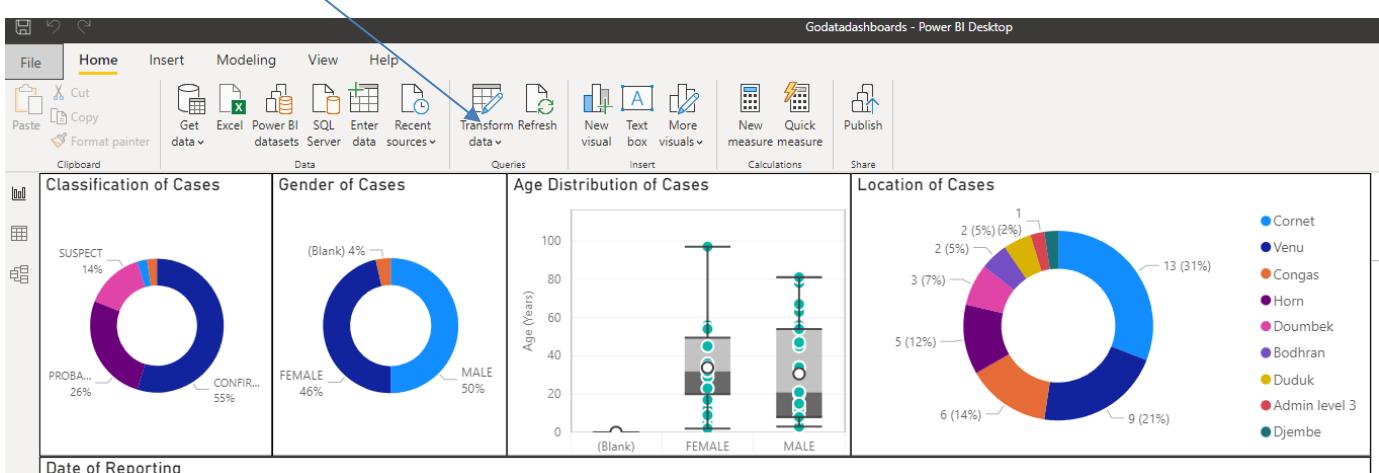
[9.2] Connecting your server to the Go.Data dashboards

After you have successfully opened the “Go.Datadashboards.pbix” as outlined in section 8.1, you will need to make sure that you have disabled parallel loading of tables as follows:

6. Click File >> Options and settings >> Options
7. In the pop-up Options Window, click on the “Data Load” tab on the left hand side
8. Make sure the “Enable parallel loading of tables” box is **UNCHECKED**.
9. Finally click on “OK”



Click on “Transform Data”



The following screen will pop-up, you will see that there are 4 sections in which you will have to enter your individual credentials, these are:

1. **Go.Data Server URL:** *The URL of your server where Go.Data is*
2. **Email address:** *The email address you use to access Go.Data*
3. **Password:** *The password you use to access Go.Data*
4. **Outbreak ID:** *This outbreak ID is found when you enter your go.data installation, go to outbreaks, roll your mouse over the outbreak of interest and select modify. On the URL section, you will see a unique identifier, this is the **Outbreak ID** that will be used when building your query.*

Godatadashboards - Power Query Editor

Queries [8]

	ABC FirstName	ABC gender	ABC wasContact	ABC outcomeId	ABC safeBurial	ABC classification	ABC transferRefused	ABC quest	
1	Abdoulaye	MALE	FALSE	null	FALSE	CONFIRMED	TRUE	Record	
2	Adama	MALE	FALSE	RECOVERED	FALSE	CONFIRMED	FALSE	Record	
3	Adama	FEMALE	FALSE	ALIVE	FALSE	PROBABLE	FALSE	Record	
4	Adama	MALE	TRUE	null	FALSE	SUSPECT	FALSE	Record	
5	Adjil	FEMALE	TRUE	null	FALSE	CONFIRMED	FALSE	Record	
6	Aida	FEMALE	FALSE	ALIVE	FALSE	CONFIRMED	TRUE	Record	
7	Aissatou	FEMALE	FALSE	DECEASED	FALSE	PROBABLE	FALSE	Record	
8	Aissiane	MALE	FALSE	RECOVERED	FALSE	CONFIRMED	FALSE	Record	
9	Aifa	FEMALE	TRUE	ALIVE	FALSE	SUSPECT	FALSE	Record	
10	Aifa	FEMALE	TRUE	null	FALSE	SUSPECT	FALSE	Record	
11	Alioune	MALE	FALSE	RECOVERED	FALSE	CONFIRMED	FALSE	Record	
12	Alioune	MALE	FALSE	RECOVERED	FALSE	CONFIRMED	FALSE	Record	
13	Amadou	MALE	FALSE	DECEASED	FALSE	CONFIRMED	FALSE	Record	
14	Amy		null	FALSE	null	CONFIRMADO POR LABORATORIO	FALSE	Record	
15	Amy	FEMALE		FALSE	RECOVERED	FALSE	CONFIRMED	FALSE	Record
16	Armand		null	FALSE	null	FALSE	CONFIRMED	FALSE	Record

Query Settings

APPLIED STEPS

- username
- password
- outbreak_id
- url
- getTokenJson
- TokenResponseAsJson
- AccessToken
- url_relativepath
- AccessTokenBearer
- getData
- getDataJson
- netDataTable

Please note that this you will need to fill in your own credentials to see data appear - please refer to Box 1 in section 2.4 for guidance as to where you can find your outbreak id.

First, click on email address, and enter your email username.

Godatadashboards - Power Query Editor

File Home Transform Add Column View Tools Help

Queries [8]

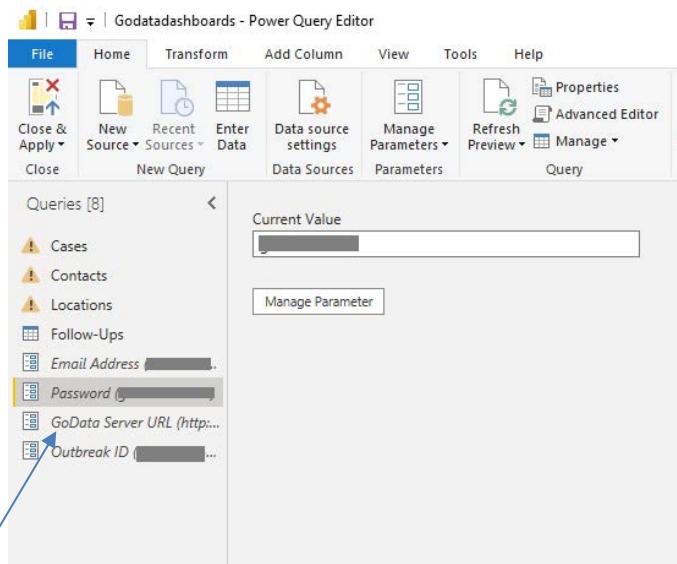
Current Value:

Manage Parameter

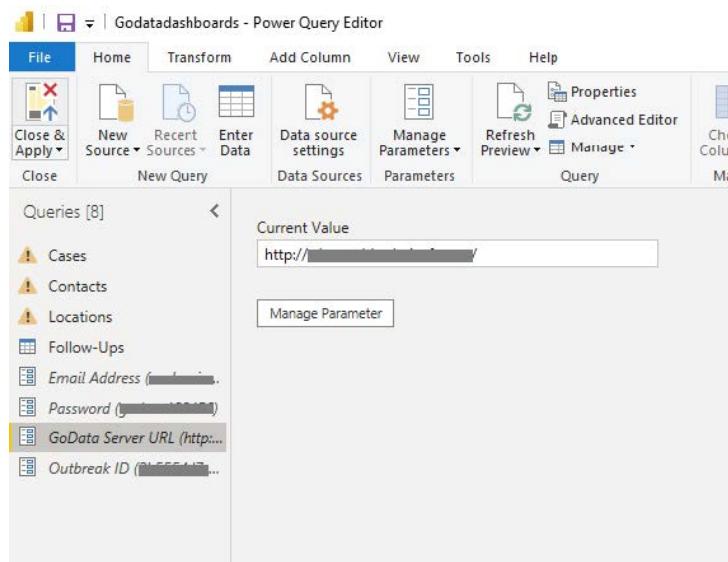
APPLIED STEPS

- username
- password
- outbreak_id
- url
- getTokenJson
- TokenResponseAsJson
- AccessToken
- url_relativepath
- AccessTokenBearer
- getData
- getDataJson
- netDataTable

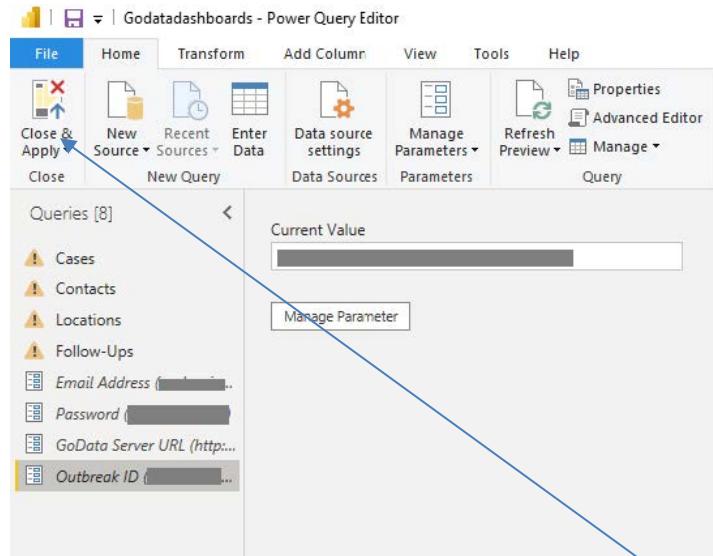
Then click on password, and enter your password.



Click on GoData Server URL, and enter your server's URL



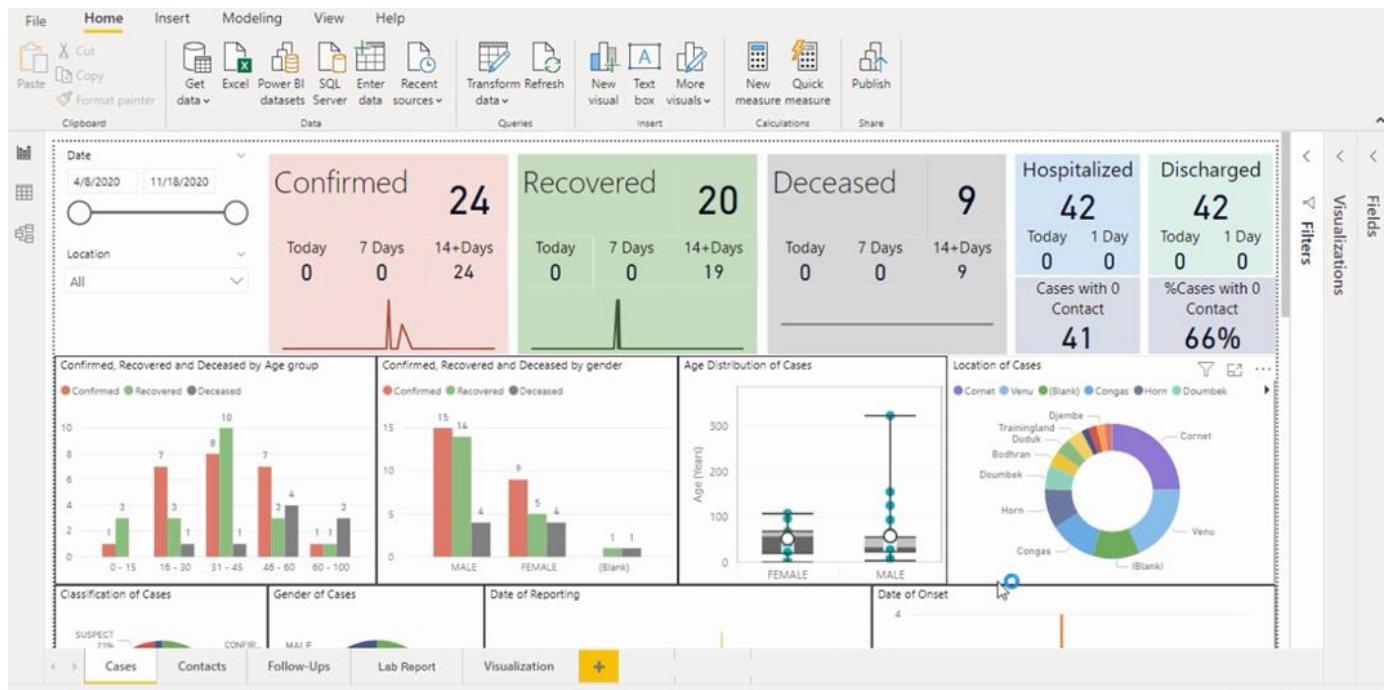
Finally, click on Outbreak ID, and enter the outbreak ID that you want to use.



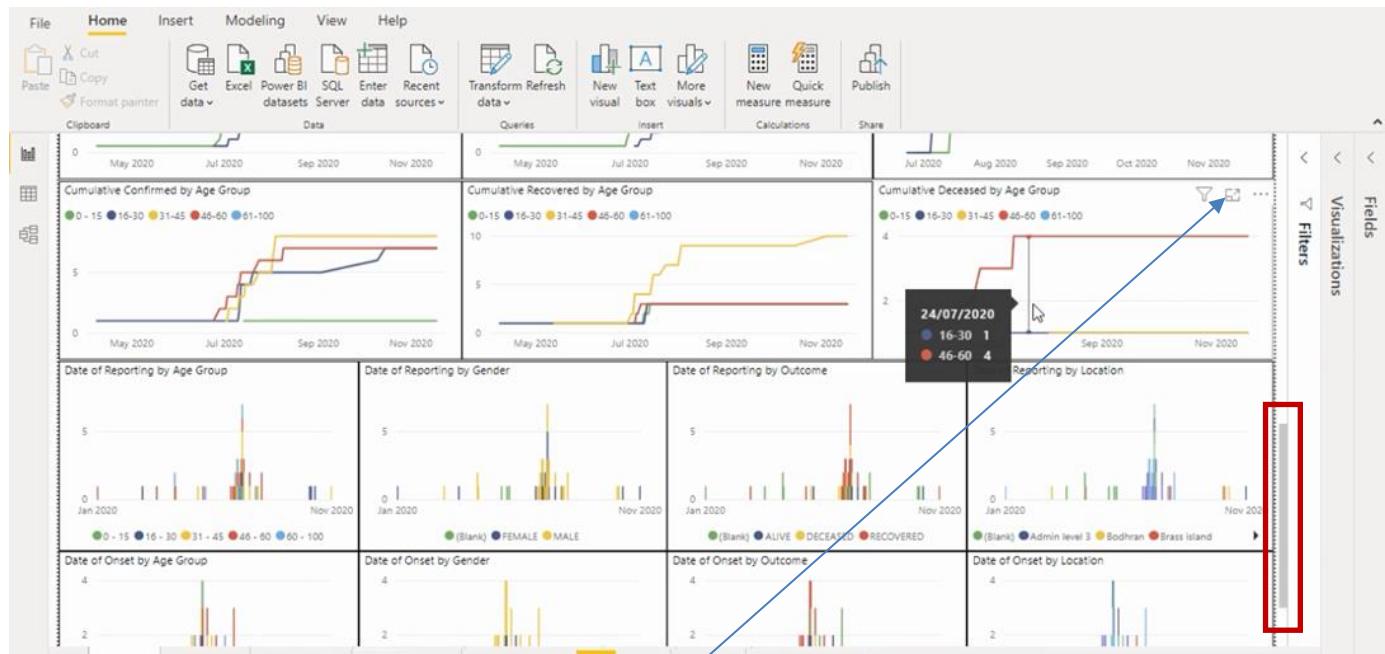
Now that we have set the 4 parameter credentials for our connection, click on “Close & Apply”

[9.3] Exploring Reports in Power BI

When you “Close & Apply” (mentioned above), you come to this screen.



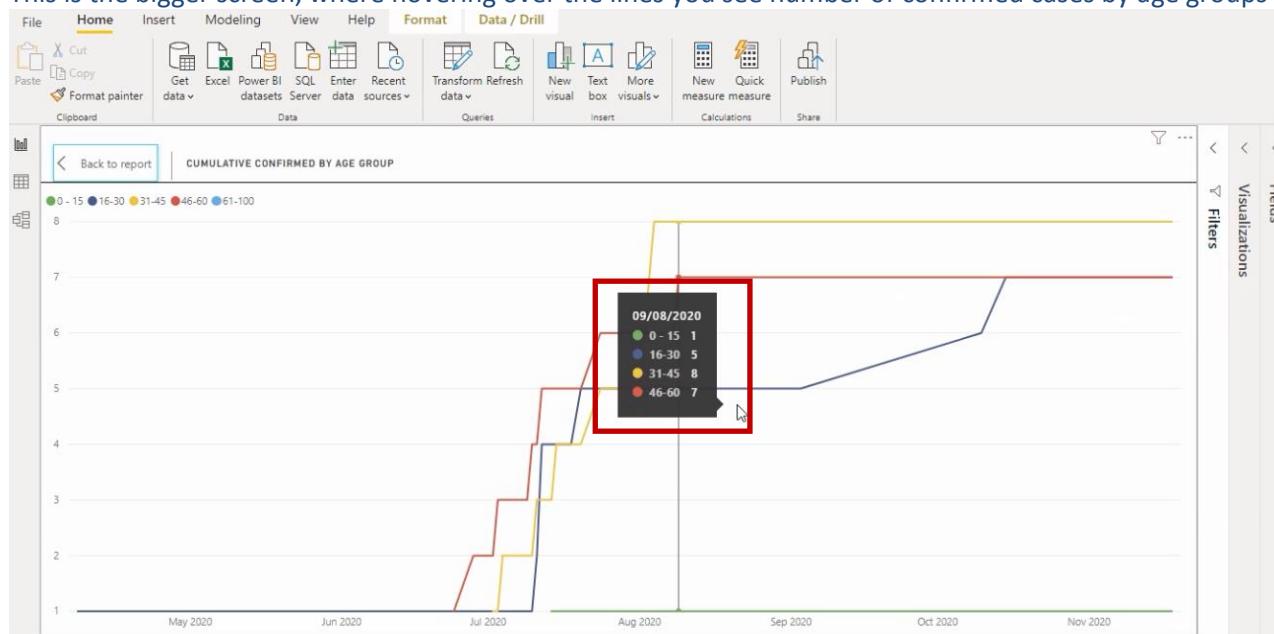
You can scroll down to see more reports.



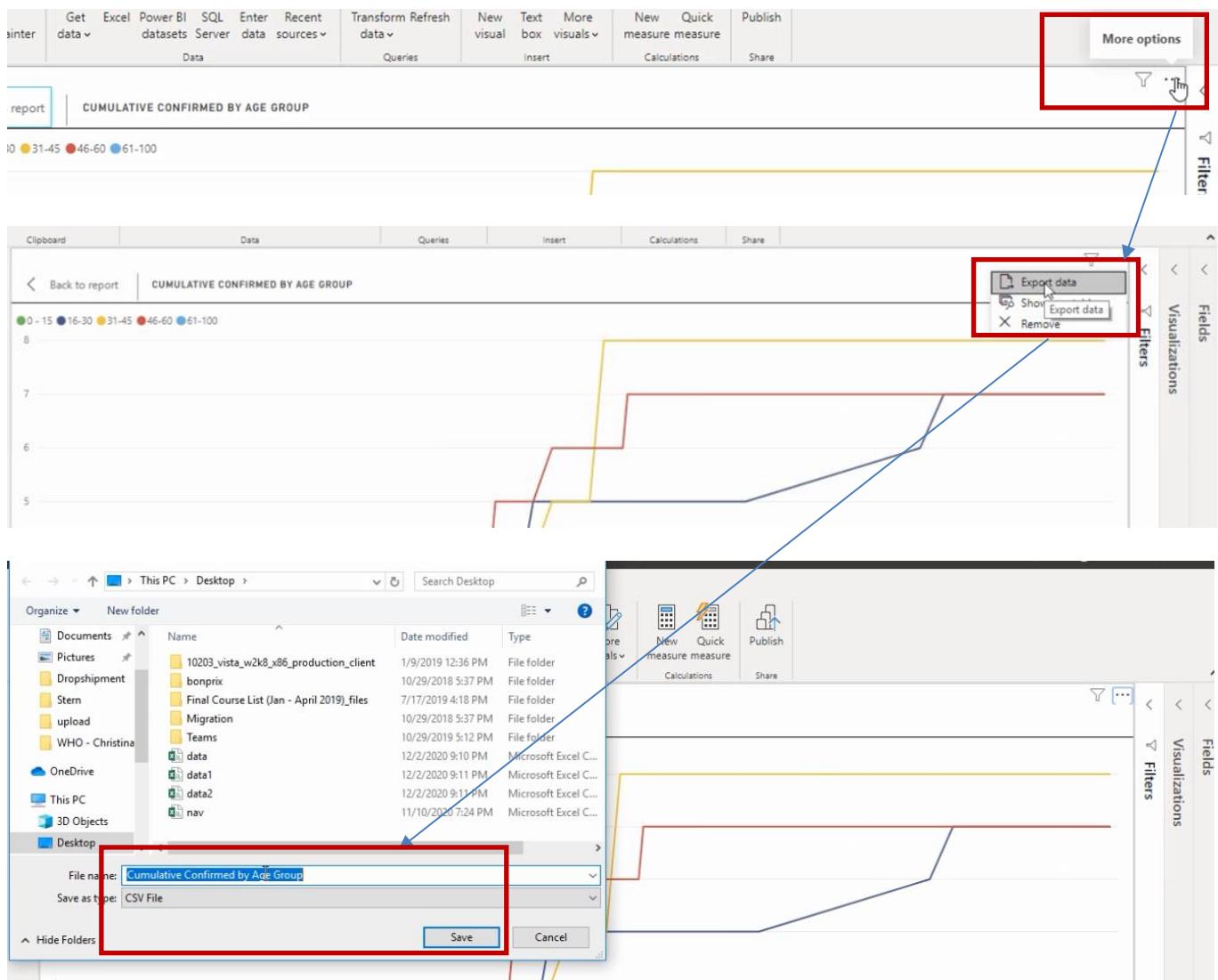
Click on the “Focus mode” to visualize this report in a bigger screen



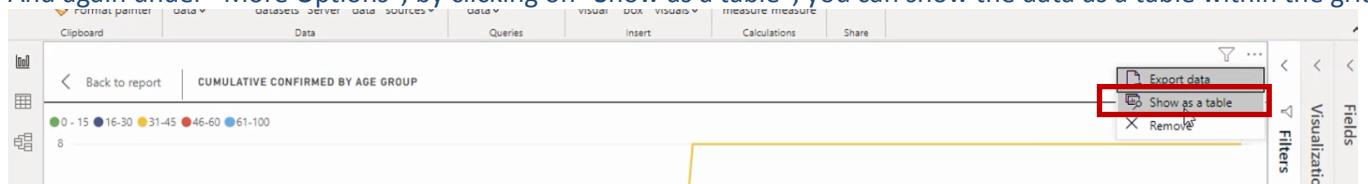
This is the bigger screen, where hovering over the lines you see number of confirmed cases by age groups



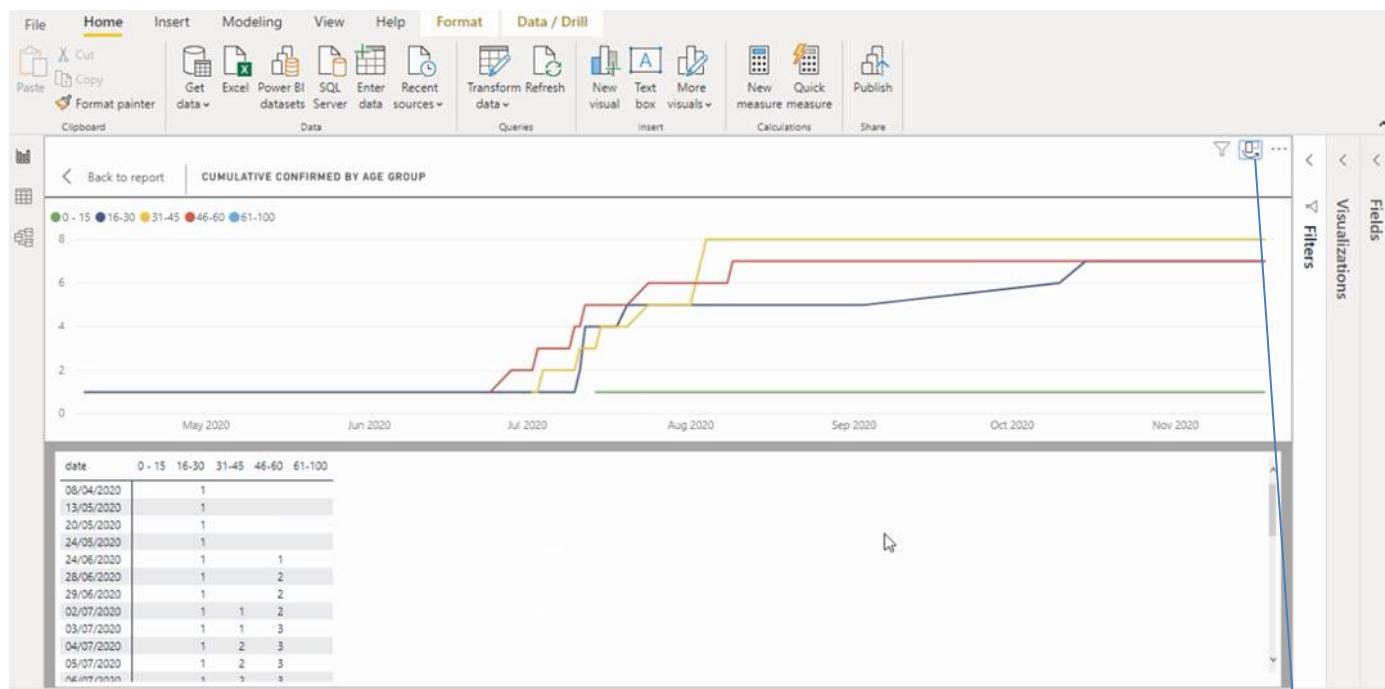
More Options: Under “More Options”, by clicking on “Export Data”, you have the option to export and save the data in CSV file format, which can be used for further analysis



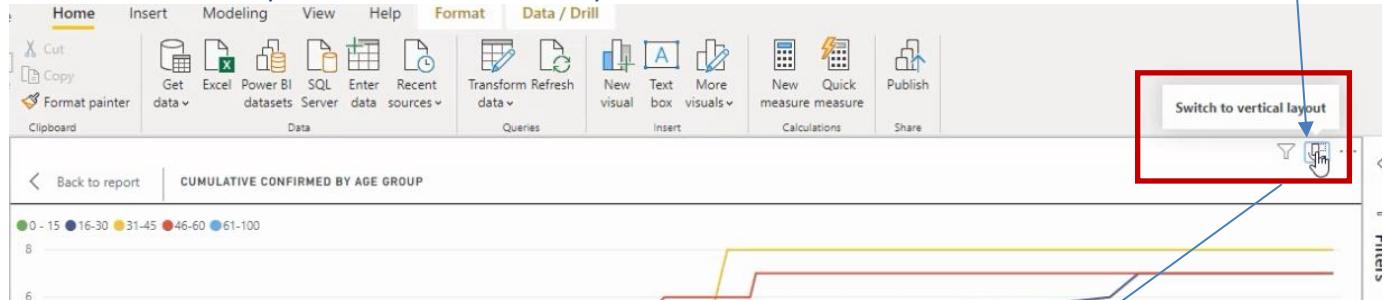
And again under “More Options”, by clicking on “Show as a table”, you can show the data as a table within the grid



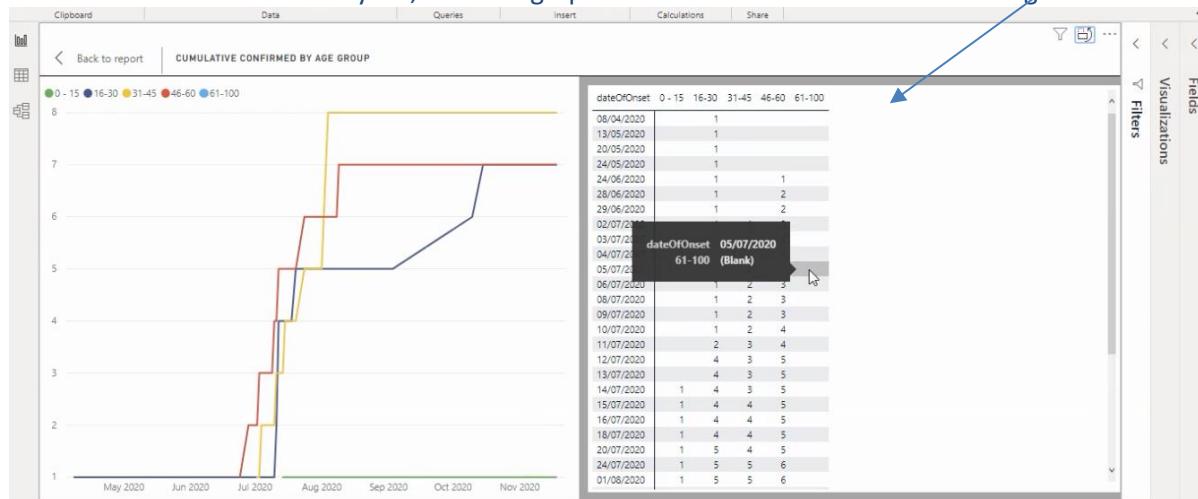
This is the data as a table within the grid, so that you are in a better position to analyze the data. Here the table is in Horizontal layout



You also have a facility to switch it to a vertical layout

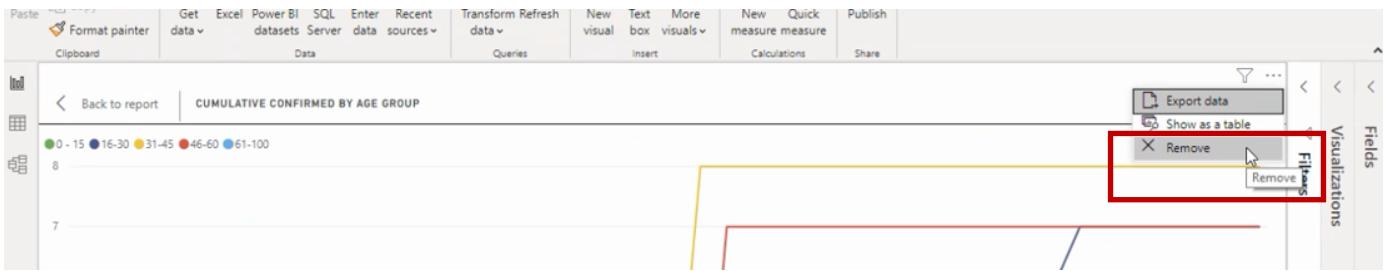


Here the table is in vertical layout, with the graph on the left hand side and data on right hand side



How to Delete Graphs that you don't need?

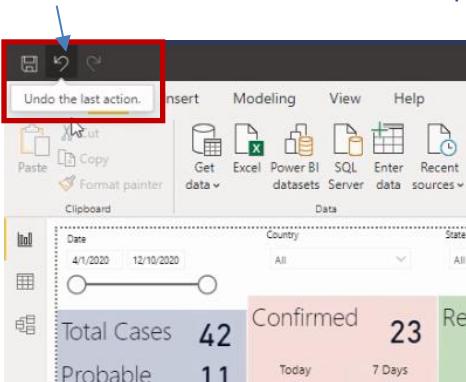
When viewing a graph in full screen, Under “More Options”, click on “Remove” to delete a particular graph from your dashboard



When viewing the graph (report) as a small thumbnail screen in the list of reports, just select the graph and click on the delete button of your keyboard. This will delete it. (Selected graph shows resizing handles)



If you have deleted the graph by mistake, then in the top left corner of your screen click on the button “Undo the last action”. This will revert back a step and get back the graph you just deleted



How to move Graphs (Reports) around?

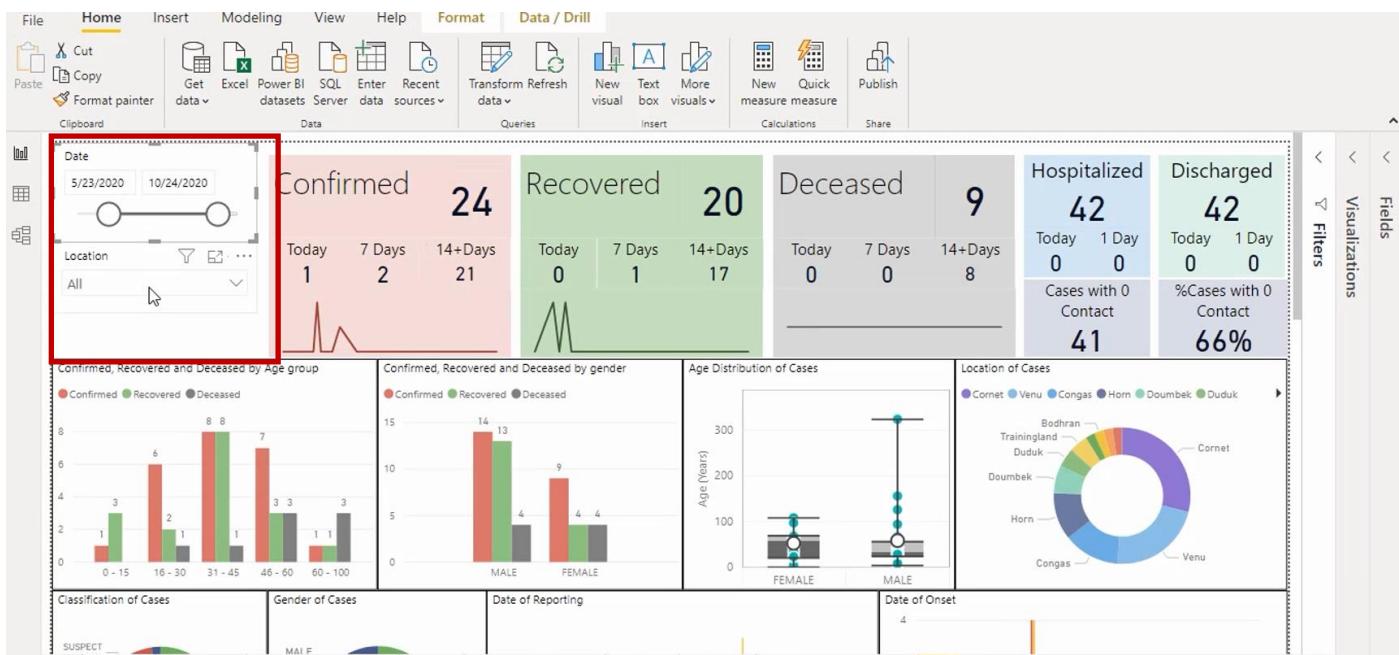
When viewing the graph (report) as a small thumbnail screen in the list of reports, let us say you want to move the report “Classification of Cases” to the position after report “Location of Cases” in row 2. Then first make space by selecting report “Location of Cases” and making it smaller using the resizing handles. You can use the direction keys of your keyboard to move the selected report left/right/up/down



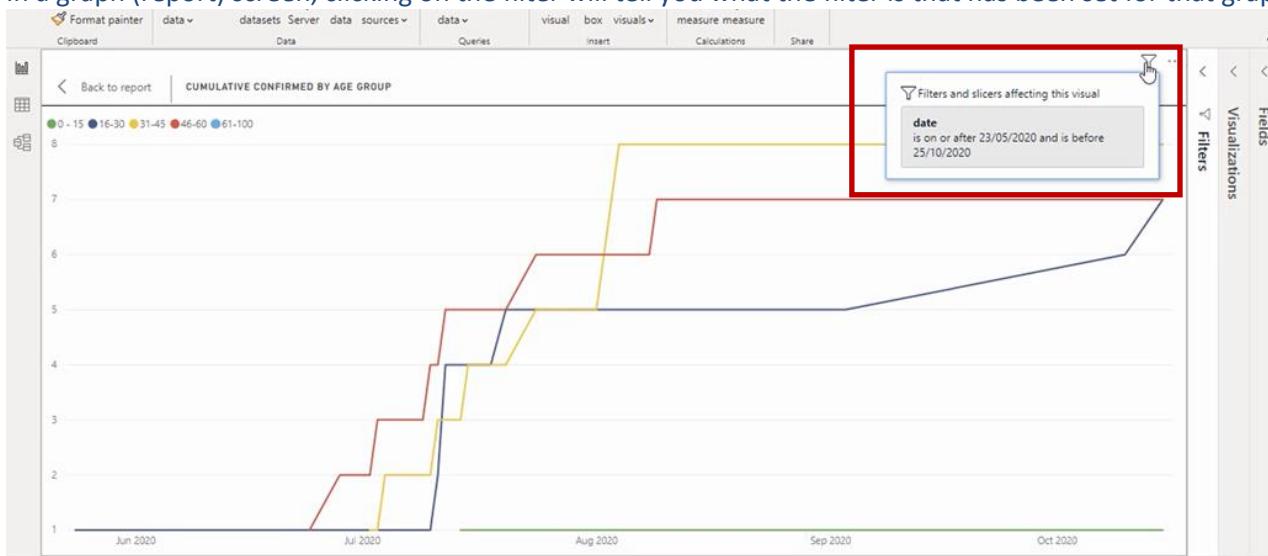
After creating the space, just select the report “Classification of Cases” and drag it to the new location. Then resize it so that it fits in the space created (using the resizing handles)



Filters: Filters are applied from the dashboard to left panel. Here if we change the “Date Range” or set any filter, the graphs will automatically change. Below we have applied a “Date Range” filter

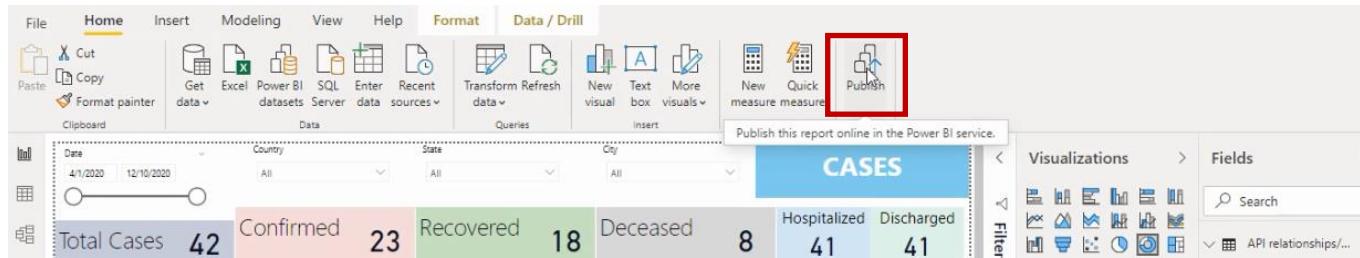


In a graph (report) screen, clicking on the filter will tell you what the filter is that has been set for that graph

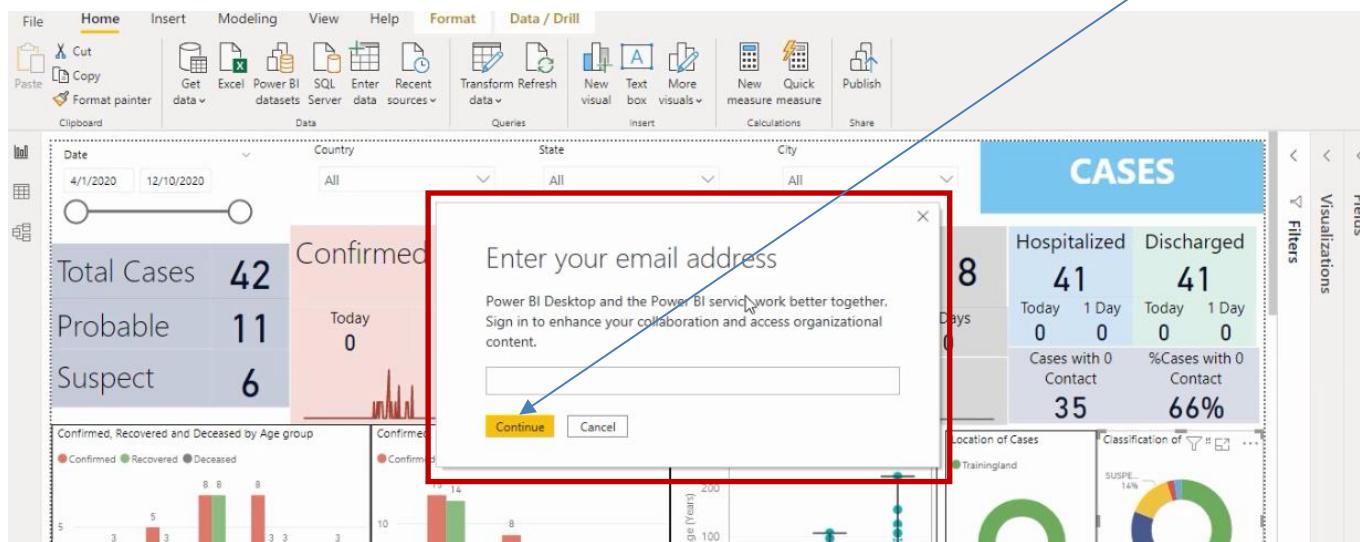


[10] How to Publish your Dashboard

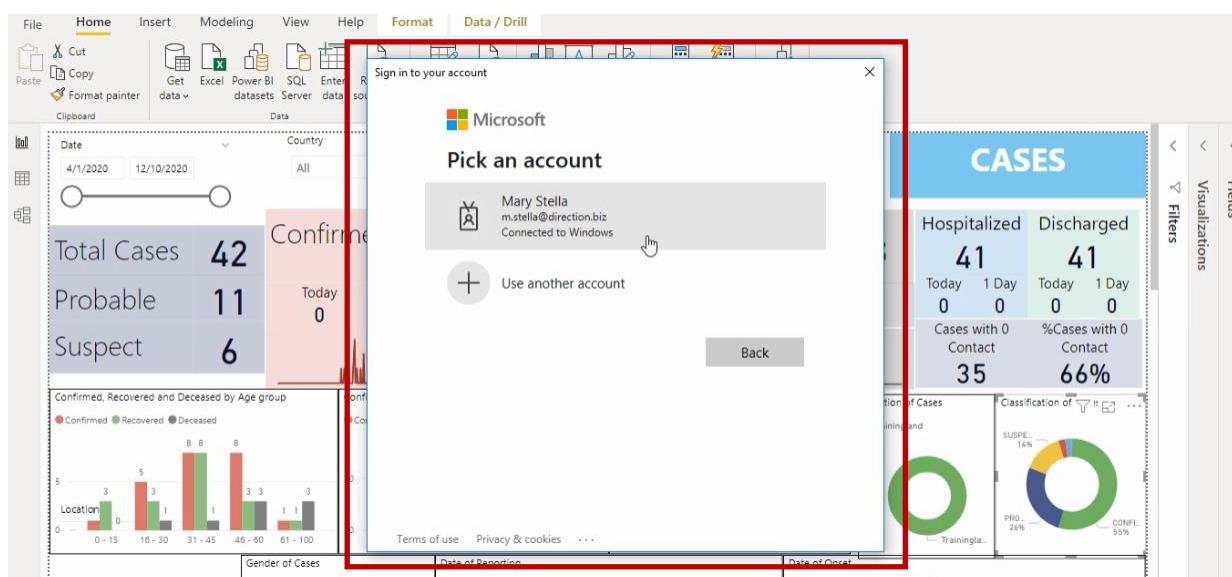
To Publish the report online in the Power BI service, click on the “Publish” button



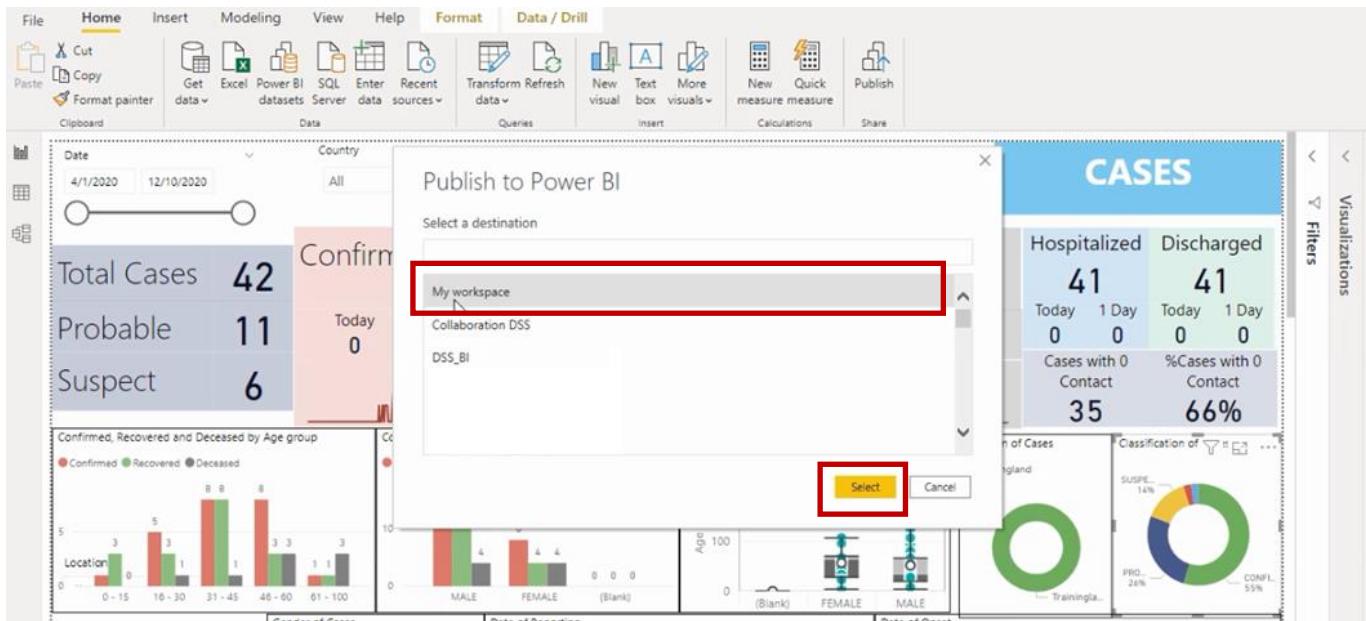
You are then asked for your email address, in a pop-up. Enter your email address and click on “Continue” button



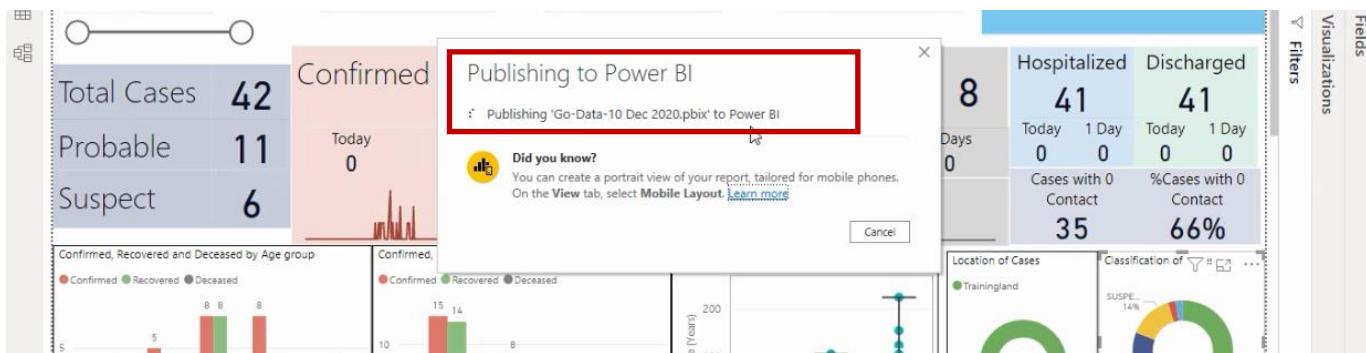
Then you have to Sign-in to your account, in another pop-up



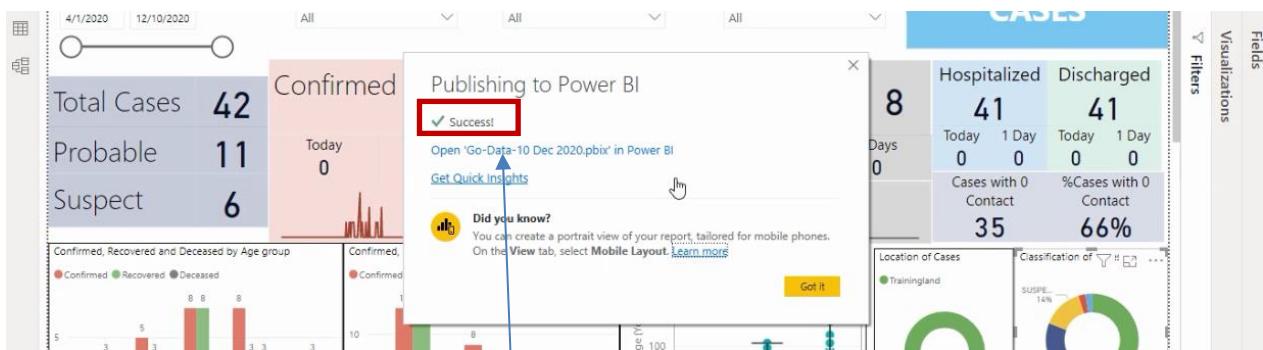
Then you select a destination where you want to publish your Power BI file. If you want to publish in “My workspace” then select it and then click on “Select” button



You get the message that “Publishing Go-Data-xyz.pbix file to Power BI” is in progress



Once Publishing is completed, you get the “Success” message



Now in the above screen click on link “Open Go-Data: xyz.pbix” in Power BI

This opens your published “Reports Dashboard” within your selected “My workspace” location in Power BI

The screenshot shows the Power BI desktop application interface. The top navigation bar includes 'Power BI', 'My workspace' (which is highlighted with a red box), 'Go-Data-10 Dec 2020 | Data updated 12/10/20', a search bar, and a Microsoft logo. The left sidebar lists 'Home', 'Favorites', 'Recent', 'Apps', 'Shared with me', 'Learn', 'Workspaces' (with 'My workspace' expanded), and a 'Get data' button. The main area displays a dashboard titled 'CASES' with various data visualizations. At the top right of the dashboard is a 'Share' icon with a downward arrow pointing to a sub-menu. The sub-menu is shown in a larger window below, with the 'Report' option highlighted with a red box.

[10.1] Share your Report

You can share this report by clicking on the top menu link “Share”, and then clicking on the sub-menu link “Report”

The screenshot shows the Power BI desktop application interface. The top navigation bar includes 'My workspace' (highlighted with a red box), 'Go-Data-10 Dec 2020 | Data updated 12/10/20', a search bar, and a Microsoft logo. The left sidebar lists 'Pages', 'CASES' (selected), 'CONTACTS' (highlighted with a yellow box), 'LAB RESULTS', 'Follow-Ups', and 'Visualization'. The main area displays a dashboard titled 'CONTACTS' with various data visualizations. At the top right of the dashboard is a 'Share' icon with a downward arrow pointing to a sub-menu. The sub-menu is shown in a larger window below, with the 'Report' option highlighted with a red box.

This opens the “Share report” panel, where you enter the email of the person you want to share this report with. Then click on button “Share”.

The screenshot shows the Power BI interface with a report titled "Go-Data-10 Dec 2020 | Data updated 12/10/20". On the left, the navigation pane shows "My workspace" selected. In the center, there's a dashboard with several visualizations: a bar chart showing "Total Number of Contacts" (56), a chart showing "New Contacts Last 1 Day" (0), a line chart for "Contacts by Gender" (Male/Female), a line chart for "Contacts by Age Group" (0-10 to 51-100), a donut chart for "Location of Contacts" (Here), and a donut chart for "Gender of Contacts" (Blank 3.57%, Female 66.43%, Male 30%). On the right, the "Share report" panel is open, showing the recipient email "xxx@gmail.com" in the "Grant access to" field. Below it are checkboxes for sharing options: "Allow recipients to share your report" (checked), "Allow recipients to build new content using the underlying datasets" (checked), "Send an email notification to recipients" (checked), and "Include my changes" (unchecked). At the bottom right of the panel are "Share" and "Cancel" buttons, with the "Share" button also highlighted by a red box.

You get the message “Success! Your report has been shared successfully”. And the mail will be sent to that person. Then that person will be able to access our report by clicking on the link in the email

The screenshot shows the Power BI report page for "Go-Data-10 Dec 2020". At the top, there's a "Success!" message in a modal window: "Success! Your report has been shared successfully." This message is highlighted with a red box. Below the message, the report interface shows various filters and visualizations, including a bar chart for "New Contacts in" and a line chart for "Contacts per".

[10.2] Other Top Menu activity options

Similarly from the top menu links and their various sub-menu links you can do various activities, like shown below

Menu > File:

- 1) Save a Copy – will create new report on same workspace
- 2) Download the .pbix file – will download PBIX file on user's m/c the same report
- 3) Print this Page – will print the open reports, all visuals

The screenshot shows the Power BI desktop interface with the 'File' menu open. The 'File' menu has a red box around it, highlighting the following options: 'Save a copy', 'Download the .pbix file', 'Print this page', and 'Settings'. The main workspace displays a dashboard titled 'CASES' with various data visualizations and filters.

Menu > Export:

- 1) Power Point – will export the image of open report into PowerPoint
- 2) PDF - will export the image of open report into PDF format
- 3) Analyze in Excel – will export all the tables in excel with pivot option

The screenshot shows the Power BI desktop interface with the 'Export' menu open. The 'Export' menu has a red box around it, highlighting the following options: 'PowerPoint', 'PDF', and 'Analyze in Excel'. The main workspace displays a dashboard with data visualizations and filters.

Menu > Share:

- 1) Report – will allow user to share open report with other users of same organization
- 2) Embed report -- There are three sub menu and all will give link to use for respective purpose
 - a. SharePoint online – Will share link which can be used in SharePoint.
 - b. Website or portal - Will share link which can be used in Website and portal.
 - c. Publish to web (public) - Will share link which can be used in public web site (this option requires permission)
- 3) Generate a QR code – will generate QR code which can be used on mobile app for viewing the reports

The screenshot shows a Power BI report interface. At the top, there's a navigation bar with 'File', 'Export', 'Share' (which is highlighted with a red box), 'Chat in Teams', 'Comment', 'Subscribe', 'Edit', and '...'. Below the navigation bar, there's a date range selector ('Date' from '4/1/2020' to '12/8/2020') and a chart titled 'Total Cases' showing values of 42 (Confirmed), 11 (Probable), 18 (Deceased), and 8 (Recovered). The 'Share' menu is open, displaying four options: 'Report', 'Embed report' (selected), 'Generate a QR code', 'SharePoint online', 'Website or portal', and 'Publish to web (public)'. A red box highlights the 'Share' menu and its dropdown options.

Other Menu options:

- 1) Chat in Teams – will allow to chat with other users from same organization
- 2) Comment – will allow users to comment on the reports
- 3) Subscribe – will allow user to subscribe for the report and user can schedule the timing slot for subscription
- 4) Edit – will allow user to modify the report online.

The screenshot shows a Power BI report interface. At the top, there's a navigation bar with 'File', 'Export', 'Share' (which is highlighted with a red box), 'Chat in Teams' (with a blue icon), 'Comment', 'Subscribe', 'Edit', and '...'. Below the navigation bar, there's a chart showing 'Total' cases (25 Confirmed, 1 New Case, 2 Last 7 Days, 2 Last 14 Days, 2 Last Month). A red box highlights the 'Share' menu and the 'Chat in Teams', 'Comment', and 'Subscribe' buttons.