Ex07

Introduction: This exercise is part 2 of 3 in report preparation.

Objective: This exercise is to demonstrate and explain the following Power BI features

- **The uses of Bookmarks**
- **Advanced filtering with Slicers**
- **Dealing with Hierarchies Data**
- **The power of DAX**
- **Direct Query**
- **Using Parameters**
- **Define and use Roles**

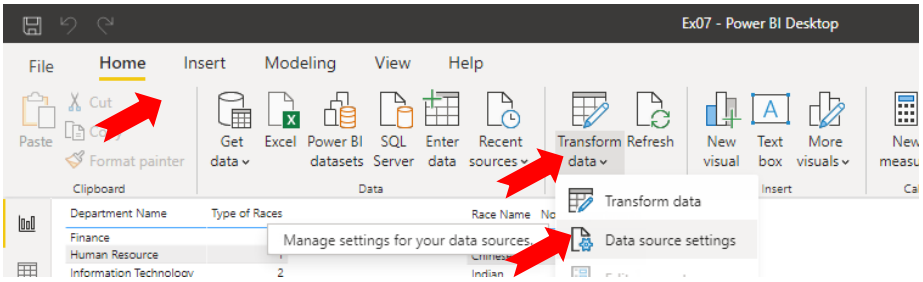
Pre-requisites:

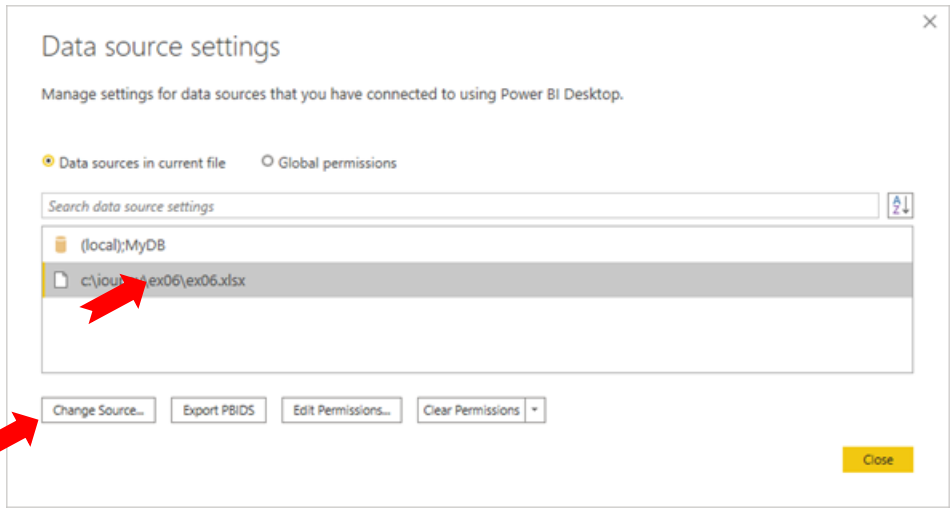
1) Understand how to perform data loading from MS Excel
2) Know how to transformation data
3) Be able to construct Data Model

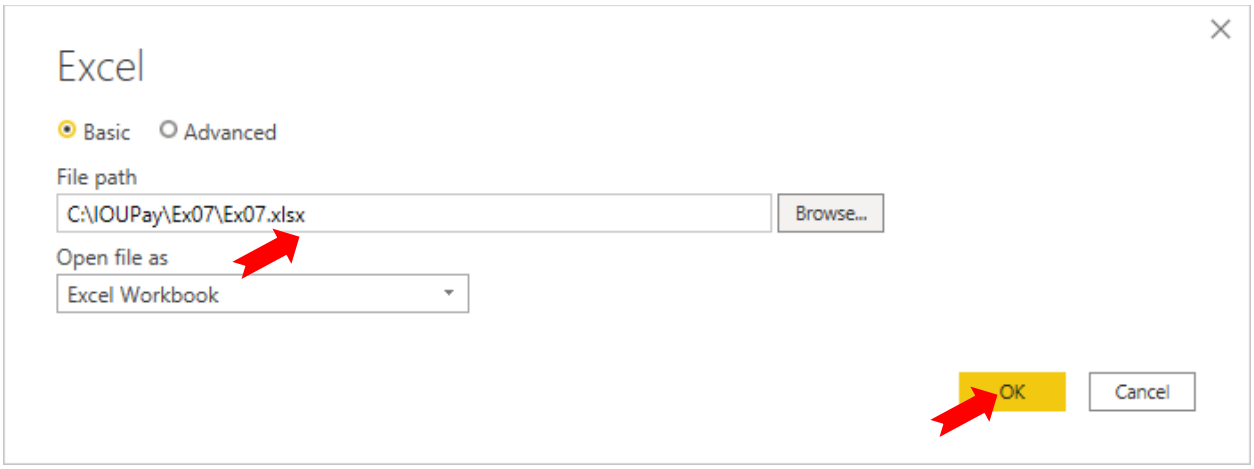
Steps:

<u>Part-1: Prepare Data Workbook and create Data Model</u>

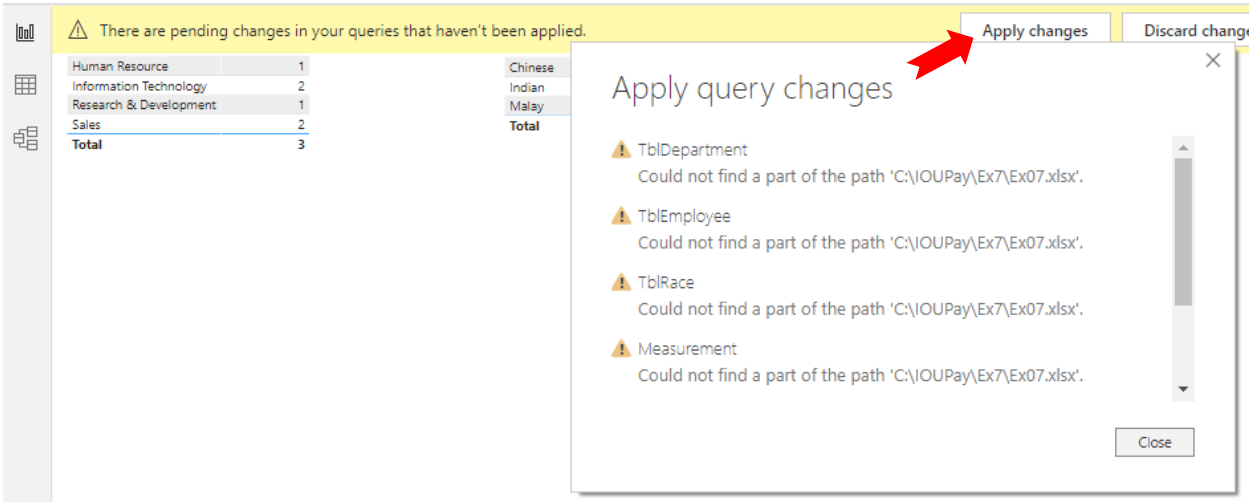
1. This exercise will use the same data model created from Ex06. Just make a copy of Ex06.xlsx, the rename it as Ex07.xlsx.
2. Copy Ex06.pbix to Ex07.pbix.
3. Open Ex07.pbix, reassign the data source to Ex07.xlsx:







Select “Close” to “Data source settings” dialog box



Wait until reload completed.

Prepare Reports

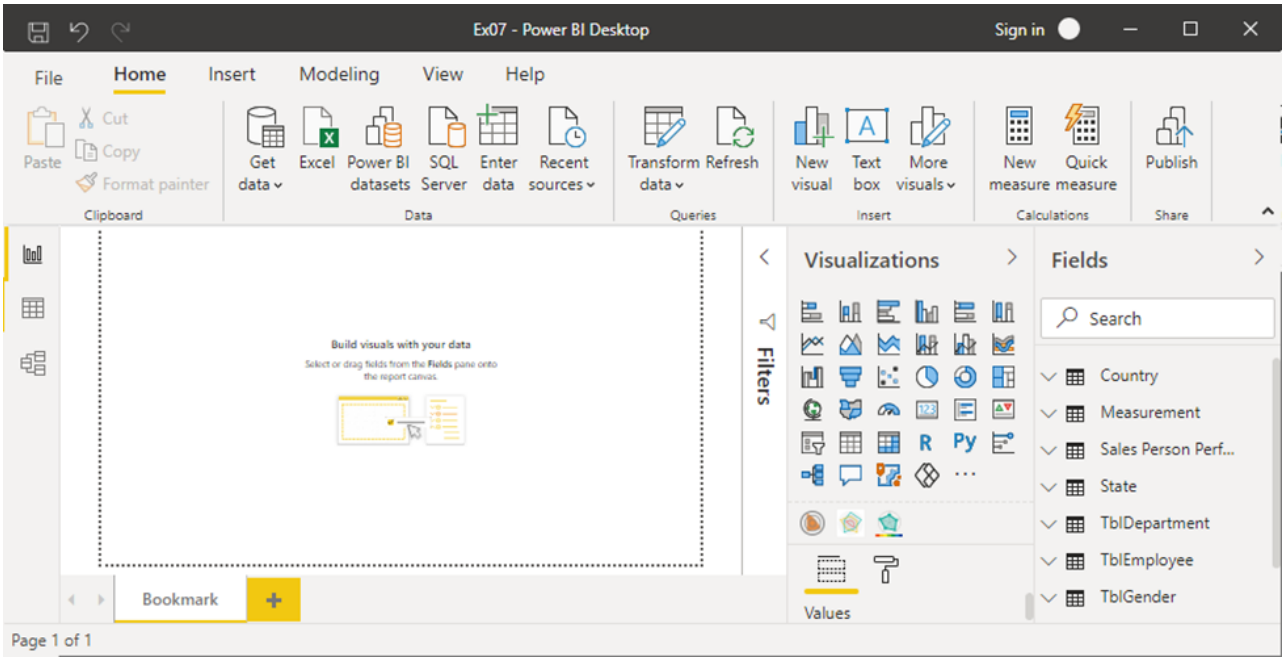
From here onward, the next step of this exercise, we will demonstrate each of the following features of Power BI under separate report pages:

- The uses of Bookmarks
- Advanced filtering with Slicers
- Dealing with Hierarchies Data
- The power of DAX
- Direct Query
- Using Parameters
- Define and use Roles

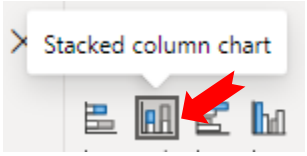
The uses of Bookmarks

Steps:

1. Empty the “Use Direction” page. Rename it as “Bookmark”. Delete all other report pages:

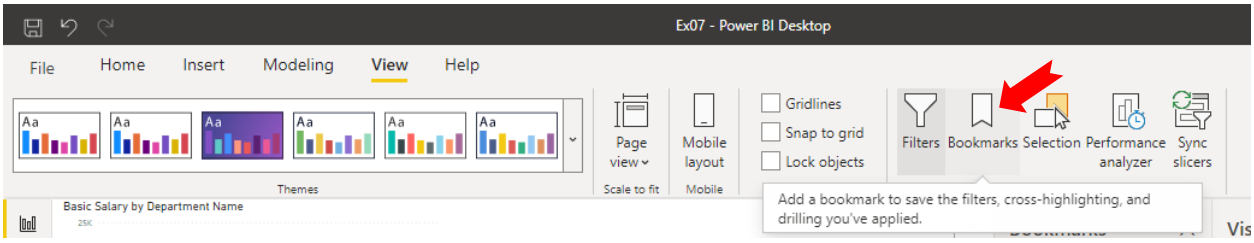


2. Add a new Stacked column cart to the Bookmark page:

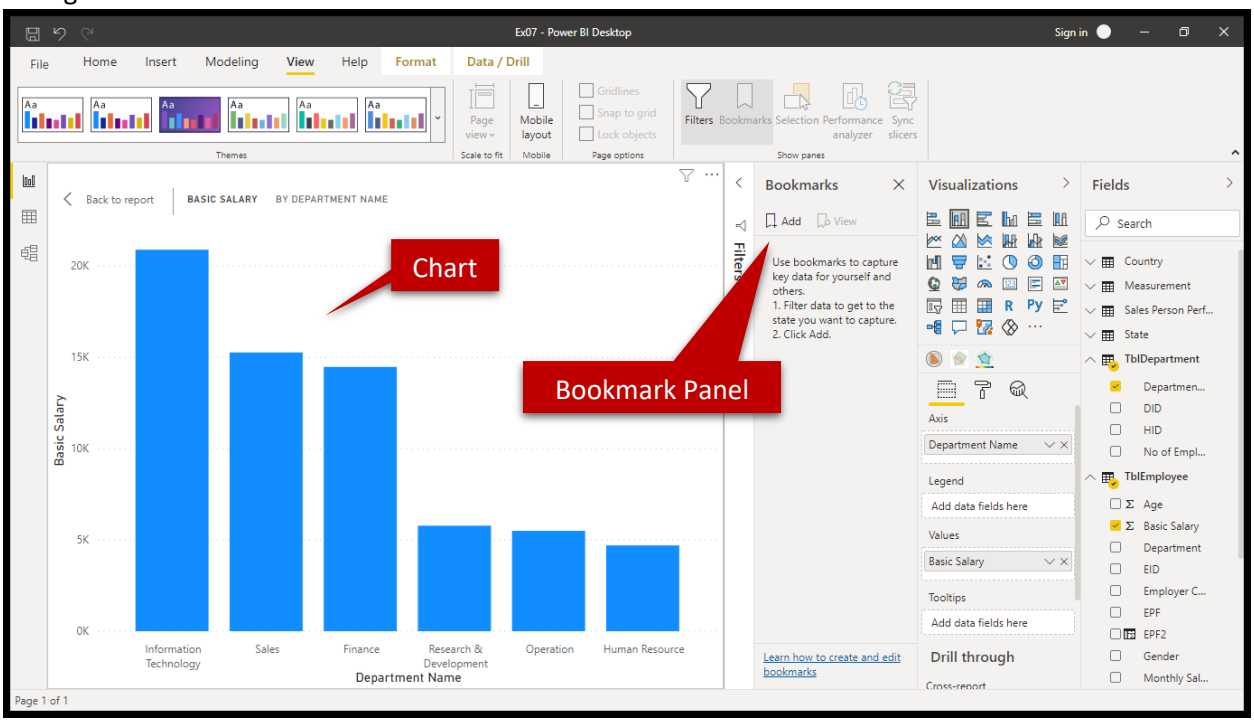


3. Set the chart properties:

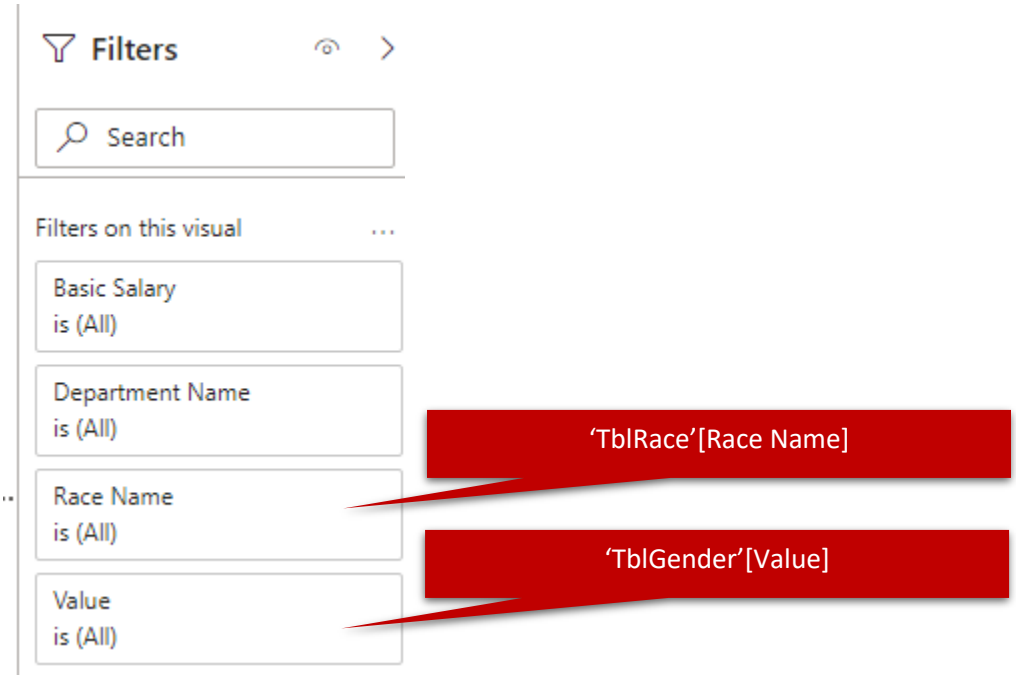
4. Under the “View” ribbon tab, select Bookmarks:



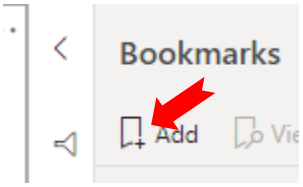
5. Enlarge the Chart. The UI now is as below:



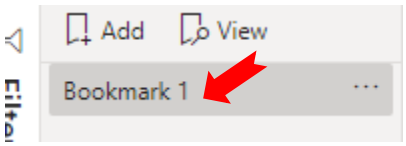
6. Expend the Filter Panel, Add 2 additional element level filters to this chart:



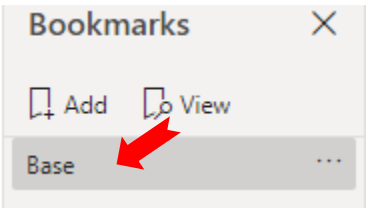
7. From the "Boomark Panel", select "Add":



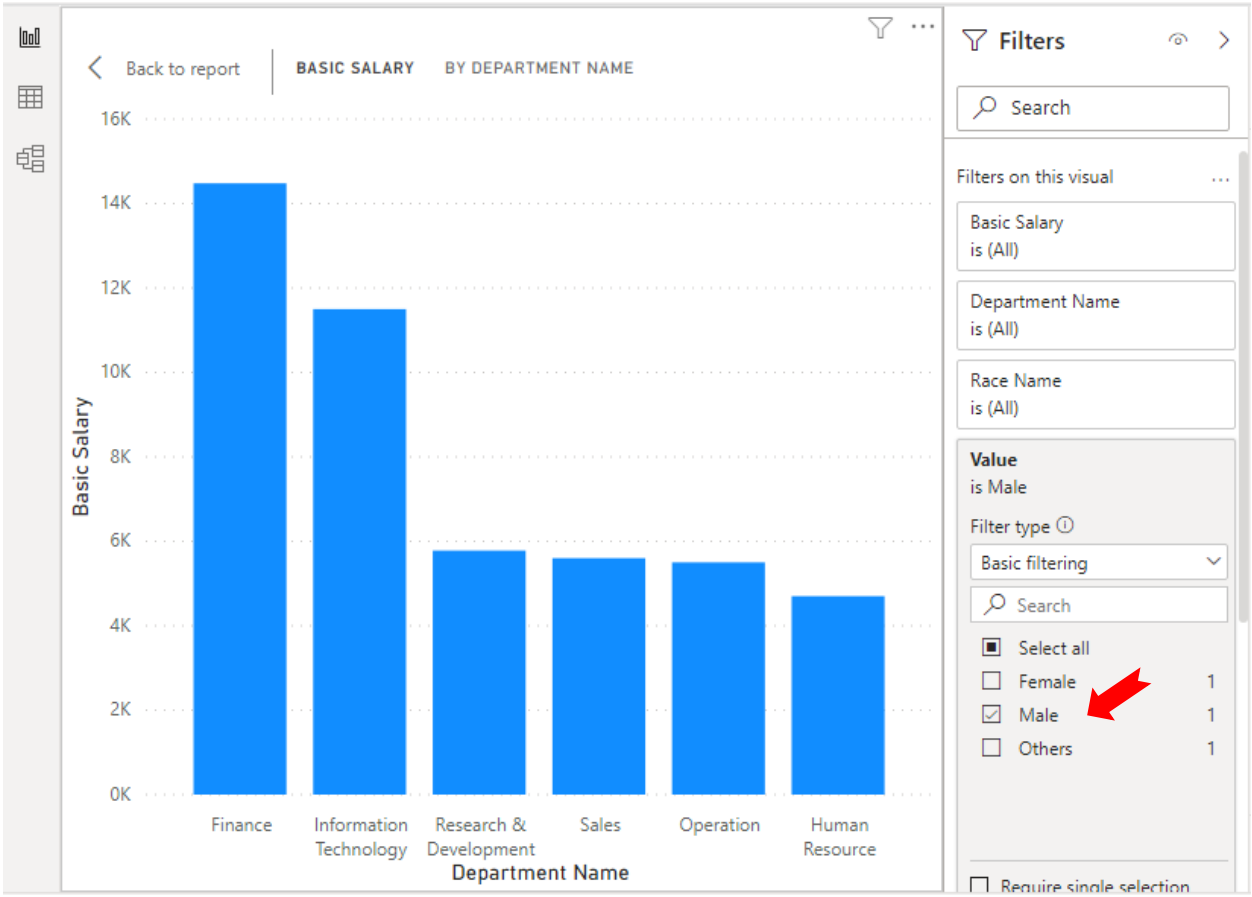
8. “Bookmark 1” is created:



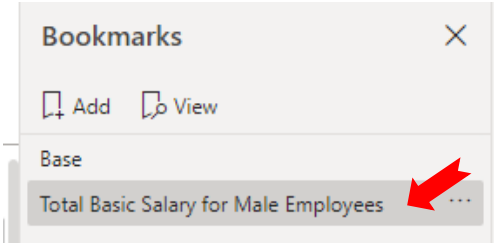
9. Right click or select right most … of “bookmark 1”, select “Rename” (or just double-click it). Rename this bookmark as “Base”:



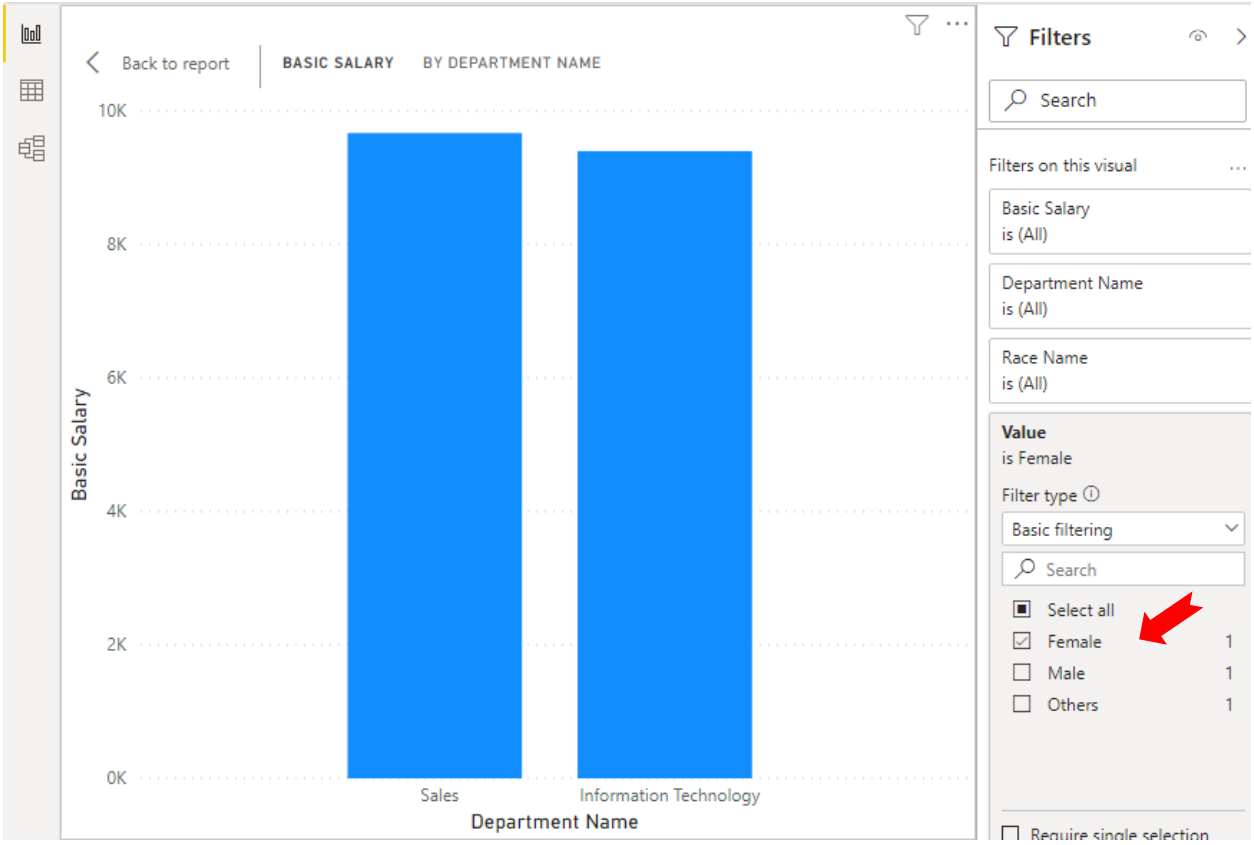
10. Let’s see the information pertaining the Male employees:



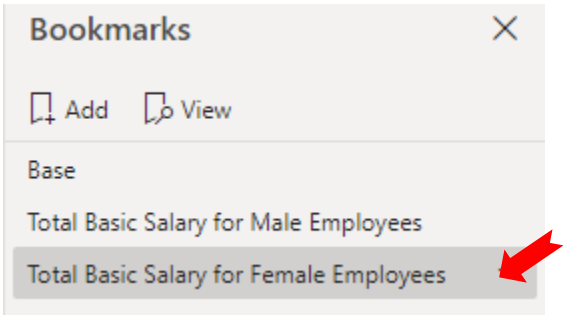
11. Add a new bookmark with name “Total Basic Salary for Male Employees”:



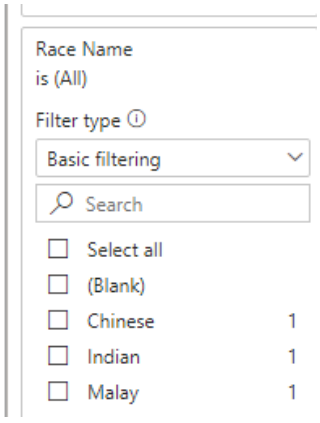
12. Let's see the information pertaining the Female employees:



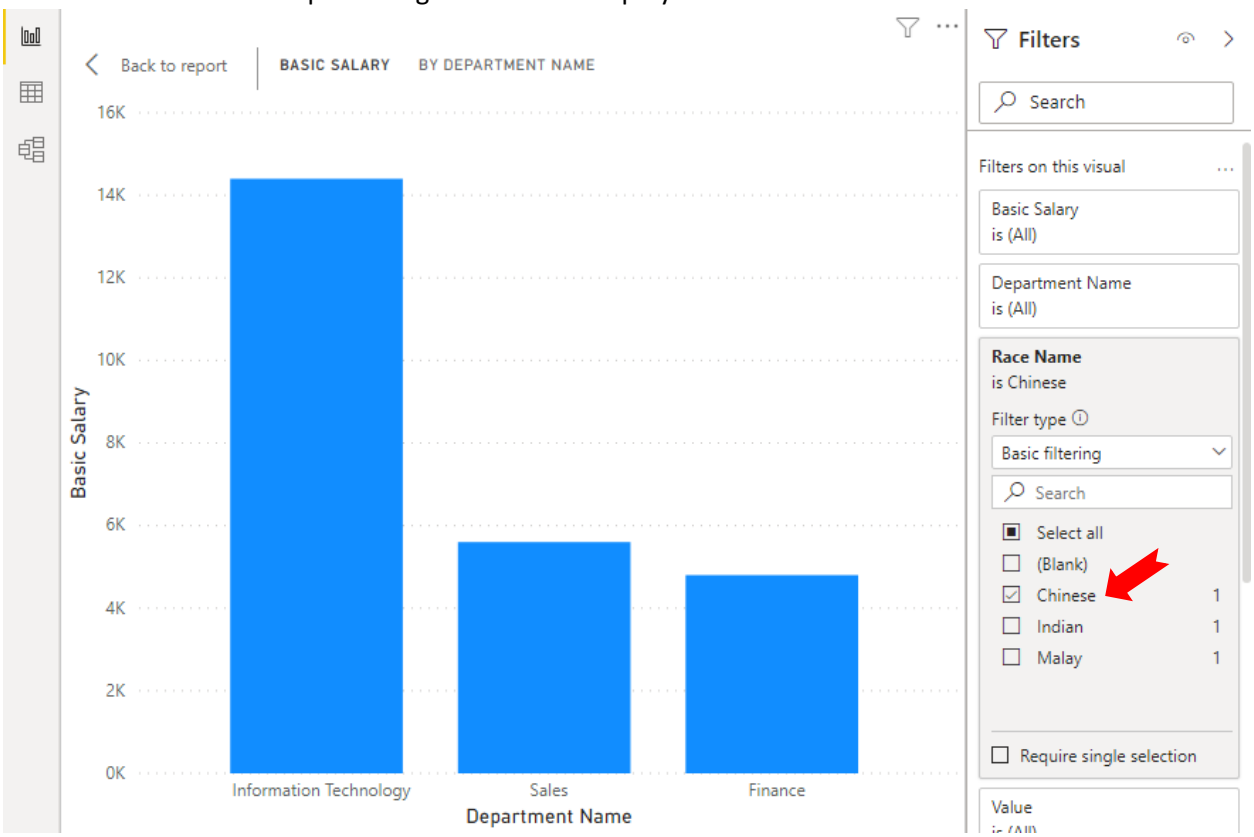
13. Add a new bookmark with name "Total Basic Salary for Female Employees":



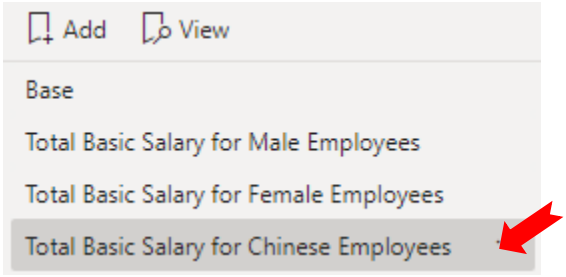
14. Now, select "Base" from bookmark. Pay attention to the Gender filter. Collapse this filter. Expand the Race filter:



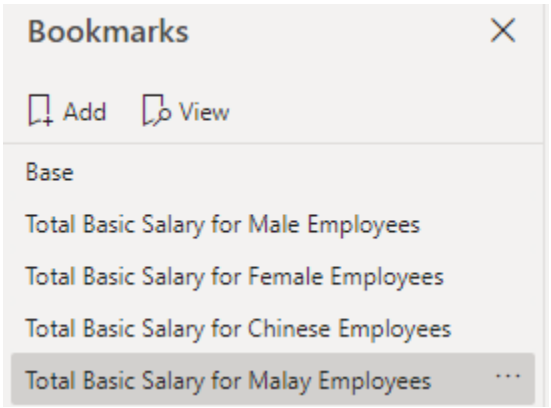
15. Let's see the information pertaining the Chinese employees:



16. Add a new bookmark with name "Total Basic Salary for Chinese Employees":

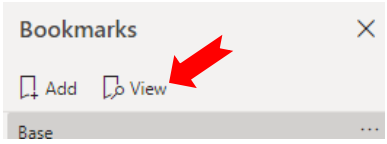


17. Try to filter by Malay Employees, and add a new bookmark with name "Total Basic Salary for Malay Employees". Now you should have in total 5 Bookmarks created:

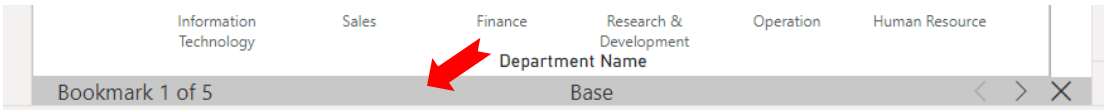


18. Try to select each bookmark. Observe how the cart is changing.

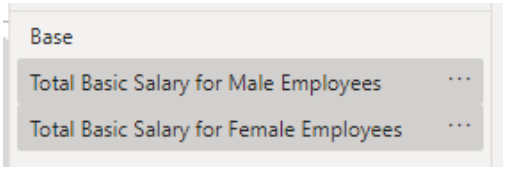
19. Click on the “View” from Bookmark Panel:



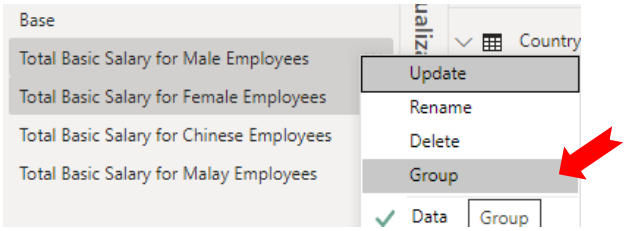
20. The Bookmark Navigator Panel appears at the bottom of the report page:



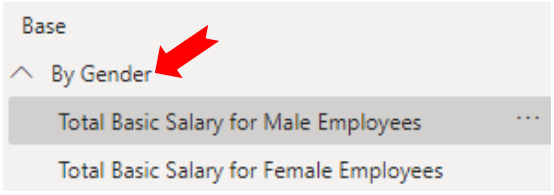
21. Try to select the “<” and “>” from the Bookmark Navigator Panel. Observe how the chart change.
22. Now select the “X” from the Navigator Panel (Or “X Exit” from the Bookmark Panel).
23. Multi-Select “Total Basic Salary for Male Employees” and “Total Basic Salary for Female Employees” Bookmarks:



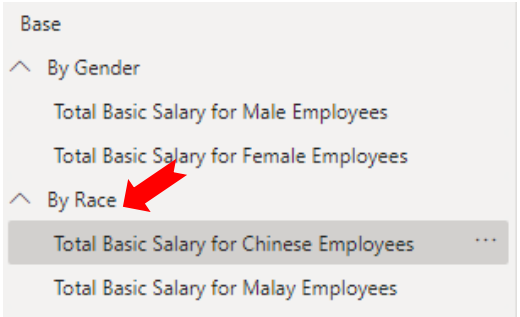
24. Right-Click the selection and Select “Group”:



25. A “Group 1” is created. Rename it to “By Gender”:



26. Can you group the last two bookmarks under group name “By Race”?

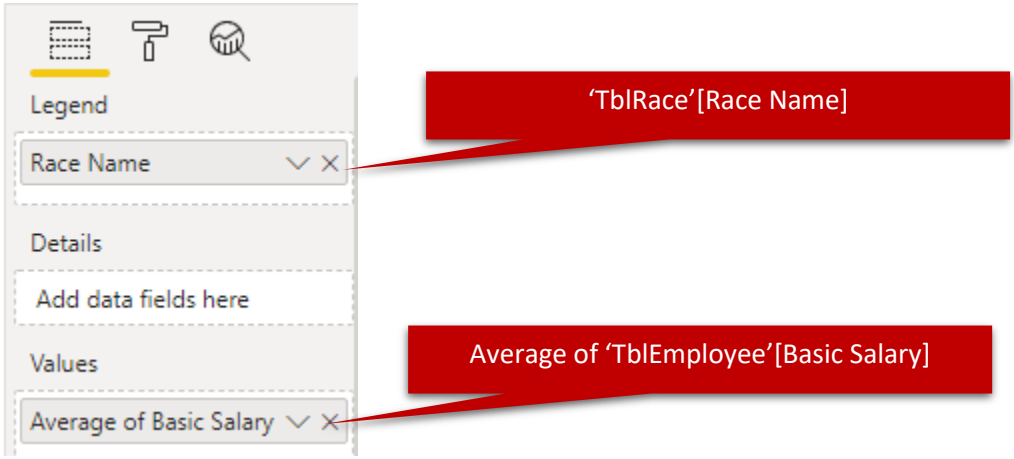


27. Find out how to perform the following for bookmarks:
    a. Ungroup bookmark group
    b. Reorder bookmarks sequence
    c. Update bookmark
    d. Delete bookmark
28. Select “Base” bookmark, minimize the chart, and close the Bookmark Panel.

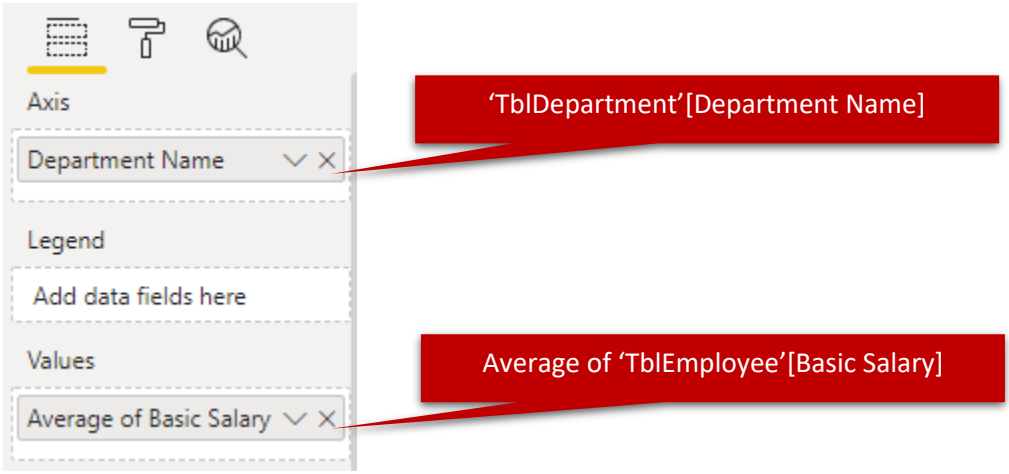
Advanced filtering with Slicers

Steps:

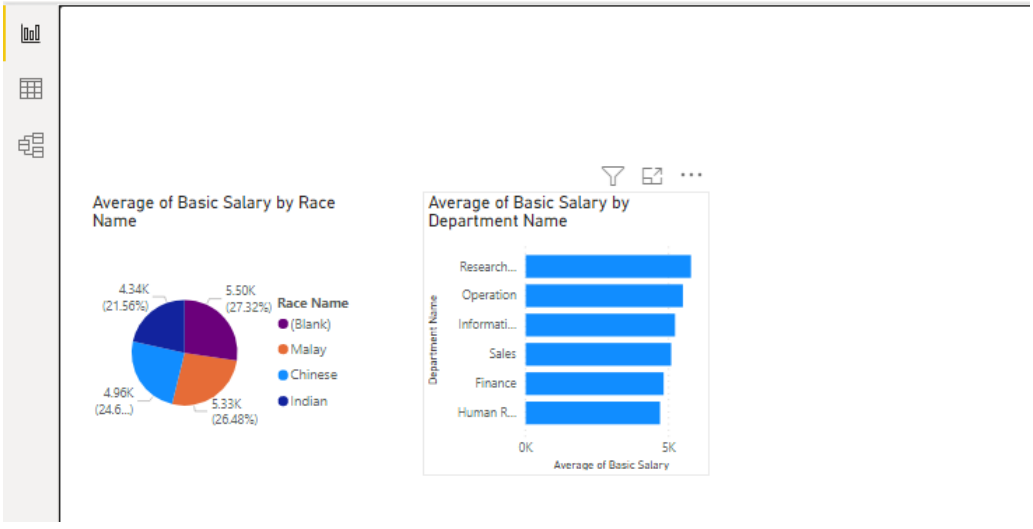
1. Create a new Report Page with name “Slicer”.
2. Add a new Pie Chart with properties:



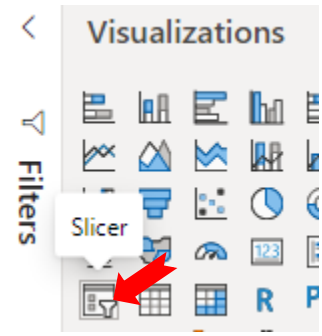
3. Add a Stack Bar Chart with properties:



4. Arrange the page is as below:



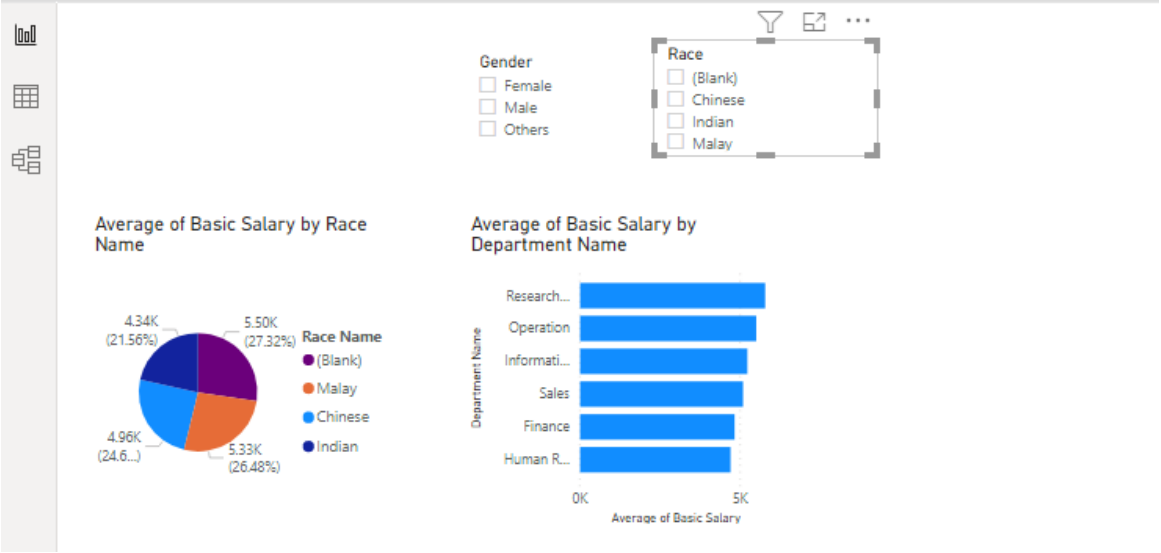
5. Add a new Slicer:



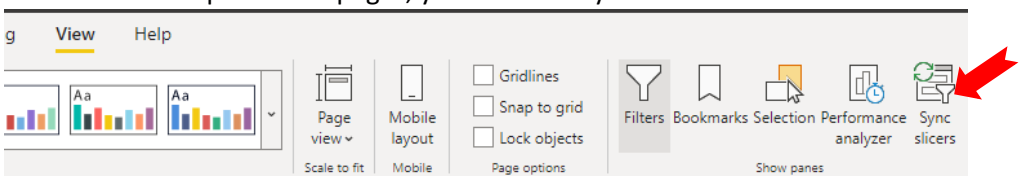
6. The Slicer properties:

7. Add another Slicer with properties:

8. Arrange these Slicers at the top of page:



9. Select the options for these slicers, observe the result.
10. To allow Slicer impact other pages, you can use "Sync slicers" under "View" ribbon tab:

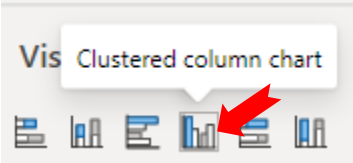


Dealing with Hierarchies Data

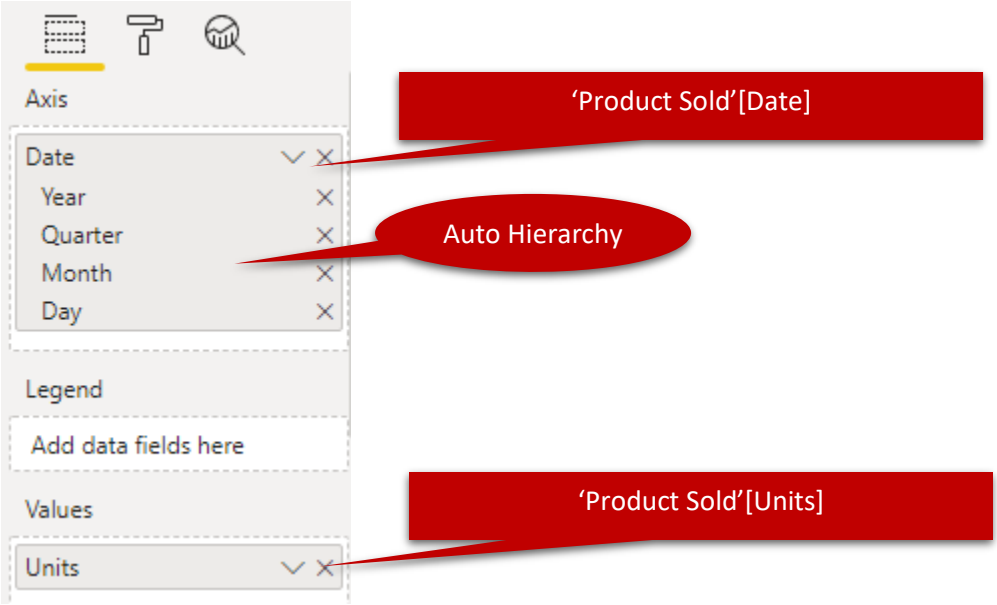
Steps:

Notes: Make sure that you clear all the previously created Slicers.

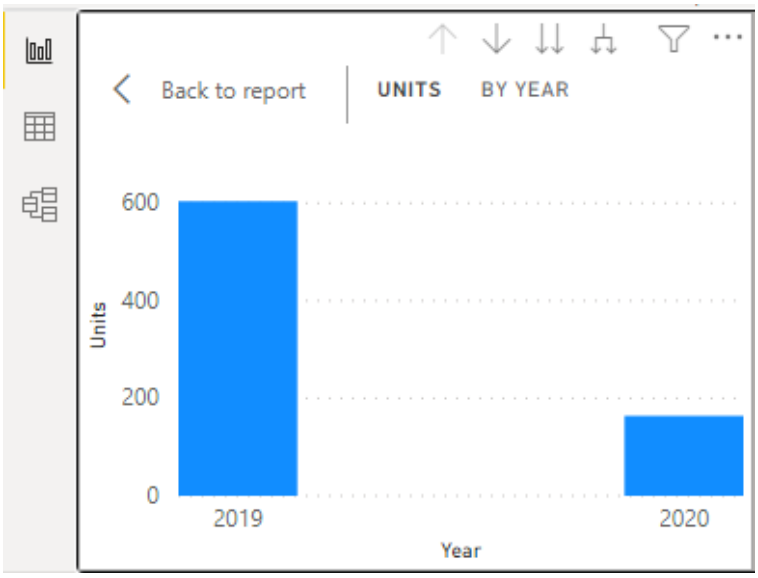
1. Load the “Product Sold” sheet from Ex07.xlsx.
2. Create a new page with name “Hierarchy”.
3. Add a new Clustered Column Chart:



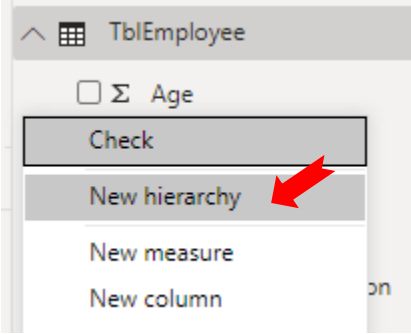
4. Set the properties:



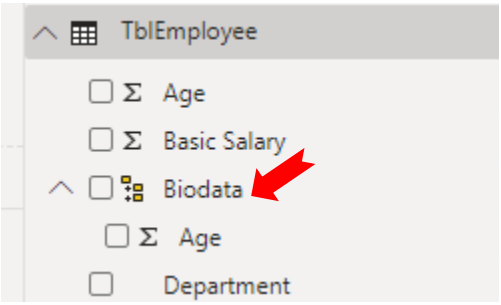
5. Try to Drill-Down the chart after expand it:



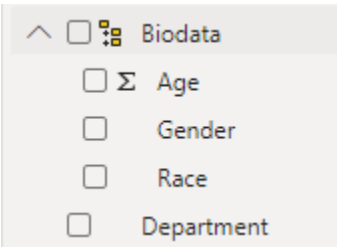
6. From the Field Pane, right click the “Age” of TblEmployee, select “New hierarchy”:



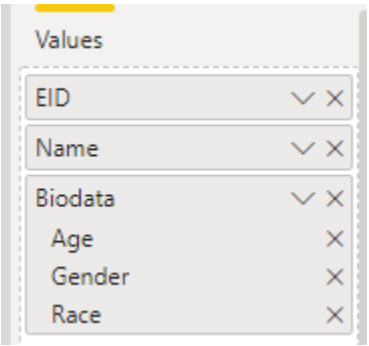
7. Rename the newly create Hierarchy as “Biodata”:



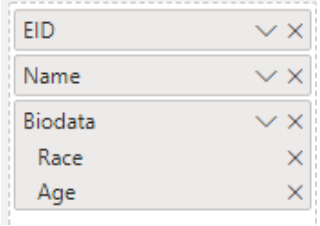
8. Drag and Drop “Race” and “Gender” fields of TblEmployee to Biodata hierarchy:



9. Add a new Table to the page with the following properties:

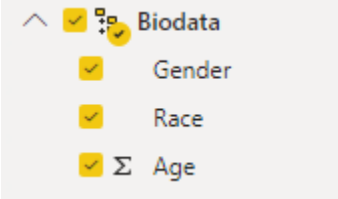


10. Observe the table result.
11. Delete the Gender under the property setting:

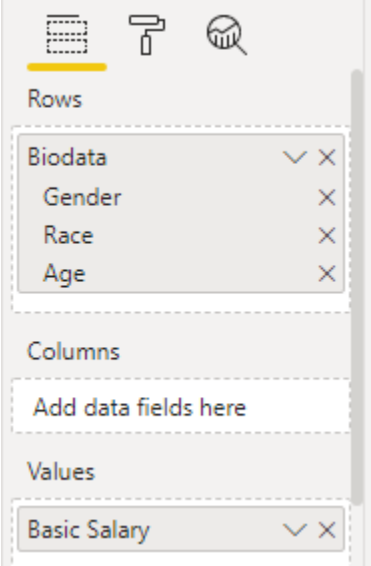


12. Observe the table result.

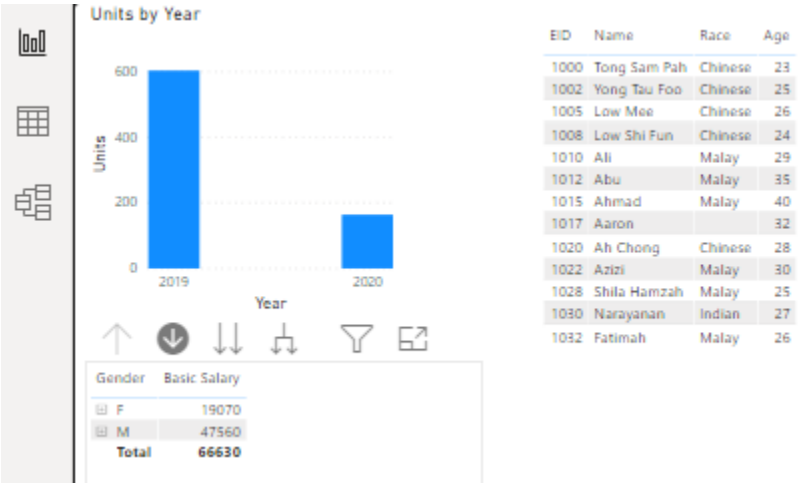
13. Reorder the member sequence by drag and drop:



14. Add a new Matrix element with properties:



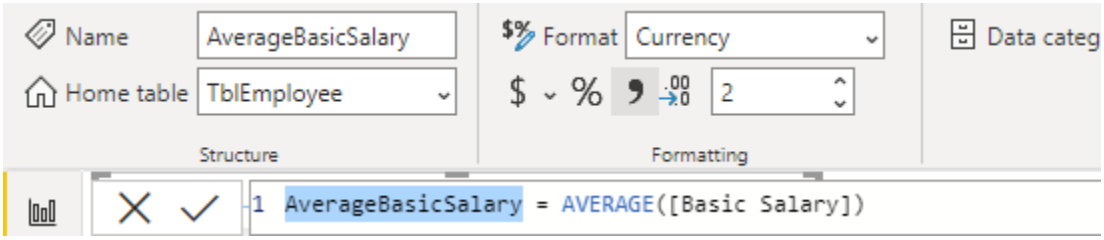
15. Explorer the Matrix element including Drill-Down:



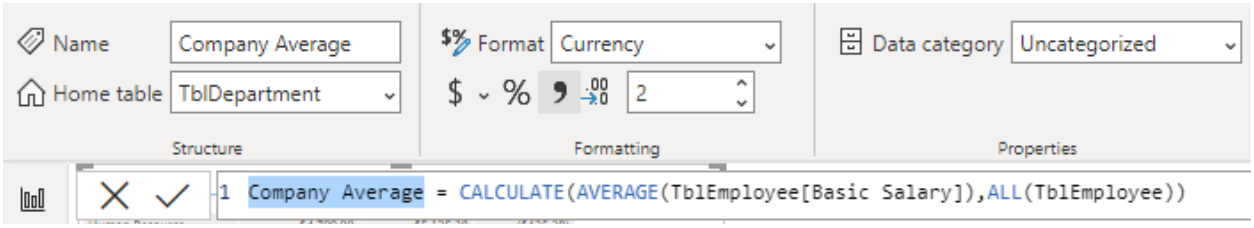
The power of DAX

Steps:

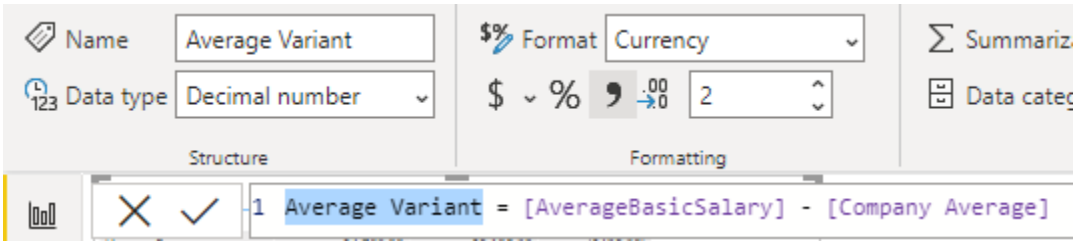
1. Create a new Report Page with name “DAX”.
2. Add a new measure “AverageBasicSalary” to TblEmployee:



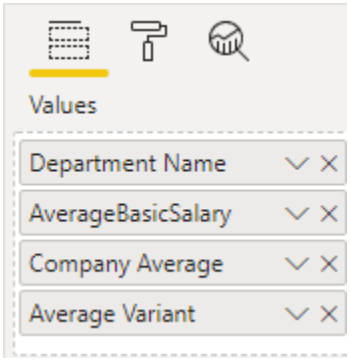
3. Add a new measure “Company Average” to TblDepartment:



4. Add a new column “Average Variant” to TblDepartment:



5. Add a new Table element to the page, and set its properties:

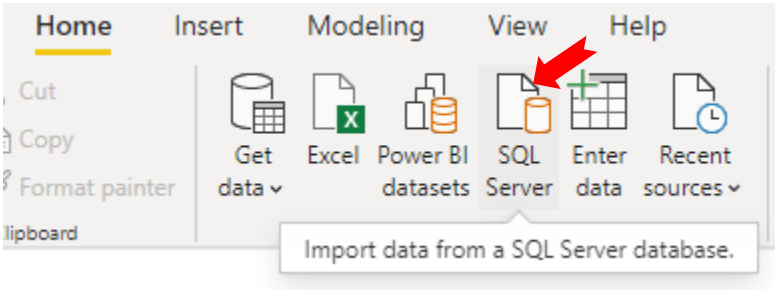


6. Expand the table and study the result.

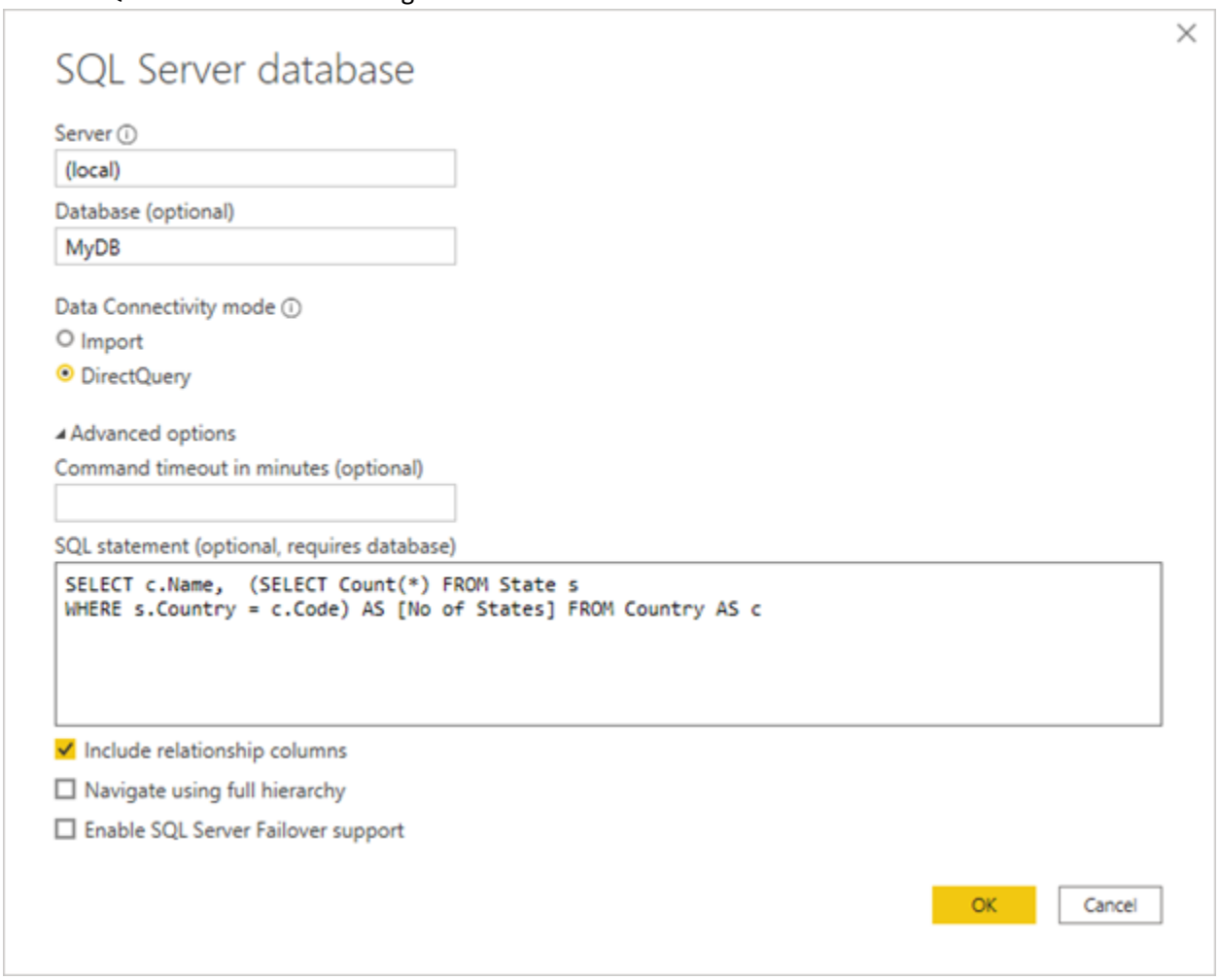
Direct Query

Steps:

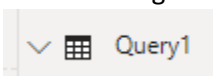
1. Create a new Report Page with name “Direct Query”.
2. Open connection with SQL Server:



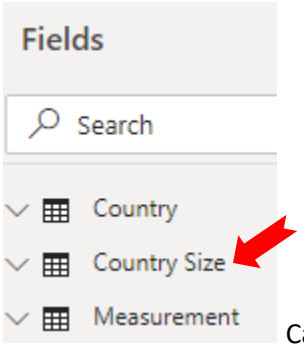
3. In the “SQL Server database” dialog box:



4. Select “OK”.
5. In the preview data, select “Load” (If the “Potential security risk” appears, just ignore).
6. A new table generate:

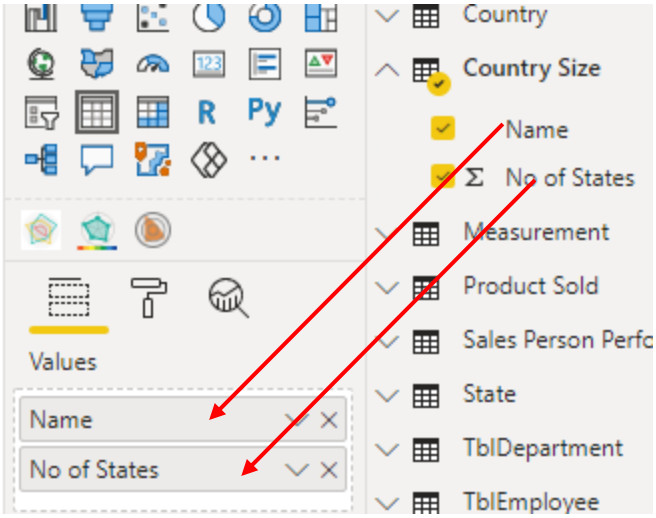


7. Rename the table as “Country Size”:

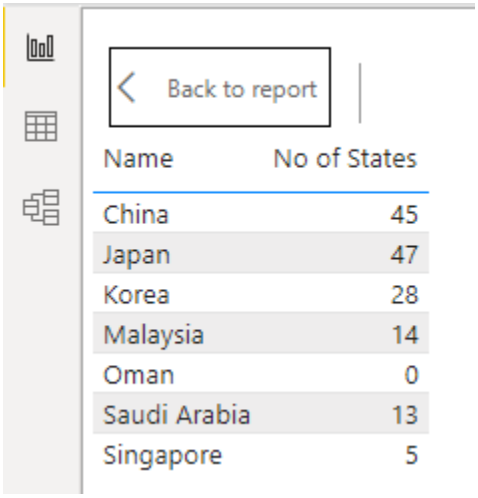


Can you preview the data from this newly created table?

8. Add a new Table to the page with properties:



9. The Table:



10. Your challenge: Create another Direct Query “Big Countries” with the following SQL statement:

```
SELECT c.Name FROM Country AS c
WHERE (SELECT Count(*) FROM State s WHERE s.Country = c.Code) > 20
```

11. Test the result with another Table element in the same page.

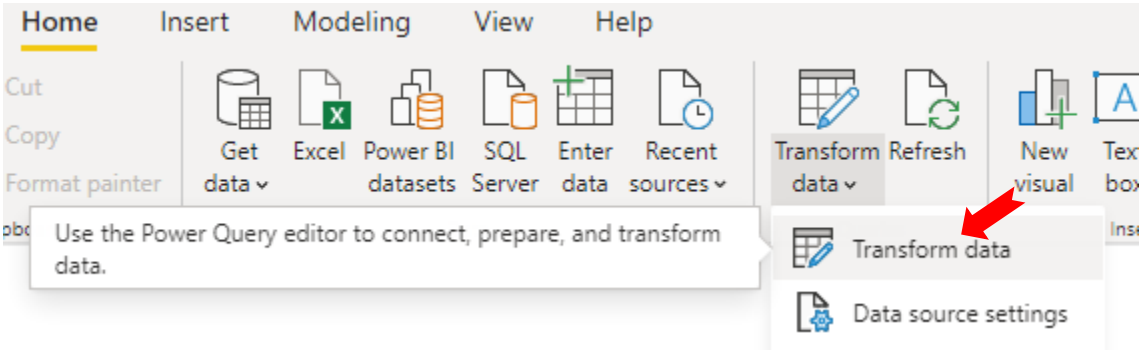
Using Parameters

Notes: There 2 types of parameters, M-Script level and DAX level. We will learn both of them here.

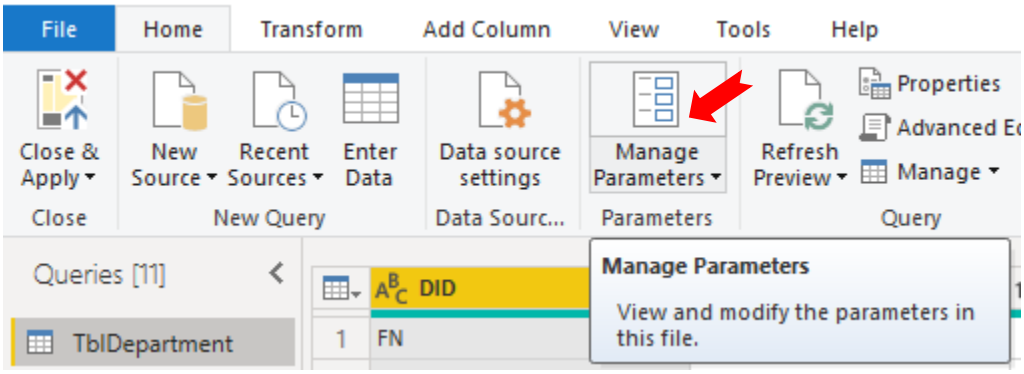
M-Script Level Parameter:

Steps:

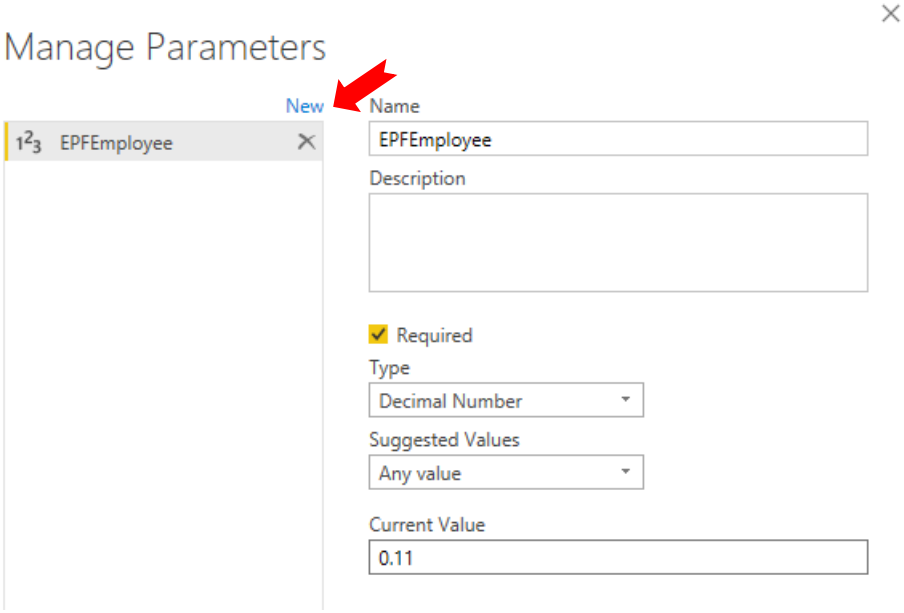
1. Create a new Report Page with name “Parameters”.
2. Open Query Editor:



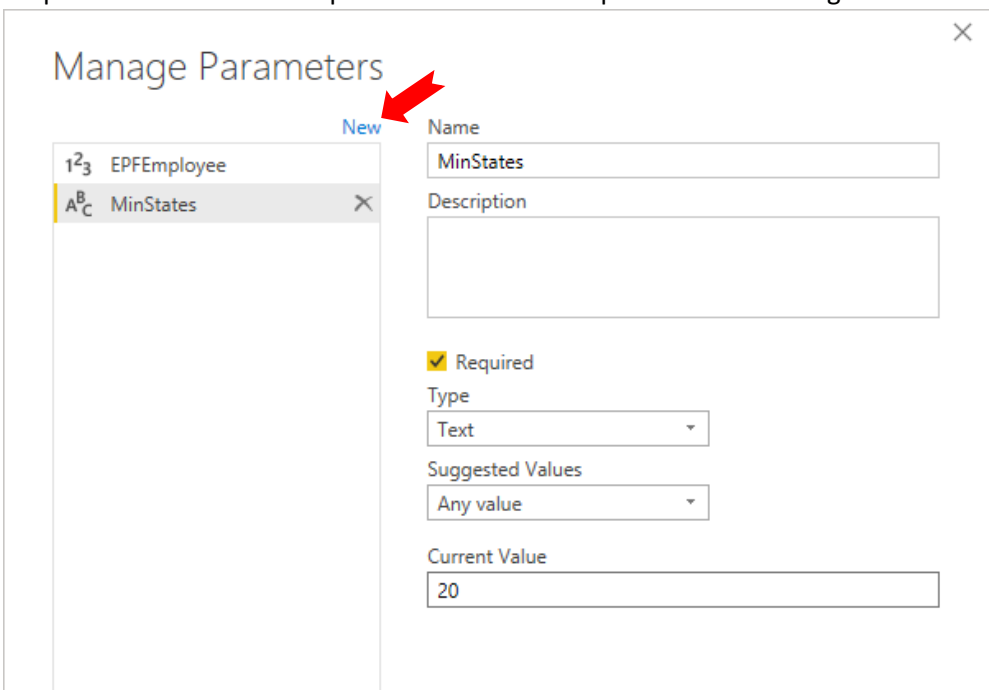
3. In the Query Editor, select “Manage Parameters”:



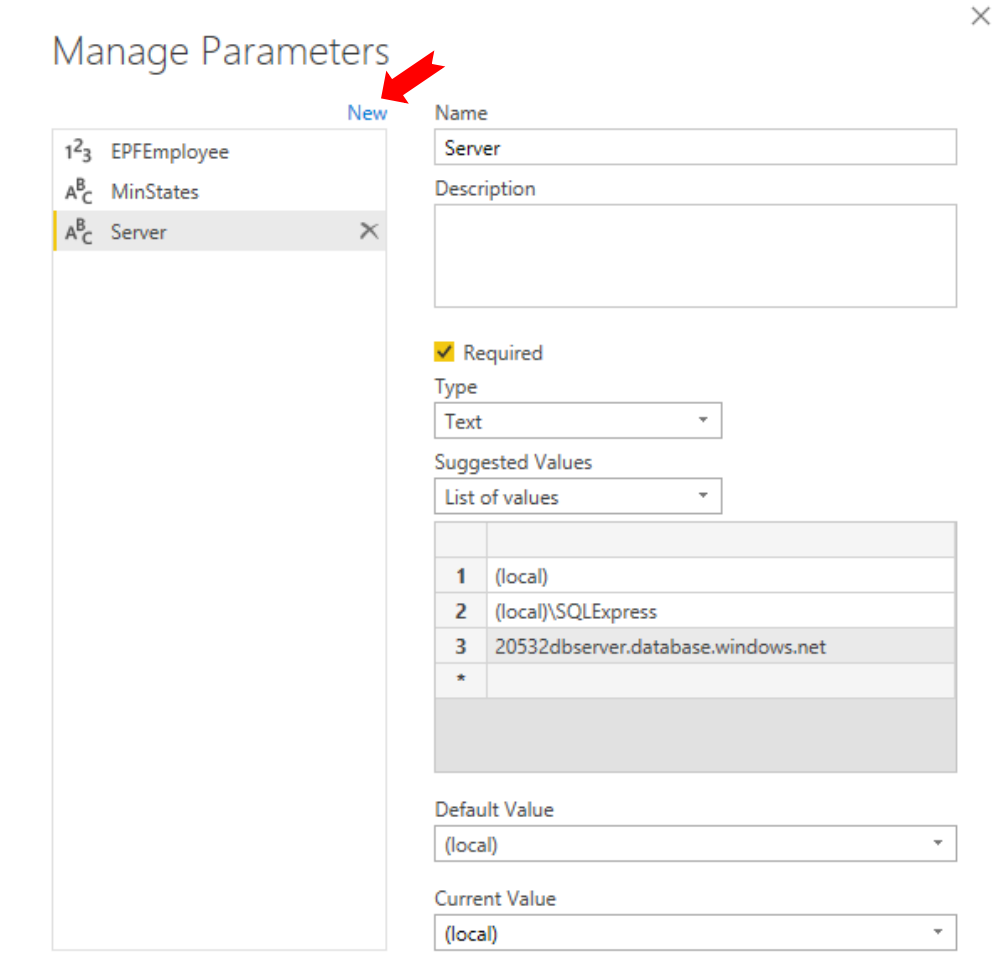
4. In the “Manage Parameters” dialog box, select “New” and prepare the following and press “New” again:



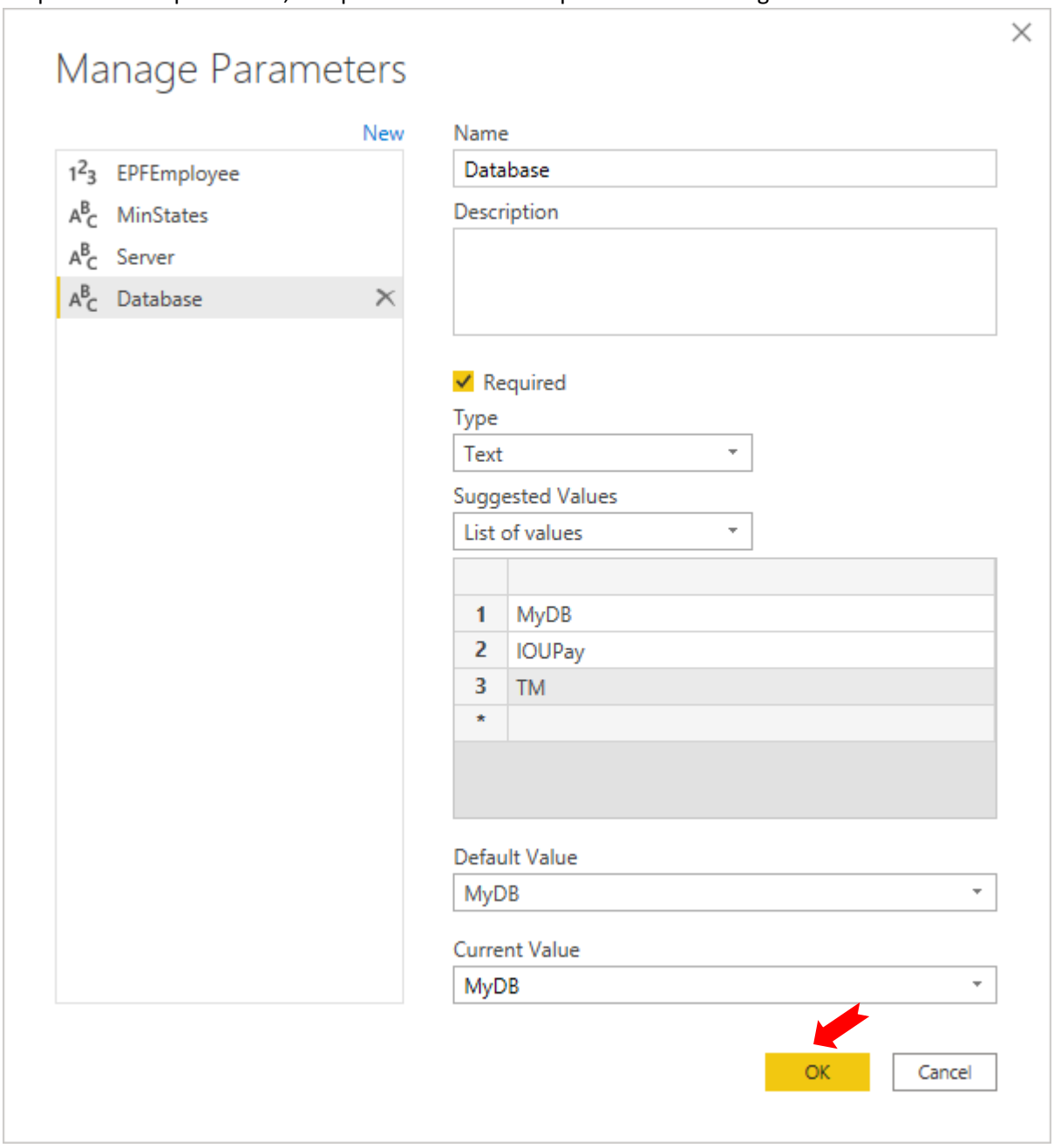
5. Prepare 2nd Parameter and press “New” after completed the following:



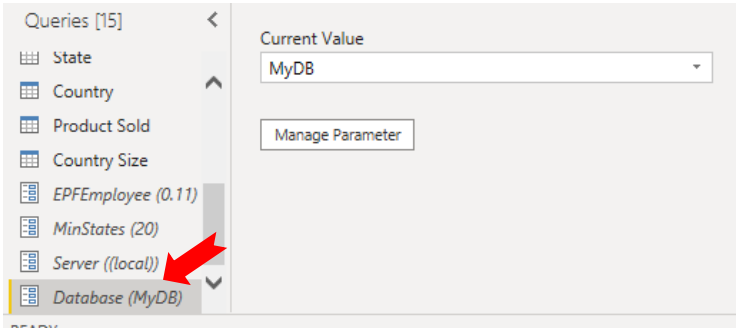
6. Prepare the 3rd Parameter and press “New” after completed the following:



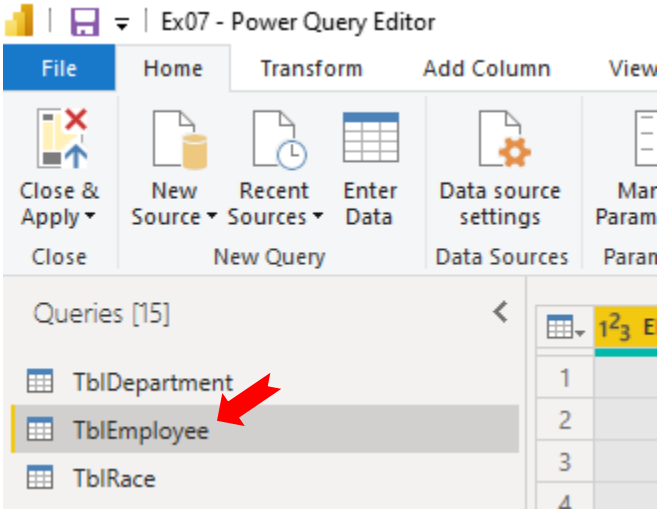
7. Prepare the last parameter, and press “OK” after completed the following:



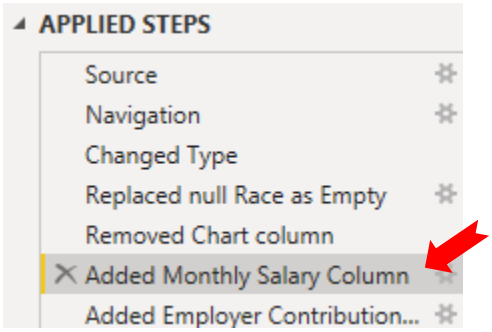
8. You can update the parameter values at the left panel of Query Editor:



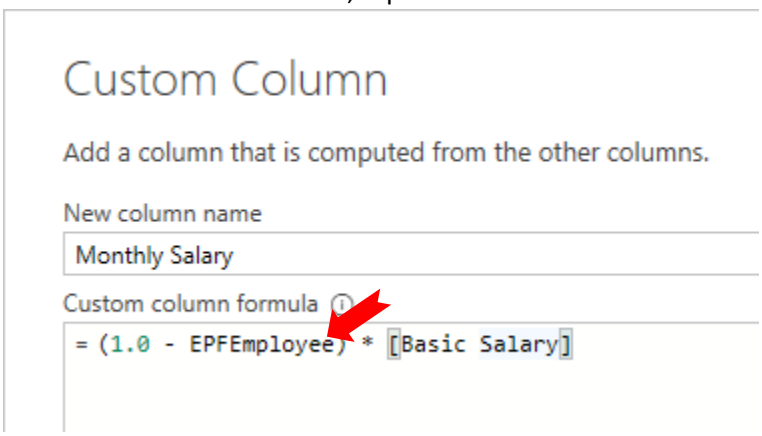
9. Select TblEmployee:



10. In the Applied Steps, double click “Added Monthly Salary Column”

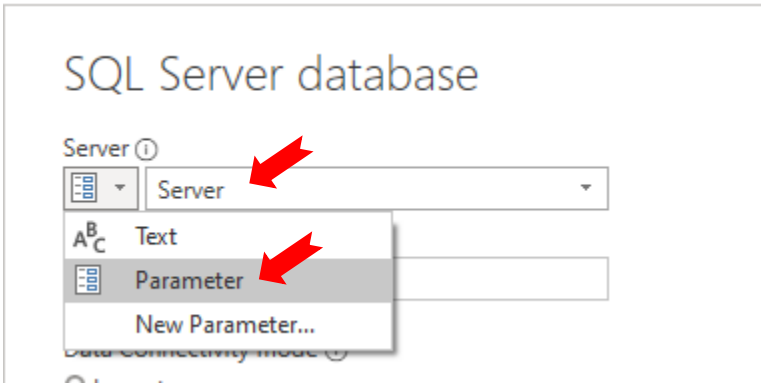


11. In the Custom Column Editor, replace the value 0.11 with Parameter “EPFEmployee”:

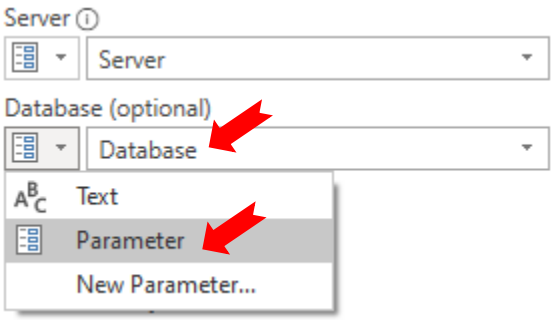


12. Press “OK” to update the virtual column.
13. You should get the same result.
14. Try change the EPFEmployee to 0.13. Refer to the value generate from the “Monthly Salary” column again. Any different?
15. Select “Close & Apply” to exit the Query Editor.
16. Wait until the process completed.
17. In the main UI, Start a new Direct Query for out MyDB again. We will use the previous SQL statement for this testing part of exercise.

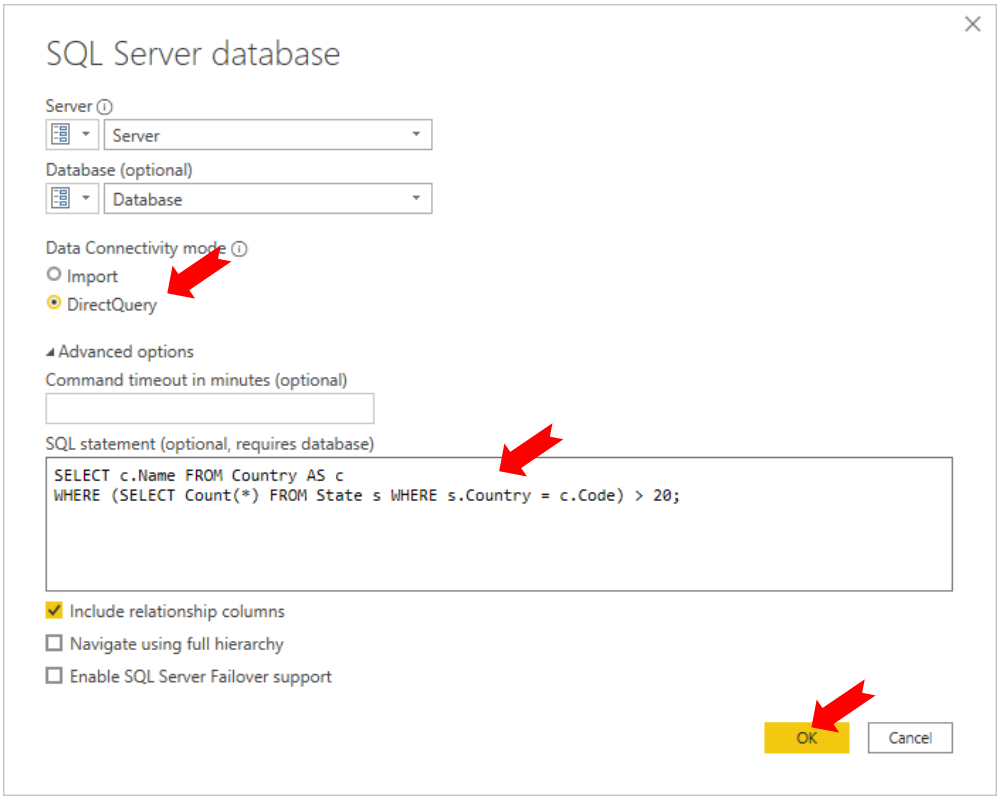
18. In the “SQL Server database” dialog box:



19. Next:

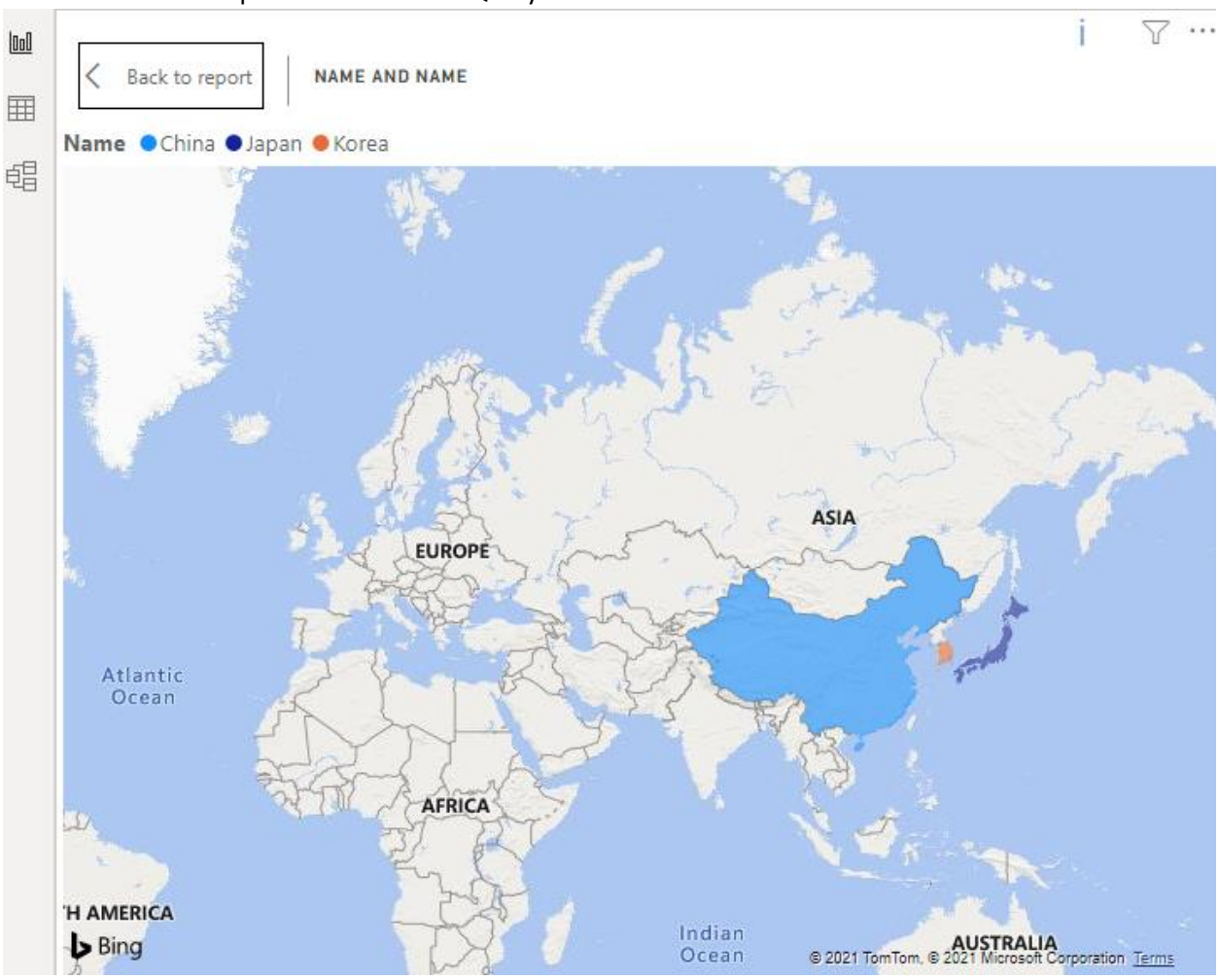


20. Next

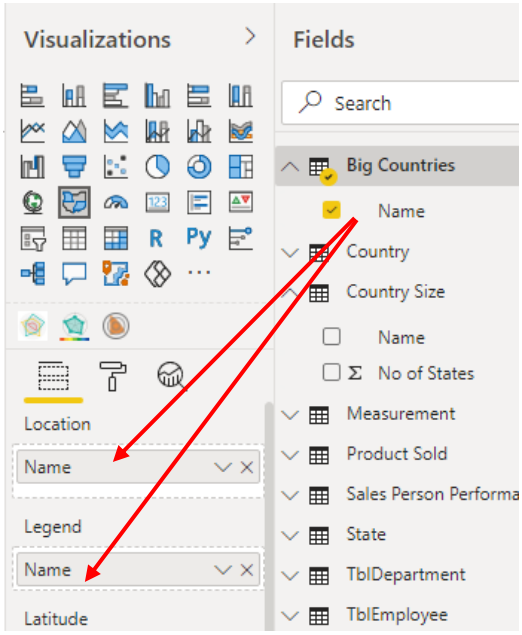


21. Name this Direct Query as “Big Countries”. (Answer to the previous challenge) 😊

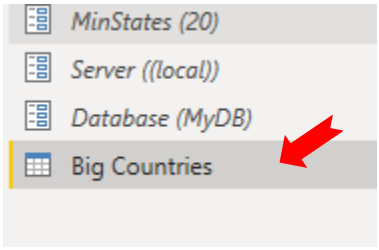
22. Create a new Fill Map to test this Direct Query:



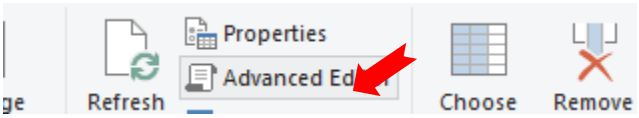
23. The properties:



24. Open the Query Editor again.
25. Select the “Big Countries” from the left panel:



26. Select the Advance Editor:



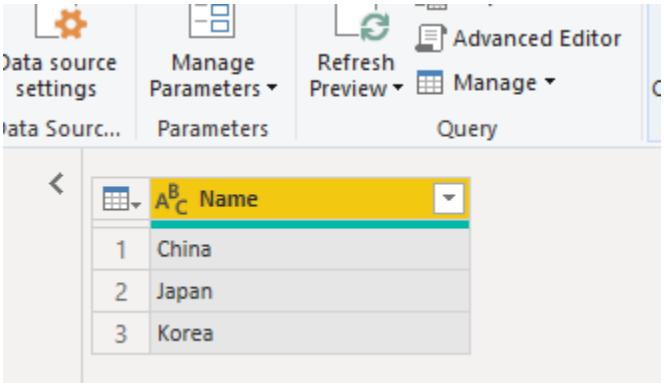
27. Modify this part of the script:

```
untry = c.Code) > 20;"])
```

As

```
ry = c.Code) > "& MinStates &";"])
```

28. Press “Done”. You should still get the same preview result:

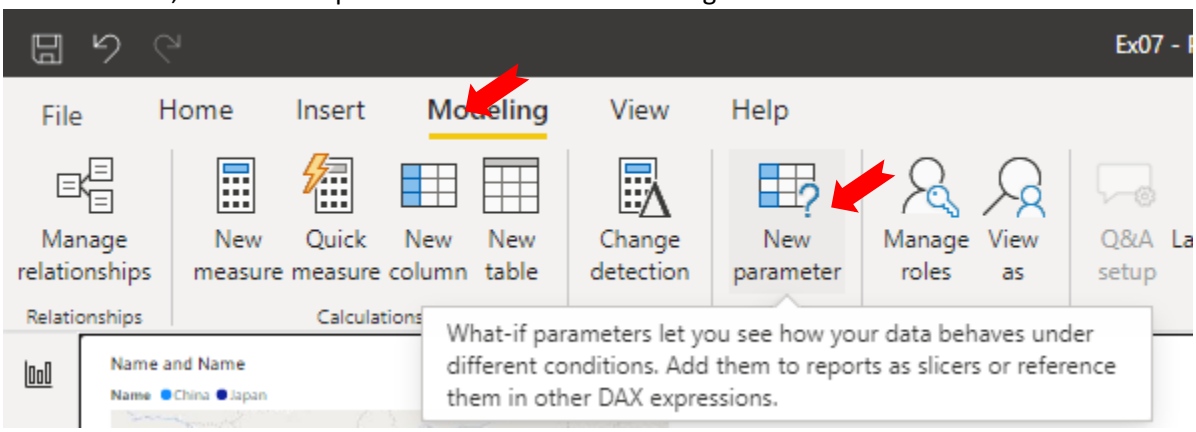


29. Try change the Parameter “MinStates” to value 40. Check the result again:

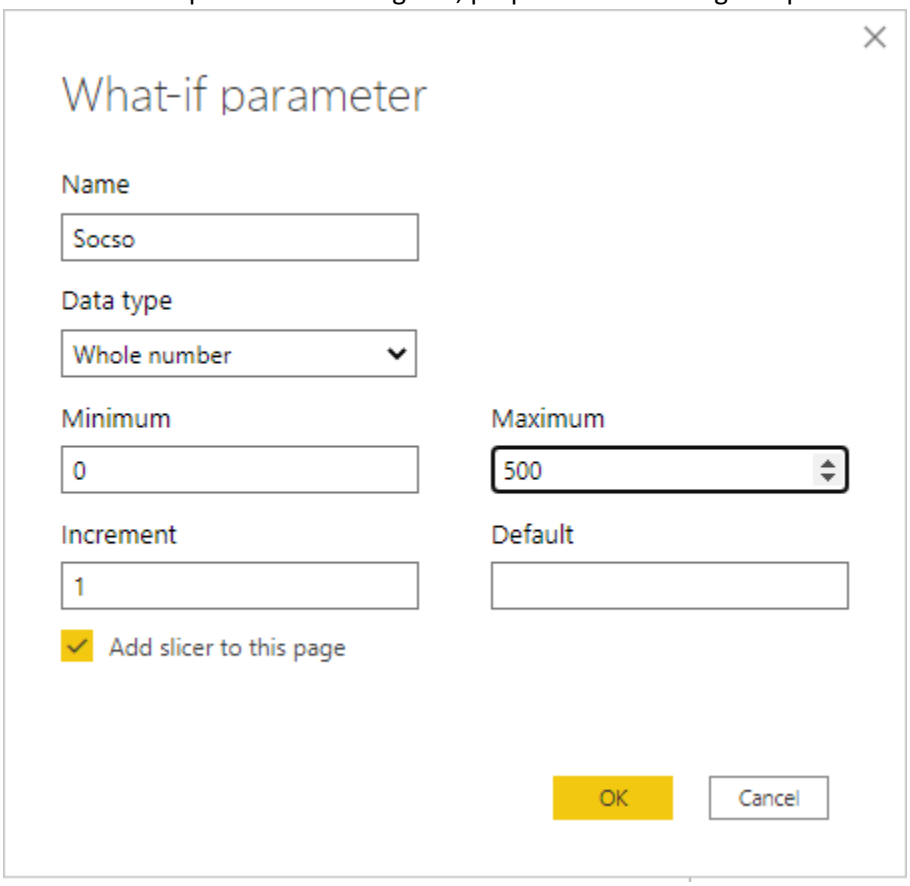
30. Why?
31. Close & Apply. Back to main UI, check the Map again.

DAX Level Parameter:

32. In the main UI, select “New parameter” from the “Modeling: ribbon tab:

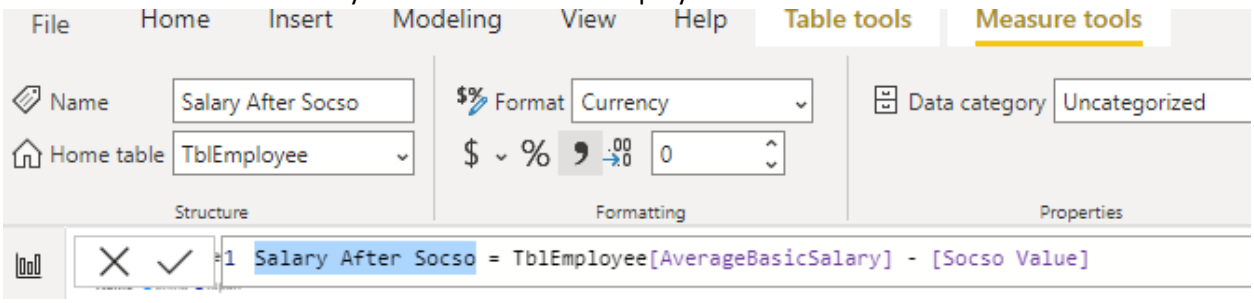


33. In the “What-If parameter” dialog box, prepare the following and press “OK” to complete:

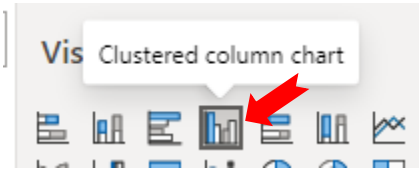


34. A Socso table is added:

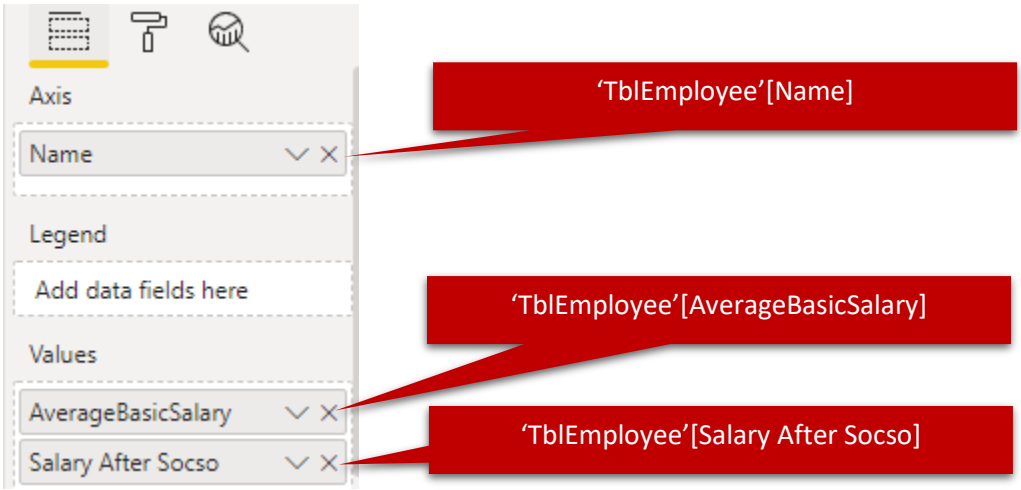
35. Create a new measure “Salary After Socso” for TblEmployee:



36. Add a new Clustered column chart:



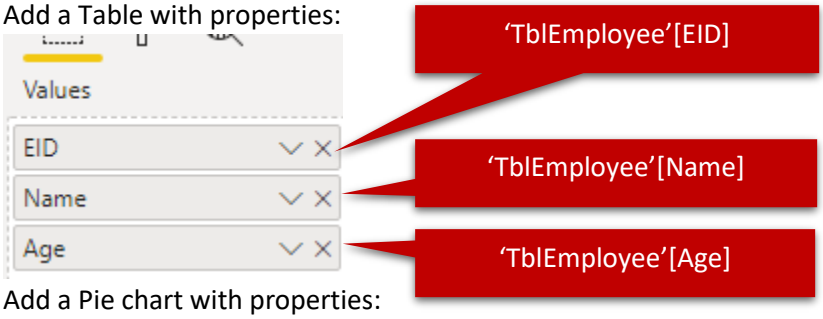
37. Set the properties:



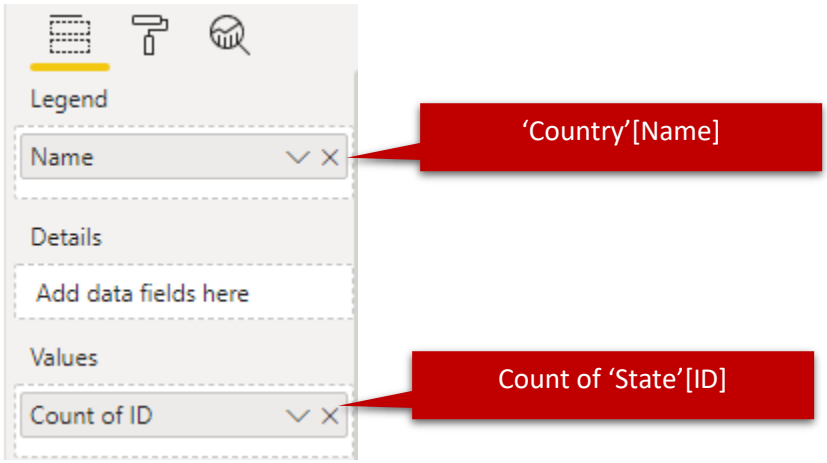
Define and use Roles

Steps:

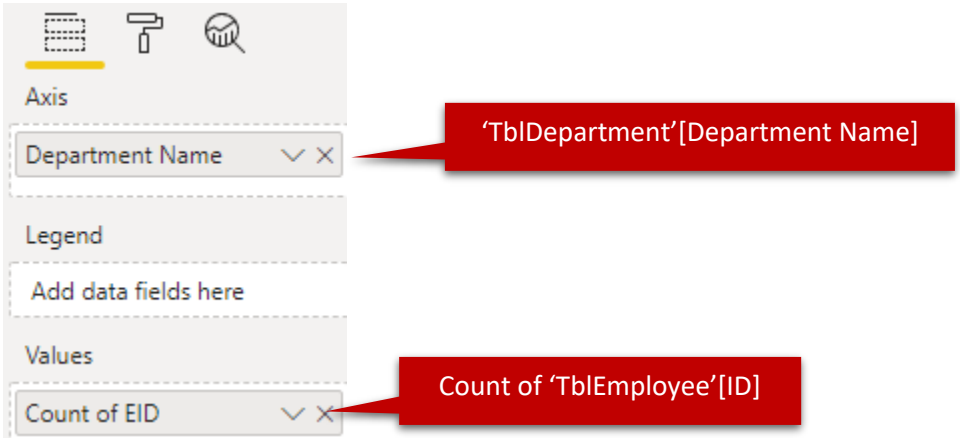
1. Create a new Report Page with name “Roles”.
2. Add a Table with properties:



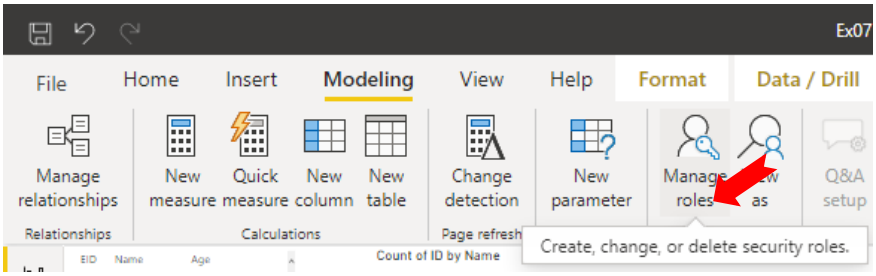
3. Add a Pie chart with properties:



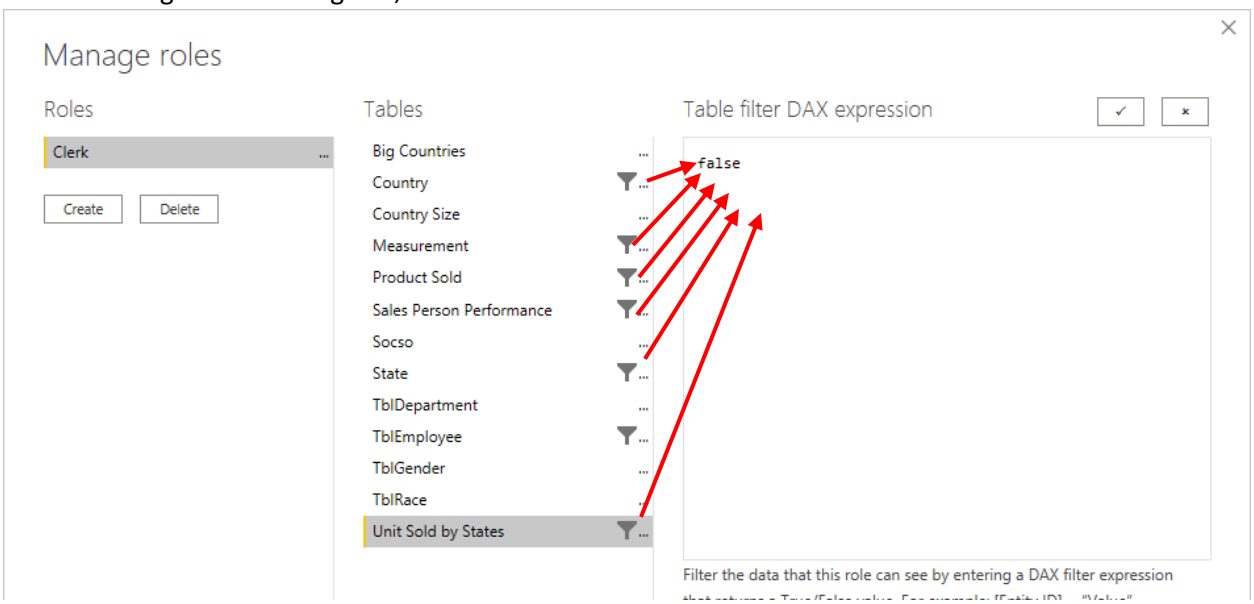
4. Add a Stacked column chart with properties:

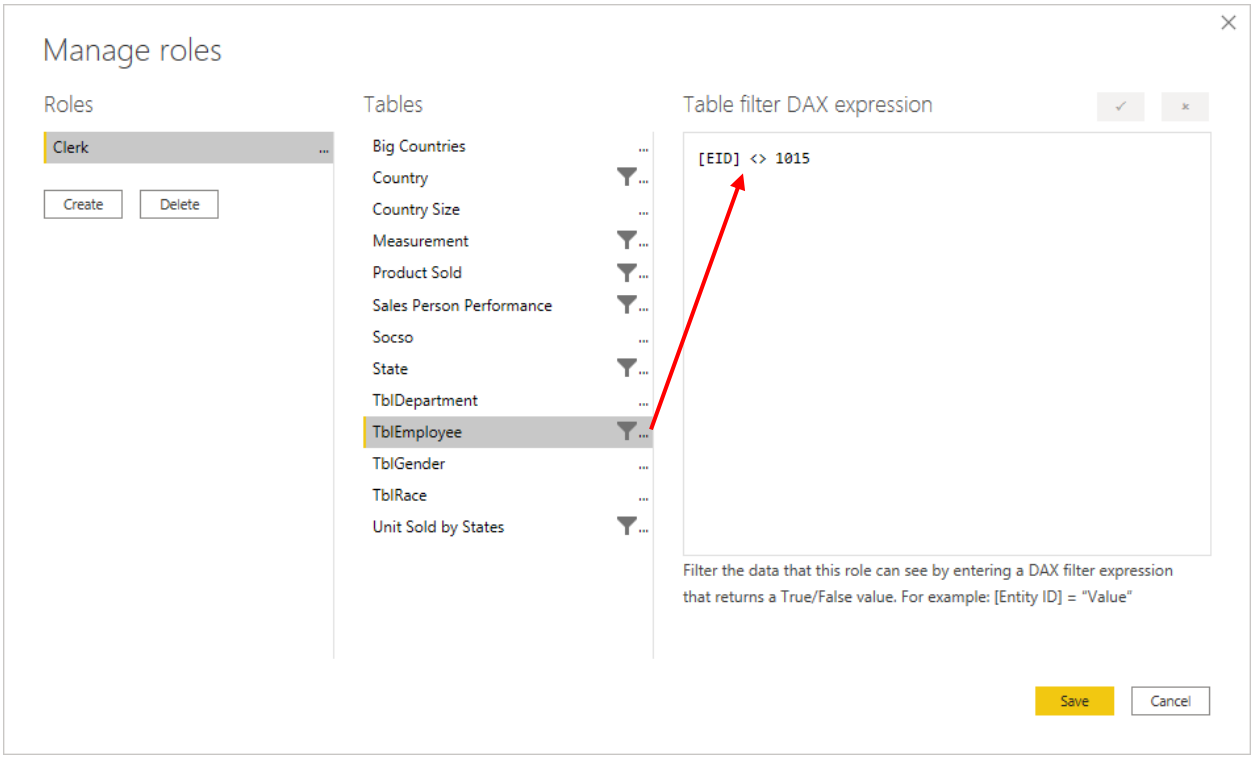


5. Select “Manage roles” from “Modeling” ribbon tab:

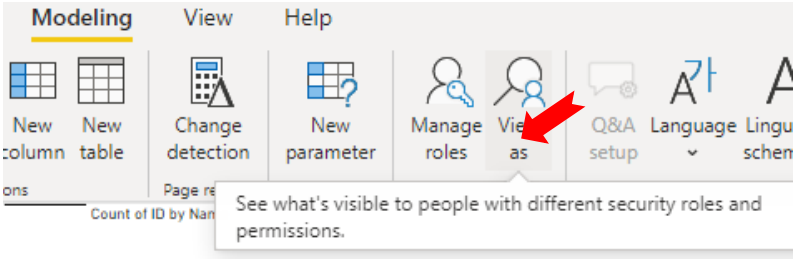


6. In the “Manage roles” dialog box, Add a new role “Clerk”:

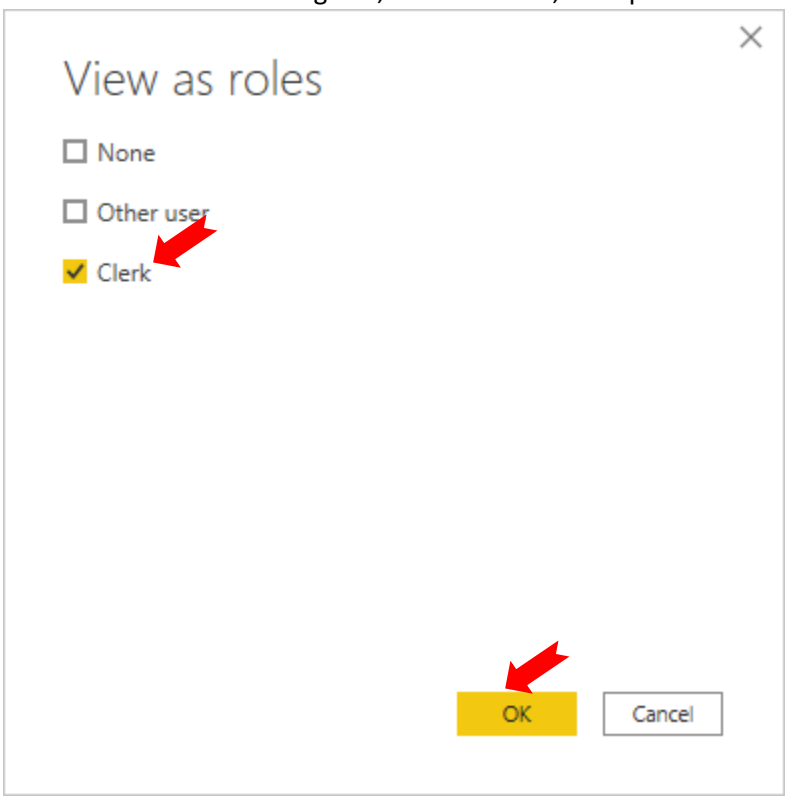




7. Press “Save” to complete.
8. Select “View as”:



9. In the “View as role” dialog box, select “Clerk”, then press “OK”:



10. What had happened?
11. Check the result of Stacked column chart too. Anything changed?
12. Click “Stop Viewing”: