

**Texas A&M Commerce University**

**College of Business - Department of Marketing & Business Analytics**

Assignment for Course:      BUSA 526 Database Management

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CERTIFICATION OF AUTHORSHIP: I certify that I am the author of this paper and that any assistance I received in its preparation is fully acknowledged and disclosed in the paper. I have also cited any sources from which I used data, ideas of words, whether quoted directly or paraphrased.  I also certify that this paper was prepared by me specifically for this course.

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**Query Statements**

1. Write an SQL query to show the top 10 best-selling products by total Qty (i.e., quantity).

**QUERY USING JOINS: -**

SELECT P.ProductName AS ProductName,

RS.ProductKey AS ProductKey,

SUM(RS.QTY) AS TotalQuantity

FROM RetailSales as RS

LEFT JOIN Products AS P

ON P.ProductKey = RS.ProductKey

GROUP BY P.ProductKey, RS.ProductKey

ORDER BY TotalQuantity DESC

LIMIT 10

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**Alternate Method using WHERE clause:**

SELECT p."ProductName" AS ProductName,

rs."ProductKey" AS ProductKey,

SUM(rs."Qty") AS TotalQuantity

FROM "RetailSales" as rs, "Products" AS p

WHERE p."ProductKey" = rs."ProductKey"

GROUP BY p."ProductName", rs."ProductKey"

ORDER BY TotalQuantity DESC

LIMIT 10

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1. Write an SQL query to show the total gross sales revenues each department makes by selling each brand.

**QUERY USING JOINS: -**

SELECT P.Dept AS Department,

P.brands,

SUM(RS.grosssales) AS GrossSales

FROM Products AS P

LEFT JOIN RetailSales AS RS

ON P.ProductKey = RS.ProductKey

GROUP BY P.Dept, P.brands

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Alternate way using WHERE clause:

SELECT P."Dept" AS Department,

P."Brands" AS Brands,

SUM(RS."GrossSales") AS GrossSales

FROM "Products" AS P, "RetailSales" AS RS

WHERE P."ProductKey" = RS."ProductKey"

GROUP BY P."Dept", P."Brands"

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1. Write an SQL query to show the total net sales revenues each department makes in-store and online respectively.

**QUERY: -**

SELECT SUM(RS."NetSales") AS TotalNetSales,

P."Dept" AS Department, S."OLStore" AS StoreType

FROM "RetailSales" AS RS, "Products" AS P, "Stores" AS S

WHERE P."ProductKey" = RS."ProductKey" AND RS."StoreKey" = S."StoreKey"

GROUP BY P."Dept", S."OLStore"

ORDER BY TotalNetSales

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1. Write an SQL query to show how many customers are served by all cash registers of Store #1 per hour? (Note: StoreKey should be 1 because only Store #1’s cash registers are of analytical interest. The fact table records data from each scan. So, you should not use SUM(Qty) because the question asks the total number of customers per hour, not the total number of scanned products per hour. Hint: **The degenerate dimension can help!**)

**QUERY: -**

SELECT T.Hour AS Hour,

COUNT(DISTINCT RS.CustomerKey) AS CustomersPerHour

FROM Time AS T

LEFT JOIN RetailSales AS RS

ON T.TimeKey = RS.TimeKey

WHERE RS.StoreKey = 1

GROUP BY T.Hour

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**Alternate way using WHERE clause:**

SELECT T."Hour" AS Hour,

COUNT(DISTINCT RS."CustomerKey") AS CustomersPerHour

FROM "Time" AS T, "RetailSales" AS RS

WHERE T."TimeKey" = RS."TimeKey"

AND RS."StoreKey" = 1

GROUP BY T."Hour"

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1. Use “Graph Visualiser” from PostgreSQL to visualize the results of question 4. Make a screenshot of the chart and save it into your submission.

**QUERY: -**

SELECT T.Hour AS Hour,

COUNT(DISTINCT RS.CustomerKey) AS CustomersPerHour

FROM Time AS T

LEFT JOIN RetailSales AS RS

ON T.TimeKey = RS.TimeKey

WHERE RS.StoreKey = 1

GROUP BY T.Hour

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Alternate way using bar chart:

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1. Write an SQL query to show how many customers are served by Store #1 in each day of a week. (Note: The SQL query should show the total number of customers served in Store #1 on Monday, Tuesday, … Sunday. The number of customers and week day information must be in the same table. You **should not** write a query for Monday, and then another query for Tuesday, and then another query for Wednesday, etc. Using just one query to show the number of customers served by Store #1 in each day of a week is required).

**QUERY: -**

SELECT D.DayOfWeek,

COUNT(DISTINCT RS.CustomerKey) AS CustomersPerDay

FROM RetailSales AS RS

JOIN Dates AS D

ON RS.DateKey = D.DateKey

WHERE RS.StoreKey = 1

GROUP BY D.DayOfWeek

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Alternate way using Where clause:

SELECT D."DayOfWeek",

COUNT(DISTINCT RS."CustomerKey") AS CustomersPerDay

FROM "RetailSales" AS RS, "Dates" AS D

WHERE RS."DateKey" = D."DateKey"

AND RS."StoreKey" = 1

GROUP BY D."DayOfWeek"

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7. Write an SQL query to show what are the best-selling products by total Qty in the fourth quarter in the “Beauty&Health” department.

**QUERY: -**

SELECT P.ProductName,

SUM(RS.Qty) AS TotalQuantity

FROM RetailSales AS RS

JOIN Products AS P

ON RS.ProductKey = P.ProductKey

JOIN Dates AS D

ON RS.DateKey = D.DateKey

WHERE P.Dept = 'Beauty&Health' AND D.Quarter = 4

GROUP BY P.ProductName

ORDER BY TotalQuantity DESC;

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**Alternate way using Where clause:**

SELECT P."ProductName",

SUM(RS."Qty") AS TotalQuantity

FROM "RetailSales" AS RS, "Products" AS P, "Dates" AS D

WHERE RS."ProductKey" = P."ProductKey"

AND RS."DateKey" = D."DateKey"

AND P."Dept" = 'Beauty&Health' AND D."Quarter" = 4

GROUP BY P."ProductName"

ORDER BY TotalQuantity DESC;

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8.Write an SQL query to show whether there is a monthly increasing total GrossSales trend in the “Electronics” department.

**QUERY: -**

SELECT D.MonthOfYear,

SUM(RS.GrossSales) AS GrossSales,

LAG(SUM(RS.GrossSales)) OVER (ORDER BY D.MonthOfYear) AS PreviousMonthGrossSales,

CASE

WHEN SUM(RS.GrossSales) > LAG(SUM(RS.GrossSales)) OVER (ORDER BY D.MonthOfYear)

THEN 'Increasing'

WHEN SUM(RS.GrossSales) < LAG(SUM(RS.GrossSales)) OVER (ORDER BY D.MonthOfYear)

THEN 'Decreasing'

ELSE 'No Change'

END AS Trend

FROM RetailSales AS RS

JOIN Products AS P

ON RS.ProductKey = P.ProductKey

JOIN Dates AS D

ON RS.DateKey = D.DateKey

WHERE P.Dept = 'Electronics'

GROUP BY D.MonthOfYear

ORDER BY D.MonthOfYear

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