**DAB203 Assignment Week 8**

1. **How many distinct products, as measured by distinct product IDs in each customer’s order?**

SELECT YEAR(OrderDate) as year, MONTH(OrderDate) as month,

COUNT(\*) as numorders,

COUNT(DISTINCT CustomerId) as numcusts,

SUM(prodsperord) as sumprodsperorder,

SUM(prodsperord)\*1.0/COUNT(\*) as avgperorder,

SUM(prodsperord)\*1.0/COUNT(DISTINCT CustomerId) as avgpercust

FROM (SELECT o.OrderId, o.CustomerId, o.OrderDate,

COUNT(DISTINCT ProductId) as prodsperord

FROM Orders o JOIN OrderLines ol ON o.orderid = ol.orderid

GROUP BY o.orderid, o.customerid, o.orderdate ) o

GROUP BY YEAR(OrderDate), MONTH(OrderDate)

ORDER BY year, month

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1. **How has the average amount spent per customer order changed?**

SELECT YEAR(OrderDate) as year, MONTH(OrderDate) as month,

COUNT(\*) as numorders, COUNT(DISTINCT CustomerId) as numcust,

SUM(TotalPrice) as totspend,

SUM(TotalPrice)\*1.0/COUNT(\*) as avgordersize,

SUM(TotalPrice)\*1.0/COUNT(DISTINCT CustomerId) as avgcustorder

FROM Orders o

GROUP BY YEAR(OrderDate), MONTH(OrderDate)

ORDER BY year, month

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1. **Has the proportion of bills by day of the week changed over the years?**

SELECT billdow, COUNT(\*) as numbills

FROM

(SELECT ol.\*, DATENAME(dw, BillDate) as billdow,

(CASE WHEN DATENAME(dw, BillDate) = 'Monday' THEN 1

WHEN DATENAME(dw, BillDate) = 'Tuesday' THEN 2

WHEN DATENAME(dw, BillDate) = 'Wednesday' THEN 3

WHEN DATENAME(dw, BillDate) = 'Thursday' THEN 4

WHEN DATENAME(dw, BillDate) = 'Friday' THEN 5

WHEN DATENAME(dw, BillDate) = 'Saturday' THEN 6

WHEN DATENAME(dw, BillDate) = 'Sunday' THEN 7

END) as billdowNum

FROM OrderLines ol

) ol

GROUP BY billdow,billdowNum

ORDER BY billdowNum

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SELECT YEAR(BillDate) as theyear,

AVG(CASE WHEN dow = 'Monday' THEN 1.0 ELSE 0 END) as Monday,

AVG(CASE WHEN dow = 'Tuesday' THEN 1.0 ELSE 0 END) as Tuesday,

AVG(CASE WHEN dow = 'Wednesday' THEN 1.0 ELSE 0 END) as Wednesday,

AVG(CASE WHEN dow = 'Thursday' THEN 1.0 ELSE 0 END) as Thursday,

AVG(CASE WHEN dow = 'Friday' THEN 1.0 ELSE 0 END) as Friday,

AVG(CASE WHEN dow = 'Saturday' THEN 1.0 ELSE 0 END) as Saturday,

AVG(CASE WHEN dow = 'Sunday' THEN 1.0 ELSE 0 END) as Sunday

FROM (SELECT ol.\*, DATENAME(dw, BillDate) as dow FROM OrderLines ol) ol

GROUP BY YEAR(BillDate)

ORDER BY theyear

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1. **How Long Between Two Dates?**

SELECT DATEDIFF(day, o.OrderDate, ol.ShipDate) as days, COUNT(\*) as numol

FROM Orders o JOIN

OrderLines ol

ON o.OrderId = ol.OrderId

GROUP BY DATEDIFF(day, o.OrderDate, ol.ShipDate)

ORDER BY days

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1. **Year-over-Year Comparisons: Comparison by Day**

Select month([start\_date]) as mon, DAY([start\_date]) as dom,

sum(Case when year([start\_date]) = 2004 then 1 else 0 end) as n2004,

sum(Case when year([start\_date]) = 2005 then 1 else 0 end) as n2005,

sum(Case when year([start\_date]) = 2006 then 1 else 0 end) as n2006

from Subscribers s

where year([start\_date]) in (2004, 2005, 2006)

group by month([start\_date]), DAY([start\_date])

order by mon, dom

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1. **Year-over-Year Comparisons: Comparison by Month?**

Select month([start\_date]) as month,

sum(Case when year([start\_date]) = 2004 then 1 else 0 end) as n2004,

sum(Case when year([start\_date]) = 2005 then 1 else 0 end) as n2005,

sum(Case when year([start\_date]) = 2006 then 1 else 0 end) as n2006

from Subscribers s

where year([start\_date]) in (2004, 2005, 2006)

group by month([start\_date])

order by month

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