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/*
Project 1: Excelsior Mobile Report
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*/

USE el23wq_Excelsior

-- Report Questions with Visualizations
-- 1 --
-- A --
SELECT FirstName, LastName, Minutes, DataInMB, Texts, Total
FROM Subscriber AS S JOIN LastMonthUsage AS LMU
    ON S.MIN = LMU.MIN
    JOIN Bill AS B
    ON S.MIN = B.MIN
ORDER BY FirstName, LastName;

-- B --
SELECT City, AVG(Minutes) AS AVGMin, AVG(DataInMB) AS AVGData, AVG(Texts) AS
AVGTexts, AVG(Total) AS AVGTotBill
FROM Subscriber AS S JOIN LastMonthUsage AS LMU
    ON S.MIN = LMU.MIN
    JOIN Bill AS B
    ON S.MIN = B.MIN
GROUP BY City;

-- C --
SELECT City, SUM(Minutes) AS SUMMin, SUM(DataInMB) AS SUMData, SUM(Texts) AS
SUMTexts, SUM(Total) AS SUMTotalBill
FROM Subscriber AS S JOIN LastMonthUsage AS LMU
    ON S.MIN = LMU.MIN
    JOIN Bill AS B
    ON S.MIN = B.MIN
GROUP BY City;

-- D --
SELECT PlanName, AVG(Minutes) AS AVGMin, AVG(DataInMB) AS AVGData, AVG(Texts) AS
AVGTexts, AVG(Total) AS AVGTotBill
FROM Subscriber AS S JOIN LastMonthUsage AS LMU
    ON S.MIN = LMU.MIN
    JOIN Bill AS B
    ON S.MIN = B.MIN
GROUP BY PlanName;

-- E --
SELECT PlanName, SUM(Minutes) AS SUMMin, SUM(DataInMB) AS SUMData, SUM(Texts) AS
SUMTexts, SUM(Total) AS SUMTotalBill
FROM Subscriber AS S JOIN LastMonthUsage AS LMU
    ON S.MIN = LMU.MIN
    JOIN Bill AS B
    ON S.MIN = B.MIN
GROUP BY PlanName;

-- Report Questions without Visualizations
-- 1 --
-- A --
SELECT TOP 2 City
FROM Subscriber
GROUP BY City

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ORDER BY COUNT(MIN) DESC;

-- B --
SELECT TOP 3 City
FROM Subscriber
GROUP BY City
ORDER BY COUNT(MIN) ASC;

-- C --
SELECT TOP 1 PlanName
FROM Subscriber
WHERE MIN >= 1
GROUP BY PlanName
ORDER BY COUNT(PlanName) ASC;

-- 2 --
-- A --
SELECT Type, COUNT(IMEI) AS 'Number of Users'
FROM Device
GROUP BY Type;

-- B --
SELECT FirstName, LastName
FROM Subscriber
WHERE MDN IN
    (SELECT MDN
     FROM DirNums
     WHERE IMEI IN
        (SELECT IMEI
         FROM Device
         WHERE Type = 'Apple'));

-- C --
SELECT FirstName, LastName, YearReleased
FROM Subscriber JOIN DirNums
    ON Subscriber.MDN = DirNums.MDN
    JOIN Device
    ON DirNums.IMEI = Device.IMEI
WHERE YearReleased < 2018;

-- 3 --
-- a. --
SELECT TOP 3 City, SUM(DataInMB) AS 'Data Usage in City'
FROM Subscriber JOIN MPlan
    ON Subscriber.PlanName = MPlan.PlanName
    JOIN LastMonthUsage
    ON Subscriber.MIN = LastMonthUsage.MIN
GROUP BY City
ORDER BY SUM(DataInMB) DESC;

-- b. --

SELECT DISTINCT City
FROM Subscriber
WHERE PlanName IN
    (SELECT PlanName
     FROM MPlan
     WHERE Data = 'Unlimited');

-- c. --

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SELECT DISTINCT City
FROM Subscriber
WHERE City NOT IN ('Everett', 'Issaquah', 'Kent', 'Olympia',
                  'Redmond', 'Seattle', 'Spokane');
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-- d. --
SELECT City
FROM Subscriber JOIN MPlan
      ON Subscriber.PlanName = MPlan.PlanName
      JOIN LastMonthUsage
      ON Subscriber.MIN = LastMonthUsage.MIN
WHERE City = 'Bellevue'
GROUP BY City;
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-- 4 --
-- A --
SELECT TOP 1 FirstName, LastName
FROM Subscriber JOIN Bill
      ON Subscriber.MIN = Bill.MIN
ORDER BY Total DESC;
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-- B --
SELECT TOP 1 PlanName
FROM Subscriber JOIN Bill
      ON Subscriber.MIN = Bill.MIN
ORDER BY Total DESC;
```

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-- 5 --
-- A --
SELECT TOP 1 LEFT(MDN,3) AS 'Area Code', SUM(Minutes) AS 'Total Minutes'
FROM Subscriber JOIN LastMonthUsage
      ON Subscriber.MIN = LastMonthUsage.MIN
GROUP BY LEFT(MDN,3)
ORDER BY SUM(Minutes) DESC;
```

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-- B --
-- a. --
SELECT TOP 1 City
FROM Subscriber JOIN LastMonthUsage
      ON Subscriber.MIN = LastMonthUsage.MIN
WHERE Minutes < 200 OR Minutes > 700
GROUP BY City
ORDER BY SUM(Minutes) ASC;
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```
-- b. --
SELECT TOP 1 City
FROM Subscriber JOIN LastMonthUsage
      ON Subscriber.MIN = LastMonthUsage.MIN
WHERE Minutes < 200 OR Minutes > 700
GROUP BY City
ORDER BY SUM(Minutes) DESC;
```