

Introduction To **TABLEAU**

Your Guide To Data Driven Insights

J A N 3 0 2 0 2 5





Objectives

By the end of this session, you will :

- **Understand how to connect Tableau to a MySQL table.**
- **Display MySQL data in Tableau and create associated graphs.**
- **Understand groupings in Tableau (similar to GROUP BY in SQL).**
- **Execute SQL queries and visualize the results in Tableau.**



Connecting to MySQL Workbench

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1. Open MySQL Workbench:

- Launch MySQL Workbench on your system.

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2. Enter Username and Password:

- When prompted, enter your MySQL username and password.
- Default username: root (if not changed).
- Password: Set by you or your system administrator.(default: 1234)

3. If You Forgot Your Username or Password:

- Check Username: Navigate to the Home screen → Under "MySQL Connections", locate your connection → Click Edit Connection Settings → Check the Username field.
- Forgot Password: Follow this full guide for resetting passwords available on [MySQL's official site](#).





Connecting MySQL Workbench to an Excel File

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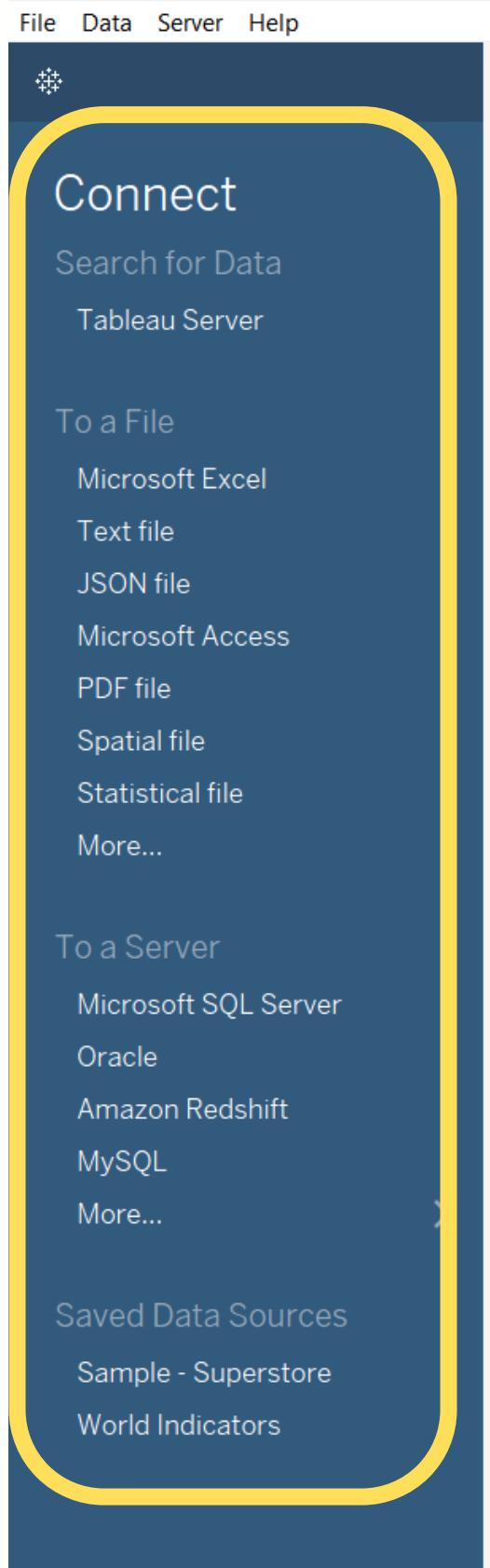
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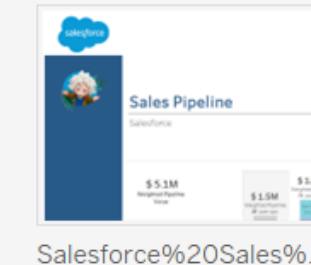
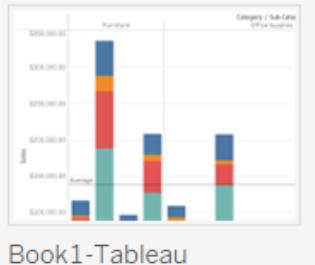
1. Open MySQL Workbench and go to Schemas.
2. Right-click to create a new schema (e.g., student_data) or select an existing schema .
3. Expand the chosen schema (e.g., student_data), right-click on Tables, and select **Table Data Import Wizard**.
4. In the Import Data panel, browse to the required Excel file and click Next.
5. Verify the new table name (e.g., students_info) and data view, then click Next and proceed until finished.
6. Right-click on the created schema (e.g., student_data) and click Refresh All.
7. Once the new table (e.g., students_info) is visible, run the following queries to verify the data :
 - USE student_data; (Example schema name)
 - SELECT * FROM `students_info`; (Example table name)

Connect

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Open



[Open a Workbook](#)

Discover

- ➊ Meet Tableau
- ➋ Get Started
- ➌ Tour the Tableau Environment
- ➍ Connect to and Prepare Data
- ➎ Learn more...

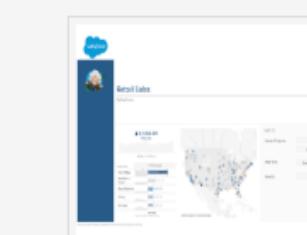
- ➏ Resources
 - ➐ Get Tableau Prep
 - ➑ Tableau Blueprint Assessment
 - ➒ Tableau Community Forums
 - ➓ Tableau Accelerators
 - ➔ Blog - Read latest post



Quick Start

Accelerators

Jumpstart your analysis with pre-built templates [View More](#)



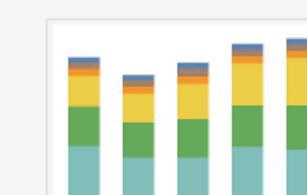
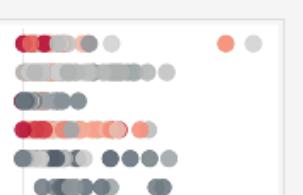
Salesforce Sales Cloud ...

Budget Controlling

Retail Sales

Sample Workbooks

Explore what Tableau can do



Connecting Tableau to MySQL

The screenshot shows the Tableau Connect interface. On the left, a vertical navigation menu lists options like 'File', 'Data', 'Server', 'Help', 'Connect', 'Search for Data', 'Tableau Server', 'To a File' (with sub-options for Microsoft Excel, Text file, JSON file, Microsoft Access, PDF file, Spatial file, Statistical file, More...), 'To a Server' (with sub-options for Microsoft SQL Server, Oracle, Amazon Redshift, MySQL, More...), 'Saved Data Sources' (with sub-options for Sample - Superstore, World Indicators), and 'More...'.

In the center, a search bar at the top has the placeholder 'Search'. Below it, a list of 'Installed Connectors (71)' includes: Google Cloud SQL, Actian Vector, Alibaba AnalyticDB for MySQL, Alibaba Data Lake Analytics, Alibaba MaxCompute, Amazon Athena, Amazon Aurora for MySQL, Amazon EMR Hadoop Hive, Amazon Redshift, Anaplan (deprecated), Apache Drill, Azure Data Lake Storage Gen2, Azure SQL Database, Azure Synapse Analytics, Box, Cloudera Hadoop, Databricks, Denodo (deprecated), Dremio, Dropbox, Esri, Exasol, Firebird 3, Google Analytics, Google BigQuery, Google BigQuery (JDBC), Google Drive, Hortonworks Hadoop Hive, HPE Ezmeral Data Fabric (Ma), IBM DB2, IBM Netezza Performance Se, Impala, Intuit QuickBooks Online (dep), Kyvos, LinkedIn Sales Navigator (dep), MariaDB, Marketing Cloud Intelligence, Marketo (deprecated), MarkLogic (deprecated), Microsoft SQL Server, Microsoft SQL Server Analysis, MonetDB, MongoDB BI Connector, OneDrive and SharePoint Online, Oracle, Oracle Eloqua (deprecated), Oracle Essbase, Pivotal Greenplum Database, PostgreSQL, Presto, and Actian JDBC by Actian.

A modal window titled 'MySQL' is open, showing the 'General' tab selected. It contains fields for 'Server' (localhost), 'Port' (3306), 'Database' (Optional), 'Username' (root), 'Password' (Optional), and a checked 'Require SSL' checkbox. A 'Sign In' button is at the bottom right of the modal.

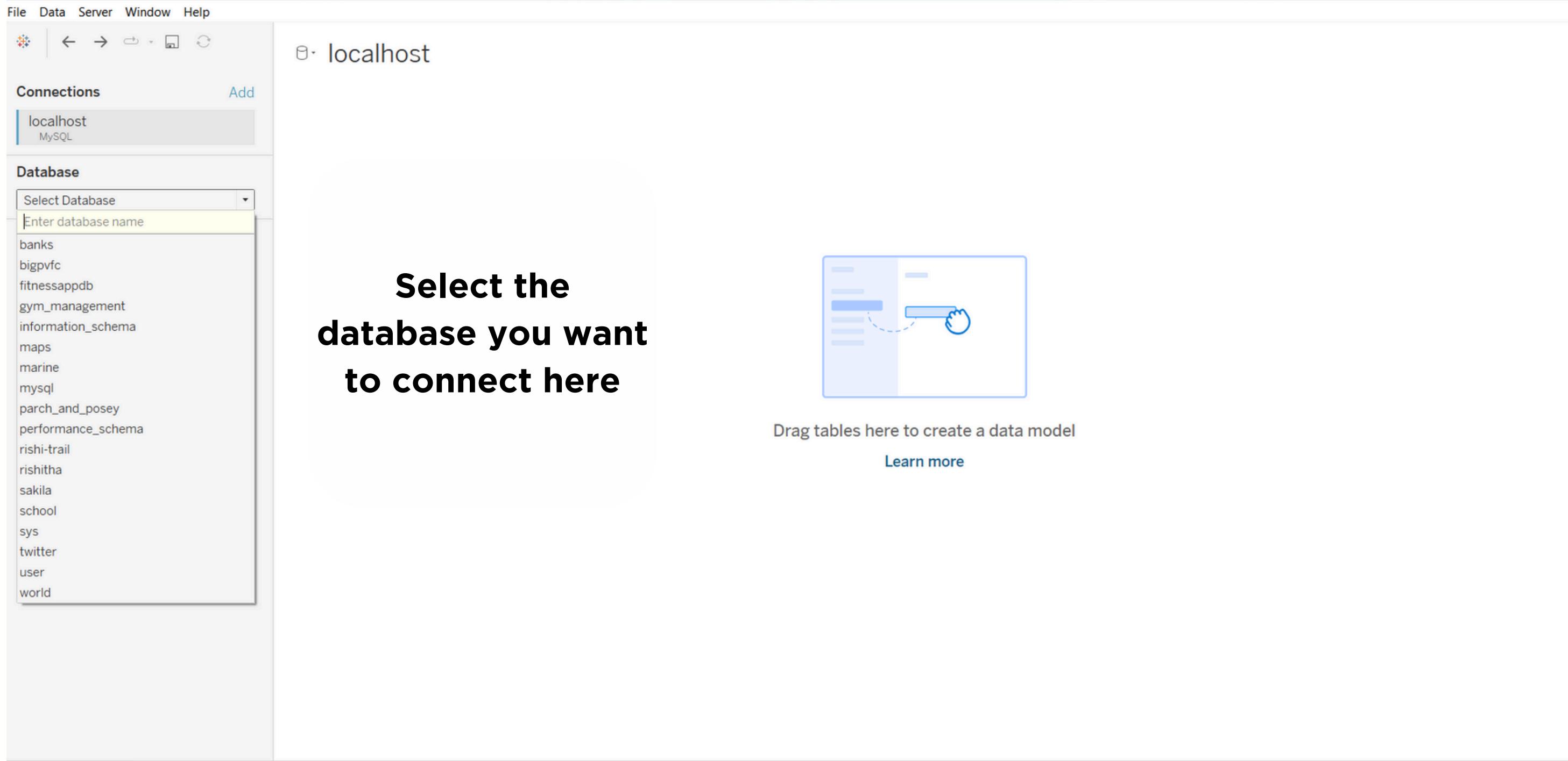
On the right side of the interface, there is a 'Sort by Name (a-z)' dropdown and a list of additional connectors: Palantir Foundry by Palantir, Qubole Hive by Qubole, Rockset by Rockset, Inc., Salesforce Marketing Cloud by Tableau, SAP SuccessFactors by Tableau, ServiceNow by Tableau, Sharepoint Lists (JDBC) by Tableau, SingleStoreDB JDBC by Singlestore, Splunk by Tableau, SQream DB by SQream Technologies, Starburst Enterprise by Starburst, StarTree Tableau Connector by StarTree, Stratio Crossdata by Stratio BD, and Yellowbrick by Yellowbrick Data.

Numbered circles on the left margin correspond to steps in the process:

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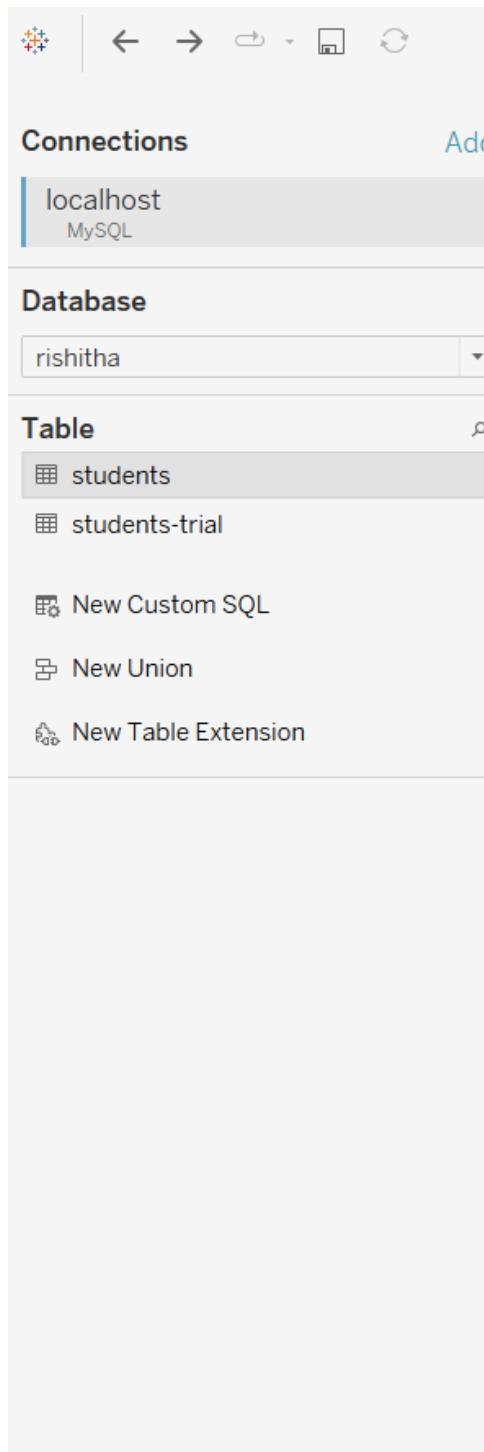
Connecting Tableau to MySQL

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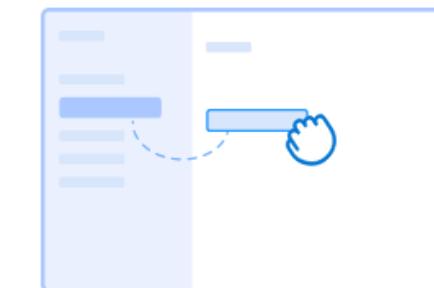


Connecting Tableau to MySQL

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Drag and drop the desired table on to the panel.



Drag tables here to create a data model

[Learn more](#)

Connecting Tableau to MySQL

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The screenshot shows the Tableau Data Source interface. On the left, the 'Connections' pane shows a connection to 'localhost MySQL' named 'rishitha'. Under 'Database', 'rishitha' is selected. In the 'Table' section, 'students' is selected. Other options include 'New Custom SQL', 'New Union', and 'New Table Extension'. The main area displays the 'students' table with 7 fields and 200 rows. The table structure includes columns for Student ID, Name, Age, Email, Department, GPA, and Graduation Year. A preview of the first few rows is shown:

# students	Abc students	# students	Abc students	Abc students	# students	# students
Student ID	Name	Age	Email	Department	GPA	Graduation Ye
3336	David Palmer	19	sean43@hotmail.com	Mathematics	3.16000	
8774	Andrew Roach	23	vbecker@harvey.com	Chemistry	3.75000	
1396	Jonathan Gonzalez	22	hollydavis@gmail.com	Physics	2.95000	
6716	Kenneth Morrow	24	ganderson@wheeler-atkins.i...	Physics	3.55000	
8830	Kaitlyn Martinez	18	hayesdiane@gmail.com	Chemistry	2.29000	
5305	Tiffany Wolf	23	qanderson@taylor.com	Mathematics	3.30000	

We can see the selected tables data view now.

Creating graphs

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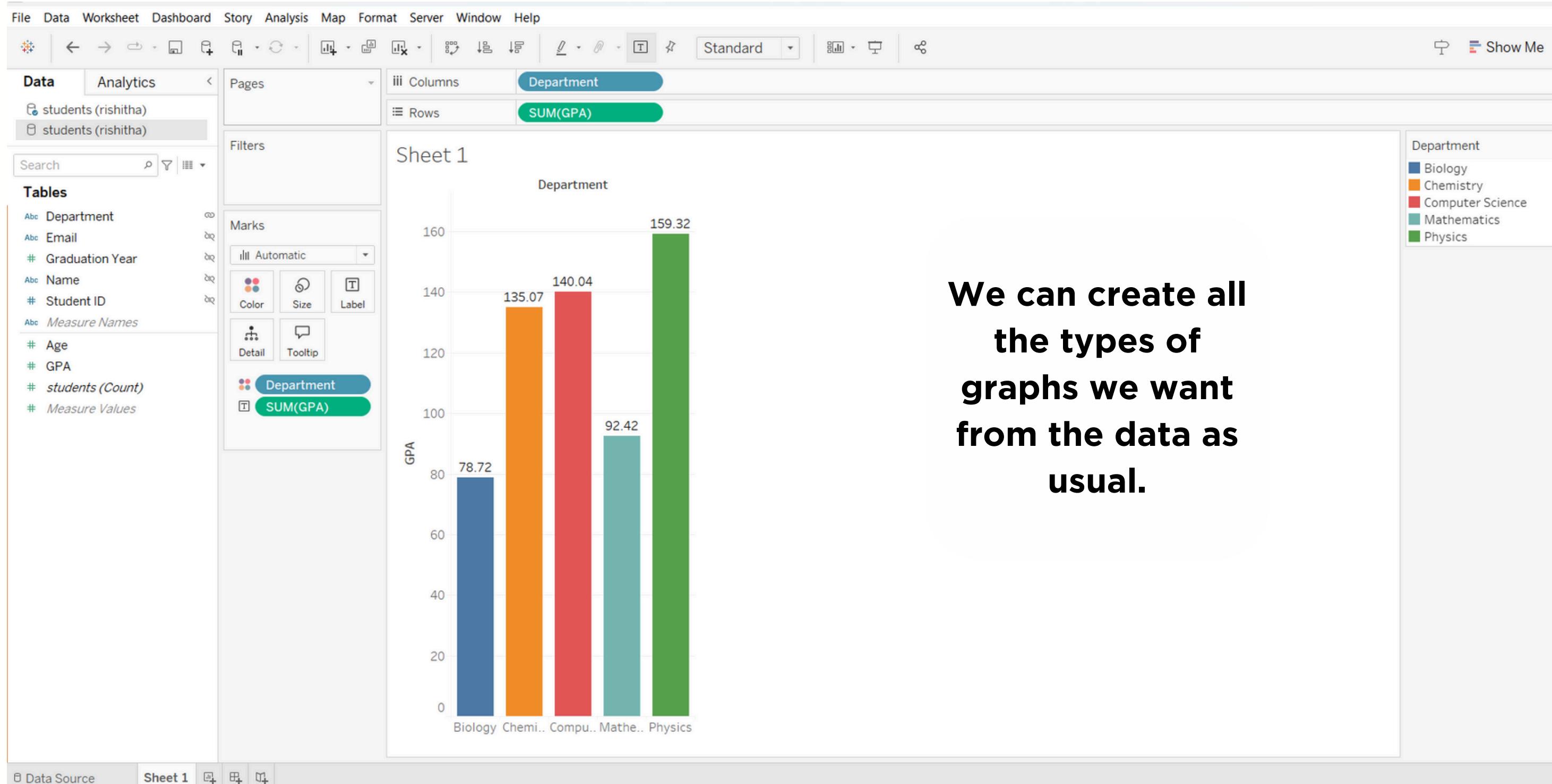
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Understanding Groupings in Tableau

(Similar to SQL GROUP BY)



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GROUP BY in SQL:

- Groups rows that have the same values into summary rows.
- Often used with aggregate functions (SUM, COUNT, AVG, etc.).

GROUP BY in Tableau:

- In Tableau, this is done using Dimensions and Measures.
- Example: Group data by category (e.g., Sales by Region).
- Example: Grouping Sales Data by Region

SQL - GROUP BY



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The GROUP BY clause in SQL is used to group rows with the same values in specified columns and then apply aggregate functions (like COUNT, SUM, AVG, etc.) to each group.

Example:

	StudentID	Name	Age	Email	Department	GPA	GraduationYear
▶	3336	David Palmer	19	sean43@hotmail.com	Mathematics	3.16	2026
7	8774	Andrew Roach	23	vbecker@harvey.com	Chemistry	3.75	2027
8	1396	Jonathan Gonzalez	22	hollydavis@gmail.com	Physics	2.95	2027
9	6716	Kenneth Morrow	24	ganderson@wheeler-atkins.info	Physics	3.55	2029
10	8830	Kaitlyn Martinez	18	hayesdiane@gmail.com	Chemistry	2.29	2025
	5305	Tiffany Wolf	23	qanderson@taylor.com	Mathematics	3.3	2029
	5048	James Reves	20	drodriguez@nauven-cooper.info	Chemistry	2.44	2029

Ex-1: Find the average GPA for each department.



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Query:

```
SELECT Department, AVG(GPA) AS Average_GPA  
FROM students  
GROUP BY Department;
```

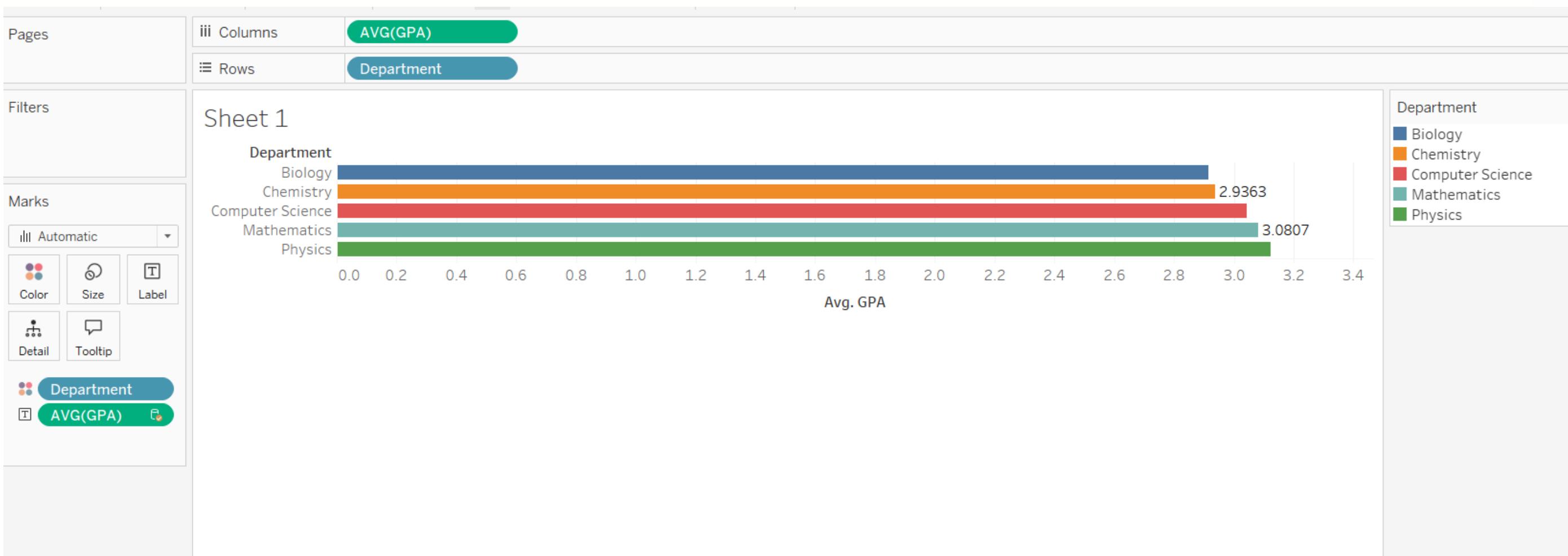
Output:

	Department	Average_GPA
▶	Mathematics	3.0806666666666667
▶	Chemistry	2.9363043478260873
▶	Physics	3.1239215686274506
▶	Computer Science	3.0443478260869563
▶	Biology	2.9155555555555556

Ex-1: Find the average GPA for each department.

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- Drag "Department" to Rows: This creates groups based on departments.
- Drag "GPA" to Columns: Tableau automatically aggregates the GPA (e.g., SUM, AVG, etc.).
- By default, Tableau applies SUM, but you can change this to AVG by right-clicking on GPA → Aggregate → Average.





Ex-2: Count of Students by Department who are above 18

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Query:

```
SELECT Department, COUNT(StudentID) AS Student_Count  
FROM students  
WHERE Age > 18  
GROUP BY Department;
```

Output:

	Department	Student_Count
▶	Mathematics	29
	Chemistry	41
	Physics	46
	Computer Science	40
	Biology	23

Ex-2: Count of Students by Department who are above 18

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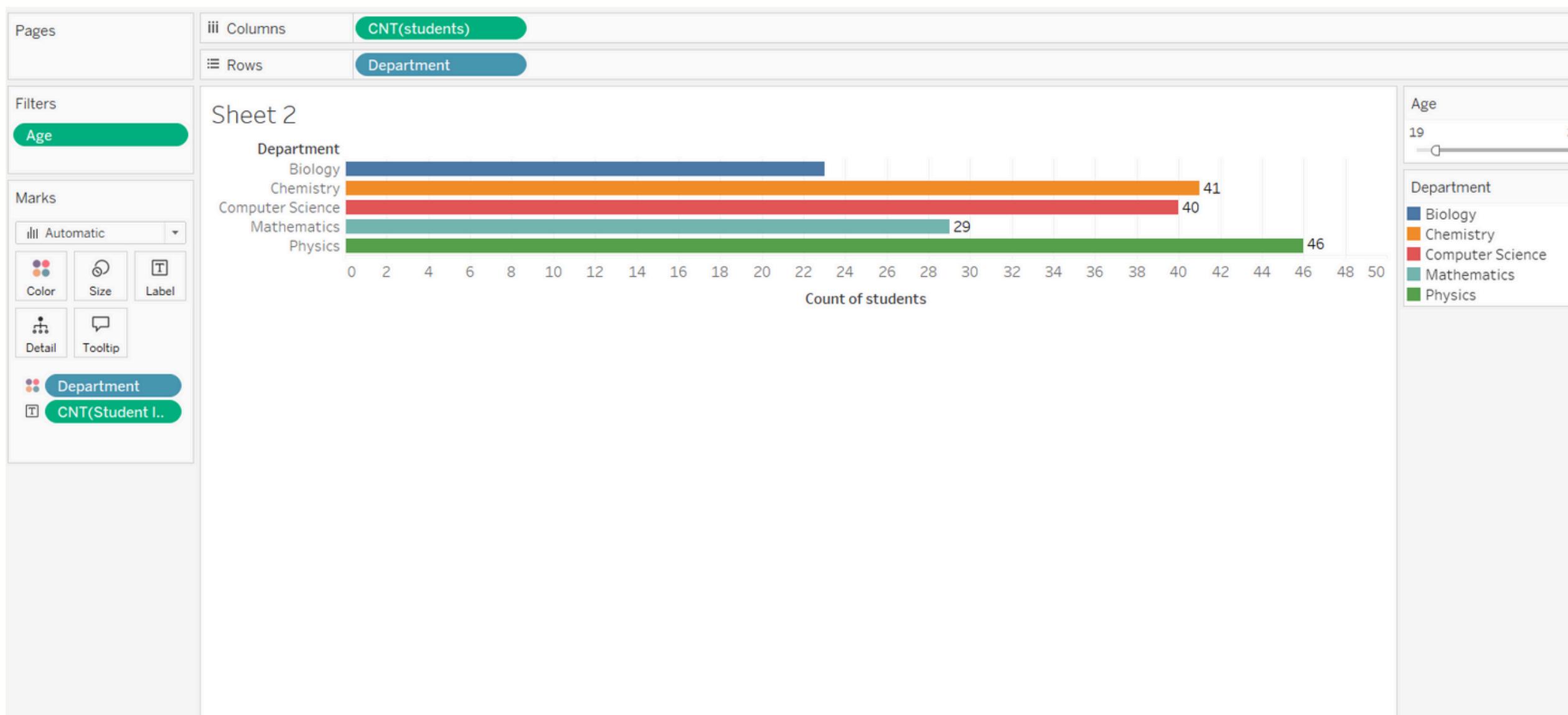
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- Drag Department to Rows.
- Drag Student ID to Columns.
- Set aggregation to Count:
- Right-click on "Student ID" → Aggregate → Count.
- Drag Age to the Filters shelf, set it to "At least 19," and click OK



Ex-3: Average Age by Graduation Year for the years 2026 - 2028

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Query:

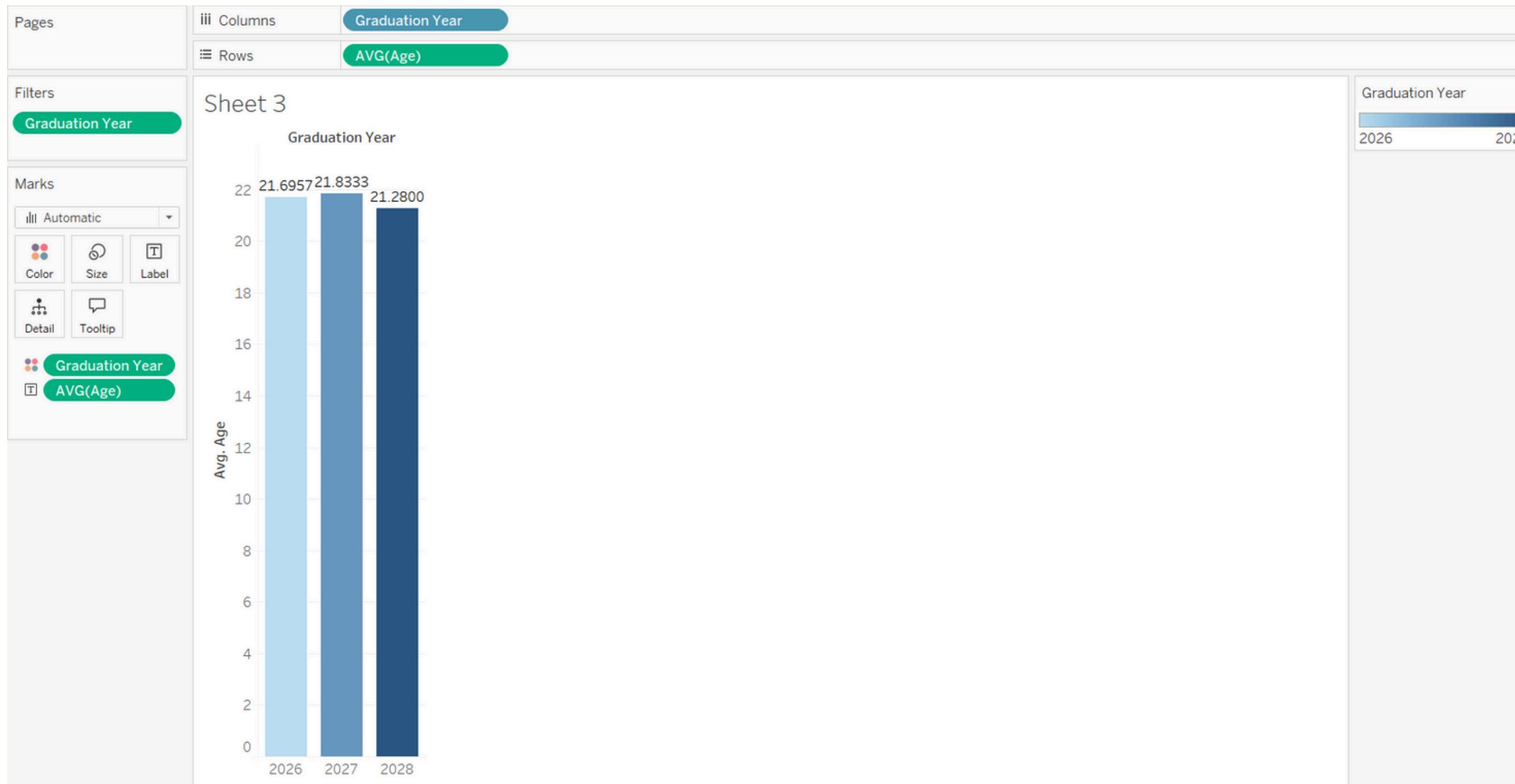
```
SELECT GraduationYear, AVG(Age) AS Average_Age  
FROM students  
WHERE GraduationYear BETWEEN 2026 AND 2028  
GROUP BY GraduationYear;
```

Output:

	GraduationYear	Average_Age
▶	2026	21.6957
	2027	21.8333
	2028	21.2800

Ex-3: Average Age by Graduation Year for the years 2026 - 2028

- Drag Graduation Year to Rows.
- Drag Age to Columns.
- Change the aggregation to Average:
- Right-click on "Age" → Aggregate → Average.
- Drag Graduation Year to the Filters shelf, set the range to "2026 to 2028" and click OK



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Ex-4: Total number of students for each department and year

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Query:

```
SELECT GraduationYear, Department, COUNT(StudentID) AS CountOfStudents  
FROM students  
GROUP BY GraduationYear, Department  
ORDER BY GraduationYear, Department;
```

Output:

	GraduationYear	Department	CountOfStudents
▶	2024	Biology	4
	2024	Chemistry	9
	2024	Computer Science	3
	2024	Mathematics	3
	2024	Physics	4
	2025	Biology	2
	2025	Chemistry	4
	2025	Computer Science	10
	2025	Mathematics	4
	2025	Physics	10
	2026	Biology	2
	2026	Chemistry	5
	2026	Computer Science	5
	2026	Mathematics	4

Ex-4: Total number of students for each department and year

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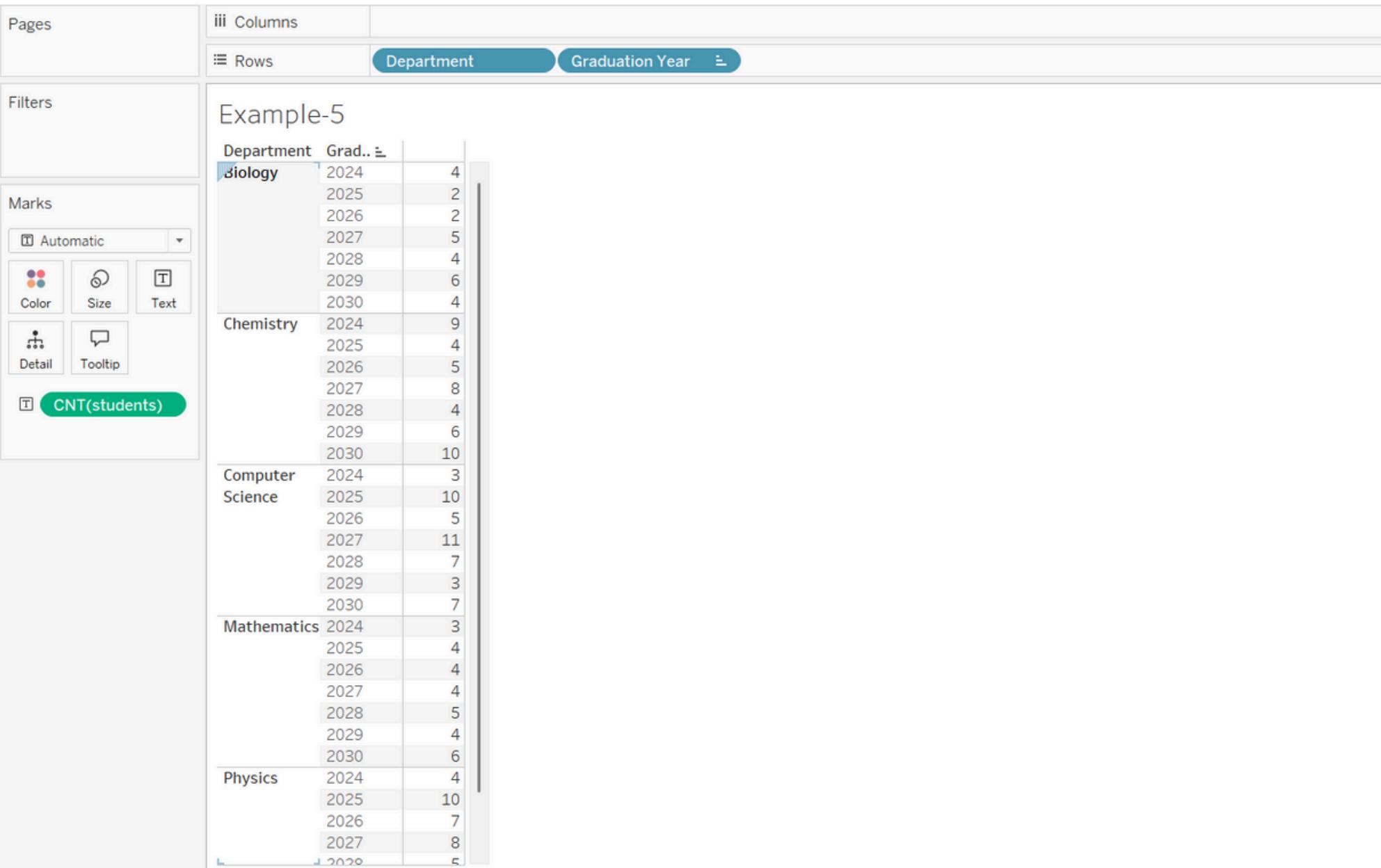
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- Drag Department to Rows.
- Drag Graduation to Rows again beside Department.
- Drag Count of Students to the Text Label in the Marks Field.



Ex-4: Total number of students for each department and year



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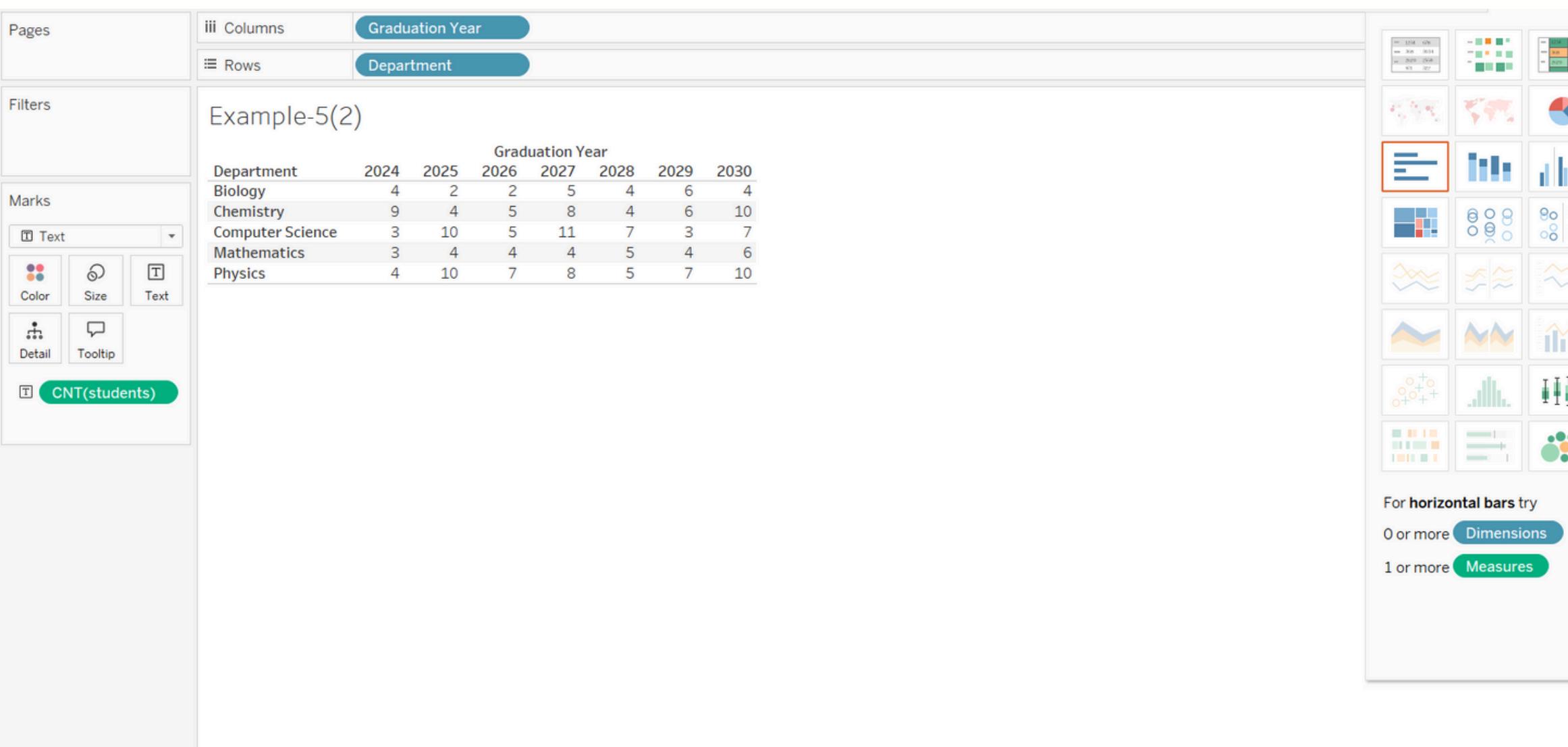
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- Drag Department to Rows.
- Drag Graduation Year to Columns.
- Change the Type in Marks Field from ‘Automatic’ to ‘Text’.
- Drag Count of Students to the Text Label in Marks.



Ex-5: Total number of students and the average GPA for each department and year

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Query:

```
SELECT Department, GraduationYear, COUNT(StudentID) AS student_count, AVG(GPA) AS average_gpa  
FROM students  
GROUP BY Department, GraduationYear  
ORDER BY Department, GraduationYear;
```

Output:

	Department	GraduationYear	student_count	average_gpa
▶	Biology	2024	4	2.8249999999999997
	Biology	2025	2	3.804999999999997
	Biology	2026	2	2.5250000000000004
	Biology	2027	5	3.16
	Biology	2028	4	2.84
	Biology	2029	6	2.601666666666666
	Biology	2030	4	2.997499999999996
	Chemistry	2024	9	3.075555555555554
	Chemistry	2025	4	2.7425
	Chemistry	2026	5	2.5
	Chemistry	2027	8	3.19875

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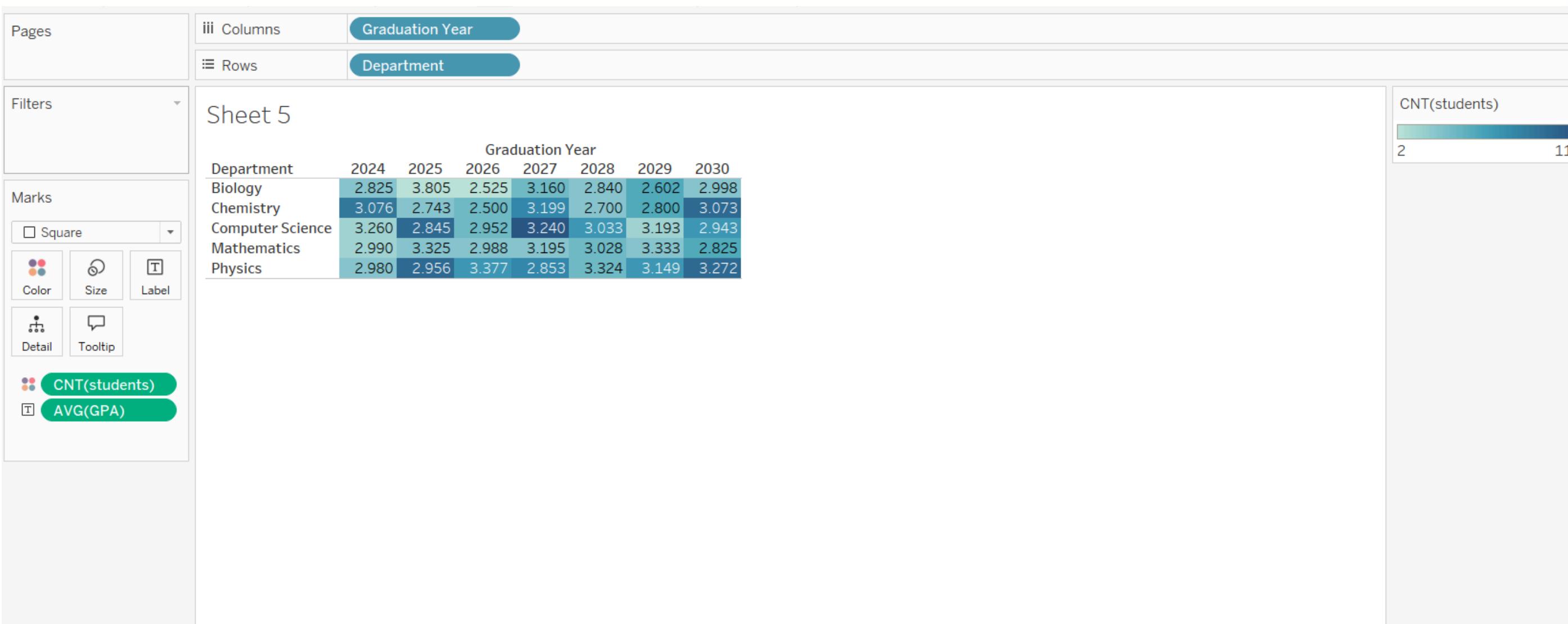
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Ex-5: Total number of students and the average GPA for each department and year

- Drag Department to Rows.
- Drag Graduation Year to Columns.
- Drag StudentID to color and change the measure to CNT (count).
- Drag GPA to Label under Marks and change the measure from SUM to AVG.



Ex-5: Total number of students and the average GPA for each department and year

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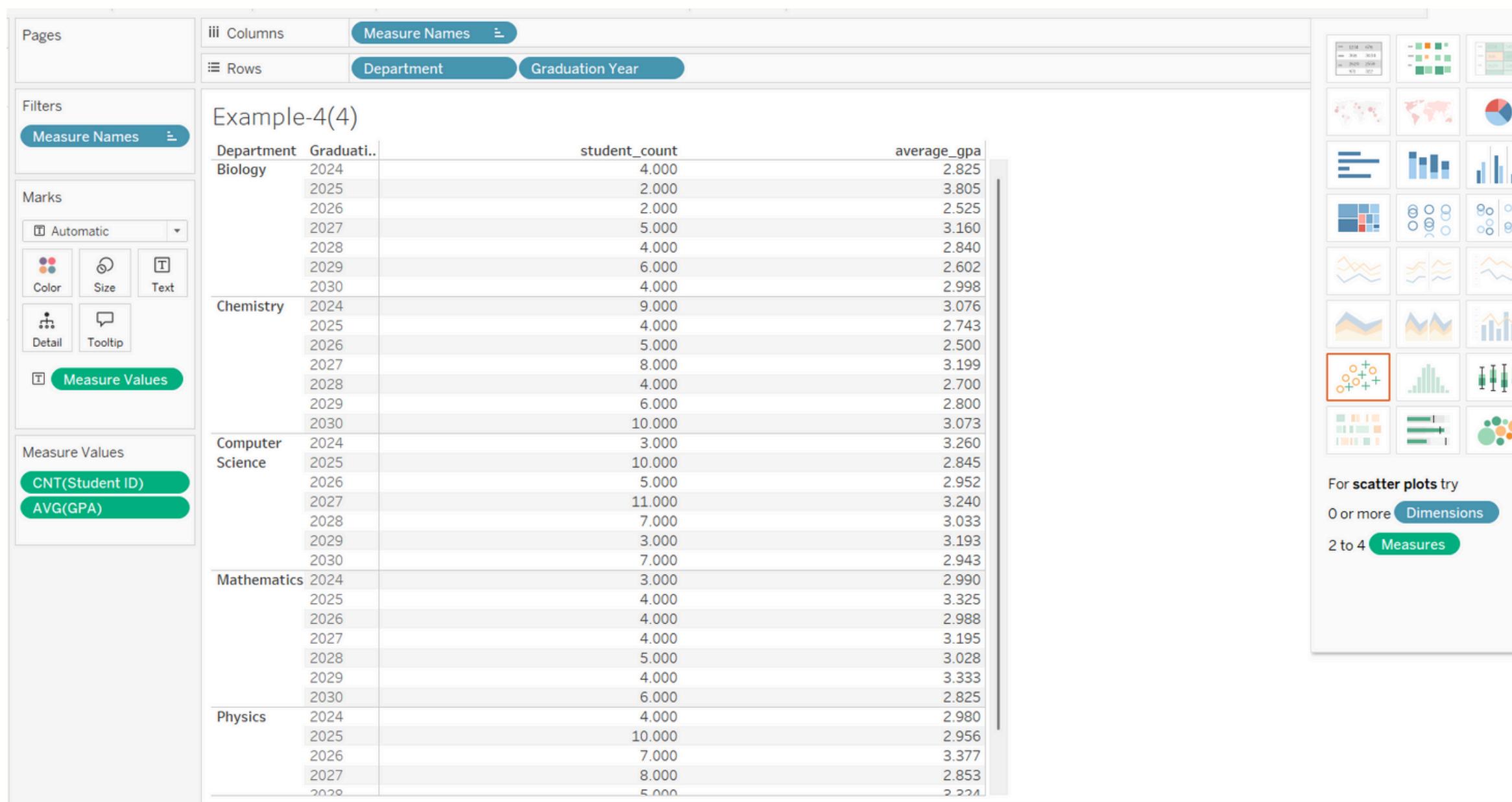
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- Drag Department to Rows.
- Drag GraduationYear to Rows, placing it next to Department.
- Drag student_count to Columns.
- Drag average_gpa to Columns, placing it next to student_count.
- Open the Show Me panel (top-right).
- Click the Text Table icon to display the data as a table.





A large, bold, black sans-serif font text "THANK YOU" is centered in the middle of the slide. The text is surrounded by abstract, organic shapes in shades of orange and light peach. A thick orange curve arches from the top left towards the center, and another thick orange curve arches from the bottom right towards the center. There are also smaller, thin orange circles and a light peach circle in the corners.

THANK YOU

