Project: OLAP Operations (using Redshift or PostgreSQL)

Objective: Perform OLAP operations (Drill Down, Rollup, Cube, Slice, and Dice) on the "sales_sample" table to analyze sales data. The project will include the following tasks:

1. Database Creation

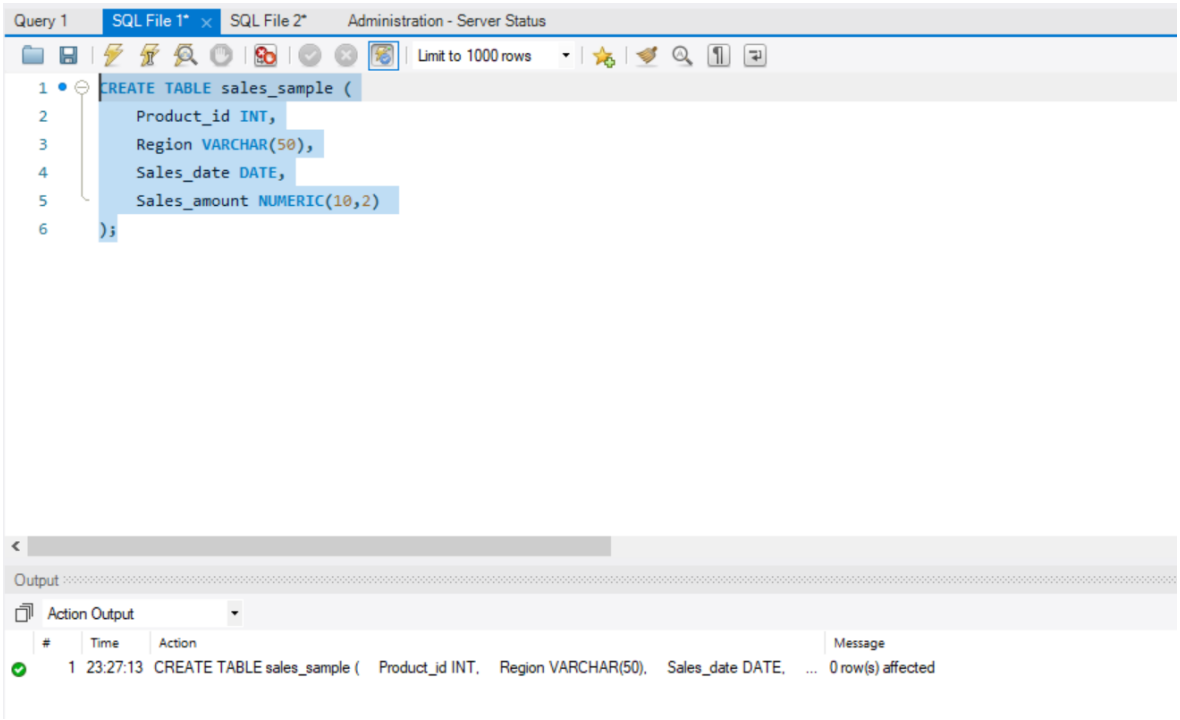
Create a table named "sales_sample" with the specified columns:

Product_Id (Integer)

Region (varchar(50))-like East ,West etc

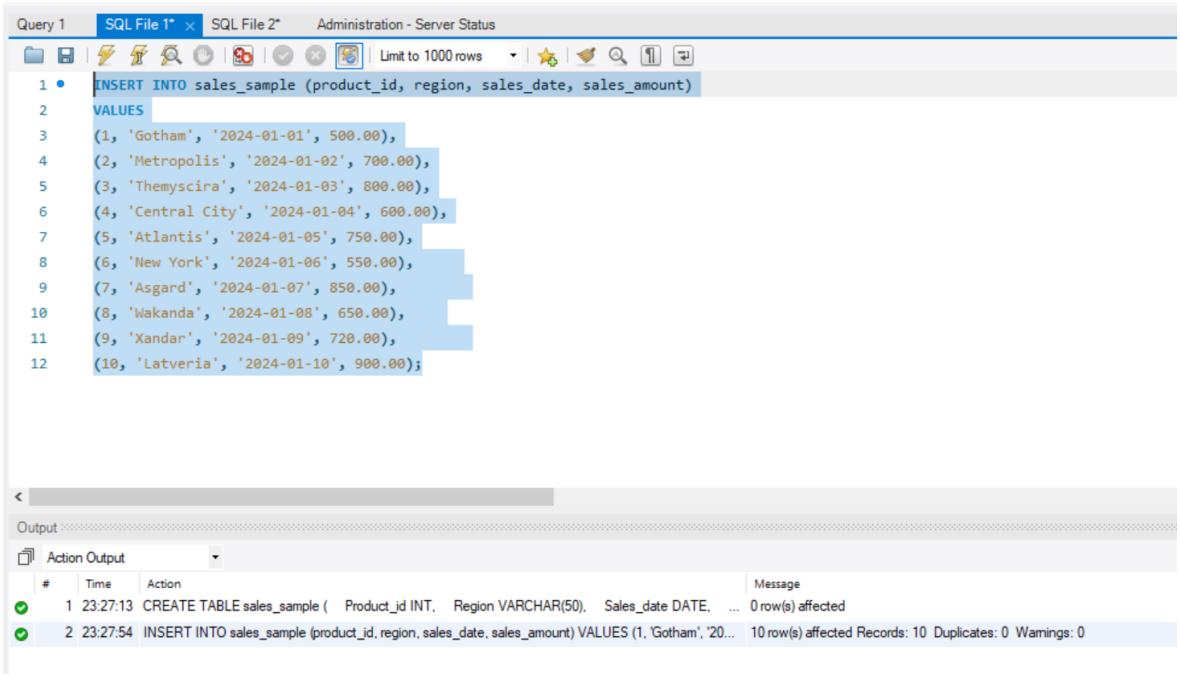
Date (Date)

Sales_Amount (int/numeric)



2. Data Creation

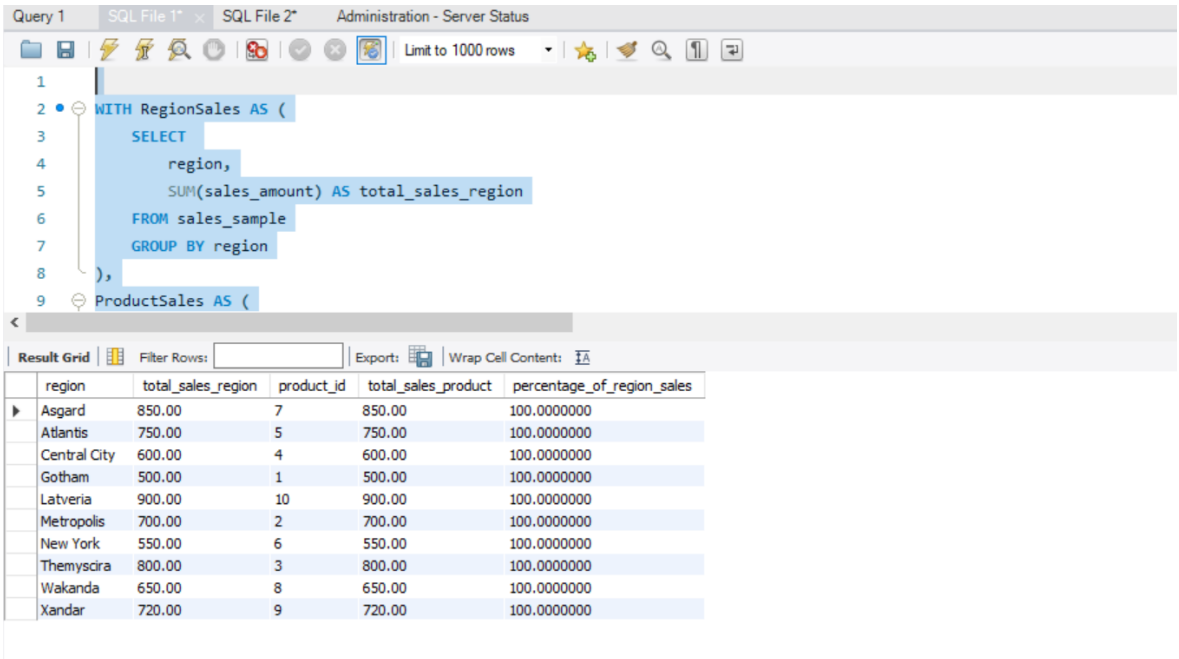
Insert 10 sample records into the "sales_sample" table, representing sales data.



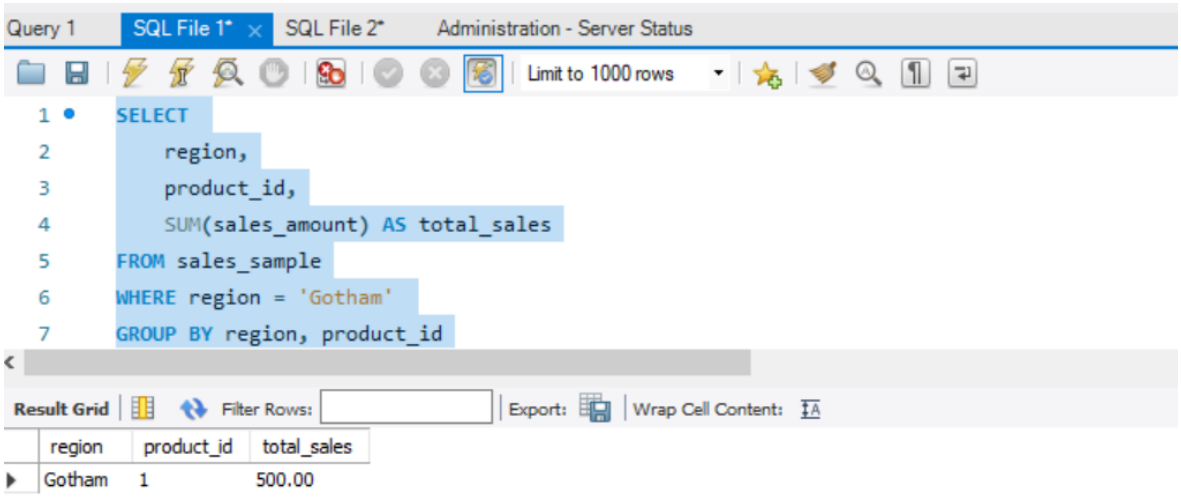
3.Perform OLAP operations

a) Drill Down-Analyze sales data at a more detailed level. Write a query to perform drill down from region to product level to understand sales performance.

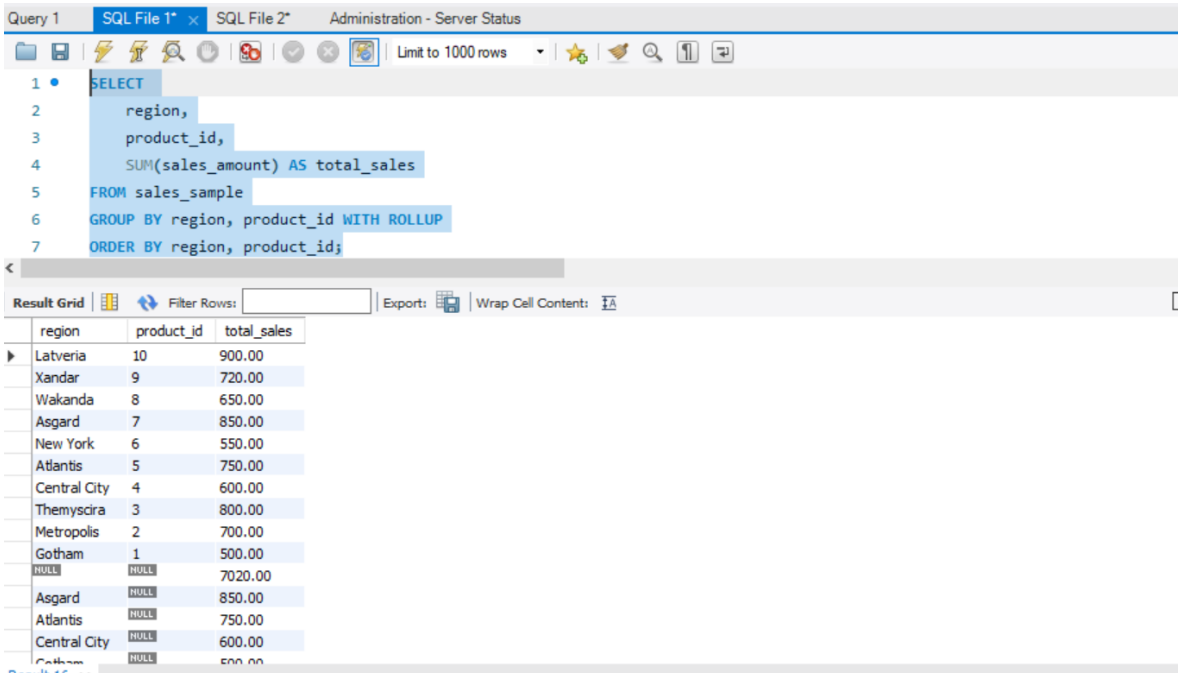
Drill Down - full



Drill down single region –

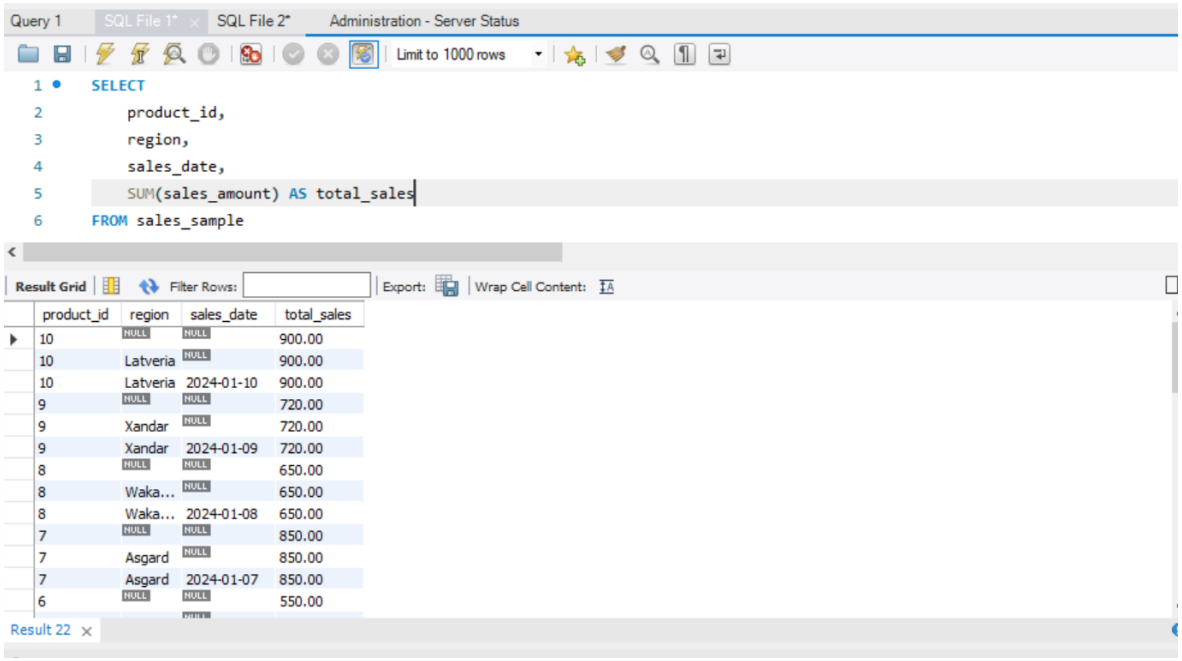


b) Rollup- To summarize sales data at different levels of granularity. Write a query to perform roll up from product to region level to view total sales by region.



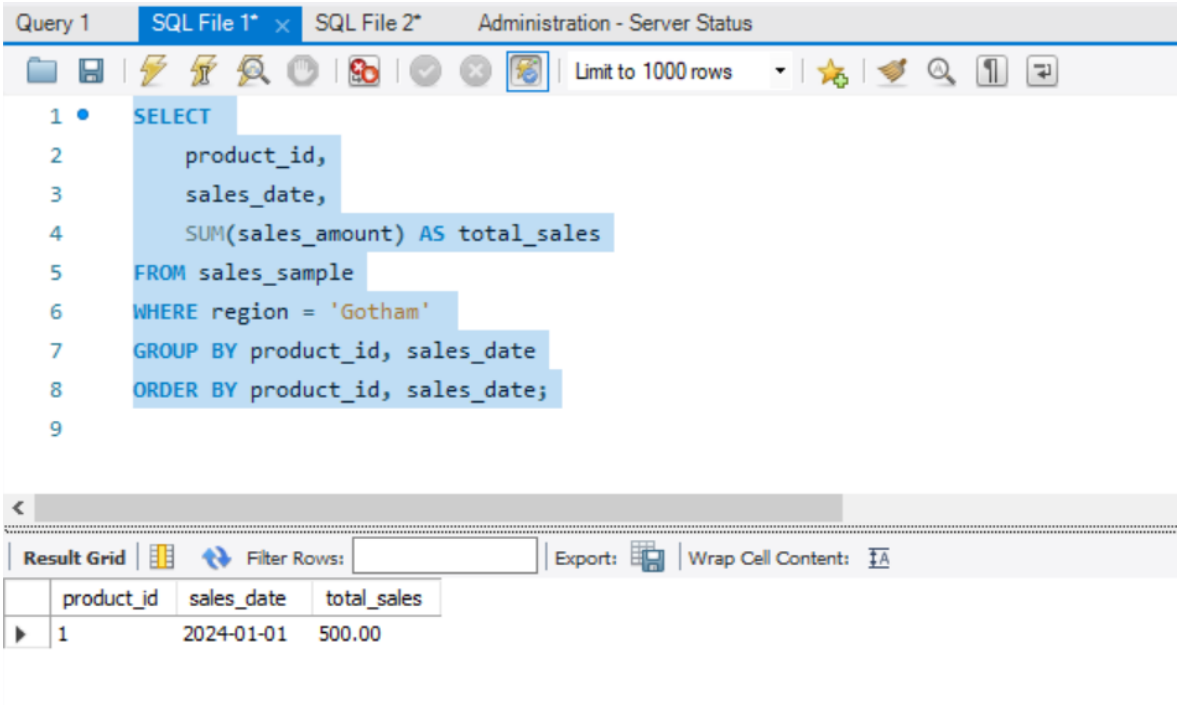
c) Cube - To analyze sales data from multiple dimensions simultaneously. Write a query to Explore sales data from different perspectives, such as product, region, and date.

Cube alternative using aggregate function

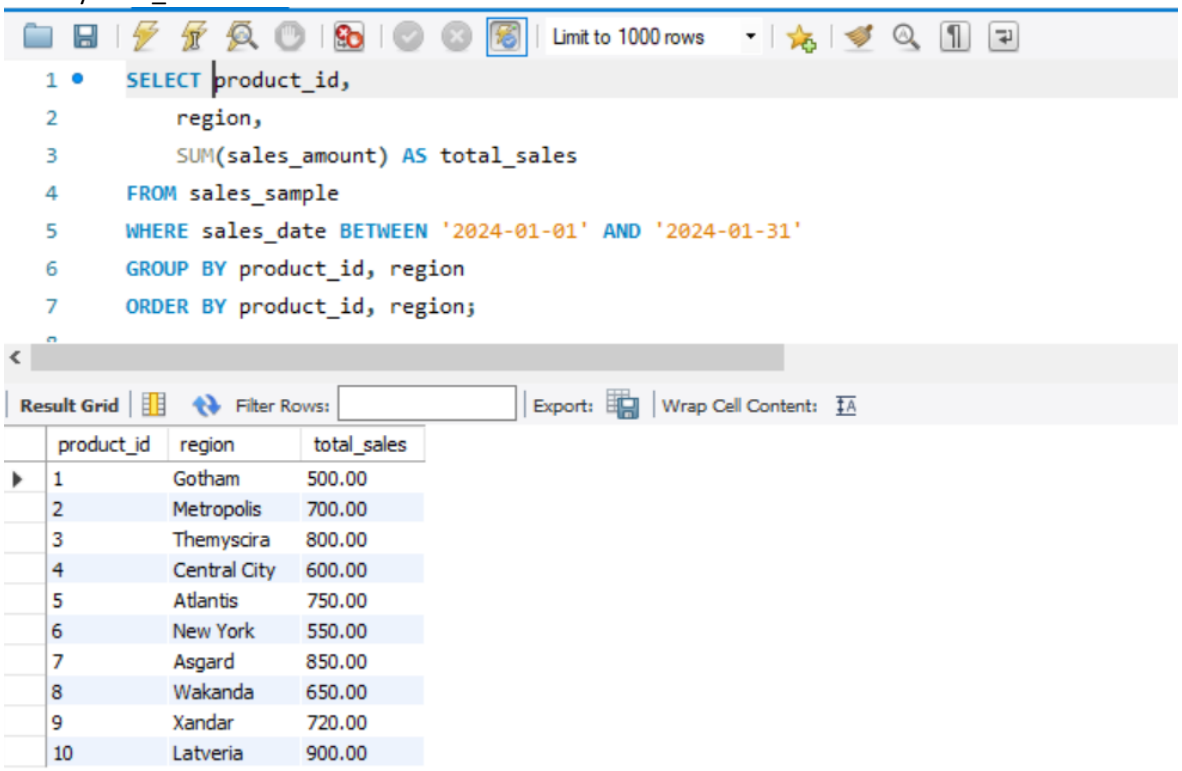

Query 1
SQL File 1*
SQL File 2*
Administration - Server Status
Limit to 1000 rows
SELECT
product_id,
region,
sales_date,
SUM(sales_amount) AS total_sales
FROM sales_sample
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
product_id region sales_date total_sales
10 NULL NULL 900.00
10 Latveria NULL 900.00
10 Latveria 2024-01-10 900.00
9 NULL NULL 720.00
9 Xandar NULL 720.00
9 Xandar 2024-01-09 720.00
8 NULL NULL 650.00
8 Waka... NULL 650.00
8 Waka... 2024-01-08 650.00
7 NULL NULL 850.00
7 Asgard NULL 850.00
7 Asgard 2024-01-07 850.00
6 NULL NULL 550.00
Result 22

d) Slice- To extract a subset of data based on specific criteria. Write a query to slice the data to view sales for a particular region or date range.

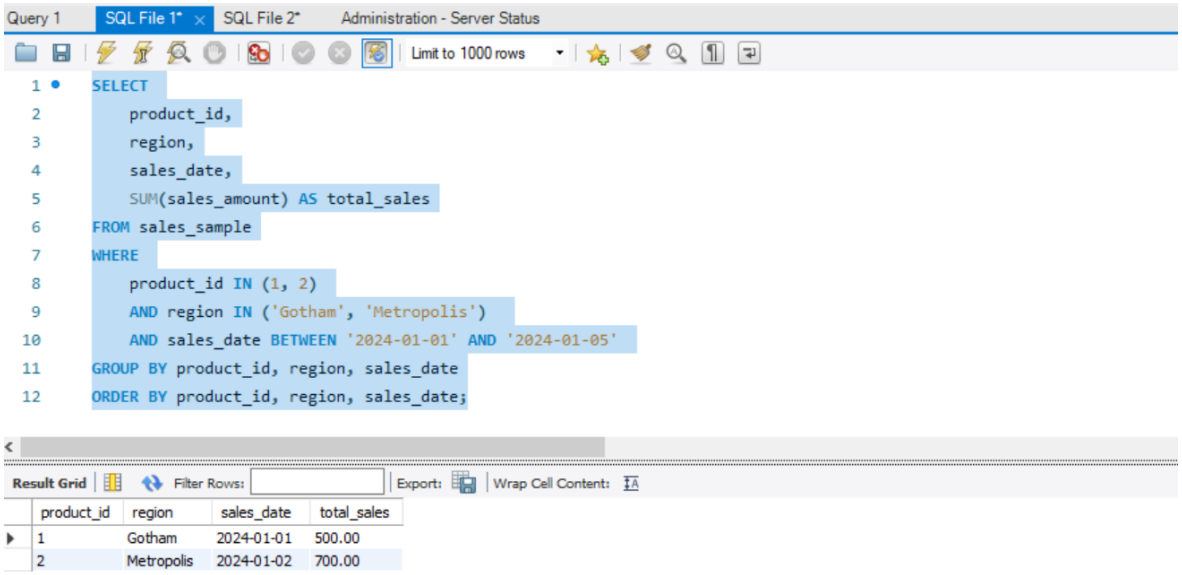
Slice by region



Slice by sales_date



e) Dice - To extract data based on multiple criteria. Write a query to view sales for specific combinations of product, region, and date


Query 1
SQL File 1*
SQL File 2*
Administration - Server Status
Limit to 1000 rows
SELECT
product_id,
region,
sales_date,
SUM(sales_amount) AS total_sales
FROM sales_sample
WHERE
product_id IN (1, 2)
AND region IN ('Gotham', 'Metropolis')
AND sales_date BETWEEN '2024-01-01' AND '2024-01-05'
GROUP BY product_id, region, sales_date
ORDER BY product_id, region, sales_date;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
product_id region sales_date total_sales
1 Gotham 2024-01-01 500.00
2 Metropolis 2024-01-02 700.00