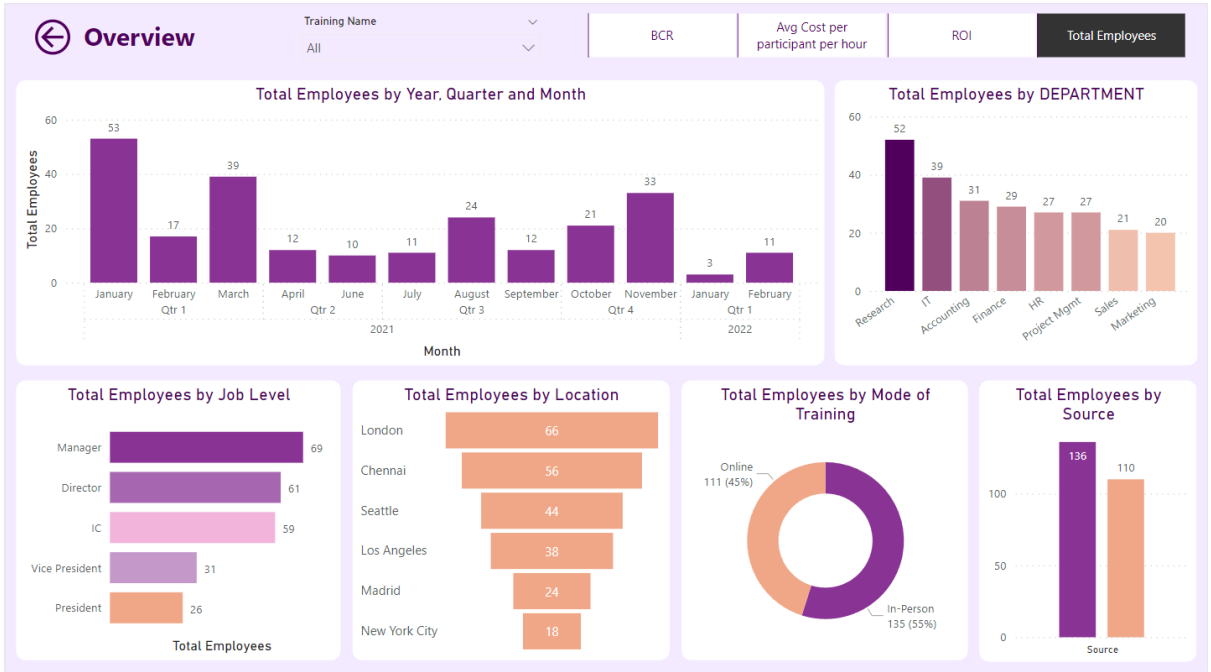
TRAINING DASHBOARD

Dashboard view:

Training Name	Total Employees	Avg Cost per participant per hour	Average of Benefit	Average of Rating	BCR	ROI
Agile Foundations	12	31.67	358.33	4.00	1.89	89%
Communications	12	17.86	362.50	3.78	2.90	190%
Digital Marketing Basics	12	17.86	316.67	3.75	2.53	153%
Digital Marketing Expert	9	37.50	322.22	3.87	2.15	115%
HR Certification	11	39.29	354.55	3.89	1.29	29%
HR Essentials	19	75.00	380.26	3.95	2.54	154%
Microsoft Excel - Advanced	13	50.00	321.15	3.71	0.80	-20%
Microsoft Excel - Beginners	20	32.86	340.00	3.68	1.70	70%
Microsoft Excel - VBA	9	87.50	377.78	3.91	0.54	-46%
People Analytics	8	43.75	337.50	3.23	0.96	-4%
Power BI - Advanced	10	31.25	365.00	3.95	1.46	46%
Power BI - Beginners	8	16.67	268.75	3.94	2.69	169%
PowerApps	3	33.33	333.33	4.07	1.67	67%
Public Speaking	12	33.33	366.67	4.12	3.67	267%
Python - Advanced	9	25.00	313.89	4.06	2.51	151%
Python -Beginners	4	14.29	312.50	3.55	3.13	213%
SQL Essentials	11	6.25	331.82	4.08	6.64	564%
Strategic Thinking	10	21.43	305.00	4.00	2.03	103%
Tableau - Advanced	11	50.00	384.09	3.86	1.28	28%
Tableau - Beginners	9	15.63	366.67	3.78	2.93	193%
Teradata Advanced	12	13.33	350.00	3.87	4.38	338%
Teradata Beginners	12	30.00	337.50	3.88	2.81	181%
Time Management Principles	10	10.71	395.00	3.90	5.27	427%
Total	**246**	**33.64**	**346.54**	**3.86**	**1.81**	**81%**



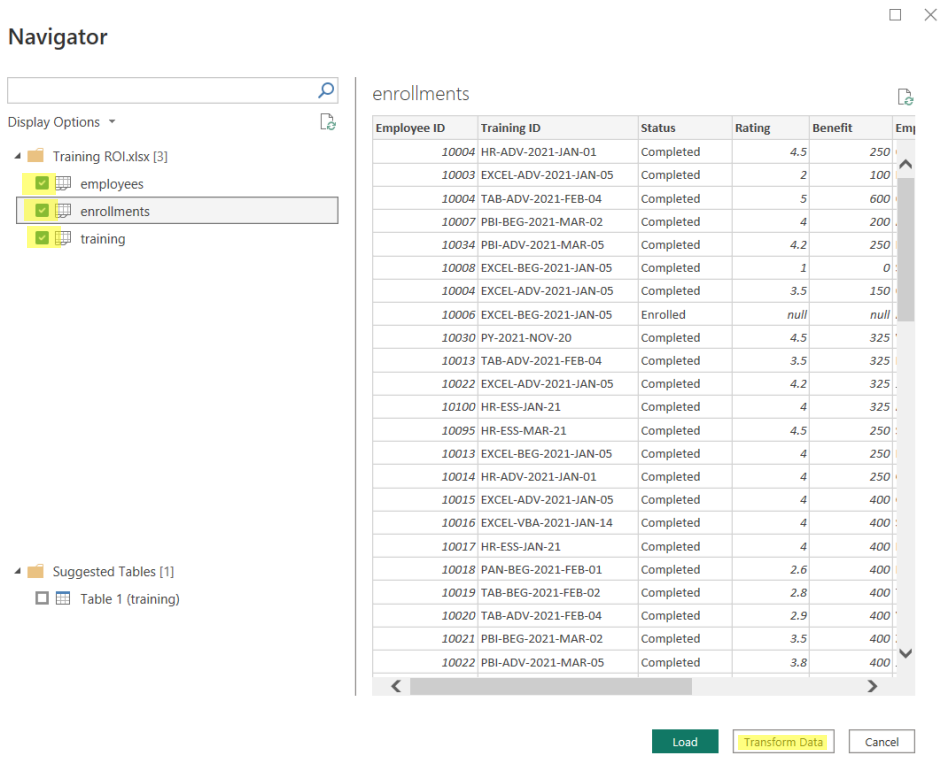
- **About the dataset:**
  The Training_ROI.xlsx excel file contains 3 datasets, employees, enrollments, training.

  The dataset employees contain 108 observations and 8 variables.

  The enrollments dataset contains 258 observations and 7 variables.

  The training dataset contains 25 observations and 11 variables.

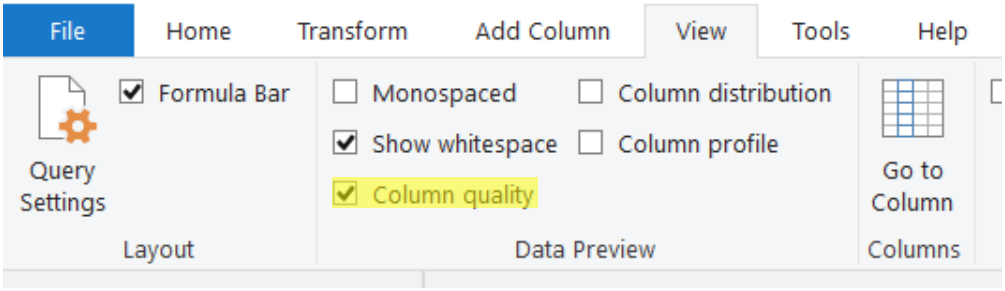
- **Importing the dataset:**
  a. Open Power BI Desktop
  b. Go to the Home tab and select **Get Data.**
  c. Select the format suitable for the dataset, i.e., Excel, csv, etc.
  d. Then click on **Connect** and select the file from your desktop/browser wherever it is located and click Open.
  e. Check all the three excel sheets, employees, enrollments, training. It is always good practice to go for transformation data to check if any data cleaning is required. Click on **Transform Data**, it will open power query editor window as below.

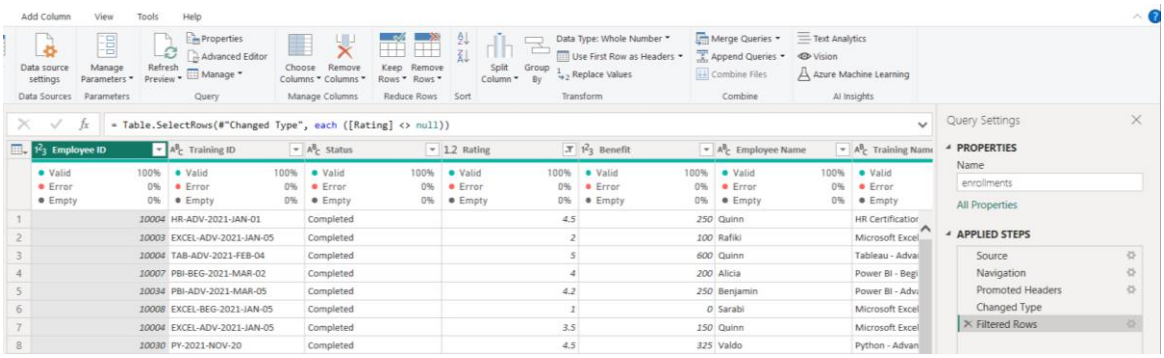


Employee ID	Training ID	Status	Rating	Benefit
10004	HR-ADV-2021-JAN-01	Completed	4.5	250
10003	EXCEL-ADV-2021-JAN-05	Completed	2	100
10004	TAB-ADV-2021-FEB-04	Completed	5	600
10007	PBI-BEG-2021-MAR-02	Completed	4	200
10034	PBI-ADV-2021-MAR-05	Completed	4.2	250
10008	EXCEL-BEG-2021-JAN-05	Completed	1	0
10004	EXCEL-ADV-2021-JAN-05	Completed	3.5	150
10006	EXCEL-BEG-2021-JAN-05	Enrolled	null	null
10030	PY-2021-NOV-20	Completed	4.5	325
10013	TAB-ADV-2021-FEB-04	Completed	3.5	325
10022	EXCEL-ADV-2021-JAN-05	Completed	4.2	325
10100	HR-ESS-JAN-21	Completed	4	325
10095	HR-ESS-MAR-21	Completed	4.5	250
10013	EXCEL-BEG-2021-JAN-05	Completed	4	250
10014	HR-ADV-2021-JAN-01	Completed	4	250
10015	EXCEL-ADV-2021-JAN-05	Completed	4	400
10016	EXCEL-VBA-2021-JAN-14	Completed	4	400
10017	HR-ESS-JAN-21	Completed	4	400
10018	PAN-BEG-2021-FEB-01	Completed	2.6	400
10019	TAB-BEG-2021-FEB-02	Completed	2.8	400
10020	TAB-ADV-2021-FEB-04	Completed	2.9	400
10021	PBI-BEG-2021-MAR-02	Completed	3.5	400
10022	PBI-ADV-2021-MAR-05	Completed	3.8	400

- **Data cleaning:**

a. To check the column quality like missing values for each column. Go to View > Data Preview > Check on **Column quality**

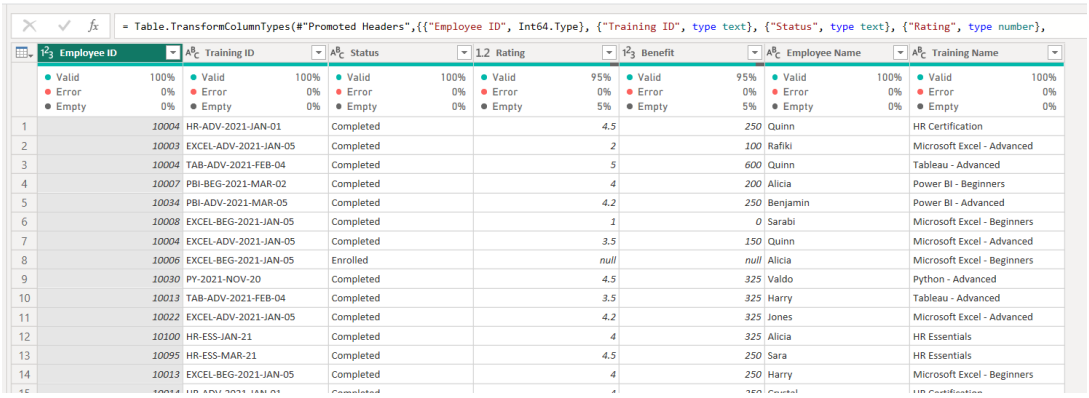




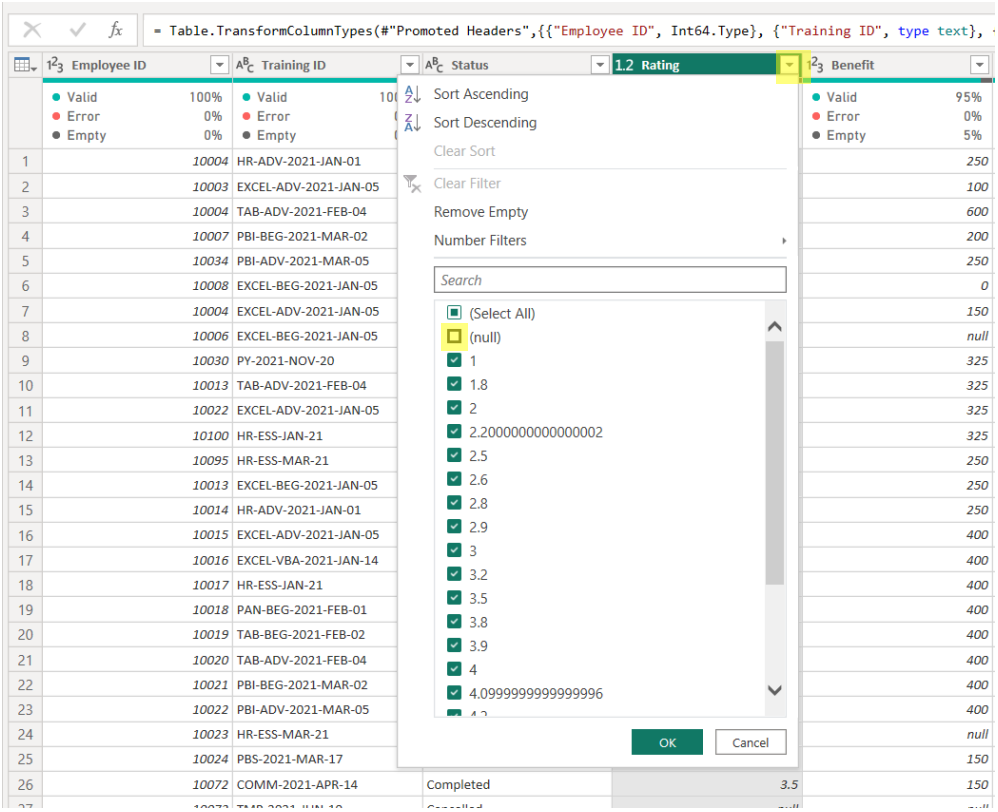
The Column quality checks the quality of the data in terms of valid, Error & Empty, and also displays the percentage of data values associated with the selected table.

- Valid - shown in green
- Error - shown in red
- Empty - shown in dark grey

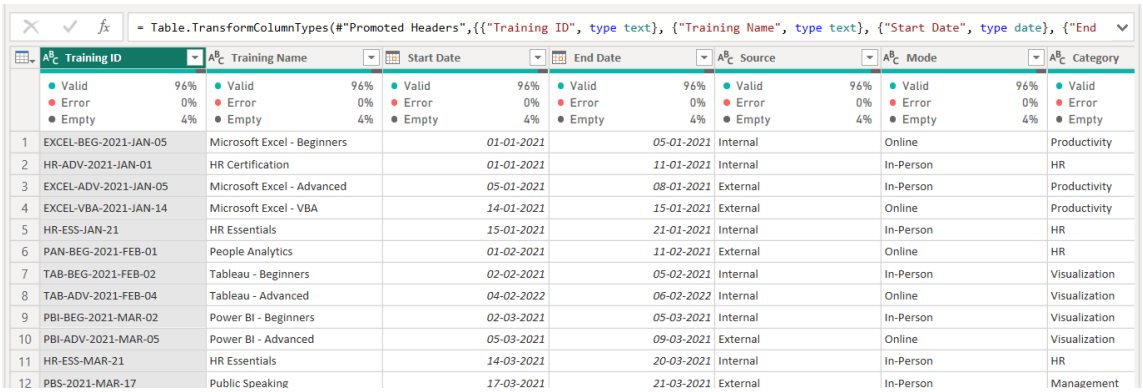
b. In the enrollments dataset the field "*Rating*" and "*Benefit*" contains Empty values.



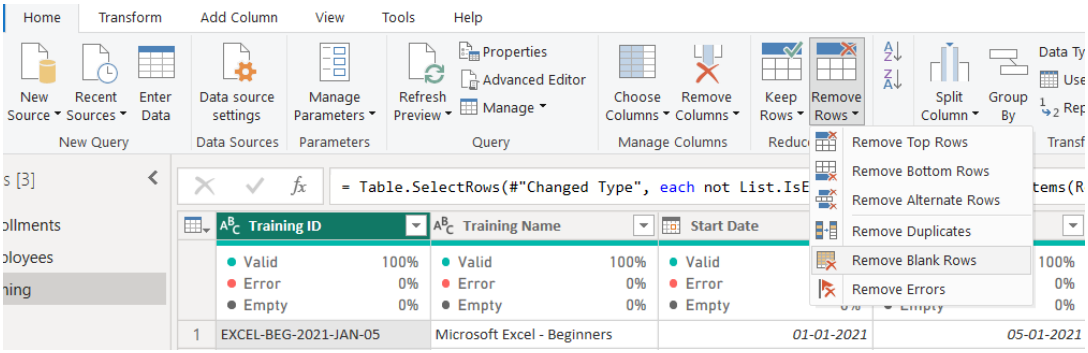
c. Click on the drop-down sign on the right most corner of the field "*Rating*" and uncheck the value "**null**" and click OK. Now the dataset does not have any null values and it is cleaned.



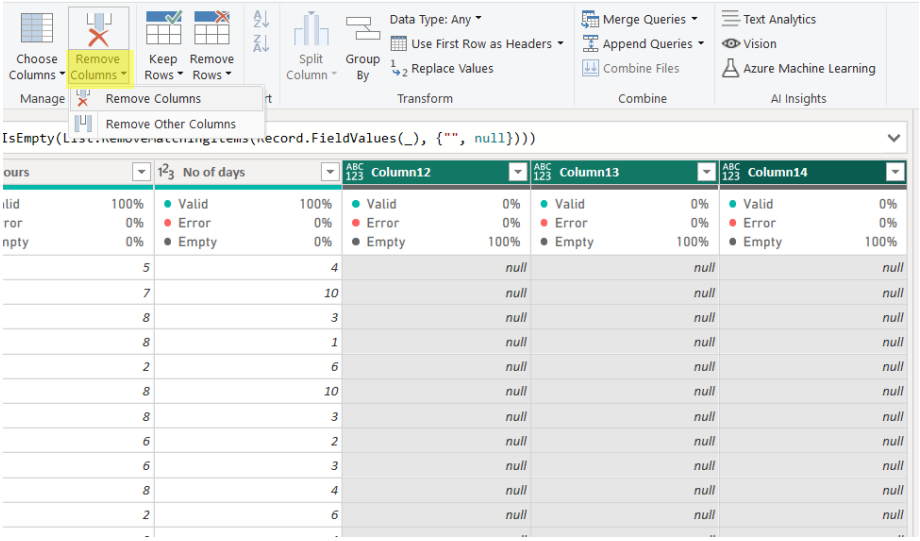
d. In the training dataset, there are empty values in each field and also there are some empty columns.



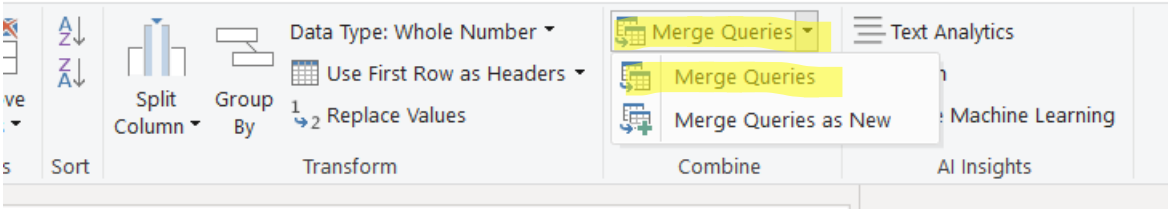
e. To remove the null rows, go to Home ribbon > Reduce rows > Remove rows > click on **Remove Blank Rows**, dataset is now cleaned.



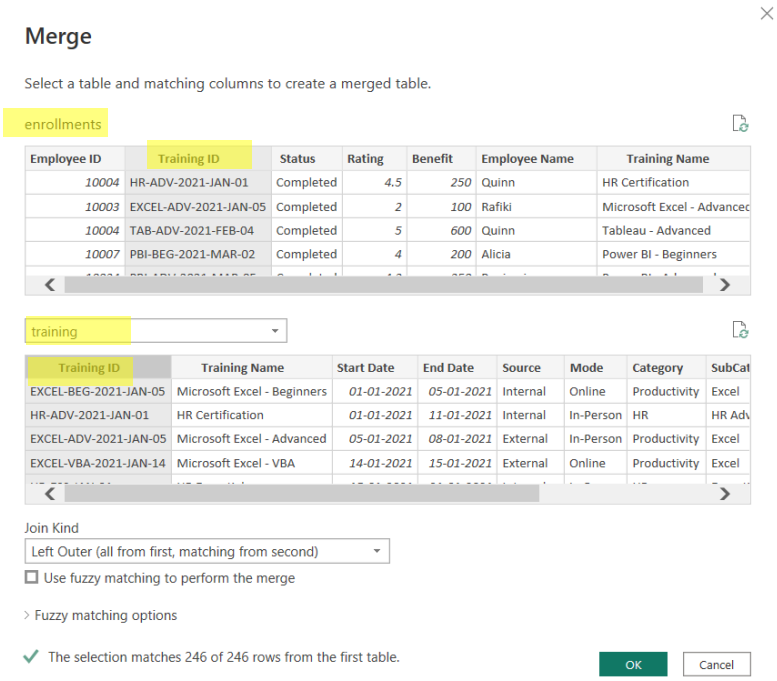
f. Select the empty columns got to Home ribbon > Manage columns > Remove columns.



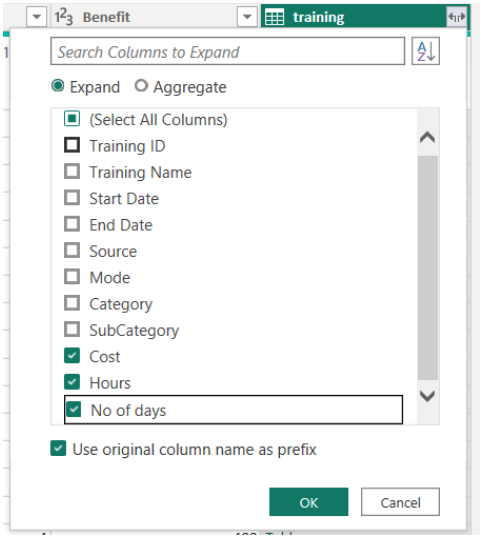
g. Go to the enrollments table, then go to Home ribbon > Combine > Merge Queries



h. A dialog box will pop up, Choose the training table from the list and select the common column "*Training ID*" to match as given in figure below. And then click OK.



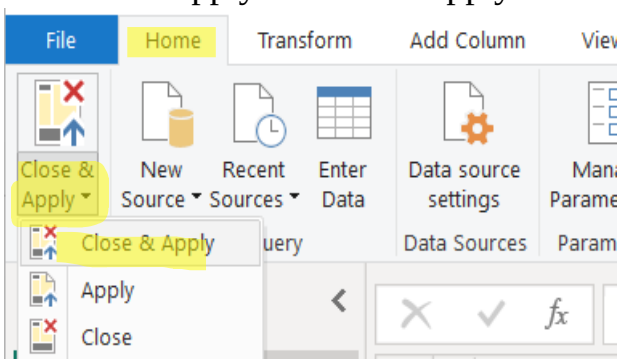
i. Now in the enrollments data, go to last column, it will be training field. Click the double-sided arrow on the column > check the boxes for fields *"Cost", "Hours" and "No of days"* and click OK.



j. Rename the fields as *"Cost of training", "Hours of training"* and *"Days of training"* by double clicking of the field name

Cost of training	Hours of training	Days of training
Valid 100%	Valid 100%	Valid 100%
Error 0%	Error 0%	Error 0%
Empty 0%	Empty 0%	Empty 0%
275	7	10
275	7	10
150	5	4
150	5	4
400	8	3
400	8	3
400	8	3
400	8	3
300	6	2

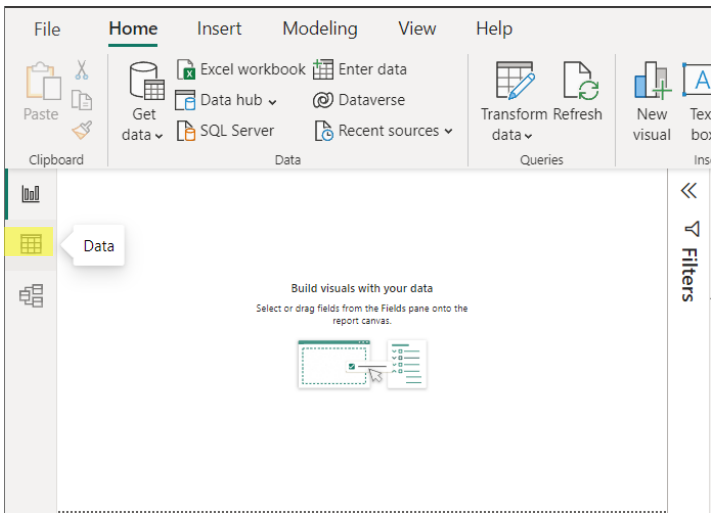
k. We have to apply all the changes made to the data now. For this, go to Home tab > Close & apply > Close & apply.

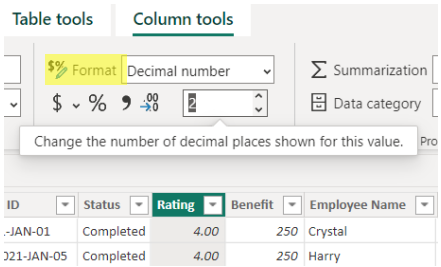


l. The dataset is ready for further analysis. To build the dashboard we create all the charts mentioned below on the same page and arrange accordingly.

Steps to Build the Dashboard page 1:

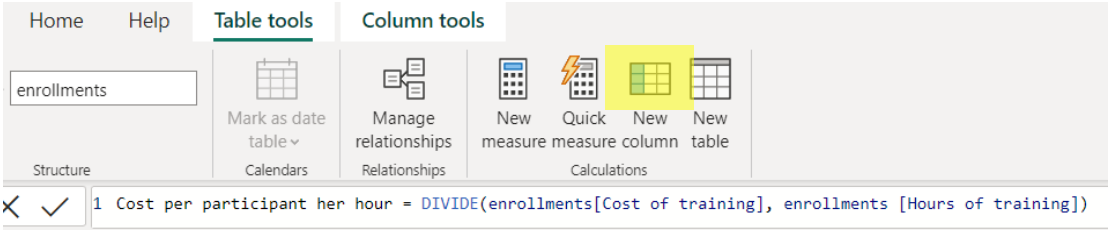
a. Before created the visuals, go to Data view and select the field "*Rating*" of enrollments table. Change the format of the field to Decimal number and also change the decimal places to two.



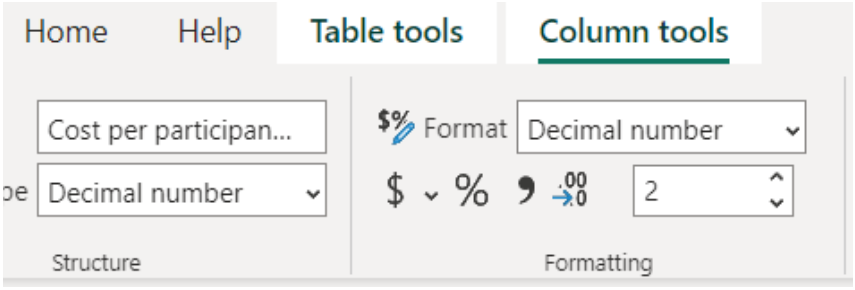


b. Create a calculated column, go to enrollments table in the Data view. In the Table tools ribbon click on new column and use the formula given below to calculate the new columns "*Cost per participant per hour*"

Cost per participant her hour = DIVIDE(enrollments[Cost of training], enrollments [Hours of training])

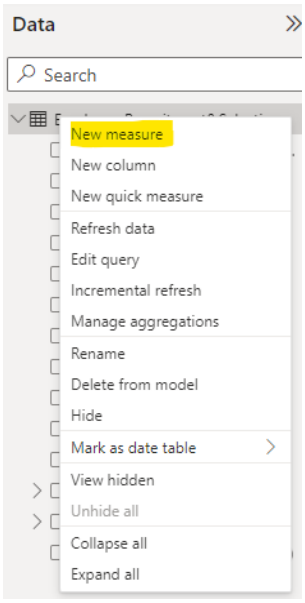


Go to column tools ribbon, change the format of the field to "Decimal number"

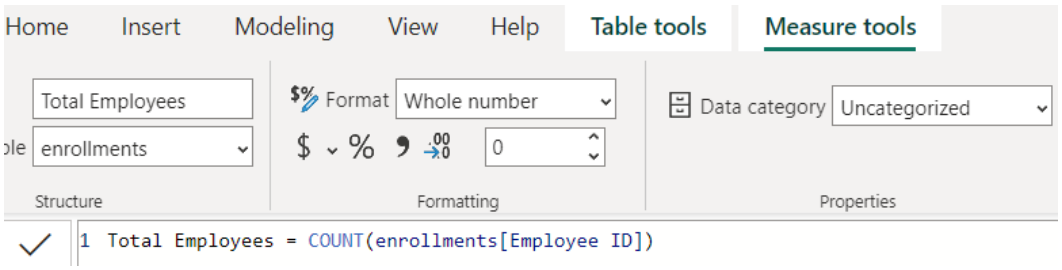


1. Cards (on the left)
   We will create four cards as mentioned below

   - Total Employees:
     a. For this visual first create a measure, In the Fields pane, right-click the "*Employee ID*" from the enrollments dataset, or hover over the table and select More options. From the menu that appears, choose New measure.

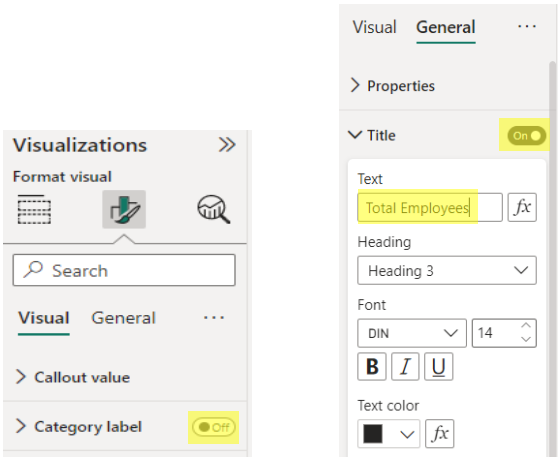


b. Enter the following formula
Total Employees = COUNT (enrollments[Employee ID])

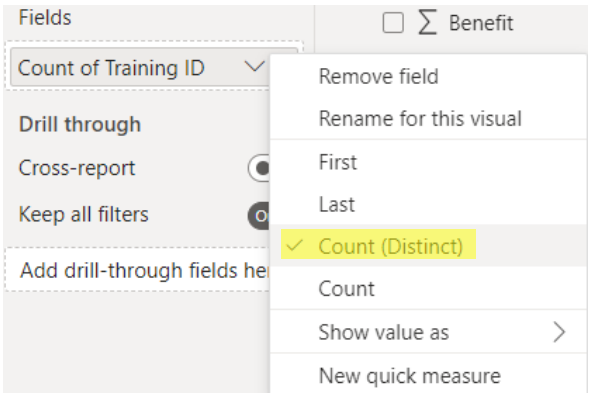


c. Select the card visual from the Visualizations panel. Drag down the measure "*Total Employees*" to the Field.

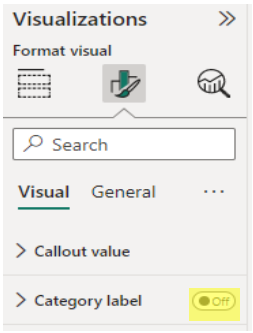
d. Go to Format visuals > General > Title > turn on the title and give a title to the visual and format the title. Go to Format visuals > Visuals > turn off Category label.



- Total Training:
  1. Select the card visual from the Visualizations panel. Drag "*Training ID*" from the enrollments table to the Field right click on the option of *Training ID* and select Count (Distinct).

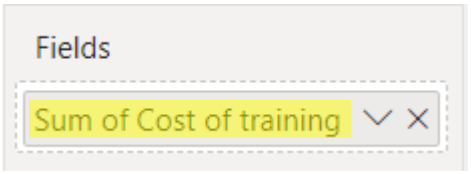


  2. Then go to Format your visual in turn off the Category label option

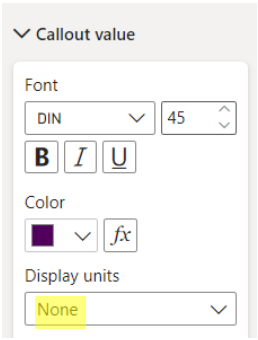


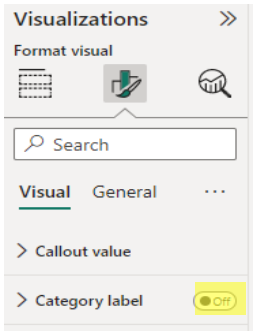
  3. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

- Total Cost:
  1. Select the card visual from the Visualizations panel. Drag "*Cost of Training*" from the enrollments table to the Field right click on the option of *Cost of Training* and select Sum.



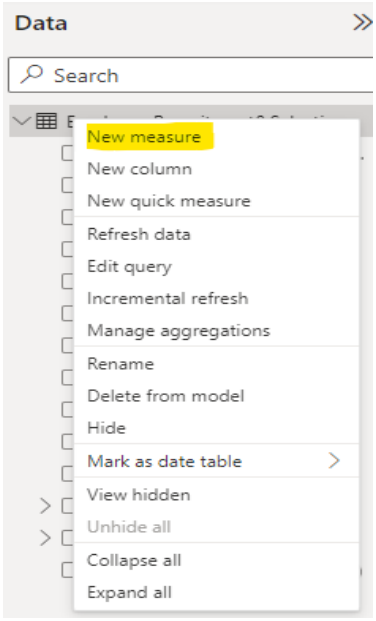
  2. Go to Format visual > Visuals > Callout value > Select **None** in Display units. Then go to Format visual in turn off the Category label option.



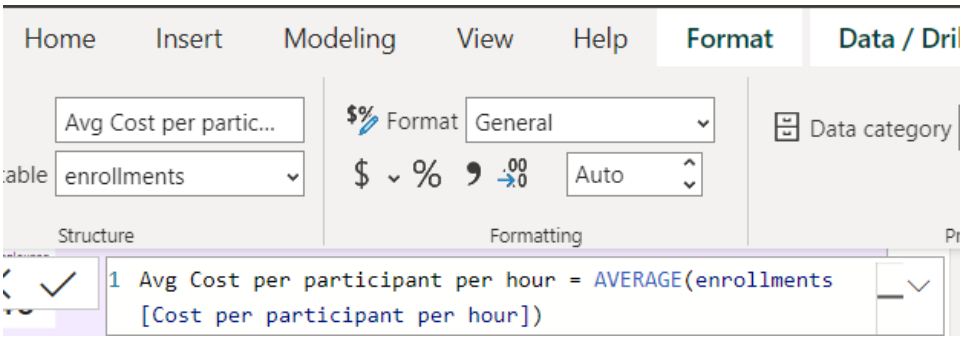


  3. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

- Cost per participant per hour:
  1. For this visual first create a measure, In the Fields pane, right-click the "*Cost per participant per hour*" from the dataset, or hover over the table and select More options. From the menu that appears, choose New measure.

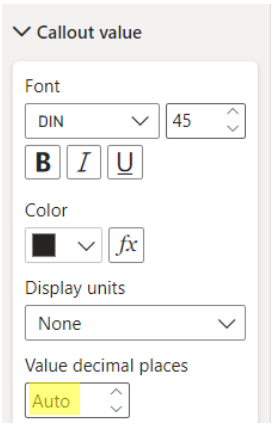


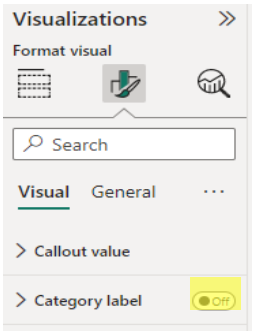
2. Enter the following formula
   Avg Cost per participant per hour = AVERAGE (enrollments[Cost per participant per hour])



3. Select the card visual from the Visualizations panel. Drag down the measure "*Avg Cost per participant per hour"* to the Field.

4. Go to Format visual > Visuals > Callout value > change the Value decimal places to zero. Then go to Format visual in turn off the Category label option.



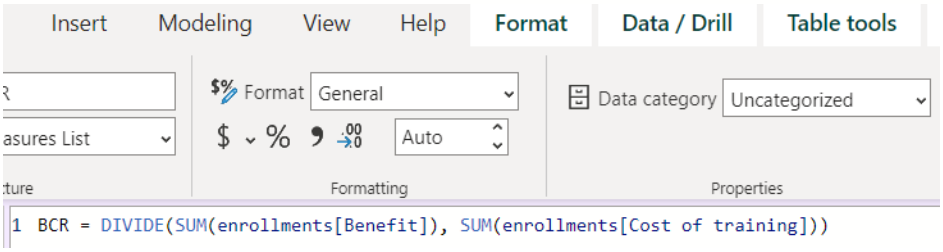


5. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

2. Cards (on the right)
We will create four cards as mentioned below

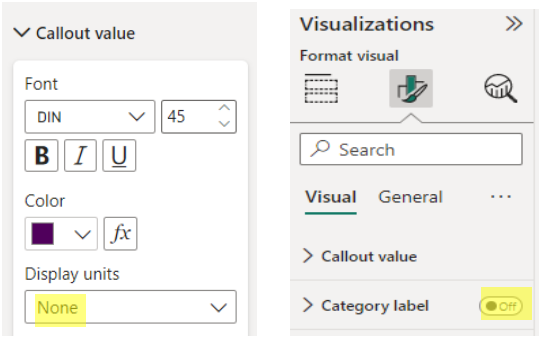
- Overall BCR
  1. First create a measure with the following formula

     BCR = DIVIDE(SUM(enrollments[Benefit]), SUM(enrollments[Cost of training]))



  2. Select the card visual from the Visualizations panel. Drag down the measure "*BCR*" to the Field.

  3. Go to Format visual > Visuals > Callout value > Select **None** in Display units. Then go to Format visual in turn off the Category label option.

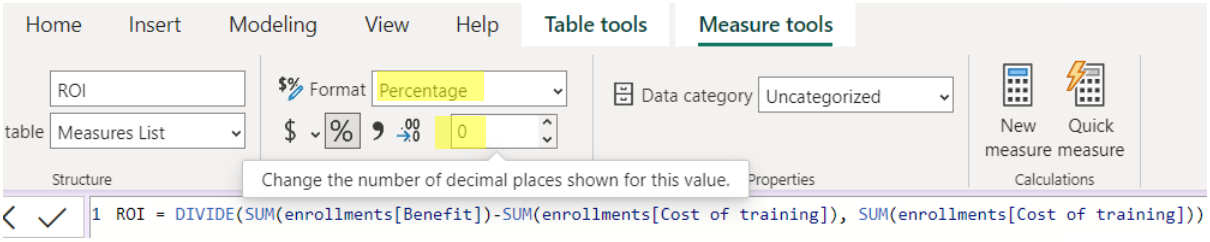


4. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

- Overall ROI
  1. For this visual create a measure with the following formula

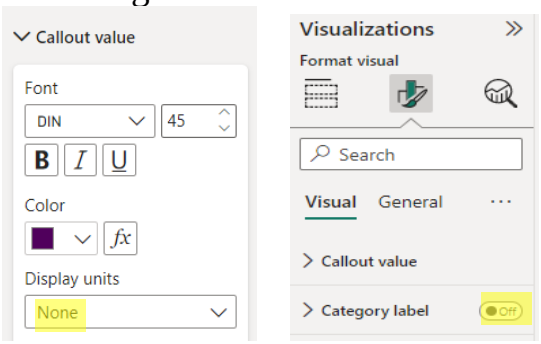
     ROI = DIVIDE(SUM(enrollments[Benefit])-SUM(enrollments[Cost of training]), SUM(enrollments[Cost of training]))

  2. Go to the Measure tools ribbon > Formatting > change the format to **Percentage** and also decimal places to zero.



  3. Select the card visual from the Visualizations panel. Drag down the measure "*BCR"* to the Field.

  4. Go to Format visual > Visuals > Callout value > Select **None** in Display units. Then go to Format visual in turn off the Category label option.



5. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

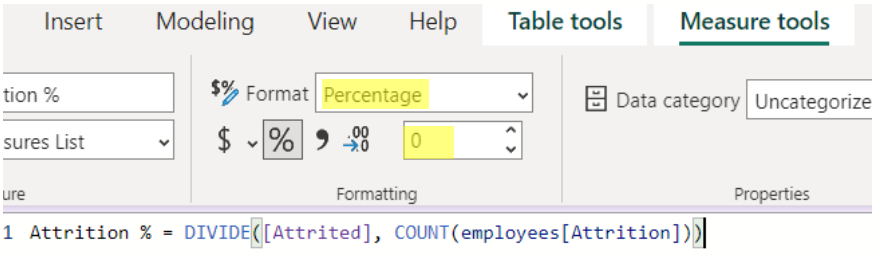
- Attrited Employees
  1. For this visual create a measure with the following formula
     Attrited = CALCULATE(COUNT(employees[Attrition]), employees[Attrition]="yes")

  2. Select the card visual from the Visualizations panel. Drag down the measure "*Attrited"* to the Field.

  3. Go to Format visual in turn off the Category label option. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

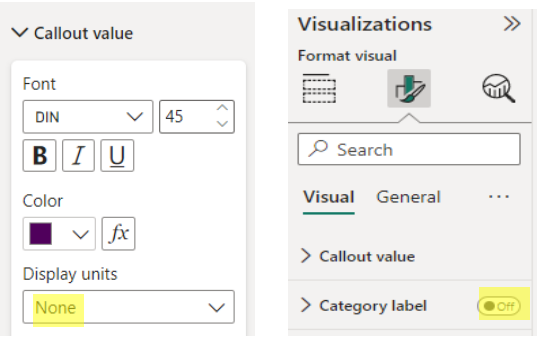
- % Attrited Employees
  1. For this visual create a measure with the following formula
     Attrition % = DIVIDE([Attrited], COUNT(employees[Attrition]))

  2. Go to the Measure tools ribbon > Formatting > change the format to **Percentage** and also decimal places to zero.



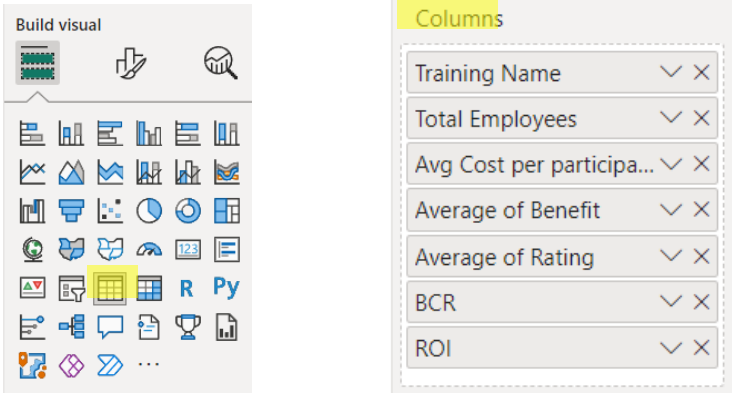
  3. Select the card visual from the Visualizations panel. Drag down the measure "*Attrition %"* to the Field.

  4. Go to Format visual > Visuals > Callout value > Select **None** in Display units. Then go to Format visual in turn off the Category label option.

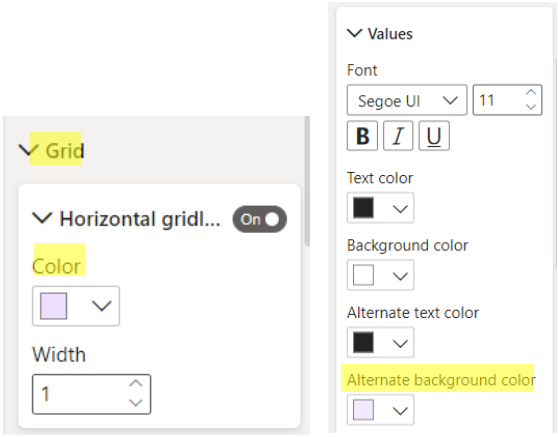


5. In General, turn on the Title option and give a Title. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

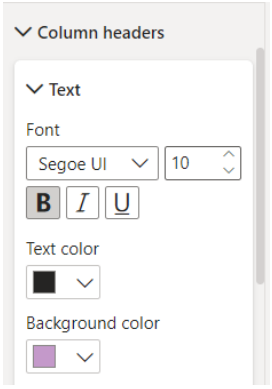
3. Overview - Table
   a. Select the table visual from the Visualization pane. Add the following fields to the Columns, "*Training Name*" from training table, "*Benefit*", "*Rating*" from enrollments table and right click on the fields and select Average. Add the following measures to the Columns "*ROI*", "*BCR*", *"Avg Cost per participant per hour*", "*Total employees"*



   b. Go to Format visuals > Visual > Grid turn off the **Horizontal gridlines** and go to Values change the **Alternate background color** from Values



c. Change the Background color of the column header from Column headers.

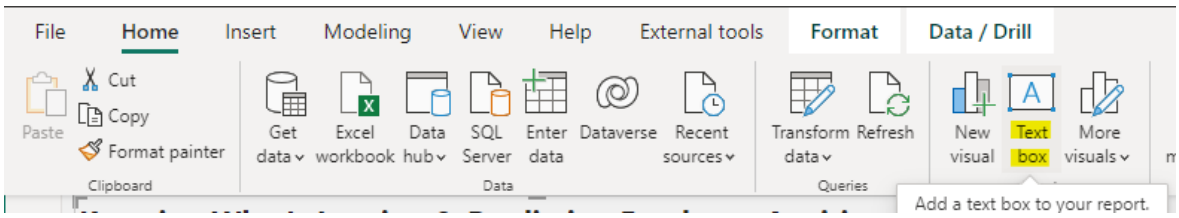


d. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

4. Title of the Dashboard

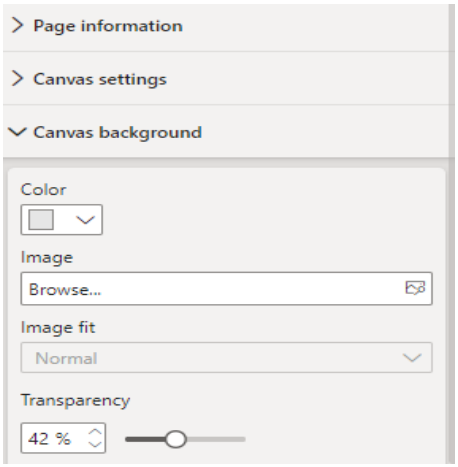
Go to Home ribbon > Insert > Text Box

Type the Title of the Dashboard and make the formatting changes as desired.



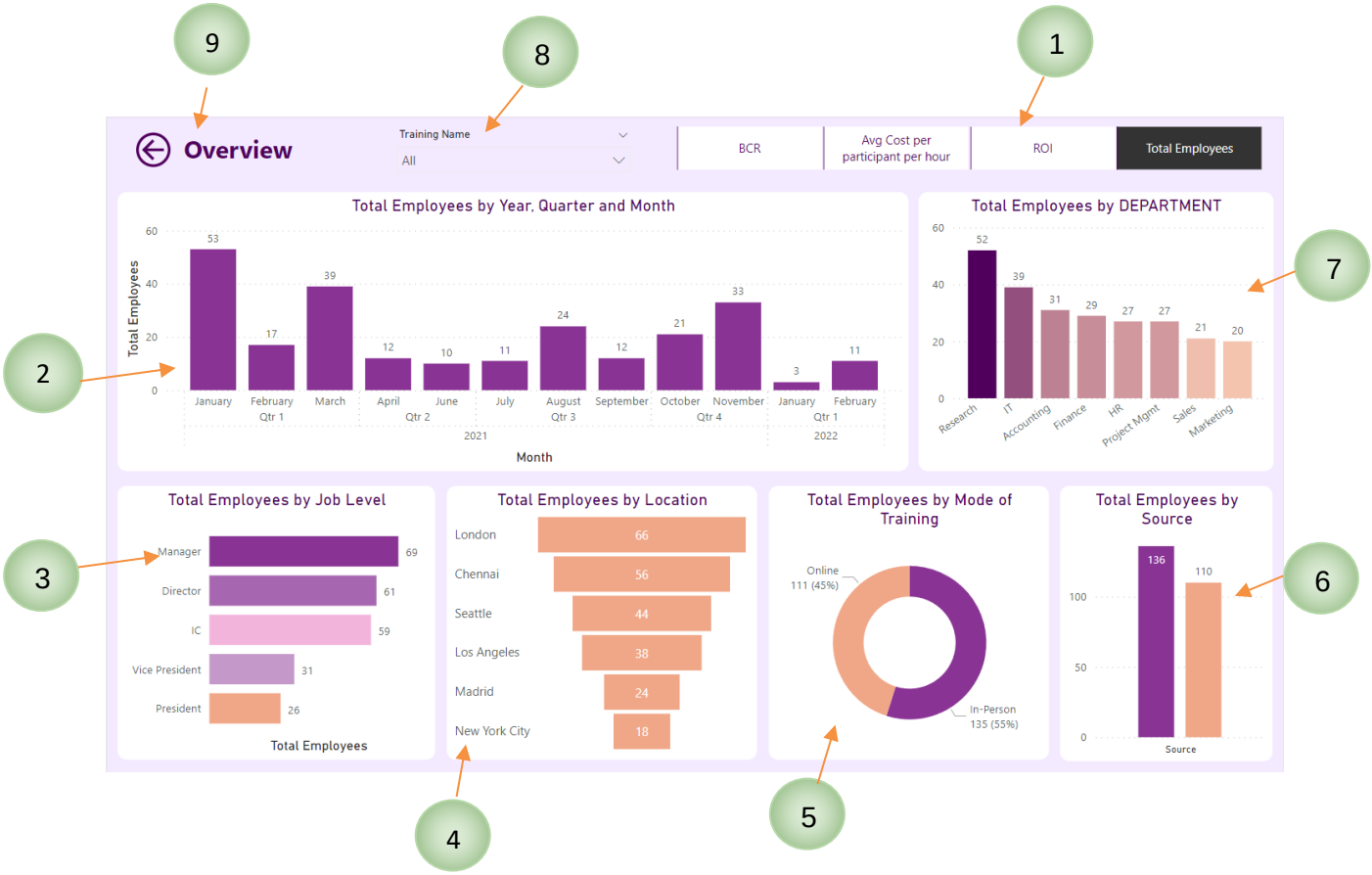
To customise the dashboard's appearance, we will proceed with setting the background colour for the entire interface.

Under Visualization pane> Format> Canvas background> select color and adjust transparency.

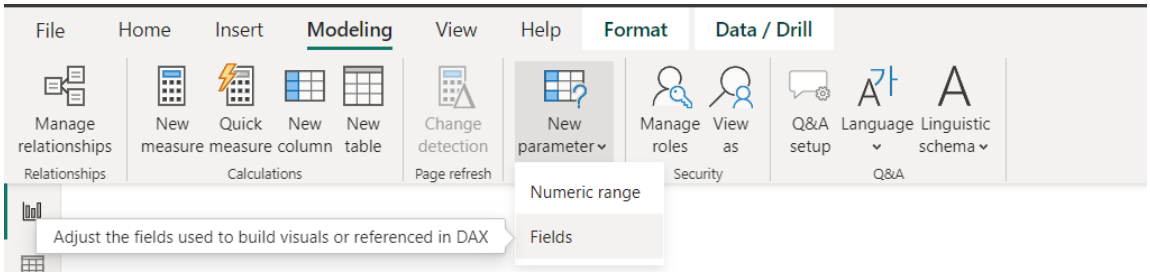


Final Step to rearrange all the visuals and cards in order to allow the viewers to easily understand and interpret the data being presented.

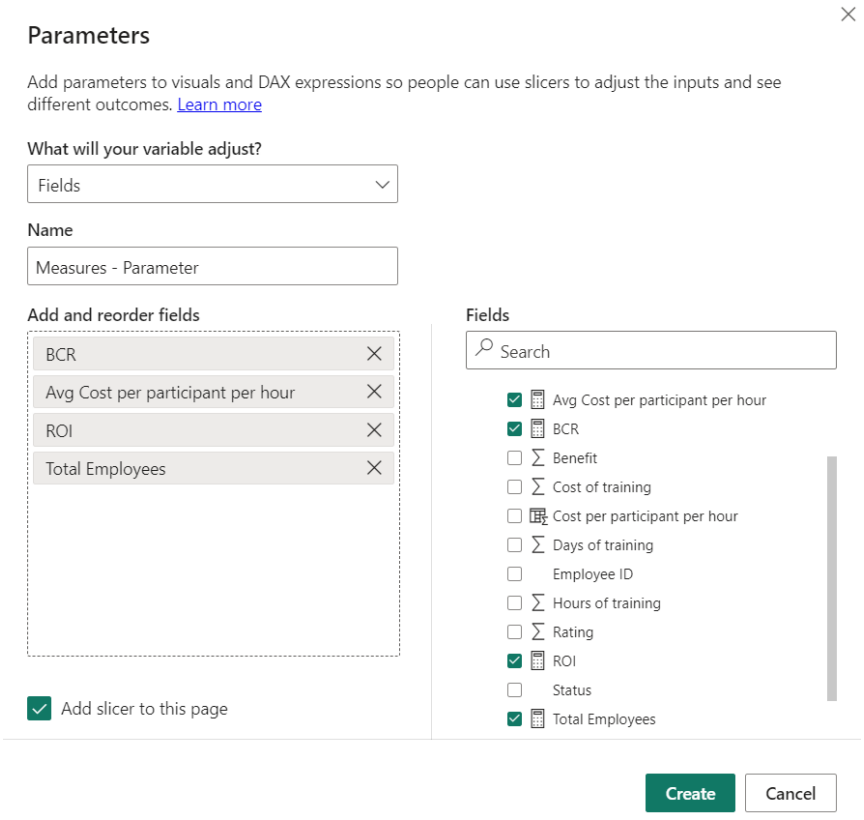
Steps to Build the Dashboard Page 2:



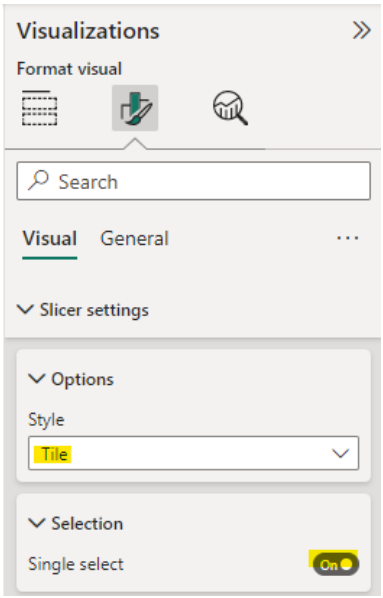
1. Field Parameter Slicer
    a. Create a field parameter, to create a new field parameter, go to the Modeling tab and select New parameter > Fields.



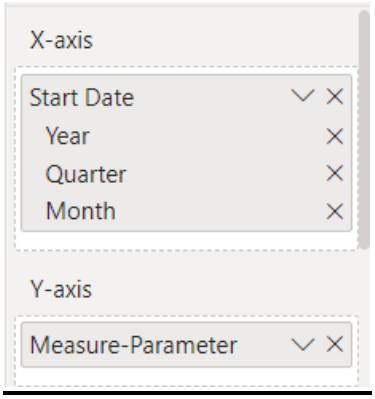
    b. To build the parameter, provide a name for the parameter and select the measures *"BCR", "ROI", "Total Employees"* and *"Avg Cost per participant per hour"* and click on create. Once you've created a field parameter, you can use the parameter to control the measures or dimensions used in a visual.



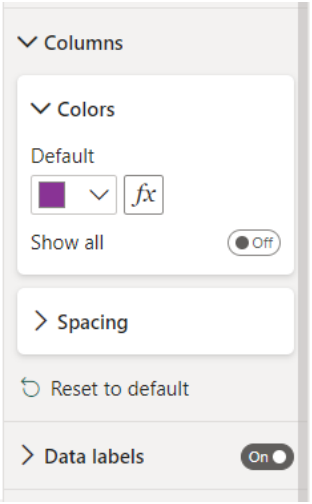
c. A slicer will be created automatically, go to Format your visual tab > Slicer setting > Orientation change to “Tile” and also turn on “Single select” from the Selection option. Turn off the slicer header.



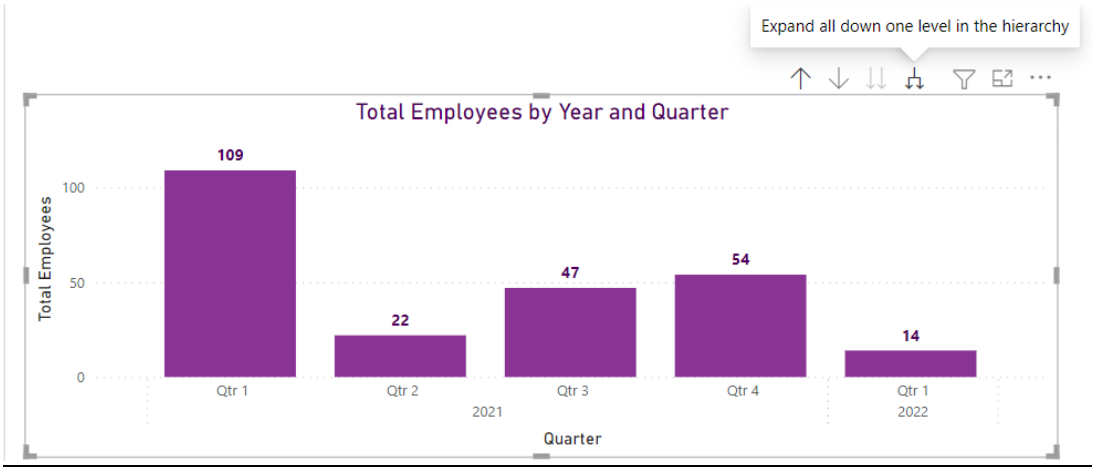
2. <u>BCR / ROI / Total Employees / Cost per participant per hour by Year, Quarter and Month</u>
   a. Select Clustered Column chart from the Visualization pane, Select the “Start Date” from training table as X-axis and remove the day option and only keep Year Quarter and Month. Add the field parameter “Measure – Parameter” as the Y-axis.



   b. Change the Title and the colours of the bars as your preference from the Format visual > Visual> Columns > colors. Turn on Data labels from the Visual tab



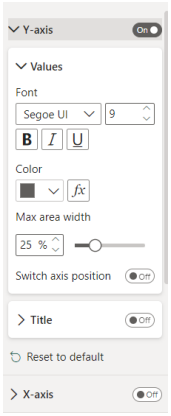
c. Once the visual is created on the right upper corner of the visual is the option to drill up, drill down and Expand all down one level of the hierarchy.

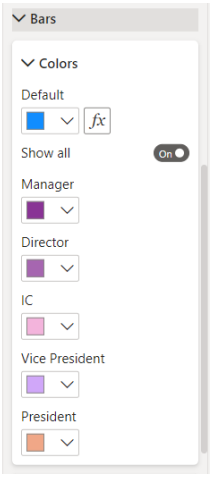


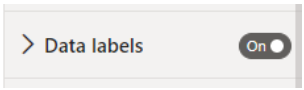
d. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

3. <u>BCR / ROI / Total Employees / Cost per participant per hour by Job Level</u>
   a. Select a stacked bar chart from the Visualization pane. Add "*JOB LEVEL*" from employees table to the Y-axis and the measure "*Measure-Parameter*" to X-axis.

b. Turn off the X-axis and also the title of the Y-axis. Change the colours of the bars from Format visual > Visual > Bars and also turn on Data labels.

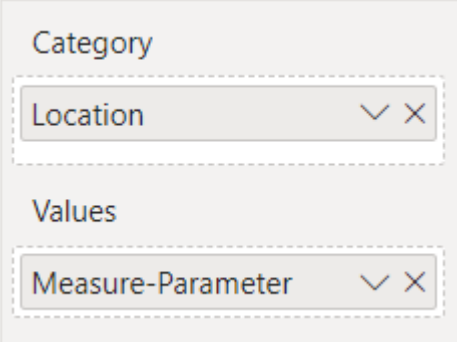




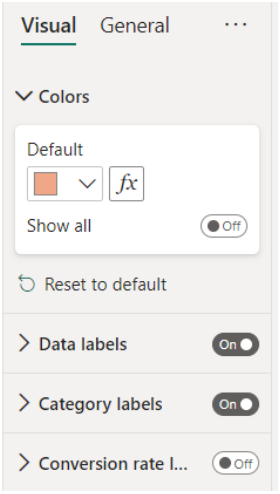


c. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

4. <u>BCR / ROI / Total Employees / Cost per participant per hour by Location</u>
   a. Select a Funnel chart from the Visualization pane. Add "*LOCATION*" from employees table to the Category field and the measure "*Measure-Parameter*" to Values.



b. Turn off the Conversion rate label, change the colours of the bars from Format visual > Visual > Colors and also turn on Data labels.

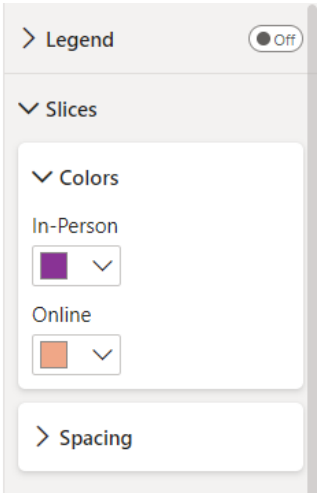


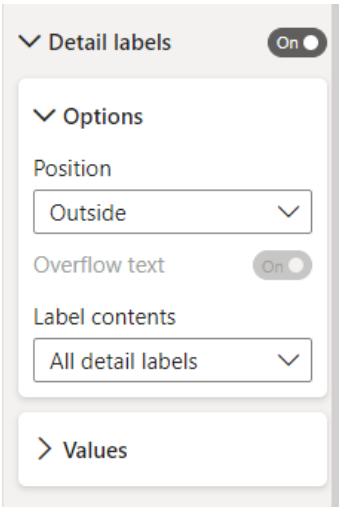
c. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

5. <u>BCR / ROI / Total Employees / Cost per participant per hour by Mode of Training</u>

a. Select a Donut chart from the Visualization pane. Add "*Mode*" from training table to the Legend field and the measure "*Measure-Parameter*" to Values.

b. Turn off the Legend option, change the colours from Format visual > Visual > Slices and also turn on Details labels, in the Label contents select All detail labels.



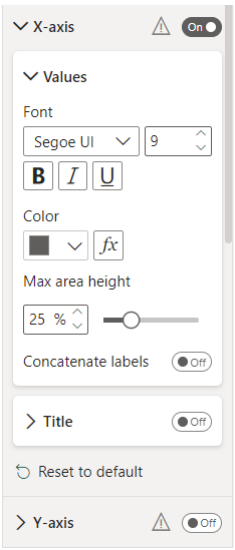


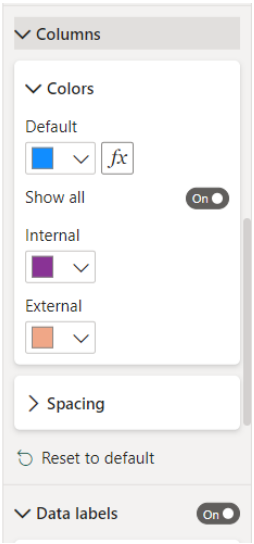
c. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

6. <u>BCR / ROI / Total Employees / Cost per participant per hour by source</u>

a. Select a Stacked column chart from the Visualization pane. Add "*Source*" from training table to the X-axis and the measure "*Measure-Parameter*" to Y-axis.

b. Turn off the Y-axis and also the title of the X-axis. Change the colours of the bars from Format visual > Visual > Columns and also turn on Data labels.



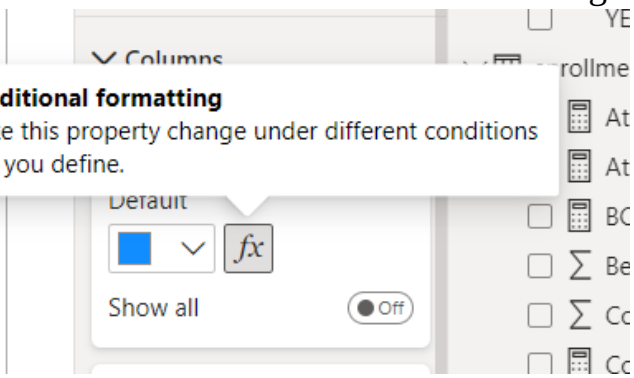


c. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

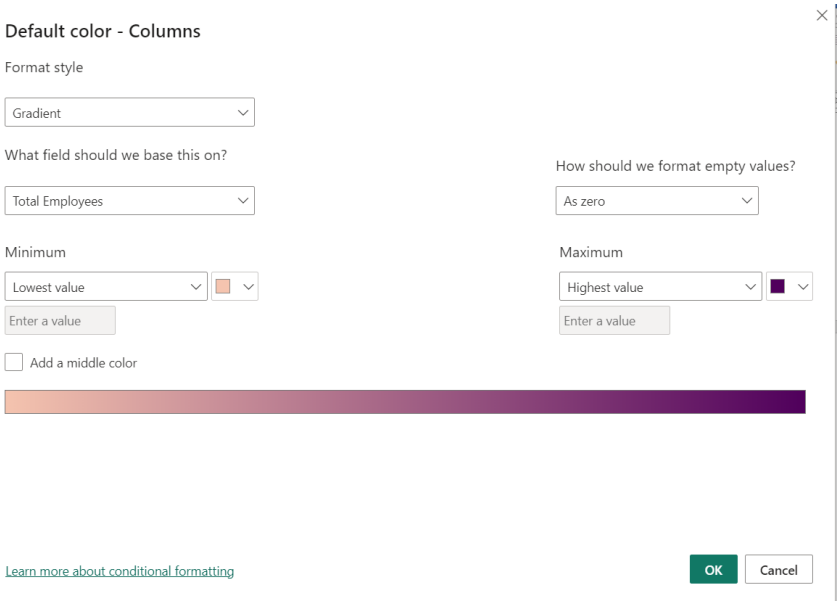
7. <u>BCR / ROI / Total Employees / Cost per participant per hour by Department</u>

a. Select a Stacked column chart from the Visualization pane. Add "*DEPARTMENT*" from employees table to the X-axis and the measure "*Measure-Parameter*" to Y-axis.

b. Turn off the title of the X-axis and Y-axis and also turn on Data labels. Change the colours of the bars from Format visual > Visual > Columns and click on the Conditional formatting icon.



c. Default color - Bars window will pop up select the colours of your preference for Minimum and Maximum value and Click Ok.

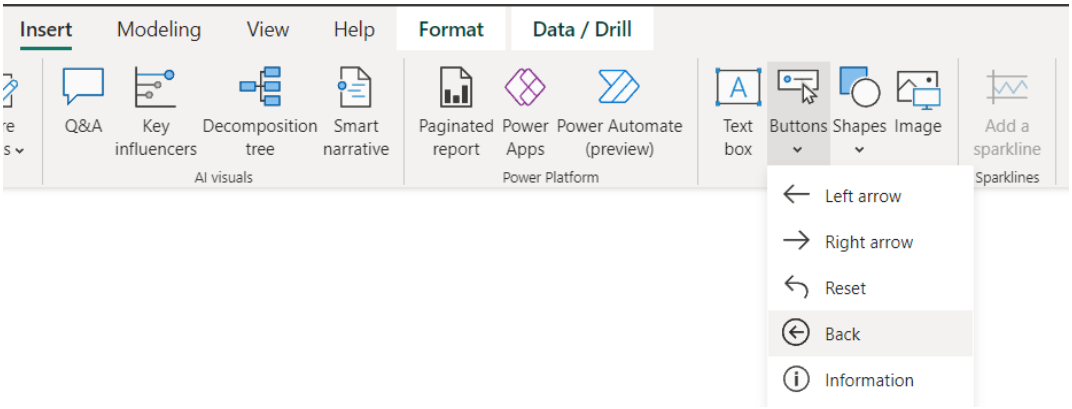


d. The changes regarding title size, colour, alignment, etc. can be done under the format tab.

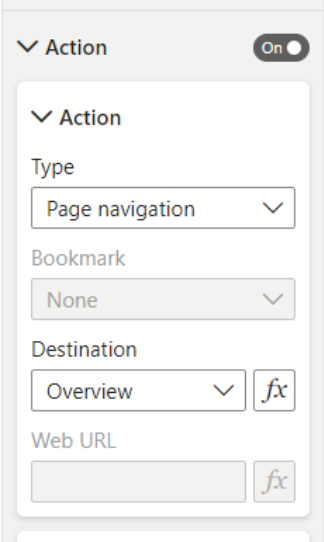
8. Slicer – Training name
    a. Add a slicer of "*Training Name*" from the enrollments table to the dashboard. Select a slicer option from the Visualization Tab. Drag "*Training Name* to the tab.

    b. From the format your visual option under the visualization pane, go to Slicer setting > Style > Select Dropdown.

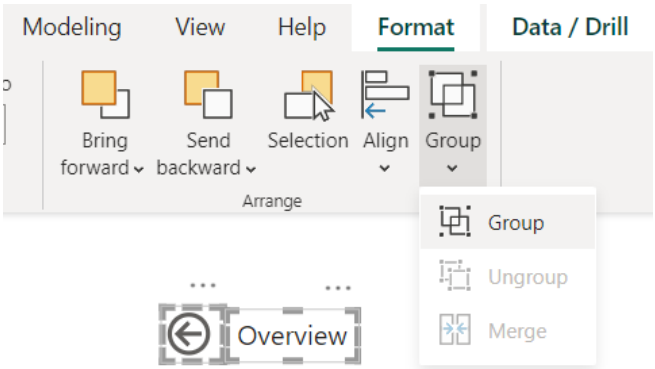
9. Page Navigation Button
    a. Go to Insert ribbon > Buttons > select Back



    b. Got o the Format pane > Button > Action > change the type to "Page navigation" and Destination as "Overview"

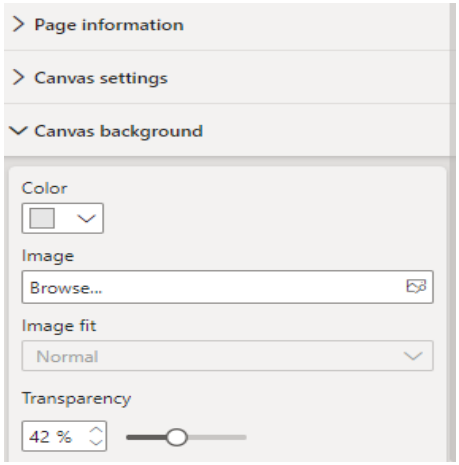


    c. Insert a text box from the Home ribbon and type "Overview", align the text box next to the button. Select the button and the Text box after alignment is made go to Format ribbon > Group > and select Group.



To customise the dashboard's appearance, we will proceed with setting the background colour for the entire interface.

Under Visualization pane> Format> Canvas background> select color and adjust transparency.



Final Step to rearrange all the visuals, cards slicers in order to allow the viewers to easily understand and interpret the data being presented.