Task4

1. Database Creation

a. Create a database to store the sales data (PostgreSQL).

CREATE DATABASE SalesData;

b. 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)

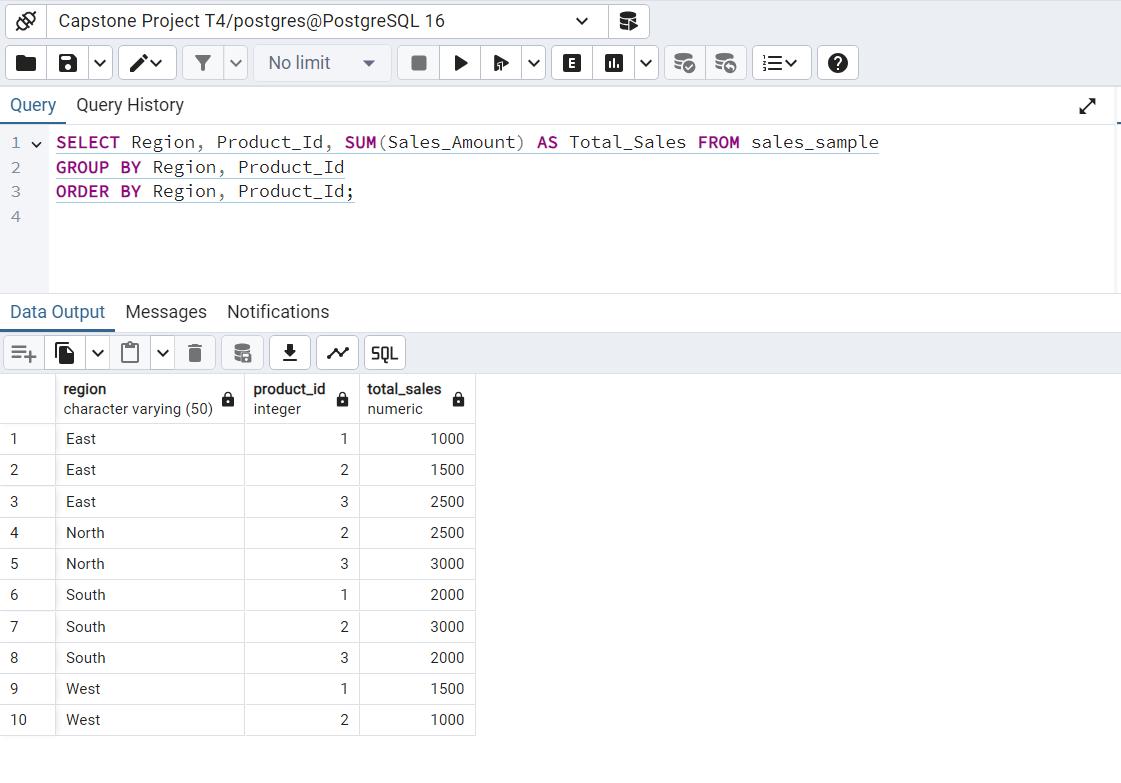
CREATE TABLE sales\_sample (Product\_Id INTEGER,  
Region VARCHAR(50),  
Date DATE,  
Sales\_Amount NUMERIC);

2. Data Creation  
a. Insert 10 sample records into the "sales\_sample" table, representing sales data.

INSERT INTO sales\_sample (Product\_Id, Region, Date, Sales\_Amount)  
VALUES (1, 'East', '2024-06-01', 1000),  
(1, 'West', '2024-06-02', 1500),  
(1, 'South', '2024-06-03', 2000),  
(2, 'North', '2024-06-04', 2500),  
(2, 'South', '2024-06-05', 3000),  
(2, 'West', '2024-06-06', 1000),  
(2, 'East', '2024-06-07', 1500),  
(3, 'South', '2024-06-08', 2000),  
(3, 'East', '2024-06-09', 2500),  
(3, 'North', '2024-06-10', 3000);

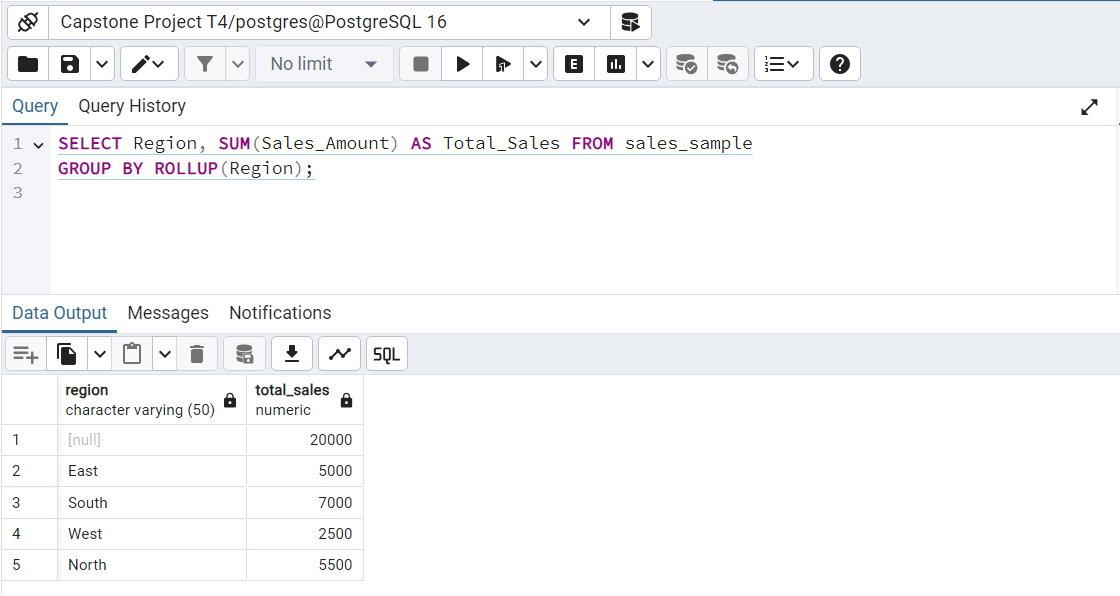
3. Perform OLAP operations  
a) Drill Down-Analyze sales data at a more detailed level. Write a query to perform drill down from region to product level to understand sales performance.

SELECT Region, Product\_Id, SUM(Sales\_Amount) AS Total\_Sales FROM sales\_sample  
GROUP BY Region, Product\_Id  
ORDER BY Region, Product\_Id;



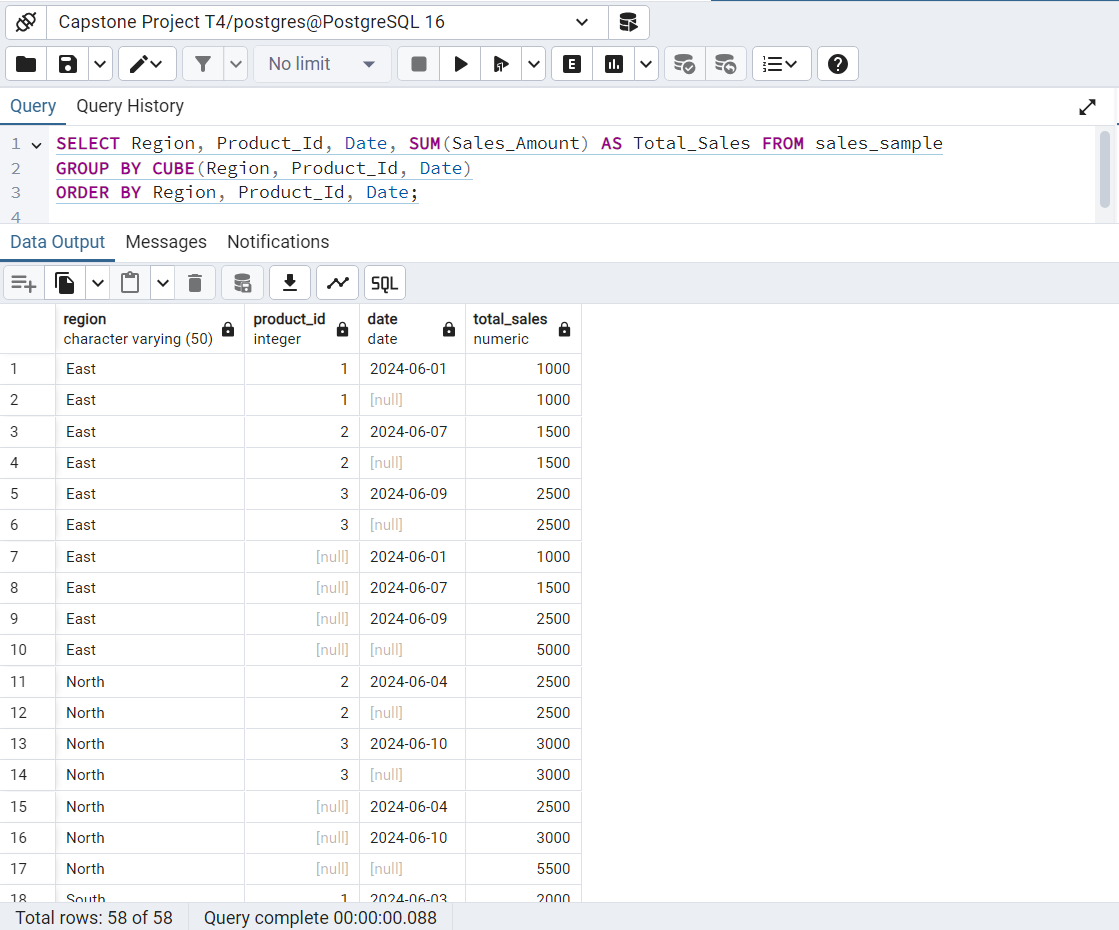
b) Rollup- To summarize sales data at different levels of granularity. Write a query to perform roll up from product to region level to view total sales by region.

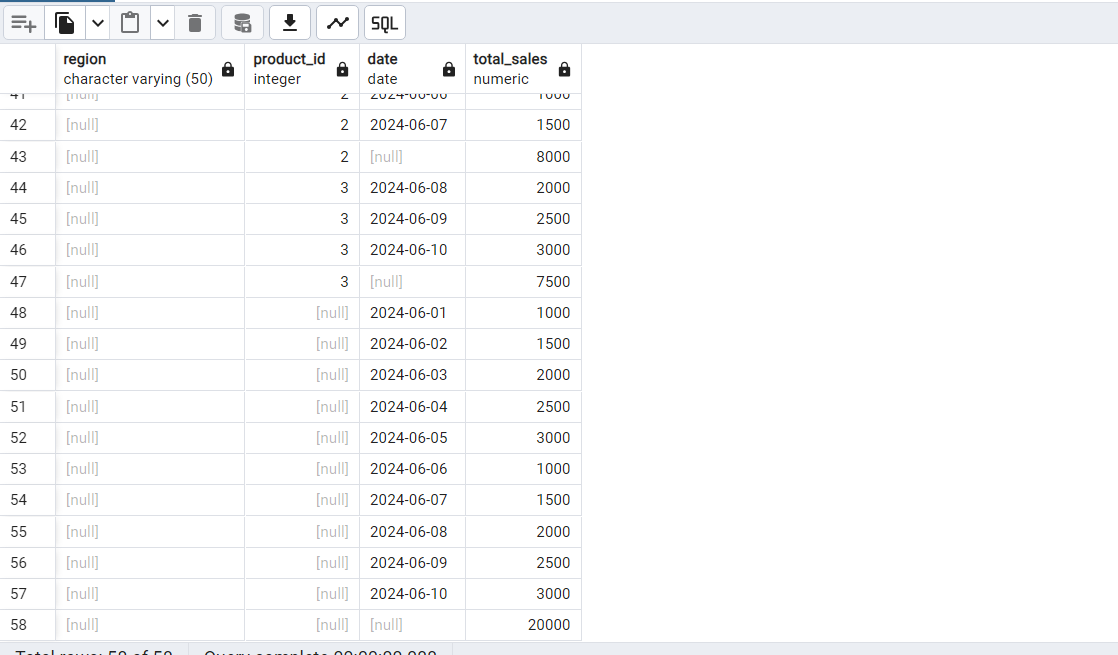
SELECT Region, SUM(Sales\_Amount) AS Total\_Sales FROM sales\_sample  
GROUP BY ROLLUP(Region);



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.

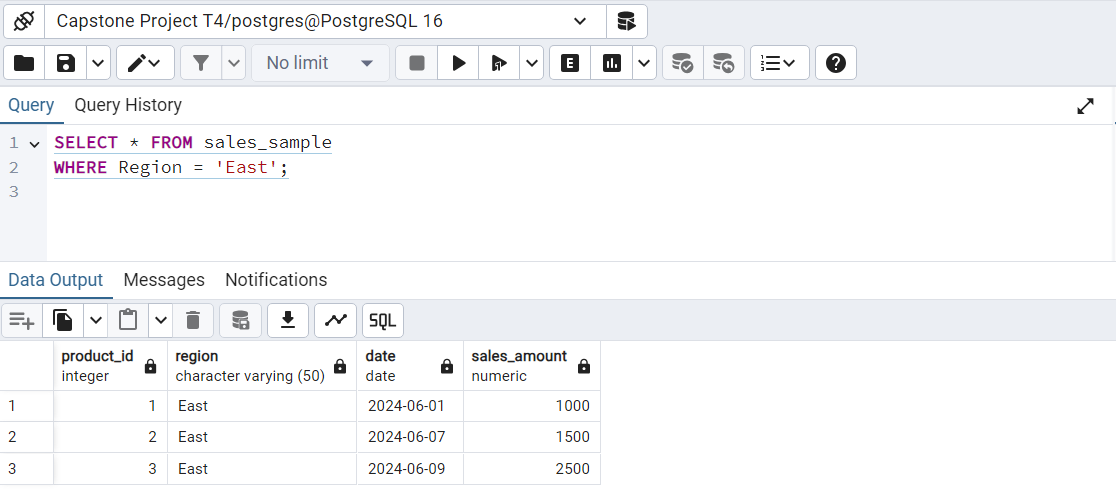
SELECT Region, Product\_Id, Date, SUM(Sales\_Amount) AS Total\_Sales FROM sales\_sample  
GROUP BY CUBE(Region, Product\_Id, Date)  
ORDER BY Region, Product\_Id, Date;



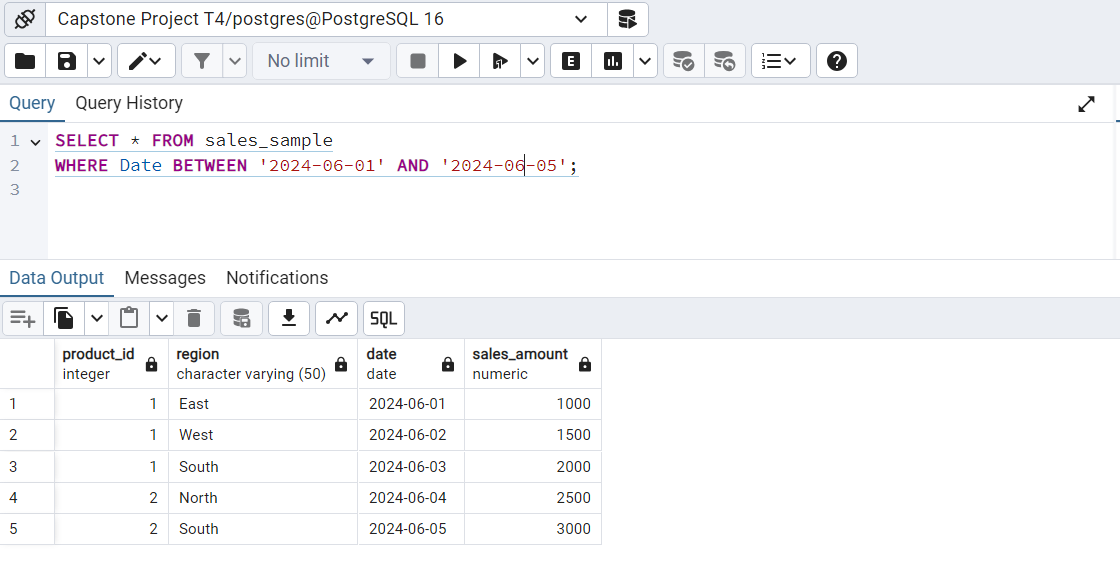


d) Slice - To extract a subset of data based on specific criteria. Write a query to slice the data to view sales for a particular region or date range.

SELECT \* FROM sales\_sample  
WHERE Region = 'East';



SELECT \* FROM sales\_sample  
WHERE Date BETWEEN '2024-06-01' AND '2024-06-05';



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

SELECT \* FROM sales\_sample  
WHERE Product\_Id = 1 AND Region = 'East' AND Date = '2024-06-01';

