Task 4 OLAP operations

1. Database creation

CREATE TABLE sales\_sample (

Product\_Id INTEGER PRIMARY KEY,

Region VARCHAR(50),

Date DATE,

Sales\_Amount NUMERIC

);

–2.data creation

INSERT INTO sales\_sample (Product\_Id, Region, Date, Sales\_Amount) VALUES

(11, 'East', '2024-04-11', 1600),

(12, 'West', '2024-04-12', 1900),

(13, 'North', '2024-04-13', 2100),

(14, 'South', '2024-04-14', 2300),

(15, 'Central', '2024-04-15', 1800),

(16, 'East', '2024-04-16', 2000),

(17, 'West', '2024-04-17', 2200),

(18, 'North', '2024-04-18', 2400),

(19, 'South', '2024-04-19', 1700),

(20, 'Central', '2024-04-20', 1900);

/\*3.perform OLAP operations

1. Drill down\*/

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

SELECT

CASE

WHEN Product\_Id IS NULL THEN 'Total'

ELSE Region

END AS Region,

Product\_Id,

SUM(Sales\_Amount) AS Total\_Sales

FROM

sales\_sample

GROUP BY

ROLLUP (Region, Product\_Id)

ORDER BY

Region,

Product\_Id;

–C.cube

GROUP BY CUBE (Product\_Id, Region, Date) ORDER BY Product\_Id, Region, DateSELECT CASE WHEN Product\_Id IS NULL AND Region IS NULL AND Date IS NULL THEN 'Total'

WHEN Product\_Id IS NULL AND Region IS NULL THEN 'Total by Date'

WHEN Product\_Id IS NULL AND Date IS NULL THEN 'Total by Region'

WHEN Region IS NULL AND Date IS NULL THEN 'Total by Product'

WHEN Product\_Id IS NULL THEN 'Total by Region, Date'

WHEN Region IS NULL THEN 'Total by Product, Date'

WHEN Date IS NULL THEN 'Total by Product, Region'

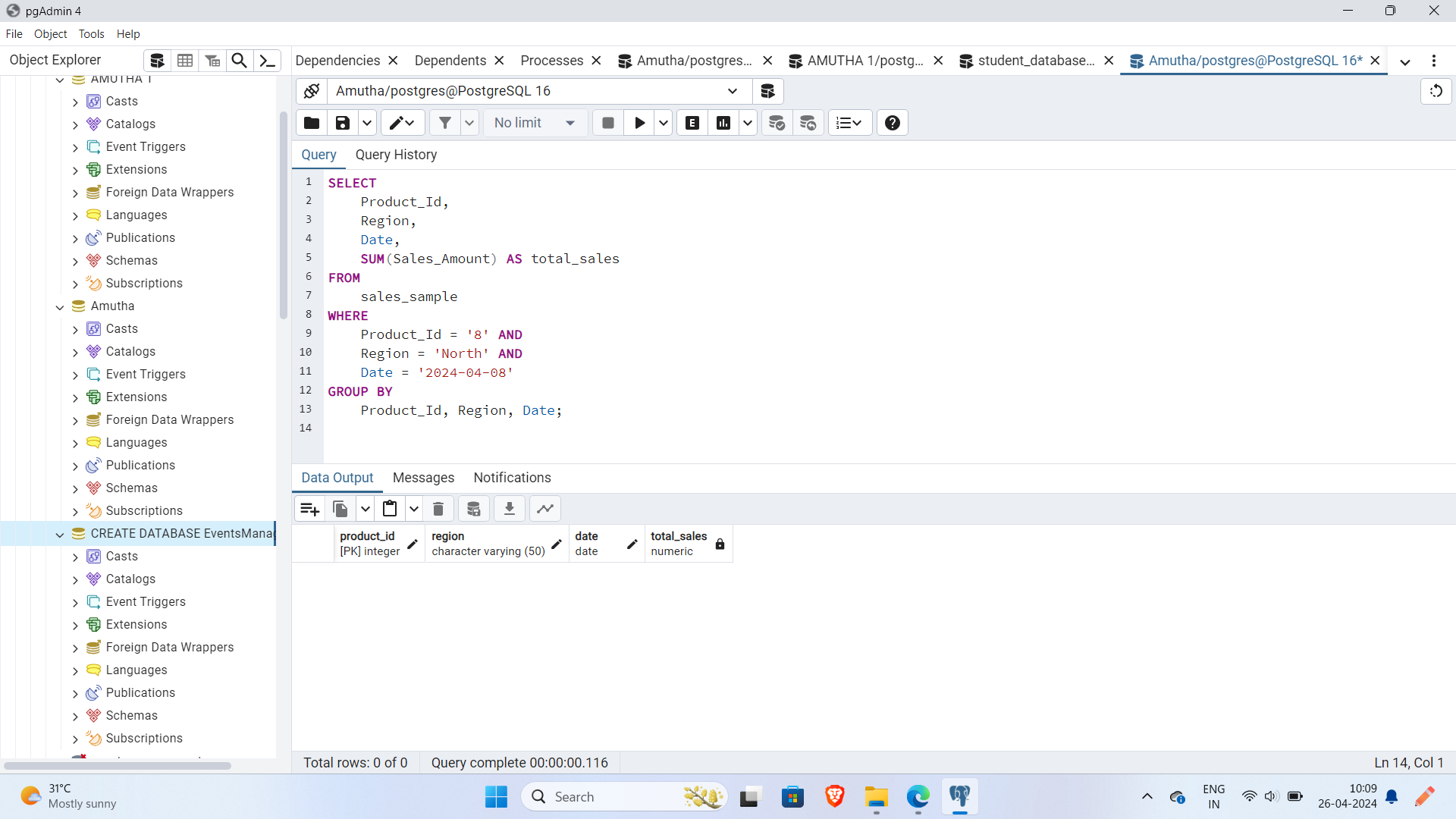
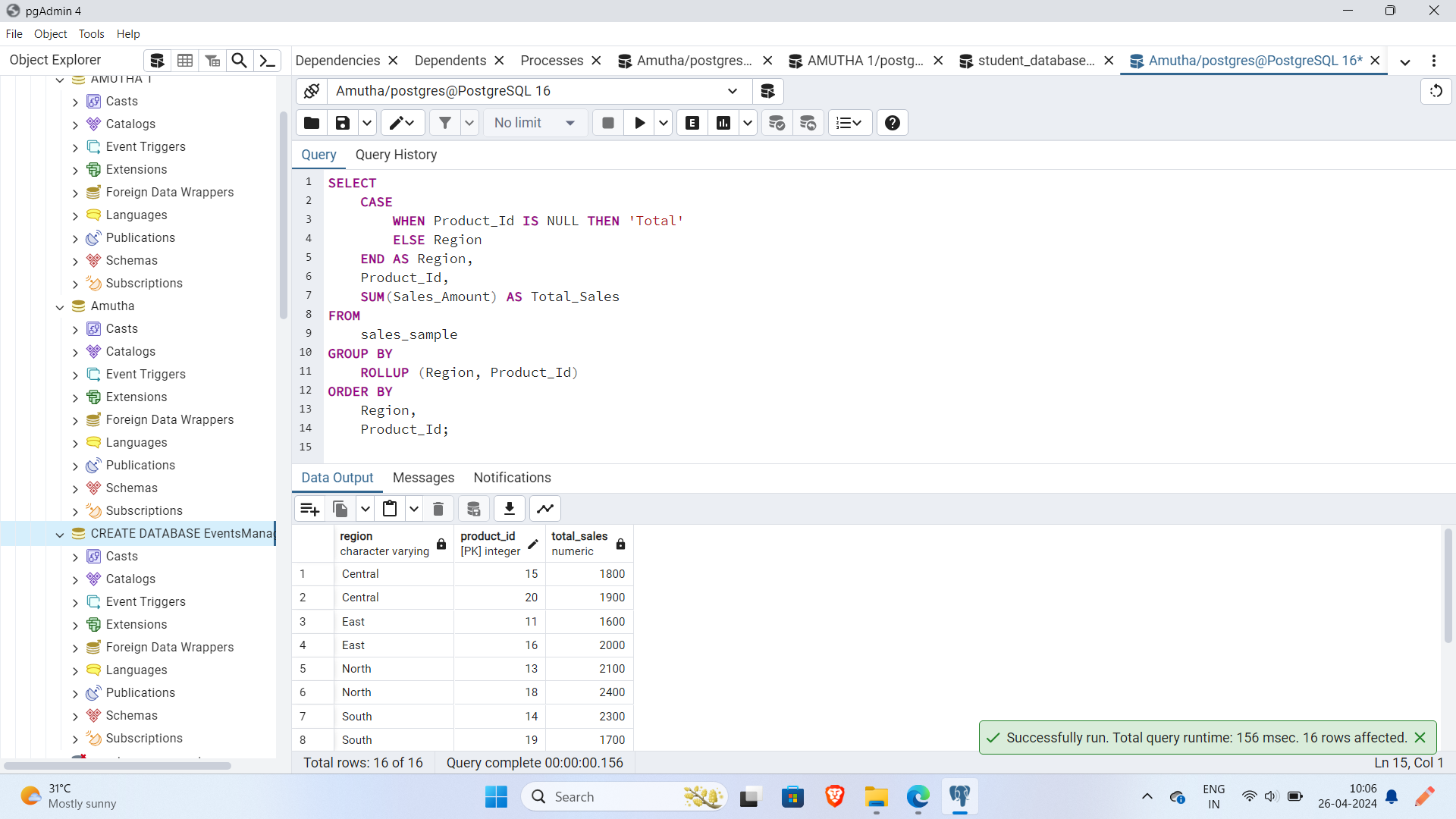
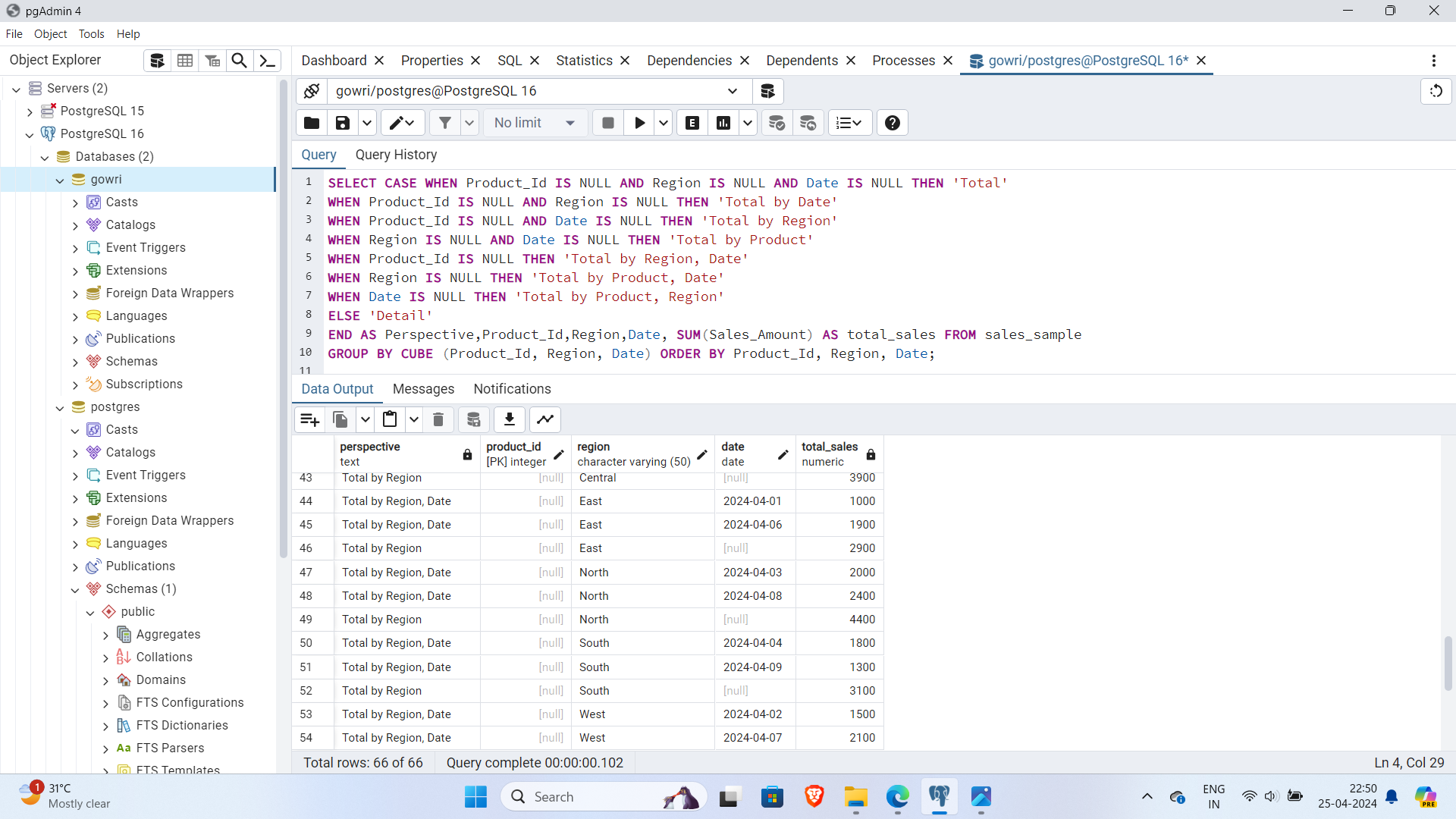
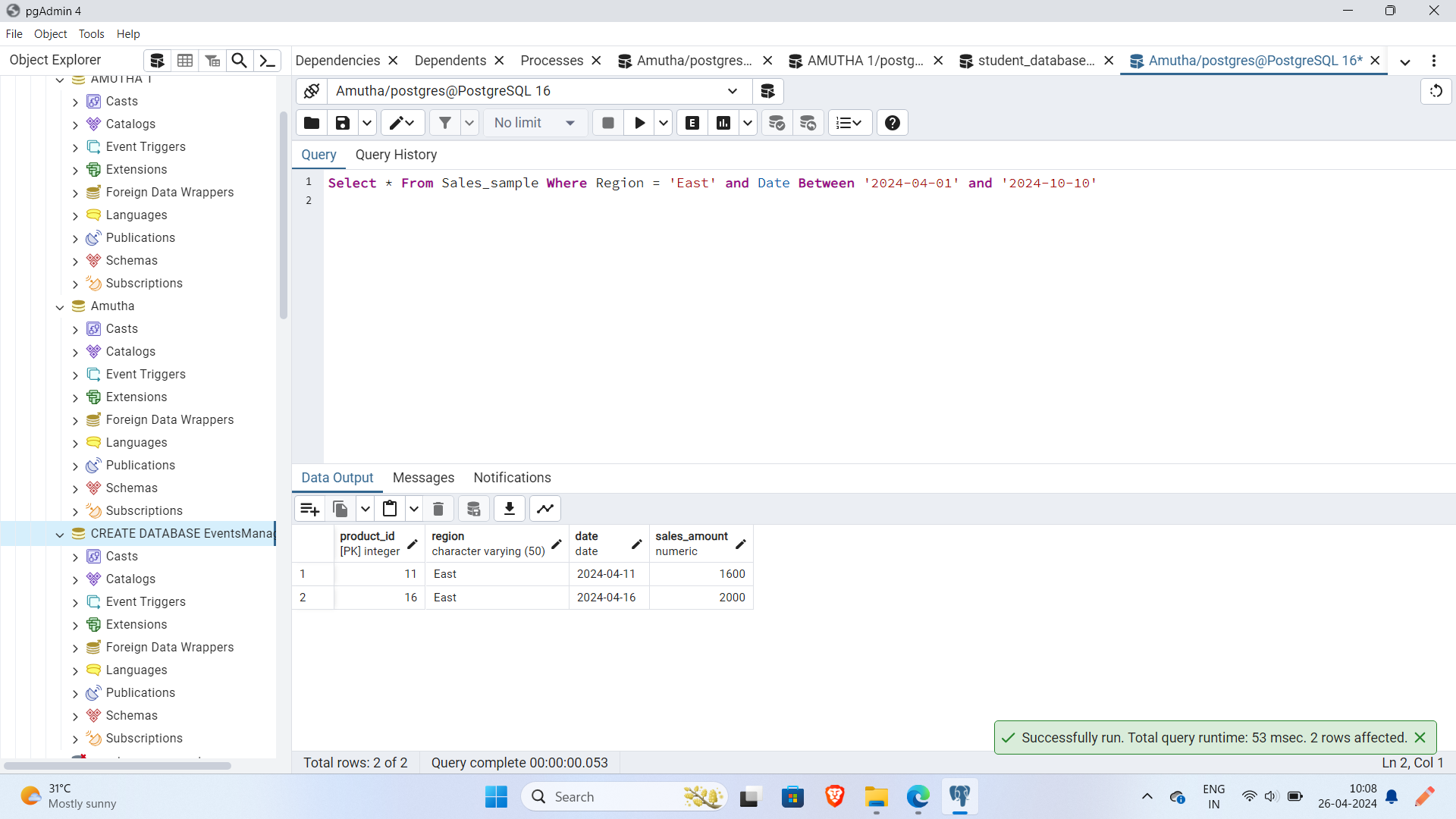
ELSE 'Detail'

END AS Perspective,Product\_Id,Region,Date, SUM(Sales\_Amount) AS total\_sales FROM sales\_sample

;

–D.slice

Select \* From Sales\_sample Where Region = 'East' and Date Between '2024-04-01' and '2024-10-10'

–E.dice

SELECT

Product\_Id,

Region,

Date,

SUM(Sales\_Amount) AS total\_sales

FROM

sales\_sample

WHERE

Product\_Id = '8' AND

Region = 'North' AND

Date = '2024-04-08'

GROUP BY

Product\_Id, Region, Date;