Program 9

Analysis of revenue in sales dataset:

(i) Create a choropleth map (fill the map) to spot the special trends to show the state which has the highest revenue.
(ii) Create a line chart to show the revenue based on the month of the year.
(iii) Create a bin of size 10 for the age measure to create a new dimension to show the revenue.
(iv) Create a donut chart view to show the percentage of revenue per region by creating zero access in the calculated field.
(v) Create a butterfly chart by reversing the bar chart to compare female & male revenue based on product category.
(vi) Create a calculated field to show the average revenue per state & display profitable & non-profitable state.
(vii) Build a dashboard.

Dataset: sales_06_FY2020-21.csv

Solution:

Upload “sales_06_FY2020-21.csv” dataset

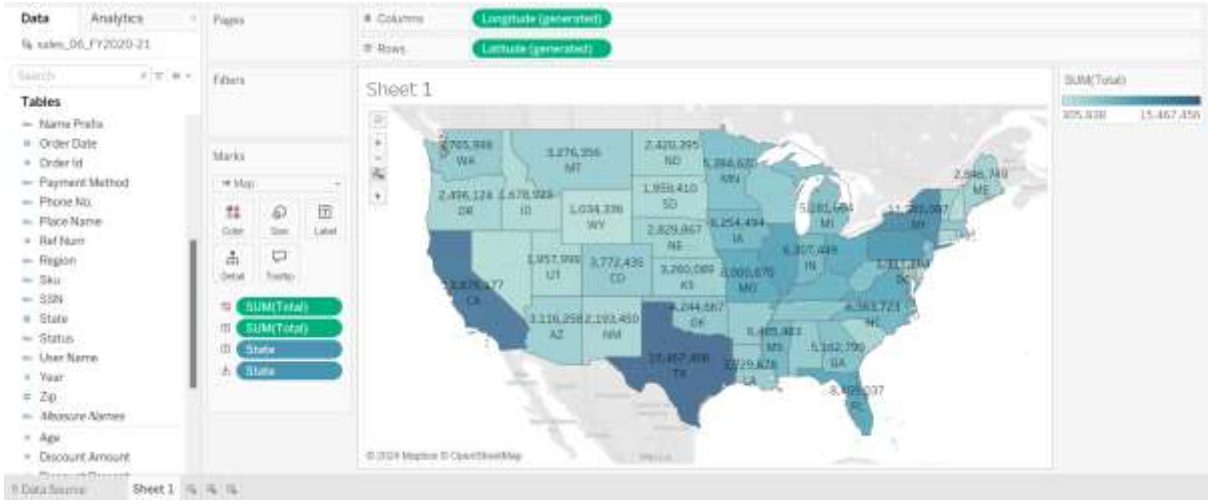
(i) Create a choropleth map (fill the map) to spot the special trends to show the state which has the highest revenue.

Step 1: Select the "Map" visualization from the Visualizations pane (filled map).

Step 2: Select “unknowns” at the bottom of the graph and choose “Edit Location”. Change country from India to USA.

Step 3: Drag and Drop “Total” to colours field in Marks to show colour gradation based on revenue.

Step 4: Add “States” and “Total” to label to mark the values.



(ii) <u>Create a line chart to show the revenue based on the month of the year.</u>

Step 1: Create a new Sheet

Step 2: Drag and add "Total" to rows

Step 3: Drag and add "Month" to column

Step 4: Change the format of "Month" attribute from year to month. (NOTE: if month is in text, right click on "month" attribute, select "change data type" and choose date)

Step 5: Add "Year" attribute to label in Marks

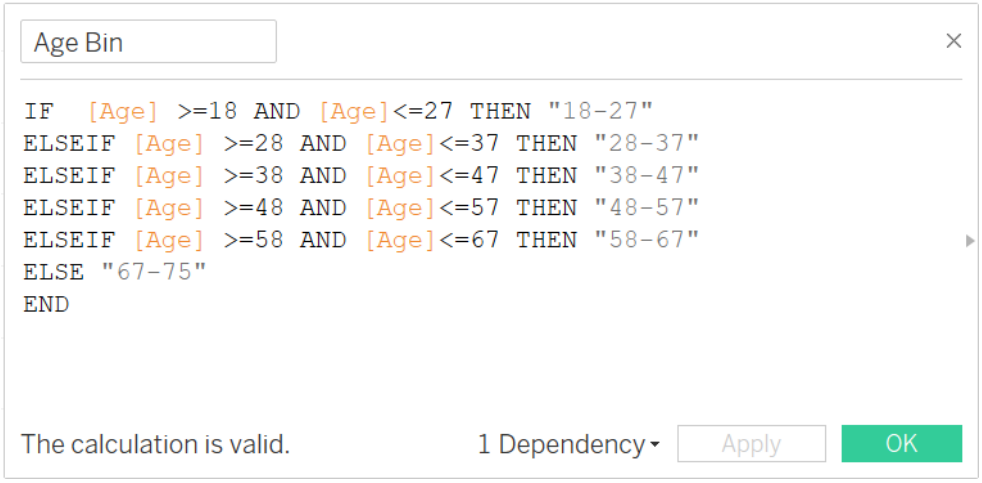
Step 6: Rename the title to "Month Based Revenue"

Step 7: Rename sheet to "Q2-line"

(iii) <u>Create a bin of size 10 for the age measure to create a new dimension to show the revenue.</u>

Step 1: Create new sheet

Step 2: Create a new calculated field to group age values. Right click on age and select create, in that select calculated field. Rename field name as "Age Bin" and type the formula



Step 3: Add "Age Bin" to column

Step 4: Add "Total" to rows

Step 5: Add "Age Bin" to colour and "Total" to label in Marks

Step 6: Rename title to "Age group based revenue"

Step 7: Rename sheet to "Q3-bar"

(iv) <u>Create a donut chart view to show the percentage of revenue per region by creating zero access in the calculated field.</u>

Since Donut chart is not available in tableau, we will create 2 pie chart and merge them

Step 1: Create new Sheet

Step 2: Add "Region" to colour in Marks. Change automatic to Pie Chart.

Step 3: Change view from "Standard" to "Entire View"

Step 4: Add "Total" to angles in Marks.

Step 5: Create new calculated field "zero" with formula 0

Step 6: Drag and add "zero" to row twice (two different charts are created)

Step 7: Choose first chart "SUM(zero)" and increase the size.

Step 8: Choose second chart "SUM(zero)(2)", remove region from marks. Add total on to label.

Step 9: In chart, right click on second access and choose dual access.

Step 10: Then, again right click on new access and select synchronize access.

Step 11: Again, right click on access and disable "show header"

Step 12: In marks, go to second chart, increase size. Change background to white.

Step 13: Go to first chart, add "Region" to labels, add "Total" to labels. Choose drop down on "Total", select Quick Table Calculations, and choose Percent of Total

Step 14: Rename title to "Region Wise Revenue"

Step 15: Rename sheet to "Q4-donut"

(v) <u>Create a butterfly chart by reversing the bar chart to compare female & male revenue based on product category.</u>

Step 1: Create new Sheet

Step 2: Create two new calculated fields for female and male revenue. Field names "female_revenue" and "male_revenue" with the following formula

female_revenue

```
IF [Gender] = "F" THEN [Total] END
```

male_revenue

```
IF [Gender] = "M" THEN [Total] END
```

Step 3: Add "Category" to rows

Step 4: Add to "female_revenue" and "male_revenue" colums.

Step 5: Sort both graph in descending order

Step 6: In graph, right click on "female_revenue" access and choose edit access. Under scale select "Reversed".

Step 7: In marks, choose first graph (female_revenue), add gender to colour, and add total to label. Convert total to percentage.

Step 8: Do the same to second graph (male_revenue)

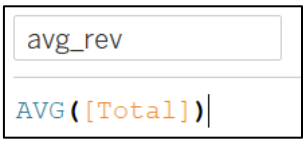
Step 9: Rename title to "Gender Based Revenue"

Step 10: Rename Sheet to "Q5-butterfly"

(vi) <u>Create a calculated field to show the average revenue per state & display profitable & non-profitable state.</u>

Step 1: Create new Sheet

Step 2: Create calculated field with name "avg_rev" with formula

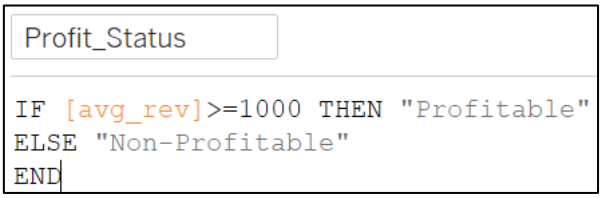


Step 3: Add "States" to rows

Step 4: Add "avg_rev" to column

Step 5: Sort graph in descending order to find the state with highest and lowest revenue.

Step 6: Create new calculated field to mark profitable and non-profitable states using following formula



Step 7: Add "Profit_Status" to column to categorize profitable and non-profitable states. Also add "Profit_Status" to color.

Step 8: Rename title as "Profitability Status"

Step 9: Rename sheet as "Q6-Profit"

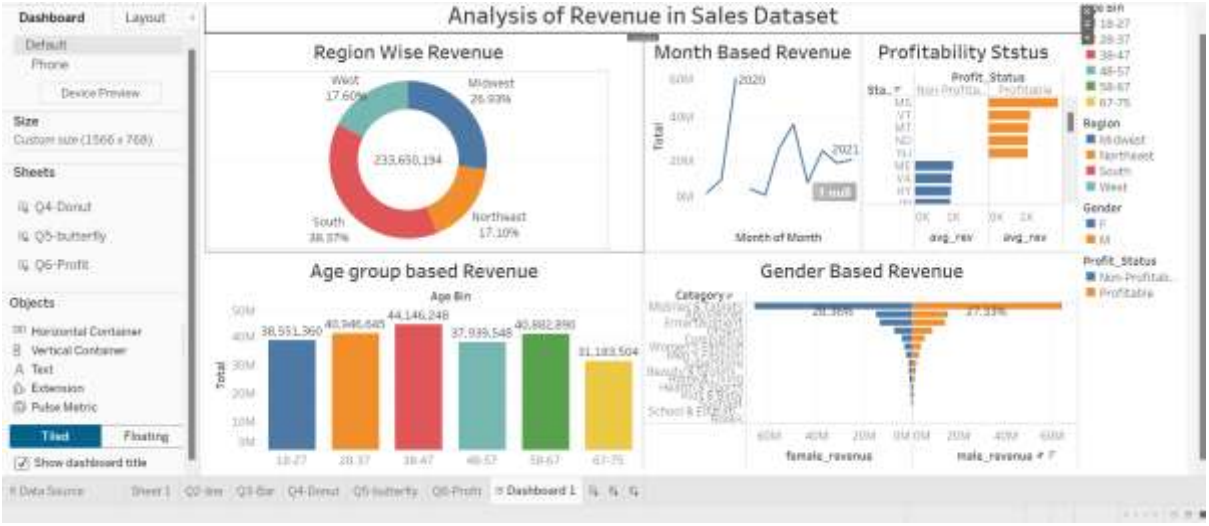
(vii) Build a dashboard.

Step 1: Create now Dashboard.

Step 2: Change size to Fixed Size -> Generic Desktop

Step 3: Add dashboard title as "Analysis of Revenue in Sales Dataset"

Step 4: Add all graphs



Program 10

Analysis of GDP dataset:

(i) Visualize the countries data given in the dataset with respect to latitude and longitude along with country name using symbol maps.
(ii) Create a bar graph to compare GDP of Belgium between 2006 – 2026.
(iii) Using pie chart, visualize the GDP of India, Nepal, Romania, South Asia, Singapore by the year 2010.
(iv) Visualize the countries Bhutan & Costa Rica competing in terms of GDP.
(v) Create a scatter plot or circle views of GDP of Mexico, Algeria, Fiji, Estonia from 2004 to 2006.
(vi) Build an interactive dashboard.

Dataset: Countries GDP 2002-2029.xls

Load "Countries GDP 2002-2029.xls" dataset in Tableau.

In data source page, click on drop down menu for GDF table, select "field names are in first row". This will change column headers

(i) Visualize the countries data given in the dataset with respect to latitude and longitude along with country name using symbol maps.

Step 1: Open new sheet

Step 2: Add "Latitude" to rows

Step 3: Add "Longitude" to column, A country map is created.

Step 4: Add "any Year" Measured Value to Label

Step 5: Add "County Name" to color in Marks.

Step 6: Rename title as "2020 World GDP" and sheet as "2020 GDP"

(ii) <u>Create a bar graph to compare GDP of Belgium between 2006 – 2026.</u>

Step 1: Create new sheet

Step 2: Drag and add "Measure Names" to filter and select the years 2006 to 2026.

Step 3: Add "Country Name" to filter and select only "Belgium"

Step 4: Add "Measured Name" and "Country Name" to Column

Step 5: Add "Measured Value" to row

Step 6: Rename title to "Belgium GDP 2006 - 2026" and sheet name to "Belgium GDP"

(iii) <u>Using pie chart, visualize the GDP of India, Nepal, Romania, South Asia, Singapore by the year 2010.</u>

Step 1: Create new sheet

Step 2: Add "Country Name" to column

Step 3: Add ""2010" to rows

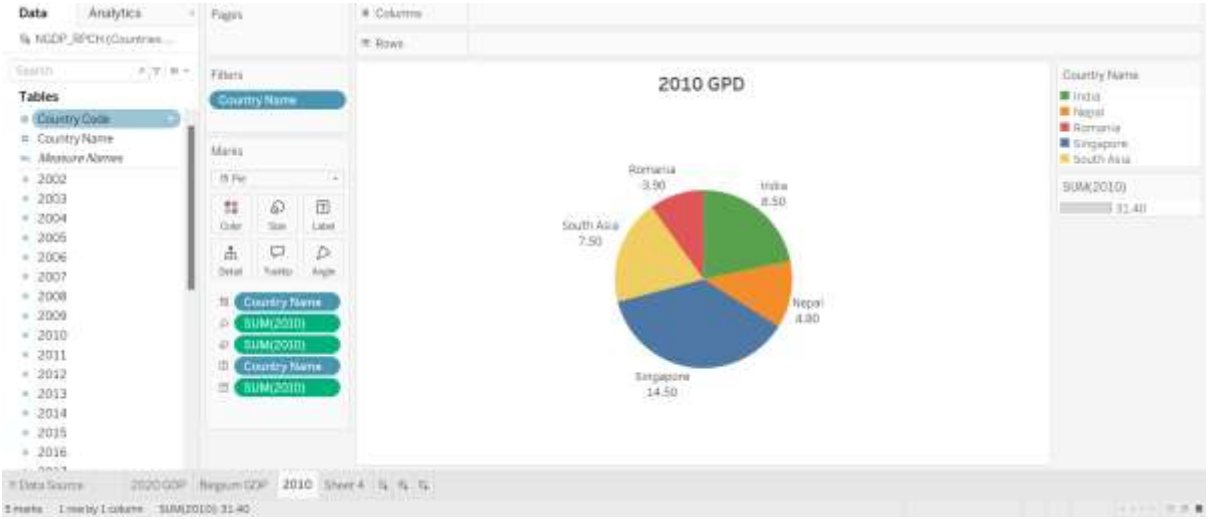
Step 4: Select pie chart visualization.

Step 5: Drag and add "country name" to filter pane and select India, Nepal, Romania, South Asia, Singapore.

Step 6: Drag and add "Country Name" and year "2010" to label in Marks.

Step 7: Change view from Standard to Entire view.

Step 8: Rename title to "2010 GDP" and sheet to "2010"



(iv) <u>Visualize the countries Bhutan & Costa Rica competing in terms of GDP.</u>

Step 1: Create new sheet

Step 2: Add Country name to filter and select "Bhutan" and "Costa Rica"

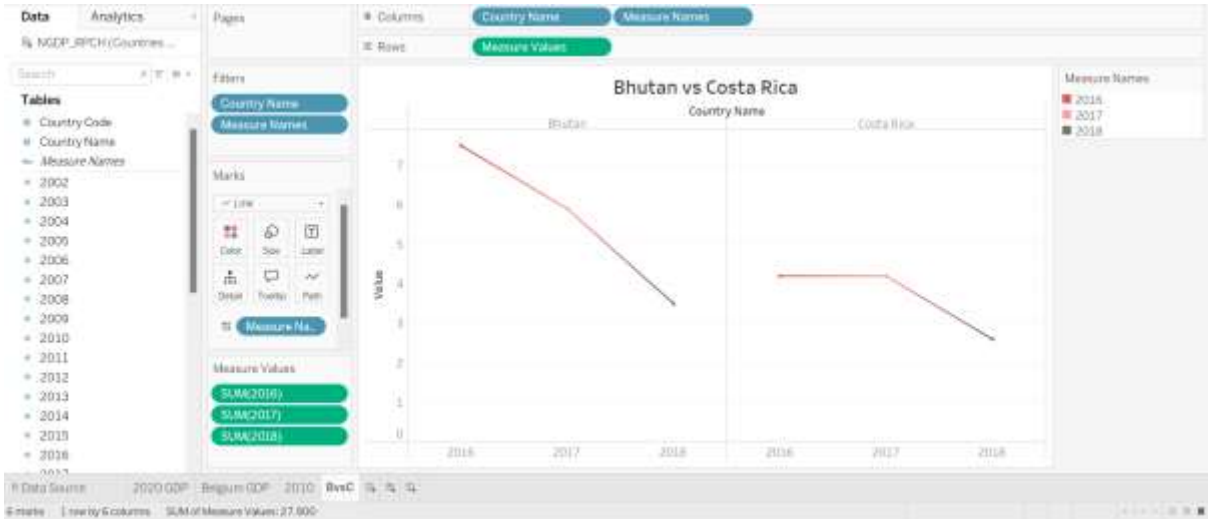
Step 3: Add Measure name to filter and select they years "2016", "2017", and "2018".

Step 4: Add "Country Name" and "Measure Name" to column

Step 5: Add "Measure Value" to row

Step 6: For better view, add "Measure Name" to colours in Mark, change type from automatic to line.

Step 7: Rename title to "Bhutan vs Costa Rica" and sheet to "BvsC"



(v) <u>Create a scatter plot or circle views of GDP of Mexico, Algeria, Fiji, Estonia from 2004 to 2006.</u>

Step 1: Create new sheet

Step 2: Add "Country Name" to filter and select Mexico, Algeria, Figi and Estonia

Step 3: Add "Measure Name" to filter and select 2004, 2005 and 2006.

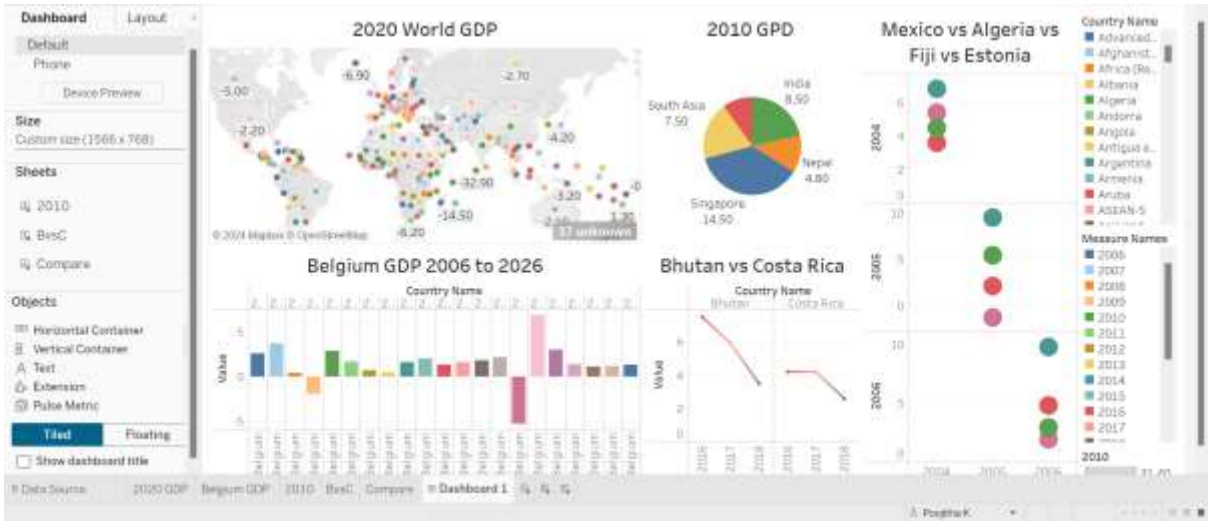
Step 4: Add "Measure name" to column and add years 2004 to 2006 to rows.

Step 5: Add country name to colours in Mark and change type from automatic to circle.

Step 6: Rename title to "Mexico vs Algeria vs Fiji vs Estonia" and sheet to "Compare"

(vi) Build an interactive dashboard.

Create new Dashboard and add all graphs



Program 11

Analysis of HR Dataset:

(i) Create KPI to show employee count, attrition count, attrition rate, attrition count, active employees, and average age.

(ii) Create a Lollipop Chart to show the attrition rate based on gender category.

(iii) Create a pie chart to show the attrition percentage based on Department Category- Drag department into colours and change automatic to pie. Entire view, Drag attrition count to angle. Label attrition count, change to percent, add total also, edit label.

(iv) Create a bar chart to display the number of employees by Age group,

(v) Create a highlight table to show the Job Satisfaction Rating for each job role based on employee count.

(vi) Create a horizontal bar chart to show the attrition count for each Education field Education field wise attrition – drag education field to rows, sum attrition count to col,

(vii) Create multiple donut chart to show the Attrition Rate by Gender for different Age group.

Dataset: HR-Employee-Attrition.csv

Solution:

Load "HR-Employee-Attrition.csv" dataset in Power BI.

(i) Create KPI to show employee count, attrition count, attrition rate, attrition count, active employees, and average age.

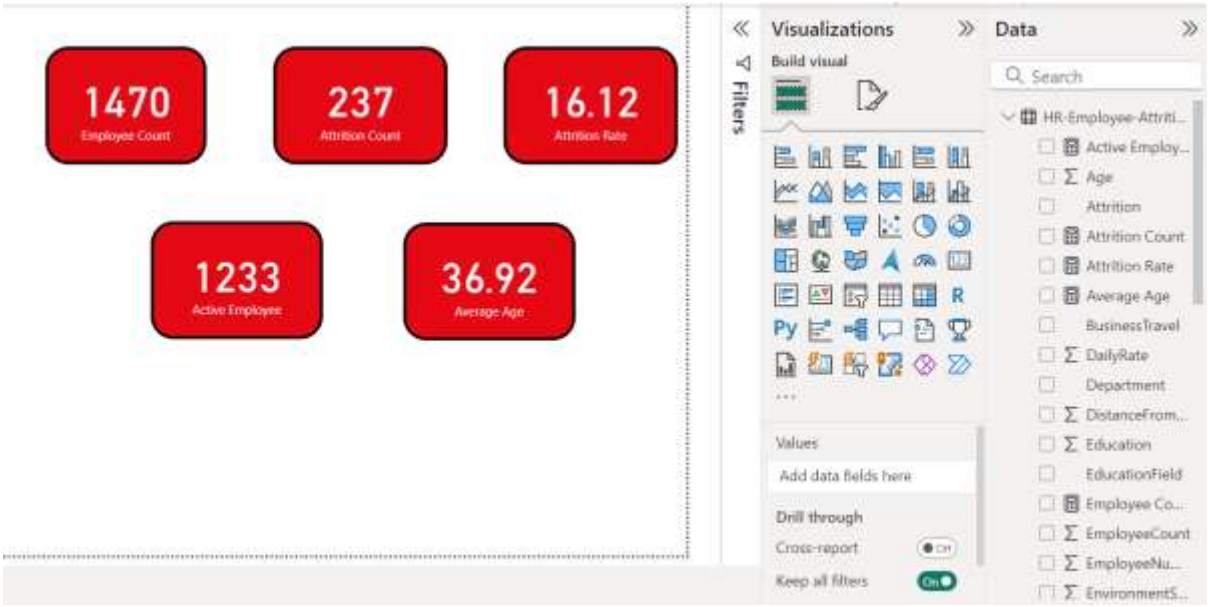
Step 1: In Ribbon, select create new measure, and create

- Employee Count = COUNT('HR-Employee-Attrition'[EmployeeCount])
- Attrition Count = COUNTROWS(FILTER('HR-Employee-Attrition', 'HR-Employee-Attrition'[Attrition]="Yes"))
- Attrition Rate = DIVIDE([Attrition Count], [Employee Count],0)*100
- Active Employee = [Employee Count] - [Attrition Count]
- Average Age = AVERAGE('HR-Employee-Attrition'[Age])

Step 2: Add card visualization for each of these measures format the visualization to your choice.

Step 3: Add card visualization → Select "Employee Count" → visualize

Step 4: Select one formatted visualization → Format print → apply to all others



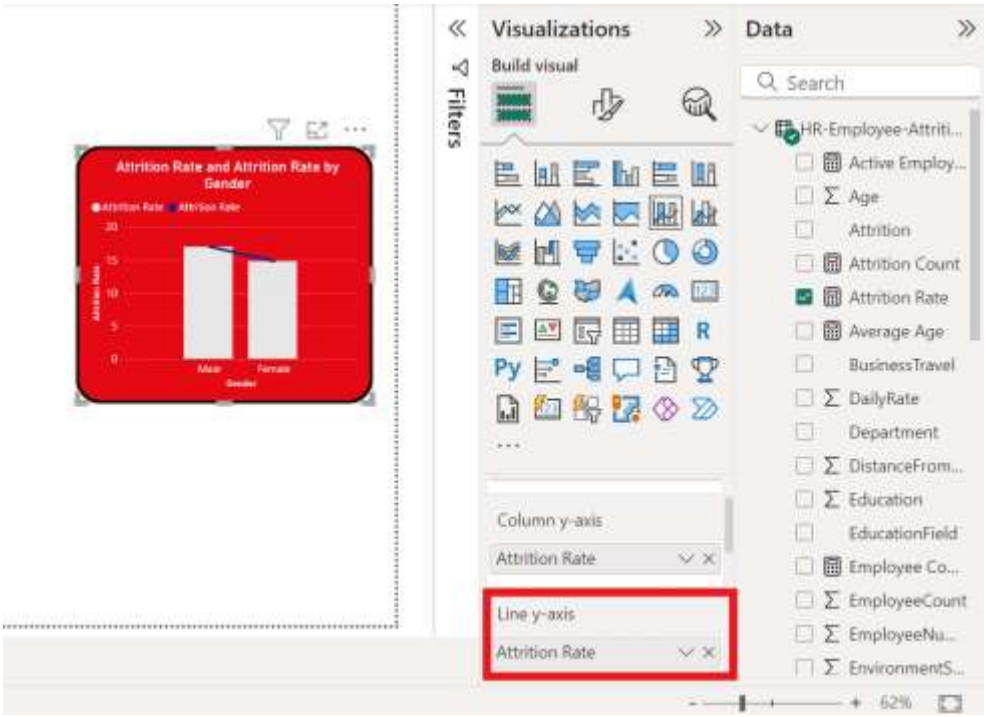
(ii) Create a Lollipop Chart to show the attrition rate based on gender category.

Step 1: Power BI does not have a native Lollipop Chart, so you will simulate it using a Line and Stacked column Chart.

Step 2: Select Line and Stacked column chart, consider variables Attrition Rate and Gender

Step 3: Copy the format from previous visualization

Step 4: Add attrition rate to like y-axis



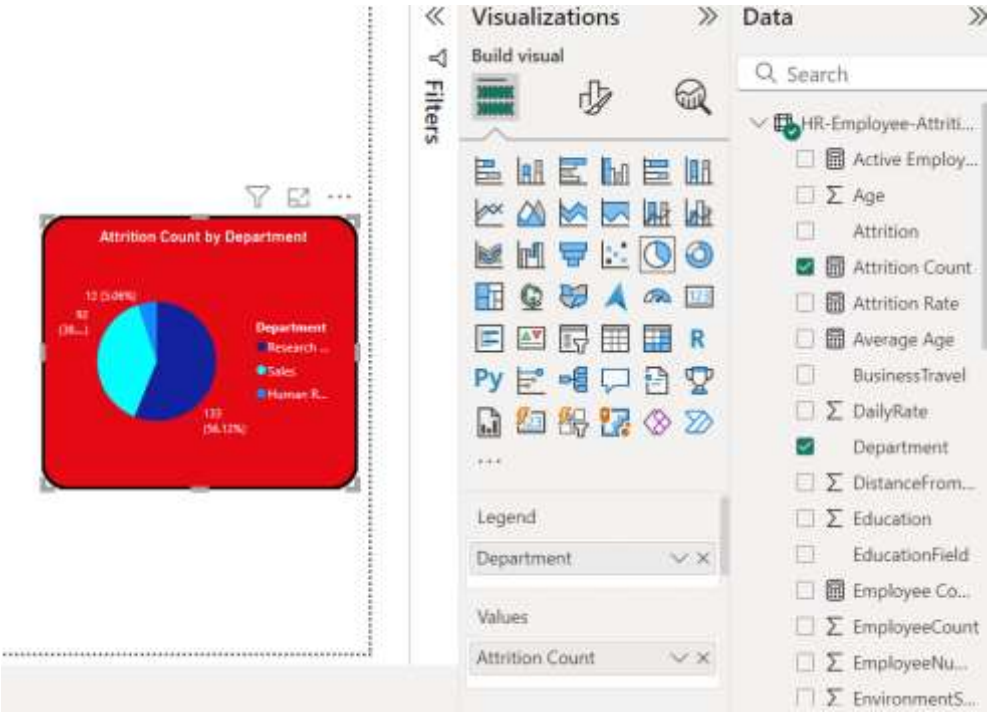
(iii) **Create a pie chart to show the attrition percentage based on Department Category.**

Step 1: Select Pie chart visualization.

Step 2: Drag "Department" attribute to legend below the charts in visualization.

Step 3: Drag the "Attrition Count" Measure to the Values area

Step 4: Change visualizations



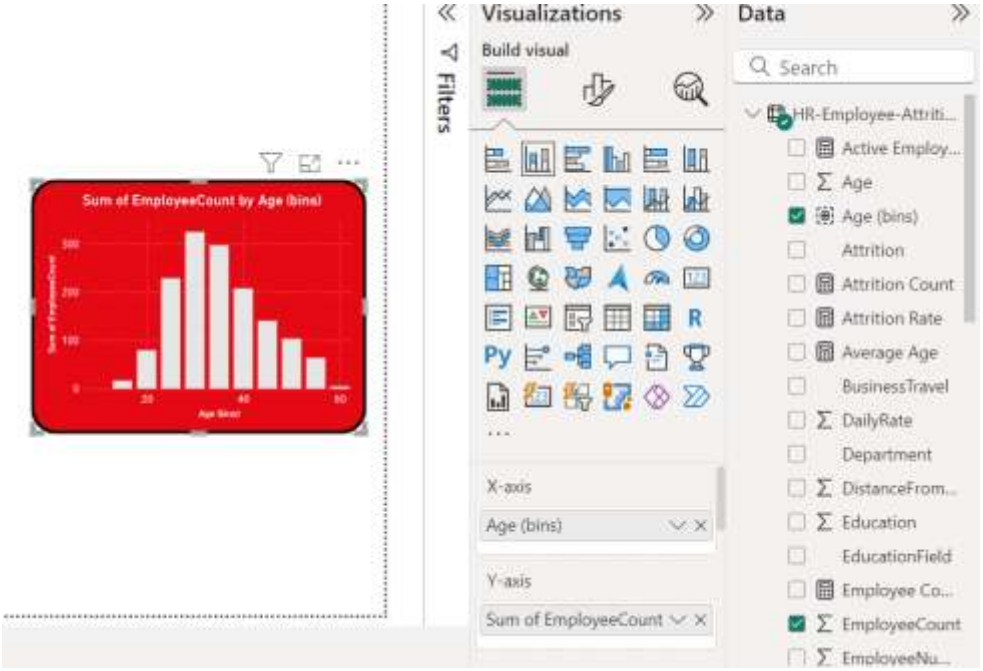
(iv) Create a bar chart to display the number of employees by Age group,

Step 1: Right click on "Age" attribute → select New Group

Step 2: Change the bin size to 5 and click on ok

Step 3: Add any bar graph (here stacked column chart is considered), select values Age (bins) and Employee Count.

Step 4: Visualize the graph



(v) Create a highlight table to show the Job Satisfaction Rating for each job role based on employee count.

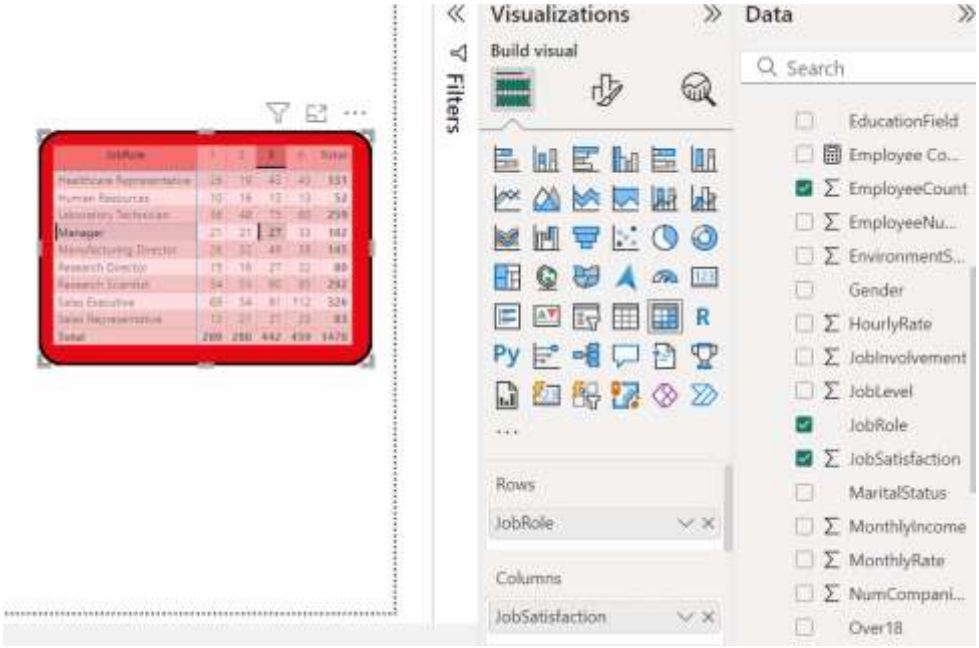
Step 1: Create a Matrix visual from the Visualizations pane.

Step 2: Drag the Job Role field to Rows.

Step 3: Drag the Job Satisfaction Rating field to Columns.

Step 4: Drag the Employee Count measure to Values.

Step 5: Visualize as needed.

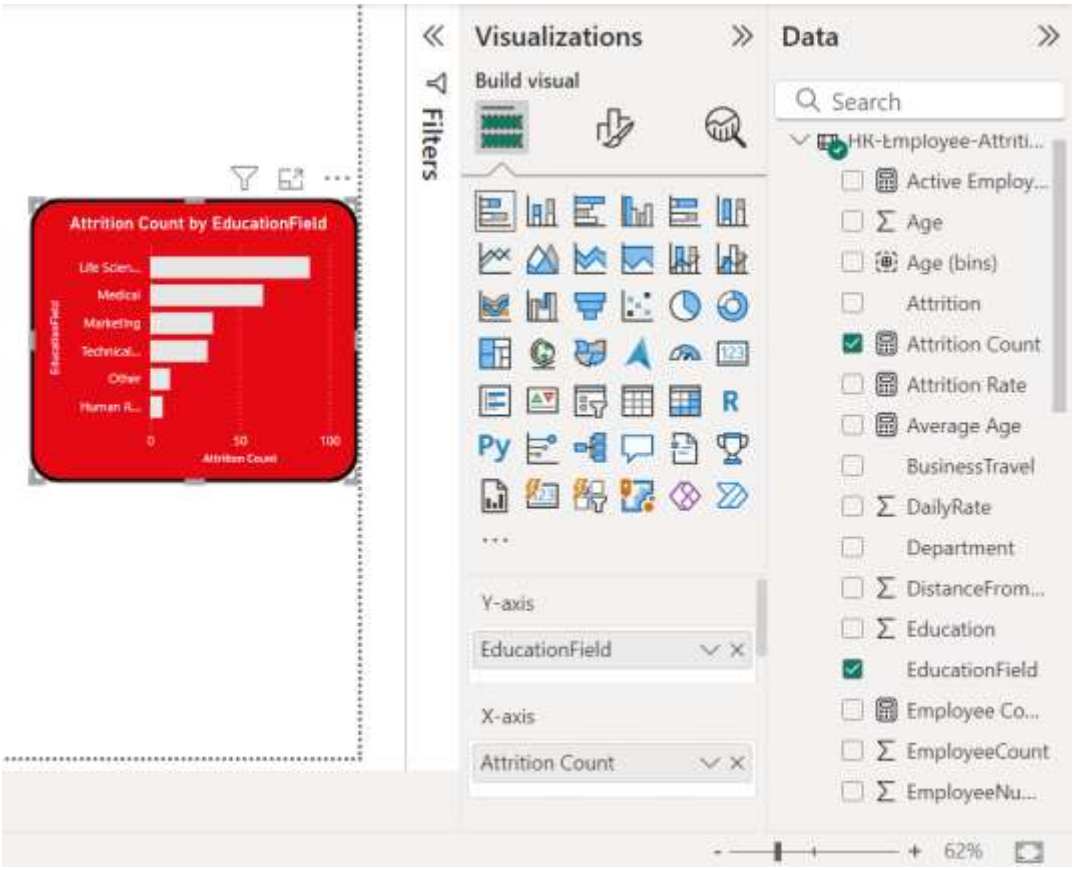


(vi) **Create a horizontal bar chart to show the attrition count for each Education field Education field wise attrition.**

Step 1: Add bar chart (It's called the Clustered Bar Chart or Stacked Bar Chart)

Step 2: Set y-axis to education filed and x-axis to attrition count.

Step 3: Customize as required.



(vii) Create multiple donut chart to show the Attrition Rate by Gender for different Age group.

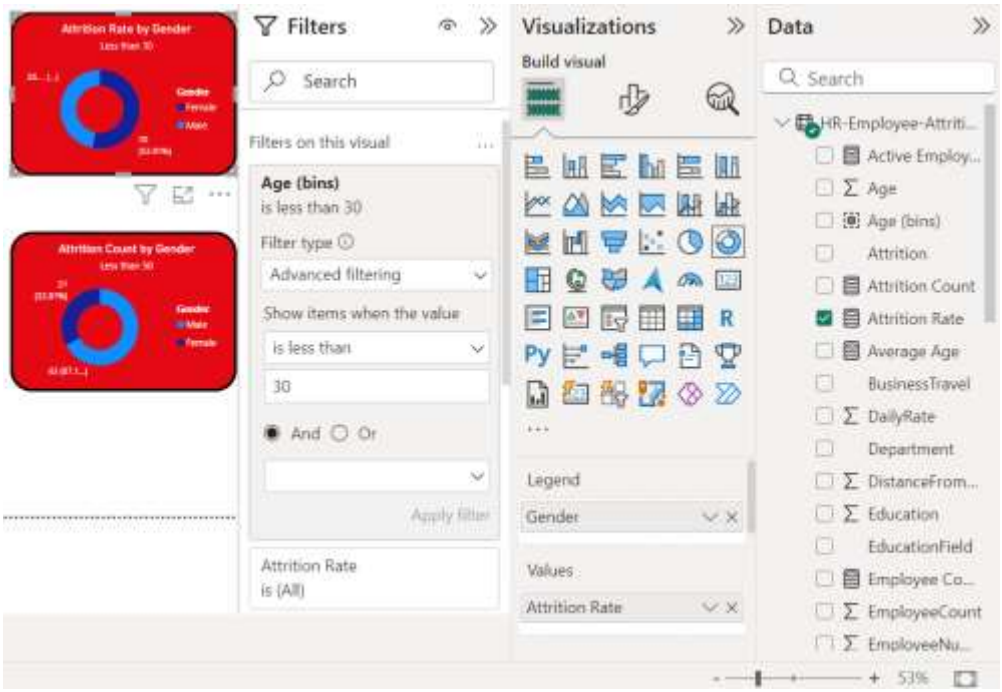
Step 1: Select the Donut Chart from the Visualizations pane.

Step 2: Create separate Donut Charts for different age groups.
For each chart, filter the dataset based on age group (using the Age Group field created earlier).

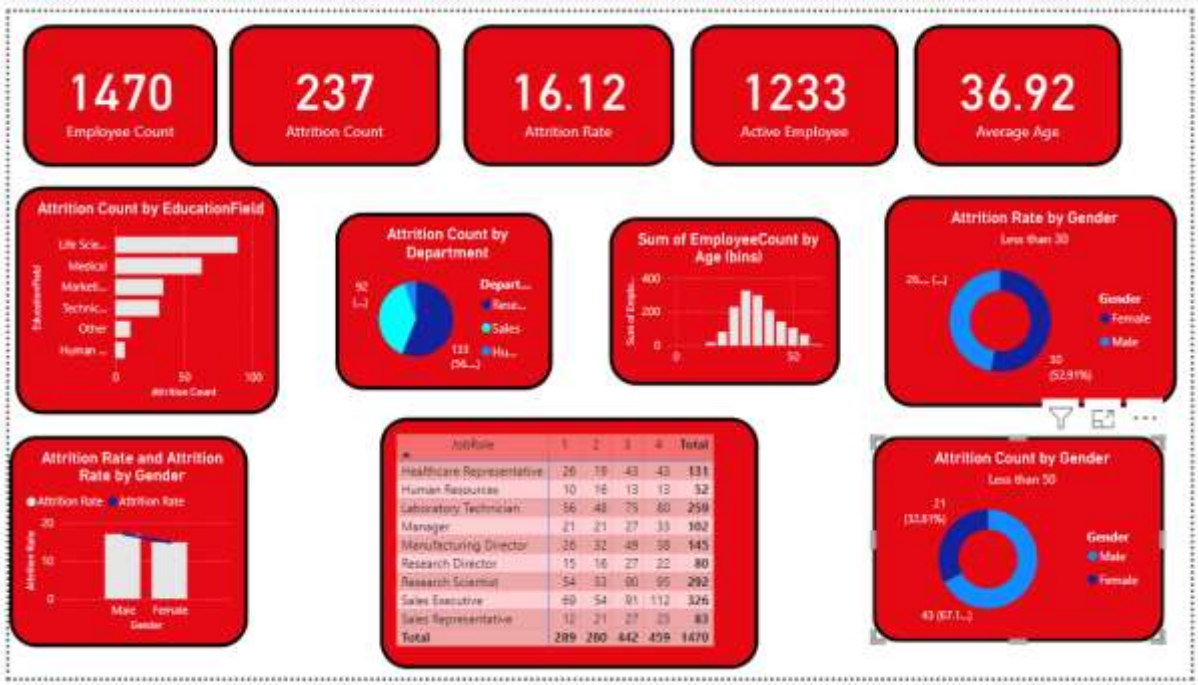
Step 3: Drag the Gender field to Legend.

Step 4: Drag the Attrition Rate measure to Values.

Step 5: Repeat for each age group, ensuring each donut chart represents a different age group with gender breakdown.


Filters
Search
Filters on this visual
Age (bins)
is less than 30
Filter type
Advanced filtering
Show items when the value
is less than
30
And
Or
Apply filter
Attrition Rate
is (All)
Visualizations
Build visual
Legend
Gender
Values
Attrition Rate
Data
Search
HR-Employee-Attriti...
Active Employ...
Age
Age (bins)
Attrition
Attrition Count
Attrition Rate
Average Age
BusinessTravel
DailyRate
Department
DistanceFrom...
Education
EducationField
Employee Co...
EmployeeCount
EmployeeNu...
53%

Dashboard


1470
Employee Count
237
Attrition Count
16.12
Attrition Rate
1233
Active Employee
36.92
Average Age
Attrition Count by EducationField
Attrition Count by Department
Sum of EmployeeCount by Age (bins)
Attrition Rate by Gender
Attrition Rate and Attrition Rate by Gender
Attrition Count by Gender