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--Date: 11/2/2016
--CIS310-01
--A8

--1--CUSTOMERS FROM CALIFORNIA, BOUGHT RED MOUNTAIN BIKES IN 9/2003
--SOLUTION
SELECT C.CUSTOMERID, C.LASTNAME, C.FIRSTNAME, B.MODELTYPE, P.COLORLIST,B.ORDERDATE,
CI.STATE
FROM CUSTOMER C INNER JOIN BICYCLE B ON C.CUSTOMERID=B.CUSTOMERID
INNER JOIN PAINT P ON  B.PAINTID=P.PAINTID
INNER JOIN CITY CI ON C.CITYID=CI.CITYID
WHERE CI.STATE = 'CA' AND P.COLORLIST='RED' AND B.MODELTYPE='Mountain'
AND YEAR(B.ORDERDATE)=2003 AND MONTH(B.ORDERDATE)=9
--2--NO RETAILSTORE INVOLVED
--SOLUTION
SELECT E.EMPLOYEEID, E.LASTNAME, CI.STATE,B.MODELTYPE, B.STOREID,B.ORDERDATE
FROM EMPLOYEE E INNER JOIN BICYCLE B ON E.EmployeeID=B.EMPLOYEEID
INNER JOIN CUSTOMER C ON C.CUSTOMERID=B.CUSTOMERID
INNER  JOIN CITY CI ON CI.CITYID=C.CITYID
WHERE B.MODELTYPE='RACE' AND YEAR(ORDERDATE)=2001
AND CI.STATE='WI' AND (B.STOREID =1 OR B.STOREID=2)
--3--LIST DISTINCT REAR DERAILLEUR INSTALLED
SELECT DISTINCT C.COMPONENTID, M.MANUFACTURERNAME, C.PRODUCTNUMBER
FROM COMPONENT C INNER JOIN MANUFACTURER M ON C.MANUFACTURERID=M.MANUFACTURERID
INNER JOIN BIKEPARTS BP ON C.COMPONENTID=BP.COMPONENTID
INNER JOIN BICYCLE B ON BP.SERIALNUMBER=B.SERIALNUMBER
WHERE C.CATEGORY LIKE 'Rear derailleur' AND B.MODELTYPE='ROAD'
AND SALESTATE='FL' AND YEAR(DATEINSTALLED)=2002

--4--FIND LARGEST FRAMESIZE BOUGHT, USE NESTED QUERY
SELECT C.CUSTOMERID, C.LASTNAME, C.FIRSTNAME,
B.MODELTYPE,B.SALESTATE,B.FRAMESIZE,B.ORDERDATE
FROM CUSTOMER C INNER JOIN BICYCLE B ON C.CUSTOMERID=B.CUSTOMERID
WHERE MODELTYPE='MOUNTAIN FULL' AND SALESTATE='GA' AND YEAR(ORDERDATE)=2004 AND
B.FRAMESIZE=(SELECT MAX(FRAMESIZE)
FROM BICYCLE
WHERE MODELTYPE='MOUNTAIN FULL' AND SALESTATE='GA' AND YEAR(ORDERDATE)=2004)

--5--FIND MANUFACTURER WITH HIGHEST DISCOUNT IN 2003
SELECT DISTINCT M.MANUFACTURERID, M.MANUFACTURERNAME
FROM MANUFACTURER M INNER JOIN  COMPONENT C ON M.MANUFACTURERID=C.MANUFACTURERID
INNER JOIN PURCHASEITEM P ON C.COMPONENTID=P.COMPONENTID
INNER JOIN PURCHASEORDER PO ON P.PURCHASEID=PO.PURCHASEID
WHERE PO.DISCOUNT =(SELECT MAX(DISCOUNT)
FROM PURCHASEORDER
WHERE YEAR(ORDERDATE)=2003)


--6--USE NESTED QUERY TO FIND MOST EXPENSIVE ROAD BIKE
SELECT DISTINCT C.COMPONENTID, M.MANUFACTURERNAME, C.PRODUCTNUMBER, C.ROAD, C.CATEGORY,
C.LISTPRICE, C.QUANTITYONHAND, B.MODELTYPE
FROM COMPONENT C INNER JOIN MANUFACTURER M ON C.MANUFACTURERID = M.MANUFACTURERID
INNER JOIN BIKEPARTS BP ON C.COMPONENTID=BP.COMPONENTID
INNER JOIN BICYCLE B ON BP.SERIALNUMBER=B.SERIALNUMBER
WHERE QUANTITYONHAND>200 AND B.MODELTYPE='ROAD'AND C.LISTPRICE =(SELECT MAX(C.LISTPRICE)
AS [MAX LISTPRICE]
FROM COMPONENT C INNER JOIN BIKEPARTS BP ON C.COMPONENTID=BP.COMPONENTID
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INNER JOIN BICYCLE B ON BP.SERIALNUMBER=B.SERIALNUMBER
WHERE QUANTITYONHAND>200 AND B.MODELTYPE='ROAD')

--7--COULD DO TWO WAYS MAX VS TOP1
SELECT TOP 1 C.COMPONENTID, M.MANUFACTURERNAME, C.PRODUCTNUMBER, C.CATEGORY,C.YEAR,
C.QUANTITYONHAND *C.ESTIMATEDCOST AS [VALUE]
FROM COMPONENT C INNER JOIN MANUFACTURER M ON C.MANUFACTURERID=M.MANUFACTURERID
ORDER BY VALUE DESC
--OR
SELECT C.COMPONENTID, M.MANUFACTURERNAME, C.PRODUCTNUMBER, C.CATEGORY,C.YEAR,
C.QUANTITYONHAND *C.ESTIMATEDCOST AS [VALUE]
FROM COMPONENT C INNER JOIN MANUFACTURER M ON C.MANUFACTURERID=M.MANUFACTURERID
WHERE QuantityOnHand*ESTIMATEDCOST=(SELECT MAX(QUANTITYONHAND*ESTIMATEDCOST)
FROM COMPONENT)


--8--USE HAVING TO FIND TOP COMPONENTS INSTALLED IN A DAY
SELECT E.EMPLOYEEID, E.LASTNAME, BP.DATEINSTALLED,COUNT(COMPONENTID) AS
[COUNTOFCOMPONENTS]
FROM EMPLOYEE E INNER JOIN BIKEPARTS BP ON E.EMPLOYEEID=BP.EMPLOYEEID
GROUP BY BP.DATEINSTALLED, E.EMPLOYEEID, E.LASTNAME
HAVING COUNT(COMPONENTID)=(SELECT TOP 1 COUNT(COMPONENTID)
FROM BIKEPARTS BP INNER JOIN EMPLOYEE E ON BP.EMPLOYEEID=E.EMPLOYEEID
WHERE E.EMPLOYEEID<>0
GROUP BY DATEINSTALLED,E.EMPLOYEEID,E.LASTNAME
ORDER BY COUNT(COMPONENTID) DESC)


--9 MOST POPULAR LETTER SYLE ON RACE BIKES IN 2003
SELECT TOP 1 L.LETTERSTYLE, COUNT(B.SERIALNUMBER) AS[COUNTOFSERIALNUMBER]
FROM BICYCLE B INNER JOIN LETTERSTYLE L ON L.LETTERSTYLE=B.LETTERSTYLEID
WHERE B.MODELTYPE='RACE' AND YEAR(ORDERDATE)=2003
GROUP BY LETTERSTYLE
ORDER BY COUNT(SERIALNUMBER) DESC

--10--USE CUSTOMER TRANSACTION TO FIND TOP AMOUNT PAID IN 2002

--ANSWER
SELECT DISTINCT C.CUSTOMERID, C.LASTNAME, C.FIRSTNAME, COUNT(SERIALNUMBER) AS [Number of
Bikes], CT.AMOUNT AS [Amount Spent]
FROM CUSTOMER C INNER JOIN CUSTOMERTRANSACTION CT ON C.CUSTOMERID=CT.CUSTOMERID
INNER JOIN BICYCLE B ON C.CUSTOMERID=B.CUSTOMERID
WHERE CT.AMOUNT =(SELECT TOP 1 AMOUNT
FROM CUSTOMERTRANSACTION CT INNER JOIN CUSTOMER C ON CT.CUSTOMERID=C.CUSTOMERID
INNER JOIN BICYCLE B ON C.CUSTOMERID=B.CUSTOMERID
WHERE YEAR(ORDERDATE)=2002
ORDER BY AMOUNT DESC)
GROUP BY C.CUSTOMERID, C.LASTNAME, C.FIRSTNAME, CT.AMOUNT

--11--COMPARE SALES
SELECT YEAR(ORDERDATE) AS SALEYEAR, COUNT(SERIALNUMBER) AS [COUNTOFSERIALNUMER]
FROM BICYCLE
WHERE (MODELTYPE ='MOUNTAIN' OR MODELTYPE= 'MOUNTAIN FULL')
AND YEAR(ORDERDATE) BETWEEN 2000 AND 2004
GROUP BY YEAR(ORDERDATE)
ORDER BY YEAR(ORDERDATE) DESC
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--12--MOST EXPENSIVE COMPONENT BOUGHT IN 2003
SELECT C.COMPONENTID, M.MANUFACTURERNAME, C.PRODUCTNUMBER, C.CATEGORY, MT.AMOUNT
AS[VALUE]
FROM COMPONENT C INNER JOIN MANUFACTURER M ON M.MANUFACTURERID =C.MANUFACTURERID
INNER JOIN MANUFACTURERTRANSACTION MT ON M.MANUFACTURERID=MT.MANUFACTURERID
WHERE MT.AMOUNT=(SELECT MAX(AMOUNT)
FROM MANUFACTURERTRANSACTION
WHERE YEAR(TRANSACTIONDATE) = 2003)

--13--RED BIKES IN 2003
SELECT E.EMPLOYEEID, E.LASTNAME,COUNT(SERIALNUMBER) AS [NUMBER PAINTED] --NUMBER PAINTED
FROM EMPLOYEE E INNER JOIN BICYCLE B ON E.EMPLOYEEID=B.PAINTER
INNER JOIN PAINT P ON P.PAINTID=B.PAINTID
WHERE YEAR(STARTDATE)=2003 AND MONTH(STARTDATE)=5 AND P.COLORLIST='RED' AND
B.ModelType='RACE'
GROUP BY E.EMPLOYEEID, E.LASTNAME
ORDER BY COUNT(SERIALNUMBER) DESC

--14--FIND TOP1, ORDER BY SALEPRICE DESC
SELECT STOREID
FROM RETAILSTORE
WHERE STOREID=(SELECT TOP 1 R.STOREID
FROM RETAILSTORE R INNER JOIN CITY C ON R.CITYID=C.CITYID
INNER JOIN BICYCLE B ON R.STOREID=B.STOREID
WHERE C.STATE='CA' AND YEAR(ORDERDATE)=2003
GROUP BY R.STOREID
ORDER BY SUM(SALEPRICE) DESC)
--15--ADD UP WEIGHT
SELECT SUM(WEIGHT) AS [TOTAL WEIGHT]
FROM COMPONENT C INNER JOIN BIKEPARTS BP ON C.COMPONENTID= BP.COMPONENTID
WHERE SERIALNUMBER =11356
--16--CAMPY RECORD 2002

--ANSWER
SELECT G.GROUPNAME, SUM(LISTPRICE) AS [SUMOFLISTPRICE]
FROM GROUPO G INNER JOIN GROUPCOMPONENTS GC ON G.COMPONENTGROUPID=GC.GROUPID
INNER JOIN COMPONENT C ON GC.COMPONENTID=C.COMPONENTID
WHERE G.GROUPNAME ='CAMPY RECORD 2002'
GROUP BY G.GROUPNAME

--17--COMPARE CARBON FIBER AND TITANUIM
SELECT T.MATERIAL, COUNT(B.SERIALNUMBER) AS [COUNTOFSERIALNUMBER]
FROM TUBEMATERIAL T INNER JOIN BICYCLETUBEUSAGE BU ON T.TUBEID=BU.TUBEID
INNER JOIN BICYCLE B ON BU.SERIALNUMBER = B.SERIALNUMBER
WHERE MODELTYPE='RACE' AND YEAR(B.STARTDATE)=2003
 AND (MATERIAL='CARBON FIBER' OR MATERIAL='TITANIUM')
GROUP BY T.MATERIAL

--18--SHIMANO XTR 2001 IN GROUPO
SELECT AVG(PRICEPAID) AS AvgOfPricePaid
FROM PURCHASEITEM P INNER JOIN COMPONENT C ON P.COMPONENTID=C.COMPONENTID
INNER JOIN GROUPCOMPONENTS GC ON C.COMPONENTID=GC.COMPONENTID
INNER JOIN GROUPO G ON GC.GROUPID= G.COMPONENTGROUPID
WHERE G.GROUPNAME='SHIMANO XTR 2001' AND C.CATEGORY='REAR DERAILLEUR'

--19--AVERAGETOPTUBE
SELECT AVG(TOPTUBE) AS AvgTopTube
FROM BICYCLE
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WHERE FrameSize=54 AND MODELTYPE='ROAD' AND YEAR(STARTDATE) = 1999
--20--COMPARE ROAD AND MOUNTAIN
SELECT ROAD, AVG(LISTPRICE) AS AvgOfListPrice
FROM COMPONENT
WHERE ROAD IS NOT NULL
GROUP BY ROAD
--21--SHOW EMPLOYEES THAT PAINTED AND SOLD BIKES
SELECT DISTINCT E.EMPLOYEEID, E.LASTNAME
FROM EMPLOYEE E INNER JOIN BICYCLE B ON E.EMPLOYEEID=B.EMPLOYEEID
WHERE E.EMPLOYEEID=B.PAINTER AND MONTH(ORDERDATE)=05 AND YEAR(ORDERDATE)=2003 AND
MODELTYPE='ROAD'
--22--SHOW PAINT JOBS IN 2002 WITH ENGLISH LETTER STYLE, SEE WHICH IS MOST POPULAR
SELECT P.PAINTID, COLORNAME, COUNT(SERIALNUMBER) AS [Number of Bikes Painted]
FROM PAINT P INNER JOIN BICYCLE B ON P.PAINTID=B.PAINTID
INNER JOIN LETTERSTYLE L ON L.LETTERSTYLE=B.LETTERSTYLEID
WHERE L.LETTERSTYLE='ENGLISH' AND YEAR(B.ORDERDATE)=2002
GROUP BY P.PAINTID, COLORNAME
ORDER BY COUNT(SERIALNUMBER) DESC

--23--USE SUBQUERY TO FIND SALEPRICE IN 2002 GRETAER THAN AVERAGE IN 2003
SELECT SERIALNUMBER, MODELTYPE, ORDERDATE, SALEPRICE
FROM BICYCLE
WHERE YEAR(ORDERDATE)=2003 AND MODELTYPE='RACE'
AND SALEPRICE>(SELECT AVG(SALEPRICE)
FROM BICYCLE
WHERE YEAR(ORDERDATE)=2002 AND MODELTYPE='RACE')

--24--ESTIMATEDCOST*QUANTITYONHAND= INVENTORY VALUE, USE SUBQUERY
SELECT DISTINCT M.MANUFACTURERNAME,C.PRODUCTNUMBER,
C.CATEGORY,(ESTIMATEDCOST*QUANTITYONHAND) AS [VALUE], C.COMPONENTID
FROM COMPONENT C INNER JOIN MANUFACTURER M ON C.MANUFACTURERID=M.MANUFACTURERID
INNER JOIN BIKEPARTS BP ON C.COMPONENTID=BP.COMPONENTID
WHERE YEAR(DATEINSTALLED) <> 2004 AND (ESTIMATEDCOST*QUANTITYONHAND)=(SELECT
MAX(ESTIMATEDCOST*QUANTITYONHAND)
FROM COMPONENT INNER JOIN BIKEPARTS BP ON C.COMPONENTID=BP.COMPONENTID
WHERE YEAR(DATEINSTALLED) <> 2004)


--25--USE UNION?

SELECT M.MANUFACTURERNAME AS [VendorName], M.PHONE
FROM MANUFACTURER M INNER JOIN CITY C ON M.CITYID=C.CITYID
WHERE STATE='CA'
UNION
SELECT R.STORENAME AS[VendorName], R.PHONE
FROM MANUFACTURER M INNER JOIN CITY C ON M.CITYID=C.CITYID
INNER JOIN RETAILSTORE R ON C.CITYID=R.CITYID
INNER JOIN BICYCLE B ON R.STOREID=B.STOREID
WHERE YEAR(B.ORDERDATE)=2004 AND C.STATE='CA'


--26--INNER JOIN EMPLOYEE TO EMPLOYEE
SELECT A.LASTNAME AS [MANAGER NAME],B.EMPLOYEEID, B.LASTNAME, B.FIRSTNAME, B.TITLE
FROM EMPLOYEE A INNER JOIN EMPLOYEE B ON A.EMPLOYEEID=B.CURRENTMANAGER
WHERE B.CURRENTMANAGER=(SELECT EMPLOYEEID
FROM EMPLOYEE
WHERE LASTNAME='Venetiaan')
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--27-
--VIEWS CREATED IN MY DATABASE
--SELECTS COMPONENTS THAT WERE RECIEVED BEFORE JUNE 30,2000
CREATE VIEW TOTALCOMPONENTSRECEIVED AS
SELECT PI.COMPONENTID, SUM(PI.QUANTITYRECEIVED)AS [Total Received]
FROM BIKE..PURCHASEITEM PI INNER JOIN BIKE..PURCHASEORDER PO ON
PI.PURCHASEID=PO.PURCHASEID
WHERE PO.ORDERDATE<='2000-06-30'
GROUP BY PI.COMPONENTID
---SELECTS COMPONENTS THAT WERE USED BEFORE JUNE 30,2000
CREATE VIEW TOTALCOMPONENTSUSED AS
SELECT BP.COMPONENTID, SUM(BP.QUANTITY) AS [TotalUsed]
FROM BIKE.. BIKEPARTS BP
WHERE DATEINSTALLED<='2000-06-30'
GROUP BY BP.COMPONENTID

--SOLUTION
SELECT C.COMPONENTID, M.MAnUFACTURERNAME, C.PRODUCTNUMBER, C.CATEGORY, TR.TOTAL RECEIVED,
TU.TOTALUSED, TR.TOTALRECEIVED-TU.TOTALUSED AS [NetGain],1-
(TU.TOTALUSED/TR.TOTALRECEIVED) AS [NetPct], C.LISTPRICE
FROM CIS31038..TOTALCOMPONENTSRECEIVED TR INNER JOIN CIS31038..TOTALCOMPONENTSUSED TU ON
TU.COMPONENTID=TR.COMPONENTID
INNER JOIN COMPONENT C ON C.COMPONENTID=TR.COMPONENTID
INNER JOIN MANUFACTURER M ON M.MANUFACTURERID = C.MANUFACTURERID
WHERE (1-(TU.TOTALUSED/TR.TOTALRECEIVED)) > .25

--28--USES DATEDIFF
SELECT YEAR(ORDERDATE) AS YEAR, AVG(DATEDIFF(DAY,ORDERDATE,SHIPDATE)) AS[BuildTime]
FROM BICYCLE
GROUP BY YEAR(ORDERDATE)
HAVING AVG(DATEDIFF(DAY,ORDERDATE,SHIPDATE))>(SELECT
AVG(DATEDIFF(DAY,ORDERDATE,SHIPDATE))
FROM BICYCLE)
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