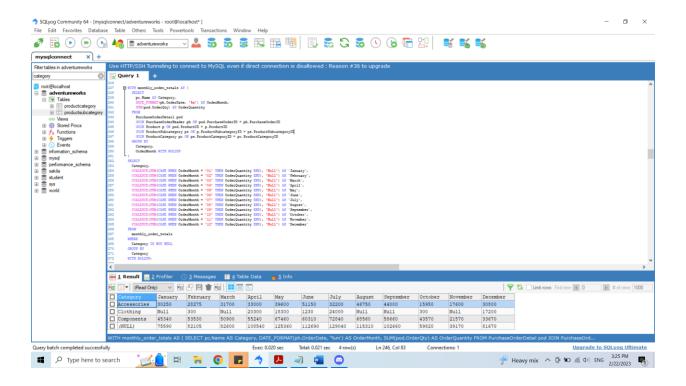
PARISA ARBAB

CSC 453 PRINCIPLE OF DATABASE SYSTEM_HW01



```
WITH monthly_order_totals AS (

SELECT

pc.Name AS Category,

DATE_FORMAT(ph.OrderDate, '%m') AS OrderMonth,

SUM(pod.OrderQty) AS OrderQuantity

FROM

PurchaseOrderDetail pod

JOIN PurchaseOrderHeader ph ON pod.PurchaseOrderID = ph.PurchaseOrderID

JOIN Product p ON pod.ProductID = p.ProductID

JOIN ProductSubcategory ps ON p.ProductSubcategoryID = ps.ProductSubcategoryID

JOIN ProductCategory pc ON ps.ProductCategoryID = pc.ProductCategoryID

GROUP BY

Category,

OrderMonth WITH ROLLUP
```

SELECT

```
Category,
```

```
COALESCE(SUM(CASE WHEN OrderMonth = '01' THEN OrderQuantity END), 'Null') AS `January`,
COALESCE(SUM(CASE WHEN OrderMonth = '02' THEN OrderQuantity END), 'Null') AS `February`,
COALESCE(SUM(CASE WHEN OrderMonth = '03' THEN OrderQuantity END), 'Null') AS `March`,
COALESCE(SUM(CASE WHEN OrderMonth = '04' THEN OrderQuantity END), 'Null') AS `April',
COALESCE(SUM(CASE WHEN OrderMonth = '05' THEN OrderQuantity END), 'Null') AS `May`,
COALESCE(SUM(CASE WHEN OrderMonth = '06' THEN OrderQuantity END), 'Null') AS `June`,
COALESCE(SUM(CASE WHEN OrderMonth = '07' THEN OrderQuantity END), 'Null') AS 'July',
COALESCE(SUM(CASE WHEN OrderMonth = '08' THEN OrderQuantity END), 'Null') AS 'August',
COALESCE(SUM(CASE WHEN OrderMonth = '09' THEN OrderQuantity END), 'Null') AS `September`,
COALESCE(SUM(CASE WHEN OrderMonth = '10' THEN OrderQuantity END), 'Null') AS 'October',
COALESCE(SUM(CASE WHEN OrderMonth = '11' THEN OrderQuantity END), 'Null') AS 'November',
COALESCE(SUM(CASE WHEN OrderMonth = '12' THEN OrderQuantity END), 'Null') AS `December`
FROM
 monthly_order_totals
WHERE
Category IS NOT NULL
GROUP BY
Category
WITH ROLLUP;
```

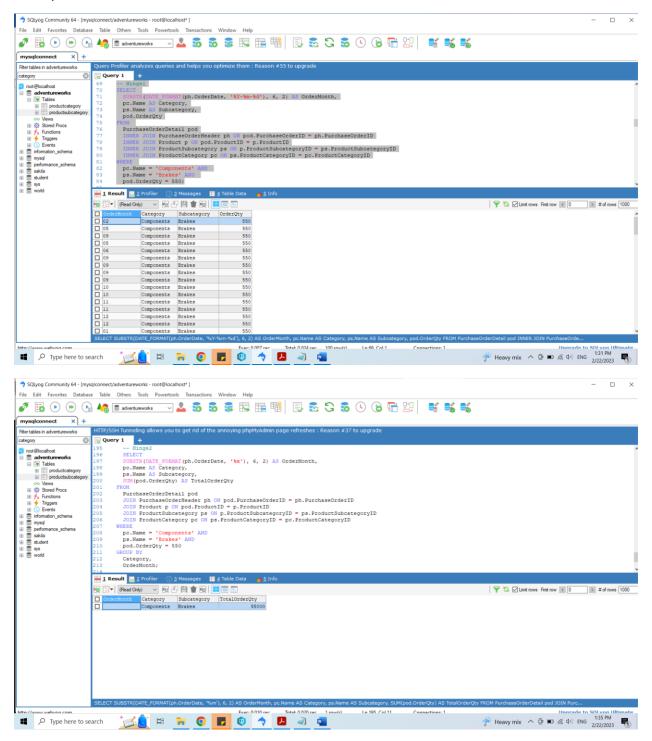
This is a SQL query that retrieves monthly order totals for products categorized by product category. The query first defines a common table expression named "monthly_order_totals" that aggregates the order quantity for each category and order month. The query then uses the ROLLUP operator to group the results by category and order month and also include a summary row that shows the total order quantity for each category across all order months.

The SELECT statement retrieves the order quantities for each category and order month by using a series of SUM and CASE statements to pivot the data. The COALESCE function is used to display "Null" instead of a NULL value in the output.

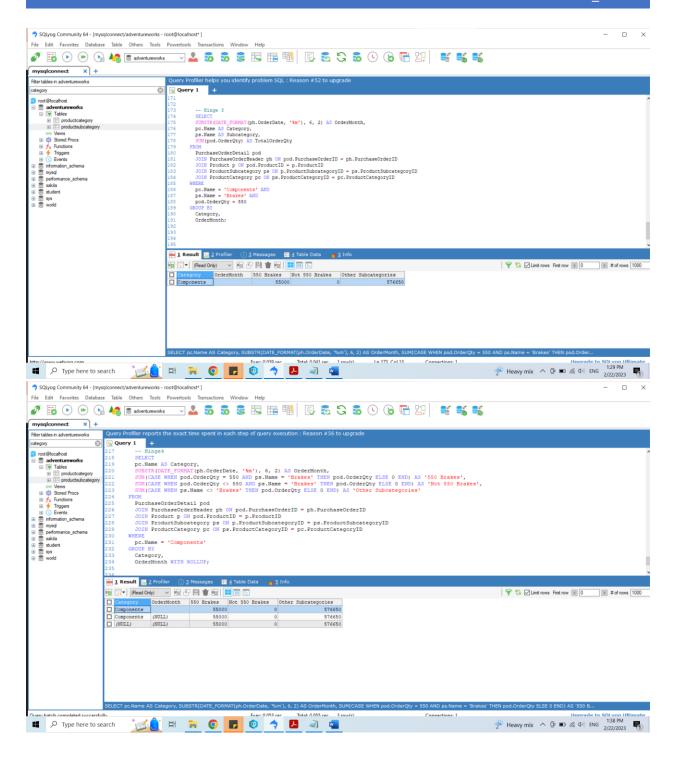
The WHERE clause filters out the summary row with a NULL category value, and the GROUP BY clause groups the results by category and also includes a summary row with the total order quantity for all categories across all order months.

Overall, this query provides a useful summary of monthly order totals for different product categories, allowing analysts to identify trends and patterns in sales over time.

History:



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