11. **Create and manage relationships between tables in Power BI. Explain how these relationships impact your data model and reporting**

Step1: Open the Power BI Desktop

Start→type (power bi desktop) in search window

→ Select the Power BI desktop and press Enter Button

→ Then it Display the power bi desktop

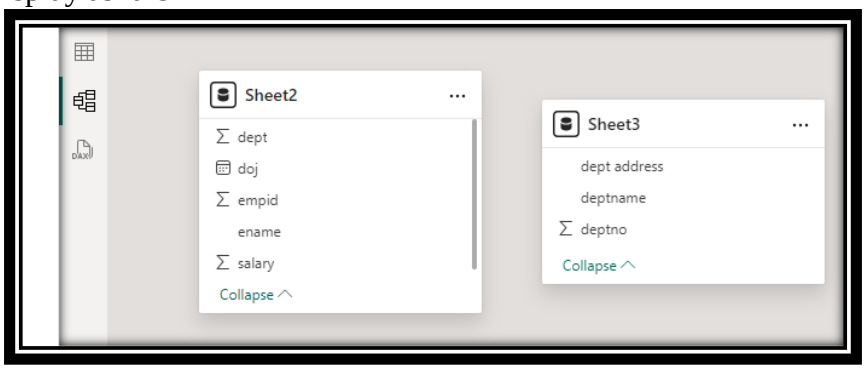
Step2: From the screen select the **Blank report** and press the enter the key

→ then it show the power bi **Home page** with home tab

Step3: Select the **Get data option form the Home menu** (for storing data in to power BI desktop)

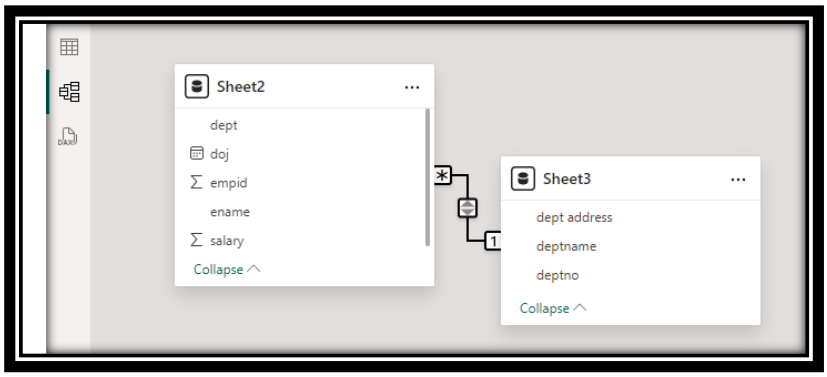
→It shows the list of files its supports from that select any one of the file which you want to create the report

- ➔ for creating the relation ship you must have more than one table and there should be one common column then you can create the relationship
- ➔ after selecting the two tables in to power BI now You can create the relation ship with the following steps
- ➔ First select the model view from the left side
- ➔ It will display as it is

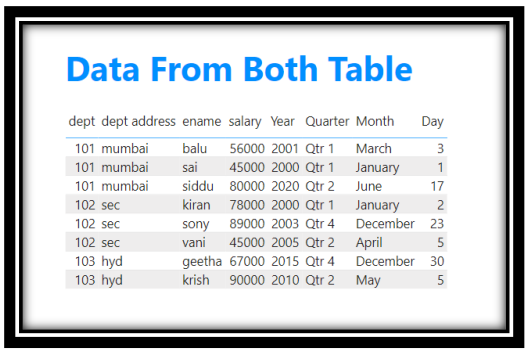


→To make a relation ship just drag and drop the common column from one table to another table then automatically relationship will be created or

- ➔ Select the manage relationship option from the above it will display another window there you need to select the from table and to table and select the common column and define the cardinality like 1:1 or 1: M or M:M or M:1 and cross direction like single or both then it will display as follows



- ➔ Before relation ship we can not create a table with mixed column values but after creating the relationship we can create the table with mixed columns as follows from both tables
- ➔ Take table visuals and drag and drop the columns from both table it will be as follows



12. **Experiment with the cross-filter direction in a Power BI report. Show how changing the filter direction affects the data displayed in your report**

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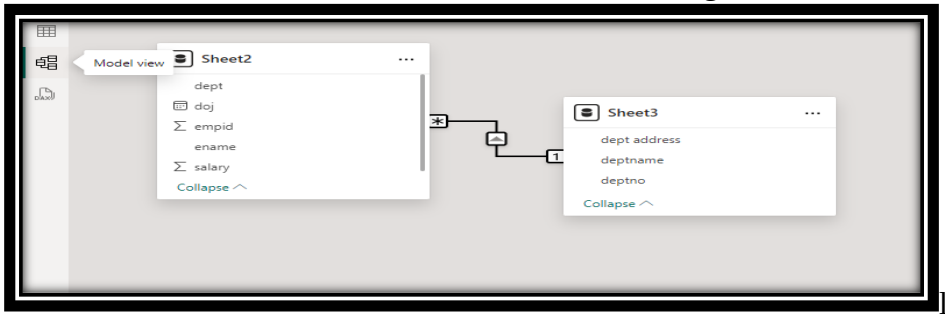
→It shows the list of files its supports from that select any one of the file which you want to create the report

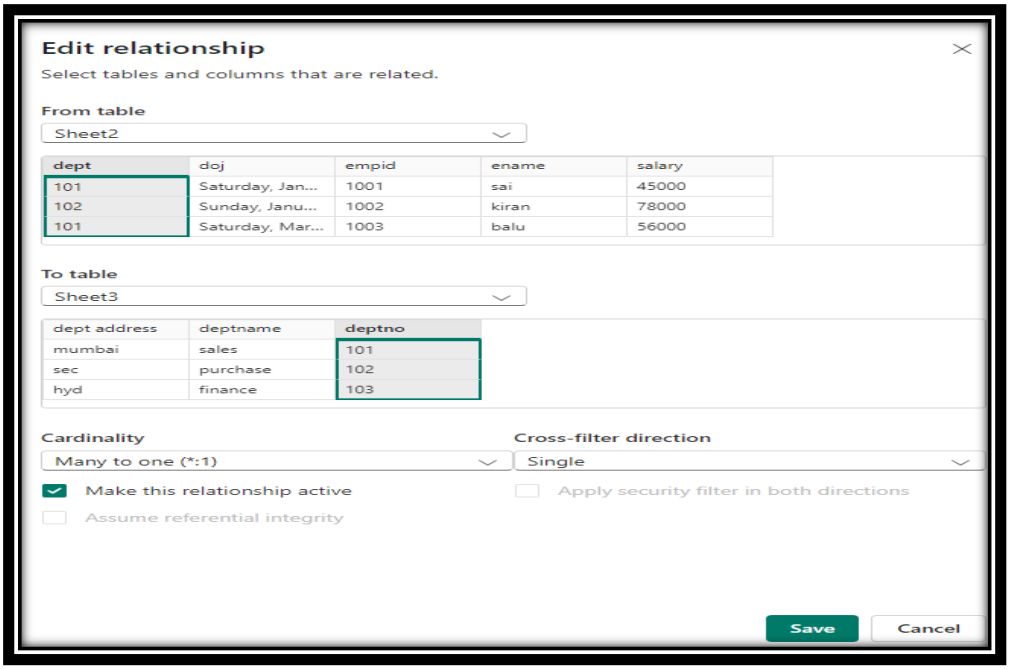
- ➔ for creating the relation ship you must have more than one table and there should be one common column then you can create the relationship
- ➔ after selecting the two tables in to power BI now You can create the relation ship with the following steps
- ➔ First select the model view from the left side
- ➔ It will display as it is

→To make a relation ship just drag and drop the common column from one table to another table then automatically relationship will be created or

- ➔ Select the manage relationship option from the above it will display another window there you need to select the from table and to table and select the common column and define the cardinality like 1:1 or 1: M or M:M or M:1 and cross direction like single or both then it will display as fol



lows



The cross filter direction = single/both

If we select single only one way joining the tables

If we seleect the both then two way joing the tables

deptno	dept address	deptname	ename
103	hyd	finance	geetha
103	hyd	finance	krish
101	mumbai	sales	balu
101	mumbai	sales	karnakar
101	mumbai	sales	sai
101	mumbai	sales	siddu
102	sec	purchase	kiran
102	sec	purchase	sony
102	sec	purchase	vani

deptno	deptname	dept address
101	sales	mumbai
102	purchase	sec
103	finance	hyd

13. **Create a series of measures in Power BI and save your work. Explain how you use these measures in different visualizations.**

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Step3: Select the **Get data option form the Home menu** (for storing data in to power BI desktop)

→It shows the list of files its supports from that select any one of the file which you want to create the report

Step 4: It open the browser window from that select your file

Step 5: Again it open Navigator window showing to you all tables to the left side and data to the right side

Step 6: Select the tables which you want to create the reports

Step 7: Click on Load

Step 8: Now the selected tables and columns are added to the right side of your data pane

Step 9: Click on > **table name** Symbol to see all columns of that table

<u>Creating the measure in power BI</u>

Step 10: select the measure option and create the following measure

Total employs=count(HRDataset_v14[empid])
Sum of all employs salary=sum(HRDataset_v14[salary])
Max salary =max(HRDataset_v14[salary])
Min salary=min(HRDataset_v14[salary])
Avg employs salary=avg(HRDataset_v14[salary])

Step 11:

- ➔ **Now all measure are gets added to the data pan**
- ➔ **Drag the cards into the page and also drag the measure in to the page that's gets displayed**
- ➔ **And apply the required formatting settings**
- ➔ **The result will be as follows**

Step 12

→For saving → file menu→save→give the name →ok then it will be saved with that name

14. **Write a DAX expression to create a calculated column in Power BI. Explain the logic behind your expression**

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Step2: From the screen select the **Blank report** and press the enter the key
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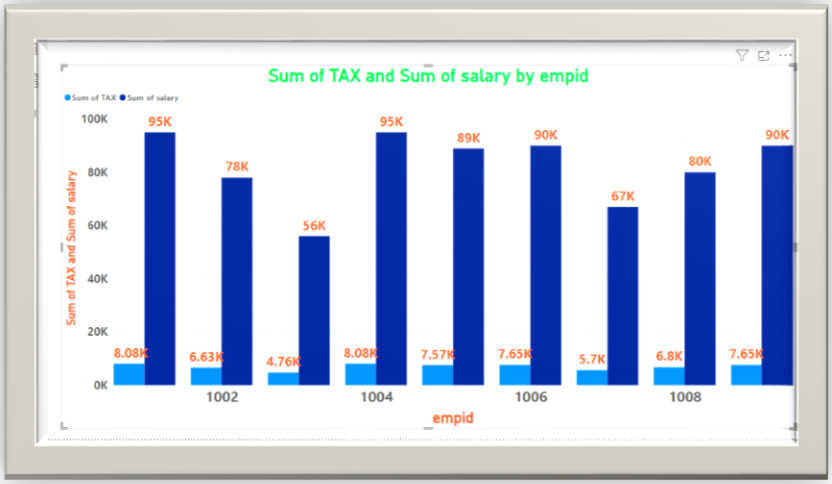
Step 8: Now the selected tables and columns are added to the right side of your data pane

We selected emp table which contain (empid,ename,salary,dept)
Now we are creating the calculated column as tax
Tax=10 % on sales
Go to data pane select three dots(…) click on it and select calculated column and type as follows
Tax=emp(salaray)*10/100

Step 9: select column chart drag and drop the empid in rows and salary and tax in columns

Step 10: apply the title color size and data labels etc



15. Create at least three different measures using DAX. Demonstrate how these measures can be used in visualizations

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Step 9: Click on > **table name** Symbol to see all columns of that table

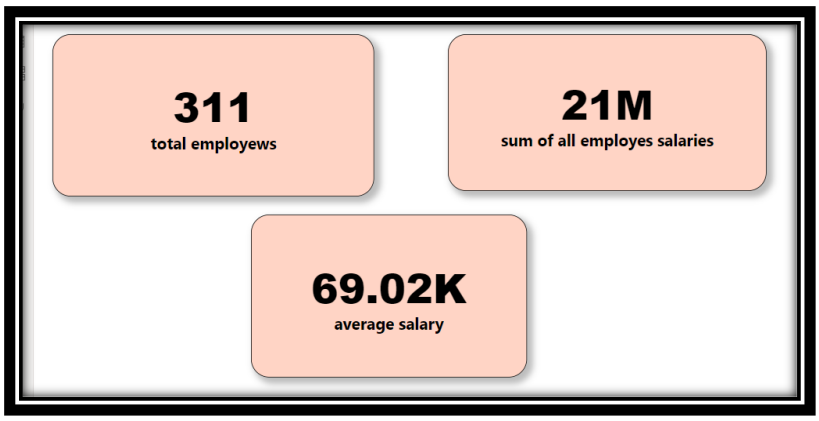
Creating the measure in power BI

Step 10: select the measure option and create the following measure

Total employs=count(HRDataset_v14[empid]
Sum of all employs salary=sum(HRDataset_v14[salary]
Avg employs salary=avg(HRDataset_v14[salary]

Step 11:

- **Now all measure are gets added to the data pan**
- **Drag the cards into the page and also drag the measure in to the page that's gets displayed**
- **And apply the required formatting settings**
- **The result will be as follows**



16. **Use a combination of DAX functions and operators to solve a specific business problem, such as calculating year-over-year growth**

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Step 7: Click on Load
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Step 9: Click on > **table name** Symbol to see all columns of that table

calculating year-over-year growth

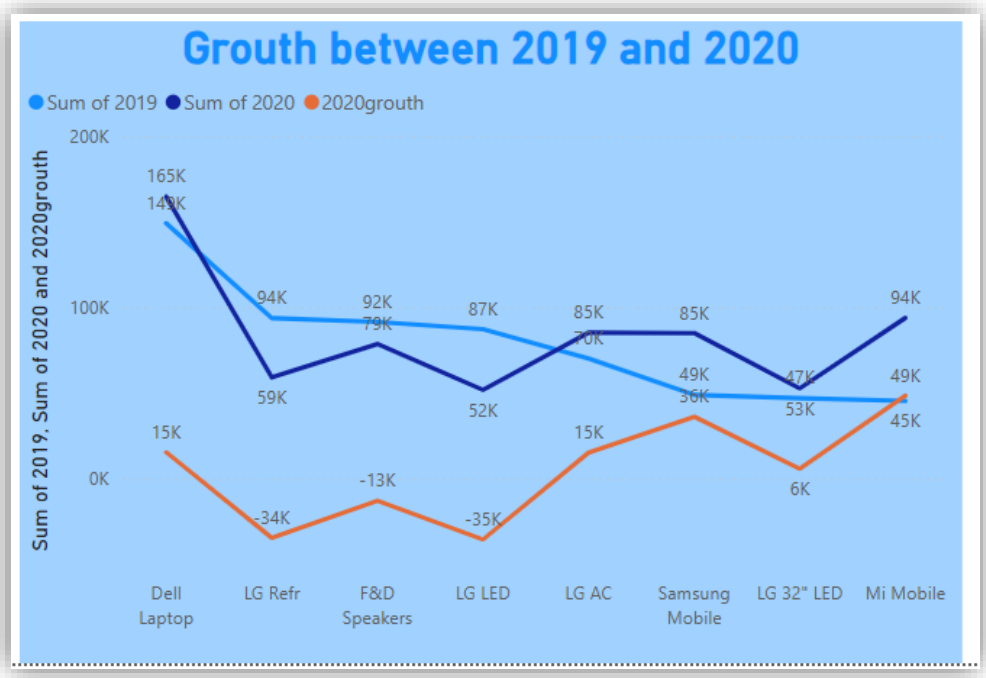
Step 10:

select table from the data pane(…) and click on three dots(…) select calculated column and type as follows

```
2020grouth = SUM(Table1[2020])-sum(Table1[2019])
```

```
Grouth_persentage = Table1[2020grouth]/Table1[2019]*100
```

Step 11 take the line chart drag and drop the 2019 ,2020,2020grouth,mesures



17. **Create various charts (e.g., bar, line, pie) using Power BI's visualization tools. Discuss the scenarios where each type of chart would be most effective**

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Step 6: Select the tables which you want to create the reports

Step 7: Click on Load

Step 8: Now the selected tables and columns are added to the right side of your data pane

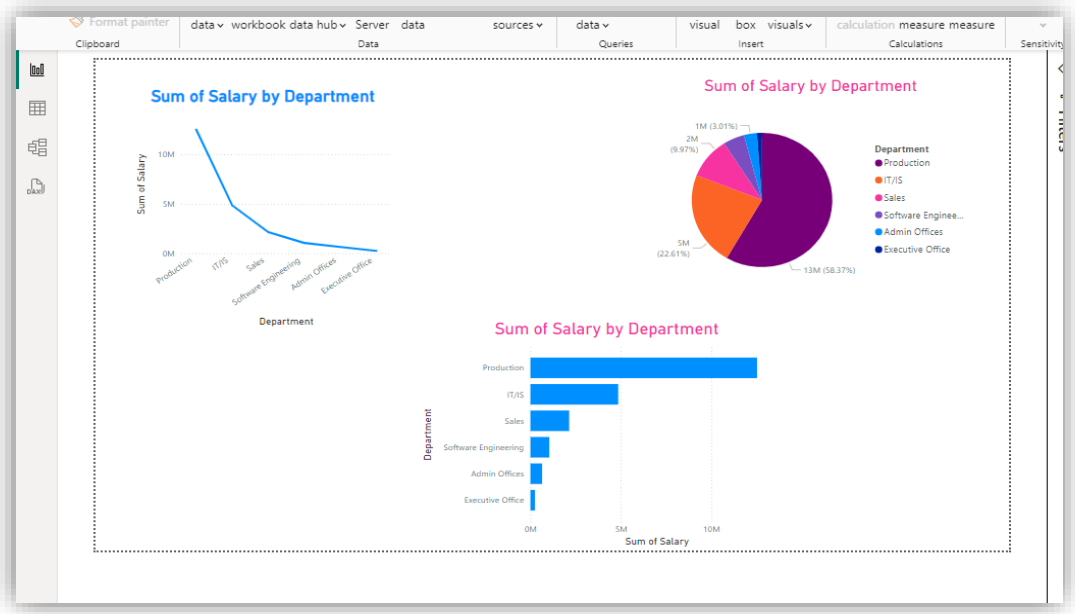
Step 9: Click on > **table name** Symbol to see all columns of that table

Step 10: drag the line chart from the visualization pan and add department name and salary to the x and y axis

Step 11: drag the bar chart from the visualization pan and add department name and salary to the x and y axis

Step 12: drag the pie chart from the visualization pan and add department name and salary to the legend and values fields

Step 13: apply the necessary formatting's to the charts



18. Build a report using matrices and tables in Power BI. Highlight the differences and advantages of using matrices over tables in specific scenarios

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Step 4: It open the browser window from that select your file

Step 5: Again it open Navigator window showing to you all tables to the left side and data to the right side

Step 6: Select the tables which you want to create the reports

Step 7: Click on Load

Step 8: Now the selected tables and columns are added to the right side of your data pane

Step 9: Click on > **table name** Symbol to see all columns of that table

<u>For Creating table</u>

→ Select the TABLE from the visualization pan drag in to the report view

→ Drag the required column and drop in to the column fields then it will be constructed with the specified columns(like employee name,state,department)

<u>For creating the matrix</u>

➔ Select the matrix form the visualization drag the department , gender, employee name in to the respected fields like rows , column , values then it will be created the matrix with rows as department and columns as gender and name are the values will be as follows