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/*
Project 1: Excelsior Mobile Report
Nghi La
*/

USE el23wq_Excelsior;
-- Report Questions (With Visualizations)
--1--
--A
-- returns the first and last names of our customers along with their minute
usage, data usage, text usage and total bill
SELECT CONCAT(TRIM(FirstName), ' ', LastName) AS NAME,
           Minutes AS AVGMins, DataInMB AS AVGData,
           Texts AS AVGTexts, Total AS AVGTotal
FROM Subscriber AS SUB, Bill, LastMonthUsage AS USG
WHERE SUB.MIN= Bill.MIN AND Bill.MIN = USG.MIN
ORDER BY CONCAT(TRIM(FirstName), ' ', LastName);

--B
--returns the average of the minutes, data, texts and total bills by city.
SELECT City, AVG(Minutes) AS AVGMins, AVG(DataInMB)AS AVGData,
           AVG(Texts) AS AVGTexts, AVG(Total) AS AVGTotal
FROM Subscriber AS SUB, Bill, LastMonthUsage AS USG
WHERE SUB.MIN= Bill.MIN AND Bill.MIN = USG.MIN
GROUP BY City
ORDER BY City;

--C
-- returns the sum of the minutes, data, texts and total bills by city.
SELECT City, SUM(Minutes) AS SUMMins, SUM(DataInMB)AS SUMData,
           SUM(Texts) AS SUMTexts, SUM(Total) AS SUMTotal
FROM Subscriber AS SUB, Bill, LastMonthUsage AS USG
WHERE SUB.MIN= Bill.MIN AND Bill.MIN = USG.MIN
GROUP BY City
ORDER BY City;

--D
-- returns the average of the minutes, data, texts and total bills by mobile plan.
SELECT PlanName, AVG(Minutes) AS AVGMins, AVG(DataInMB)AS AVGData,
           AVG(Texts) AS AVGTexts, AVG(Total) AS AVGTotal
FROM Subscriber AS SUB, Bill, LastMonthUsage AS USG
WHERE SUB.MIN= Bill.MIN AND Bill.MIN = USG.MIN
GROUP BY PlanName
ORDER BY PlanName;

--E
-- returns the sum of the minutes, data, texts and total bills by mobile plan.
SELECT PlanName, SUM(Minutes) AS SUMMins, SUM(DataInMB) AS SUMData,
           SUM(Texts) AS SUMTexts, SUM(Total) AS SUMTotal
FROM Subscriber AS SUB, Bill, LastMonthUsage AS USG
WHERE SUB.MIN= Bill.MIN AND Bill.MIN = USG.MIN
GROUP BY PlanName
ORDER BY PlanName;

-- Report Questions (Without Visualizations)
--1
--(A)--
-- returns two cities we have the most customers in.
SELECT TOP 2 City

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FROM Subscriber
GROUP BY City
ORDER BY COUNT(MIN) DESC;
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--(B)--
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```
-- returns we should increase our marketing in based on number of customers
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SELECT TOP 3 City
FROM Subscriber
GROUP BY City
ORDER BY COUNT(MIN);
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--(C)--
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```
-- returns the city we should market the most based on the number of people
who have them
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SELECT TOP 1 PlanName
FROM Subscriber
GROUP BY PlanName
ORDER BY COUNT(MIN);
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--2
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--(A)--
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-- returns the type of cellphones most of customers use
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SELECT Type, COUNT(IMEI) AS 'Number of Customers'
FROM Device
GROUP BY Type
ORDER BY COUNT(IMEI) DESC;
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--(B)--
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```
-- returns list of customers (first and last name) use the phone type that is
least used by our customers
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SELECT CONCAT(TRIM(FirstName), ' ', LastName) AS 'Apple Customers'
FROM Device as DV, DirNums as DN, Subscriber AS SUB
WHERE DV.IMEI= DN.IMEI AND DN.MDN= SUB.MDN AND Type ='Apple'
GROUP BY CONCAT(TRIM(FirstName), ' ', LastName)
ORDER BY CONCAT(TRIM(FirstName), ' ', LastName);
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--(C)--
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```
-- returns our customers and the year of their phones who have phones
released before 2018
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```
SELECT CONCAT(TRIM(FirstName), ' ', LastName) AS 'Customer Name', YearReleased
FROM Device as DV, DirNums as DN, Subscriber AS SUB
WHERE DV.IMEI= DN.IMEI
      AND DN.MDN= SUB.MDN
      AND YearReleased < 2018
ORDER BY YearReleased;
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--3
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-- A--
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-- returns top 3 cities used most data (no unlimited plan)
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```
SELECT TOP 3 City, SUM(DataInMB) AS 'Total Data Used'
FROM Subscriber AS SUB, LastMonthUsage AS USG, MPlan AS MP
WHERE SUB.MIN = USG.MIN
      AND SUB.PlanName = MP.PlanName
      AND Data NOT IN ('Unlimited')
GROUP BY City
ORDER BY SUM(DataInMB) DESC;
```

```
--B---
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```
-- returns top the city used most data (no unlimited plan)
```

```
SELECT TOP 1 City, SUM(DataInMB) AS 'Total Data Used'
```

```

FROM Subscriber AS SUB, LastMonthUsage AS USG
WHERE SUB.MIN = USG.MIN
      AND City IN ('Bellevue', 'Olympia', 'Seattle')
GROUP BY City
ORDER BY City;

```

--4

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--(A)--
-- returns the first and last name of the customer who has the most expensive
bill last month.
SELECT TOP 1 CONCAT(TRIM(FirstName), ' ', LastName) AS 'Customer Name'
FROM Subscriber AS SUB, Bill
WHERE SUB.MIN = Bill.MIN
ORDER BY Total DESC;

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--(B)--
-- returns the mobile plan delivered the highest total bill last month.
SELECT TOP 1 PlanName
FROM Subscriber AS SUB, Bill
WHERE SUB.MIN = Bill.MIN
ORDER BY Total DESC;

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--5

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--(A)--
-- returns the area code (only the area code) uses the most minutes, return
the minutes also.
SELECT TOP 1 LEFT(MDN,3) AS AREA, SUM(Minutes) AS 'Total Mins'
FROM Subscriber AS SUB, LastMonthUsage AS USG
WHERE SUB.MIN = USG.MIN
GROUP BY LEFT(MDN,3)
ORDER BY SUM(Minutes) DESC;

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--(B)--
-- returns cities have the biggest difference between the customers
-- who use smallest amount of minutes to customers that use the largest
SELECT DISTINCT SUB.City
FROM Subscriber AS SUB
JOIN LastMonthUsage AS USG
ON SUB.MIN= USG.MIN
WHERE USG.Minutes< 200
      AND SUB.City IN
      (SELECT SUB.City
       FROM Subscriber AS SUB
       JOIN LastMonthUsage AS USG
       ON SUB.MIN= USG.MIN
       WHERE USG.Minutes > 700);

```