

Program 2 : Connecting to Data Source – Connecting to Database, Different types of Tableau Joins.

Dataset used: Tableau Joins File: Contains 3 sheets : Demographics, Salary, Job Title

1. Connecting to Excel Files in Tableau:

- Open Tableau and click on **Connect** in the left pane.
- Under **To a File**, choose **Microsoft Excel**.
- Browse and select your Excel file (Tableau Joins File.xlsx).
- Tableau will display the sheets from the Excel file in the Data Source tab.
- Drag the relevant sheets to the workspace.

2. Tableau Joins File.xlsx Dataset: has three Excel sheets

- **Demographics:**
 - EmployeeID
 - NameofEmployee
 - EmployeeAge
 - EmployeeGender
- **Salary:**
 - EmployeeID
 - EmployeeSalary

These sheets have a relationship based on the EmployeeID, and you can join them using this field.

Drag and drop Demographics table- Right click-select open- that allows you to do following types of joins.

Now Drag and drop Salary table - That allows you to do join of your choice.

3. Types of Joins in Tableau:

Once both tables are in the Data Source tab, Tableau automatically suggests an inner join, but you can modify the type of join depending on the scenario.

a. Inner Join:

- **Description:** Returns only records where there is a match in both tables.
- **How to Create in Tableau:**
 - Drag Demographics and Salary sheets into the canvas.
 - Tableau automatically detects the common field (EmployeeID). If not, manually select it.
 - Choose **Inner Join** in the **Join Type** options.
 - Result: You will see only employees whose employee id matches in both Demographics and Salary table.

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File Data Window Help

Connections: Add
Tableau Joins File
Microsoft Excel

Sheets: ρ
Use Data Interpreter
Data Interpreter might be able to clean your Microsoft Excel workbook.
Demographics
JobTitle
Salary
New Union

Demographics+ (Tableau Joins File)

Demographics is made of 2 tables. \odot

Join

Demographics Salary

Employee ID EmployeeID (Salary)

Add new join clause

Demographics 6 fields 7 rows

Name	Demographics	Demographics	Demographics	Demographics	Salary	Salary
Employee ID	Name of Employee	Employee Age	Employee Gender	EmployeeID (Salary)	Employee Salary	
1001	Jim Halpert	35	Male	1001	45,000	
1002	Pam Beasley	35	Female	1002	35,000	
1003	Dwight Schrute	37	Male	1003	65,000	
1004	Toby Flenderson	38	Male	1004	38,500	
1005	Angela Martin	34	Female	1005	45,000	
1006	Michael Scott	40	Male	1006	70,000	
1007	Meredith Palmer	43	Female	1007	40,000	

Fields

Type	Field Name	Physical Table	Remote F...
Demographics	Employee ID	Demographics	EmployeeID
Demographics	Name of Employee	Demographics	Name of Em...
Demographics	Employee Age	Demographics	EmployeeAge
Demographics	Employee Gender	Demographics	EmployeeG...
Salary	EmployeeID (Sal...	Salary	EmployeeID...
Salary	Employee Salary	Salary	EmployeeS...

Go to Worksheet

• b. Left Join:

- **Description:** Returns all records from the left table (Demographics), and matched records from the right table (Salary). If there's no match, NULL values are returned for fields from the right table.

• How to Create in Tableau:

- In the join settings, select **Left Join**.
- **Result:** All employees will be returned, even if data missing in Salary. Salary information will be NULL for those without a match.

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Demographics
JobTitle
Salary
New Union

Demographics+ (Tableau Joins File)

Demographics is made of 2 tables. \odot

Join

Demographics Salary

Employee ID EmployeeID (Salary)

Add new join clause

Demographics 6 fields 10 rows

Name	Demographics	Demographics	Demographics	Demographics	Salary	Salary
Employee ID	Name of Employee	Employee Age	Employee Gender	EmployeeID (Salary)	Employee Salary	
1001	Jim Halpert	35	Male	1001	45,000	
1002	Pam Beasley	35	Female	1002	35,000	
1003	Dwight Schrute	37	Male	1003	65,000	
1004	Toby Flenderson	38	Male	1004	38,500	
1005	Angela Martin	34	Female	1005	45,000	
1006	Michael Scott	40	Male	1006	70,000	
1007	Meredith Palmer	43	Female	1007	40,000	
1008	Stanley Hudson	49	Male	Null	Null	
1009	Kevyn Moore	37	Male	Null	Null	
1010	Ryan Howard	31	Male	Null	Null	

Fields

Type	Field Name	Physical Table	Remote F...
Demographics	Employee ID	Demographics	EmployeeID
Demographics	Name of Employee	Demographics	Name of Em...
Demographics	Employee Age	Demographics	EmployeeAge
Demographics	Employee Gender	Demographics	EmployeeG...
Salary	EmployeeID (Sal...	Salary	EmployeeID...
Salary	Employee Salary	Salary	EmployeeS...

Go to Worksheet

c. Right Join:

- **Description:** Returns all records from the right table (Salary), and matched records from the left table (Demographics). If there's no match, NULL values are returned for fields from the left table.

- **How to Create in Tableau:**

- Select **Right Join**.

- Result: You will see all salary, even if they don't have employee id. Employee information will be NULL for those salary with no matching employee id.

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File Data Window Help

Connections: Tableau Joins File, Microsoft Excel

Sheets: Demographics, Job Title, Salary, New Union

Demographics+ (Tableau Joins File)

Demographics is made of 2 tables: Demographics, Salary

Join: Inner, Left, Right, Full Outer

Data Source: Employee ID, Salary: EmployeeID (Salary)

Demographics

Name	Demographics	Salary
Employee ID	Demographics	EmployeeID
Employee Age	Demographics	EmployeeAge
Employee Gender	Demographics	EmployeeGender
EmployeeID (Sal...)	Salary	EmployeeID (Salary)
Employee Salary	Salary	EmployeeSalary

Employee ID	Demographics	Employee Age	Demographics	Employee Gender	Demographics	Salary	EmployeeID (Salary)	Salary	Employee Salary
1001	Jim Halpert	35	Male	1001	45,000				
1002	Pam Beasley	35	Female	1002	35,000				
1003	Dwight Schrute	37	Male	1003	65,000				
1004	Toby Flenderson	38	Male	1004	38,500				
1005	Angela Martin	34	Female	1005	45,000				
1006	Michael Scott	40	Male	1006	70,000				
1007	Meredith Palmer	43	Female	1007	40,000				
null	null	null	null	1010	25,000				

d. Full Outer Join:

- **Description:** Returns all records when there is a match in either the left (Demographics) or right (Job Title) table. If there's no match, NULL values are returned for the missing side.
- **How to Create in Tableau:**
 - Select **Full Outer Join**.
 - Result: You will see all employees and all salary, even if they don't have a match in the other table. NULL values will appear where there's no corresponding record.

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File Data Window Help

Connections: Tableau Joins File, Microsoft Excel

Sheets: Demographics, Job Title, Salary, New Union

Demographics+ (Tableau Joins File)

Demographics is made of 2 tables: Demographics, Salary

Join: Inner, Left, Right, Full Outer

Data Source: Employee ID, Salary: EmployeeID (Salary)

Demographics

Name	Demographics	Salary
Employee ID	Demographics	EmployeeID
Employee Age	Demographics	EmployeeAge
Employee Gender	Demographics	EmployeeGender
EmployeeID (Sal...)	Salary	EmployeeID (Salary)
Employee Salary	Salary	EmployeeSalary

Employee ID	Demographics	Employee Age	Demographics	Employee Gender	Demographics	Salary	EmployeeID (Salary)	Salary	Employee Salary
1001	Jim Halpert	35	Male	1001	45,000				
1002	Pam Beasley	35	Female	1002	35,000				
1003	Dwight Schrute	37	Male	1003	65,000				
1004	Toby Flenderson	38	Male	1004	38,500				
1005	Angela Martin	34	Female	1005	45,000				
1006	Michael Scott	40	Male	1006	70,000				
1007	Meredith Palmer	43	Female	1007	40,000				
1008	Stanley Hudson	49	Male	null	null				
1009	Kevin Malone	37	Male	null	null				
null	Ryan Howard	31	Male	null	null				
null	null	null	null	1010	25,000				

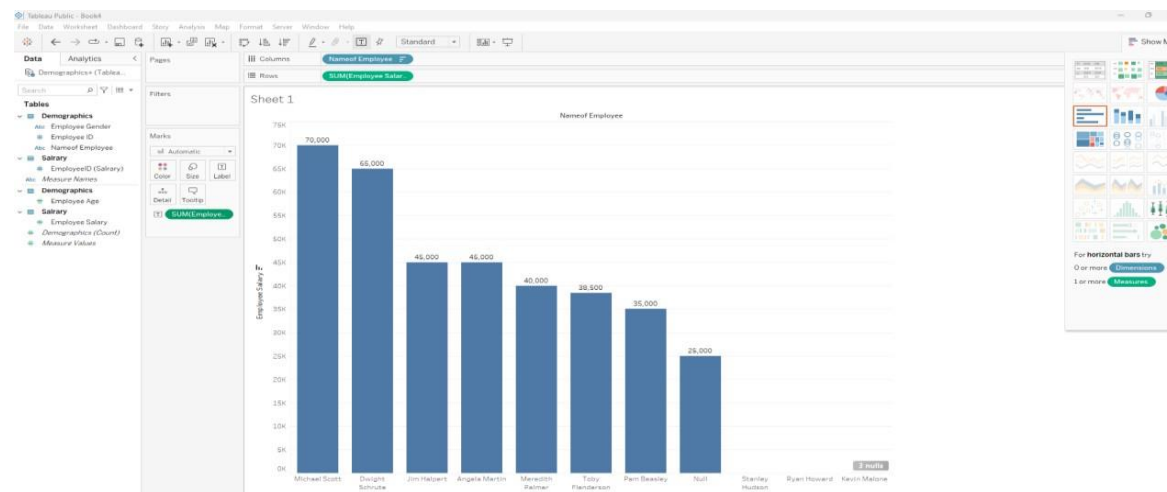
4. Creating a Visualization Based on Joins:

After performing the joins, you can build different visualizations.

Press on Sheet 1:

For example:

- **Bar Chart:** Number of employees and their salary.
- Drag NameofEmployee to **Columns**.
- Drag EmployeeSalary to **Rows**.
- This chart will display the number of employees and their salary based on the type of join.
- Sort it in decending
- Drag EmployeeSalary to Marks - Select color Color, Label



Reference Video Link -

https://www.youtube.com/watch?v=A4SVUF-fTwc&list=PLUaB-1hjhk8GwbqoVmo_5zuhOa0Tcl3xC&index=4

This same procedure we can do by connecting to any database server

We should initially connect to driver by installing it for example if you are planning for mysql

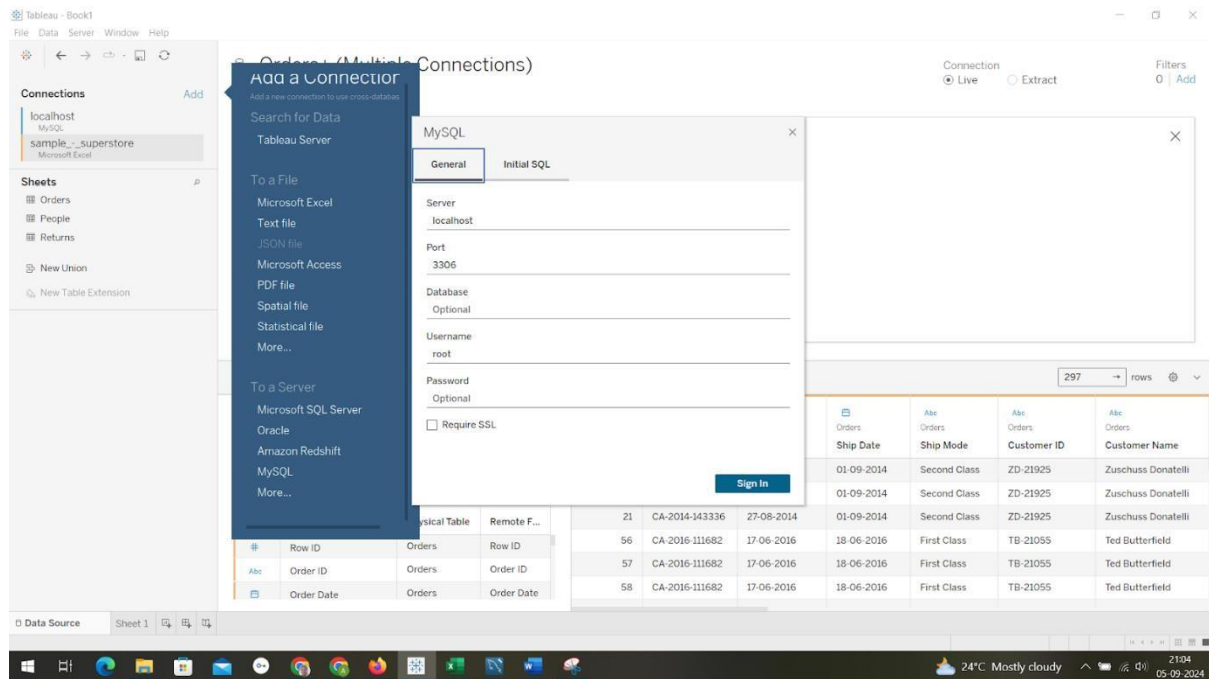
- **Install mysql driver connector as in link below:**
- <https://dev.mysql.com/downloads/connector/odbc/>

It is available in Drive Link also

https://drive.google.com/drive/folders/1kG25wextZcEOsjfXdr5VcrwW3Dp53jBf?usp=drive_link

After installing it

We have to connect to Mysql



For More Info : Refer Tableau Handouts and Tableau Tutorial