

```

/*
Project 1: Excelsior Mobile Report
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*/

USE el23wq_Excelsior;

/*
Report Questions (with Visualizations)
*/

-- 1 --
-- A
/*
This query will reutrn the customer's full name, along with their minute, data, and
test usage, and total bill.
Perhaps Excelsior is looking for a summary of their customer usage and the
correlating bill amounts.
*/
SELECT CONCAT(FirstName, ' ', LastName) AS 'Customer',
       Minutes, DataInMB, Texts, Total
FROM Subscriber AS Sub
     JOIN LastMonthUsage AS LMU
       ON Sub.MIN = LMU.MIN
     JOIN Bill AS B
       ON Sub.MIN = B.MIN
ORDER BY CONCAT(FirstName, ' ', LastName);

-- B
/*
This query will return the average minutes, data, texts, and total bill for each
city Excelsior supports.
Perhaps Excelsior wants to know what services, on average, their consumers use in
each city.
*/
SELECT City, AVG(Minutes) AS 'AVG Min', AVG(DataInMB) AS 'AVG Data',
       AVG(Texts) AS 'AVG Texts', AVG(Total) AS 'AVG Total Bill'
FROM Subscriber AS Sub
     JOIN LastMonthUsage AS LMU
       ON Sub.MIN = LMU.MIN
     JOIN Bill AS B
       ON Sub.MIN = B.MIN
GROUP BY City;

-- C
/*
This query will return the total minutes, data, and text usage, along with total
bills paid by consumers within each city.
Perhaps Excelsior wants to know which city's consumers uses Excelsior's services
the most.
*/
SELECT City, SUM(Minutes) AS 'Total Min Usage', SUM(DataInMB) AS 'Total Data
Usage',
       SUM(Texts) AS 'Total Texts', SUM(Total) AS 'Sum of Bills'
FROM Subscriber AS Sub
     JOIN LastMonthUsage AS LMU
       ON Sub.MIN = LMU.MIN
     JOIN Bill AS B
       ON Sub.MIN = B.MIN

```

```
GROUP BY City;
```

```
-- D  
/*
```

This query will return the average minutes, data, texts usage, and average of total bills by mobile plan.

Perhaps Excelsior wants to know the average consumer usage, based on their mobile plan.

This data can also help Excelsior see which customers are most effectively using their plan, and give recommendations to customers.

```
*/  
SELECT PlanName, AVG(Minutes) AS 'AVG Min', AVG(DataInMB) AS 'AVG Data',  
       AVG(Texts) AS 'AVG Texts', AVG(Total) AS 'AVG Total Bill'  
FROM Subscriber AS Sub  
     JOIN LastMonthUsage AS LMU  
       ON Sub.MIN = LMU.MIN  
     JOIN Bill AS B  
       ON Sub.MIN = B.MIN  
GROUP BY PlanName
```

```
/*  
The Report Questions (without Visualizations)  
*/
```

```
-- 1 --  
-- A  
/*
```

This query returns the two cities with the most Excelsior customers.

```
*/  
SELECT TOP 2 City  
FROM Subscriber  
GROUP BY City  
ORDER BY COUNT(MIN) DESC;
```

```
-- B  
/*
```

This query returns three cities with the least Excelsior customers.

```
*/  
SELECT TOP 3 City  
FROM Subscriber  
GROUP BY City  
ORDER BY COUNT(MIN) ASC;
```

```
-- C  
/*
```

This query returns the mobile plan with the least Excelsior customers.

```
*/  
SELECT TOP 1 PlanName  
FROM Subscriber  
GROUP BY PlanName  
ORDER BY COUNT(MIN) ASC;
```

```
-- 2 --  
-- A  
/*
```

This query will return the cell phone types and how many Excelsior customers use these phones.

```
*/  
SELECT Type, COUNT(MIN) AS 'Customers'
```

```

FROM DirNums
    JOIN Device
        ON Device.IMEI = DirNums.IMEI
    JOIN Subscriber
        ON DirNums.MDN = Subscriber.MDN
GROUP BY Type
ORDER BY COUNT(MIN) DESC;

```

```

-- B
/*
Since less Excelsior customers use Apple phones,
this query will return the six Apple users of Excelsior.
*/
SELECT CONCAT(FirstName, ' ', LastName) AS 'Apple Customers'
FROM DirNums
    JOIN Device
        ON Device.IMEI = DirNums.IMEI
    JOIN Subscriber
        ON DirNums.MDN = Subscriber.MDN
WHERE Type = 'Apple';

```

```

-- C
/*
This query will return the customers whos phone was released before 2018
*/
SELECT CONCAT(FirstName, ' ', LastName) AS 'Customers', YearReleased
FROM DirNums
    JOIN Device
        ON Device.IMEI = DirNums.IMEI
    JOIN Subscriber
        ON DirNums.MDN = Subscriber.MDN
WHERE YearReleased < 2018;

```

```

-- 3 --
-- A
/*
This query will return the 3 cities of Excelsior customers that use the most data.
*/
SELECT TOP 3 City
FROM Subscriber JOIN LastMonthUsage
    ON Subscriber.MIN = LastMonthUsage.MIN
GROUP BY City
ORDER BY SUM(DataInMB) DESC;

```

```

-- B
/*
This query will return the cities where no customers have unlimited mobile plans.
*/
SELECT DISTINCT City
FROM Subscriber
WHERE City NOT IN
    (SELECT City
     FROM Subscriber
     WHERE PlanName LIKE 'Unl%');

```

```

/*
When comparing the two query results, the only city in common is Bellevue.
Bellevue is the only city that uses a lot of data, but none of the Excelsior
customers have Unlimited mobile plans.

```

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*/
```

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-- 4 --
```

```
-- A
```

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/*
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This query will return the customer who had the most expensive bill last month.

```
*/
```

```
SELECT TOP 1 CONCAT(FirstName, ' ', LastName) AS 'Customer'
```

```
FROM Subscriber JOIN Bill
```

```
    ON Subscriber.MIN = Bill.MIN
```

```
ORDER BY Total DESC;
```

```
-- B
```

```
/*
```

This query will return the mobile plan with the highest total bill last month.

```
*/
```

```
SELECT TOP 1 PlanName
```

```
FROM Subscriber JOIN Bill
```

```
    ON Subscriber.MIN = Bill.MIN
```

```
GROUP BY PlanName
```

```
ORDER BY SUM(Total) DESC;
```

```
-- 5 --
```

```
-- A
```

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/*
```

This query will return the area code that used the most minutes and also the total minute usage.

```
*/
```

```
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 MDN
```

```
ORDER BY SUM(Minutes) DESC;
```

```
-- B
```

```
/*
```

This query will return the cities with the biggest differences in minute usage.

```
*/
```

```
SELECT City
```

```
FROM Subscriber JOIN LastMonthUsage
```

```
    ON Subscriber.MIN = LastMonthUsage.MIN
```

```
GROUP BY City
```

```
HAVING MIN(Minutes) < 200
```

```
    AND MAX(Minutes) > 700;
```