Question 1 Marketing asked where we should be focusing our new marketing at. We have decided that we want to
put our efforts increasing our customer base in cities we currently have customers in instead of marketing in cities we have no customers in.
Let's figure out which three cities we should point our markets to. (Hint: we should be marketing to cities we have the least number of customers in. Be careful and keep this in mind when answering the three queries below.)

A First though, I want to know which two cities we have the most customers in.

City	amount of customers
Seattle	5
Olympia	4

Answer The two cities we have the most customers in are Seattle and Olympia.
By Selecting top statement to find two cities have the most customers .
and and how many people in that city by using COUNT. The output is Seattle with 5 people and Olympia with 4 people

B Then show me which cities we should increase our marketing in.

City	amount of customers
Issaquah	1
Kent	1
Tacoma	1
Spokane	2
Redmond	2
Bellevue	2
Everett	2
Olympia	4
Seattle	5

Answer: The cities we should have increase our marketing in are Issaquah, Kent, Tacoma
. Those cities have amount of customers less equal than 1.
In order to know what city should we target, we have to find the amount of customer on each city.

C Finally, show us which plan (only one) we should market the most based on the number of people who have them
(infer if they are marketing to least or most customer using common sense and the paragraph intro to this question for what they want to market to cities based on).

PlanName	amount of Customers
Data2	1

Answer: Based on the number of people who have least customer, Data 2 is the one we should
focus on marketing. With the cost is $40, the customers would rather pay extra $10 to have more daata
which is Data 10 that have 5 times larger compared to Data 2. In order to increase the number of customers, the company should adjust the price affordably.
In order to show only one Planname, we have to use Top 1 statement and find the amout of customers
by using count in the columm: Min

Question 2 Next we want some information on the actual devices our customers use.

A (A) Show us the count of cell phone types with count among our customers. What type do most of our customers use?

Type	Phone Type
Android	14
Apple	6

Answer: The type which has the most customers use is Android
We can see that the different type of brands mostly use Android.
Only products from Apple is Iphone use per se. By using Select type columm and count statement, we find that 14 phones type using android and 6 iphones using apple. Group them by Type

B) Show us which customers (first and last name) use the phone type that is least used by our customers so we can send them a promotion for their friends and family.
You can use the answer from 2A in this query.

FirstName	LastName
Bucky	Barnes
Clint	Barton
Jane	Foster
Nathan	Summers
Reed	Richards
Steve	Rogers

Answer: Six people use Apple phone type those are need to be sent promotion for their friends and family.
To combine 3 tables: Subcribers, DirNums, Device
We have to use the Inner Join and condition is using 'Apple'

(C) Finally, show us our customers and the year of their phones who have phones released before 2018?

fullname	YearReleased
Ben Grimm	2014
Natasha Romanova	2015
Bruce Banner	2016
Nathan Summers	2017
Matt Murdock	2017
Jessica Jones	2017
Wade Wilson	2017
Bucky Barnes	2017
Jane Foster	2017

Answer: These are customers's information using their phones those released before 2018
Using concat to delete the white space between first and last name columms
Using alias to name two columms as FULL Name.
Using join statement to select 3 tables: Subcriber, DirNums and Device
The condition is phone type released before 2018

Question 3 Now we are trying to figure out if our customers are using our data plans efficiently.
We have Unlimited plans that throttle the data at specific limits and then there are plans for caps on data usage.
We want to know ultimately if there is a city that uses a lot of data (within the top 3 data using cities) but none of our customers in that city are using the Unlimited Plans
. If there is a city like that, which one is it?

A

City	Total Data Cities use
Bellevue	64695
Olympia	35003
Seattle	31308

Answer: These are top 3 data using cities that included how much data the cities used
Using top 3 to find top 3 data using cities
Using Inner Join to select 3 tables: subcriber, lastmonthusage and Mplan
Condition is data is not unlimited in order to calculate the throttle
If select umilited, the company can not estimate exactly throttle data that top 3 cities has been used

B

Column1
City
Bellevue

Answer: There is one city that spend largest data without using Unilimited on Data.

That is Bellevue city.
By Selecting top 1 among those cities and condition is NOT IN Unlimited
we can see that only Bellevue is only option
Using Inner Join to select 2 tables: subcriber, Mplan

Question 4: Our financial department has requested a few items of information.

(A) They wish to know the first and last name of the customer who has the most expensive bill last month.

Total	Customer Full Name
224.12	Frank Castle

Answer: Frank Castle is the customer who has the most expensive bill last month.
Using top 1 in Total columm in Bill, delete concast in first name and last name.
Rename those as full name. I applied join statement to see the data from 2 table
: Subcriber and Bill. Order by the largest to smallest by using DESC at the end.

(B) They also want to know which mobile plan delivered the highest total bill last month.

PlanName	Total Bill Last month
UnlPrime	826.12

Answer: The mobile plan delievered highest total bill last month is UnlPrime
Using top 1 in the Planname, and sum all the value at the total columm and
rename it as 'total bill last month'. To combine 2 tables: Bill and Subcriber, I used Join statement.
To find the highest total bill last month, I used DESC command on the last row which is order by

Question 5 Finally, we want to get some information on minutes usage.

A. (A) Please tell us which area code (only the area code) uses the most minutes, return the minutes also.

Area Code	Total Minutes
360	1822

Answer: Using top 1 to find the area code uses the most minutes
which is 360. Left statement to only select 3 characters and rename it as
area code. Sum all minutes in LastmonthUsage and command desceding at the order by

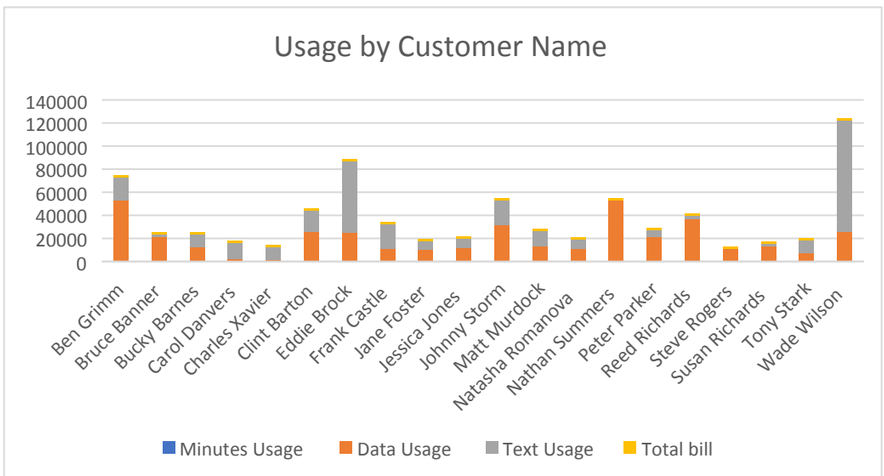
B.) Lastly, Which cities do we see the biggest difference in terms of minutes usage? In other words, which cities have the biggest difference between the customers who use smallest amount of minutes to customers that use the largest. Use the difference of customers who use less than 200 and customers who use more than 700 minutes.

City
Seattle
Spokane

Answer: The cities we see the biggest different in terms of minutes usages is seattle and spokane
Using join statement to combine 2 tables: subcribers, lastmonthusages
the condition is Minutes in the lastmonthusages is greater than 700 and the other is smaller than 200

a

Customer full name	Minutes Usage	Data Usage	Text Usage	Total bill
Ben Grimm	533	52339	21332	131.5
Bruce Banner	125	21563	3252	121.5
Bucky Barnes	112	12356	12452	74.71
Carol Danvers	359	1912	15332	87
Charles Xavier	155	1221	12335	149
Clint Barton	78	25352	20159	101
Eddie Brock	250	25003	63352	141.5
Frank Castle	702	10235	22542	224.12
Jane Foster	320	10256	8449	97.62
Jessica Jones	715	11256	9663	139
Johnny Storm	988	31022	22368	194.26
Matt Murdock	288	12568	15236	159.41
Natasha Romanova	855	10000	10121	104
Nathan Summers	125	52669	1752	204
Peter Parker	101	21052	7596	112
Reed Richards	352	36588	4253	139.41
Steve Rogers	212	10950	1533	164
Susan Richards	365	12635	4256	139.41
Tony Stark	257	7259	12369	219
Wade Wilson	311	25332	98254	179

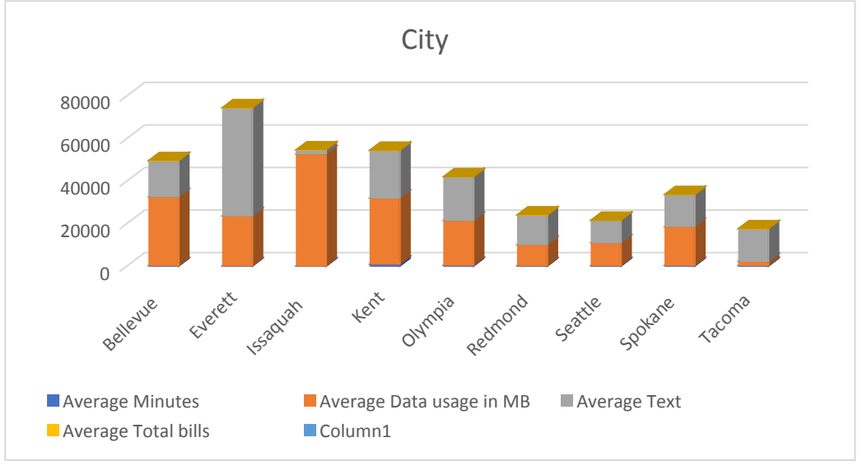


Analysis

The total bill is mostly on UnlPrime which has a largest cost per month ,$150. On the average minutes of data using, Data 10 is the highest. On the average data usages, we can see that Data 50 with also have the largest average text. Because the user who need to text and call most of the time will choose the plan name have unlimited data but limited in throttle to save money rater than Data 2,10,25,50 with have null in throttle but not limited in data

b

City	Average Minutes	Average Data usage in MB	Average Text	Average Total bills	Column1
Bellevue	322	32347	16892	103.105	
Everett	218	23447	50753	150.25	
Issaquah	125	52669	1752	204	
Kent	988	31022	22368	194.26	
Olympia	455	21056	20495	131.08	
Redmond	272	9913	13802	189.205	
Seattle	298	10742	10491	149.348	
Spokane	396	18304	14911	120	
Tacoma	359	1912	15332	87	



Analysis

The city that most affects the average bill is Issaquah. However, it uses the most data while using the fewest minutes and texts overall.

We can assume that Issaquah's data use accounts for the majority of its average cost.

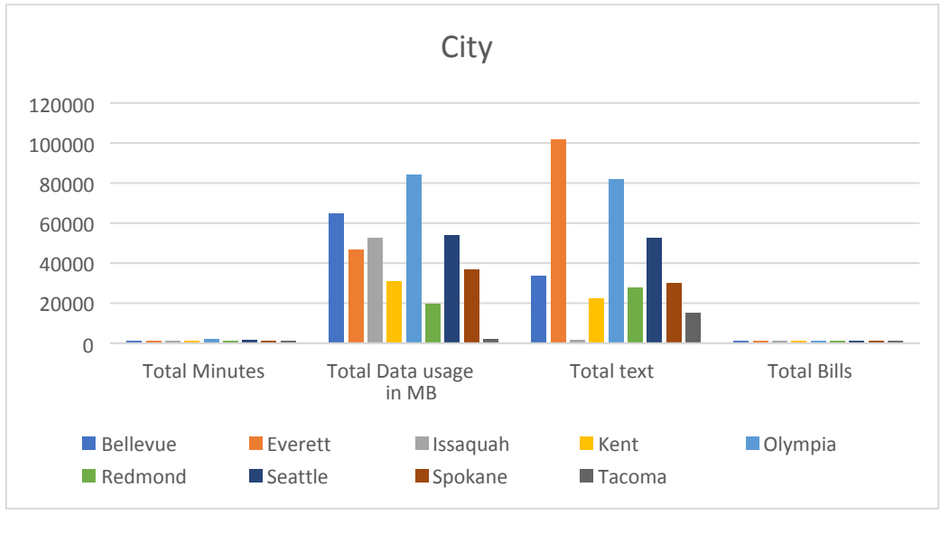
Tacoma has the lowest average utilization of all the ranges. The most affordable bills are in this city.

Therefore, we can assume that Tacoma's bill is equally based on its utilization of minutes, data, and texts.

We are not certain that average usage across all fields has an impact on average city bills. Another element that significantly affects the average bill may need to be taken into account.

c

City	Total Minutes	Total Data usage in MB	Total text	Total Bills
Bellevue	645	64695	33784	206.21
Everett	436	46895	101506	300.5
Issaquah	125	52669	1752	204
Kent	988	31022	22368	194.26
Olympia	1822	84226	81982	524.32
Redmond	545	19827	27605	378.41
Seattle	1490	53714	52455	746.74
Spokane	793	36608	29822	240
Tacoma	359	1912	15332	87



Analysis

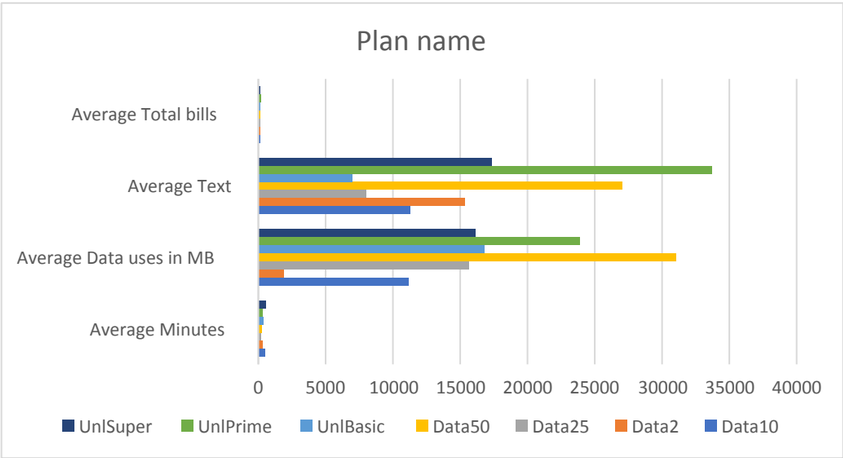
Among the top cities for minutes, texts, and data use are Olympia and Seattle. The total bill for these two cities is therefore the highest.

The least amount of minutes, data, and texts are used on Tacoma. The least expensive city is this one in the end.

We are very certain that all total usage has an impact on the cities' overall expenses (minutes, data and texts).

d

PlanName	Average Minutes	Average Data uses in MB	Average Text	Average Total bills
Data10	483	11178	11286	89.355
Data2	359	1912	15332	87
Data25	210	15654	8022	104.81
Data50	246	31064	27023	123.875
UnlBasic	386	16799	6988	148.246
UnlPrime	348	23873	33729	206.53
UnlSuper	571	16121	17351	171.63



Analysis

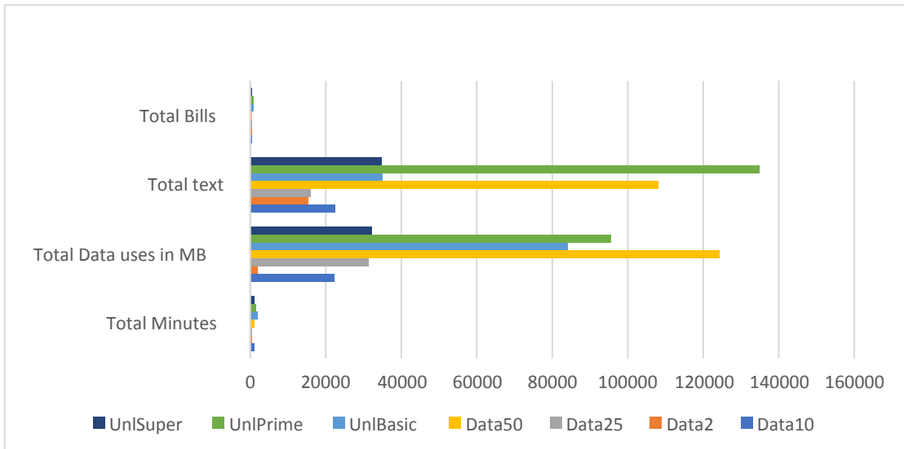
The most money is typically generated by UnlPrime.

Users of UnlPrime consume the most messages and data (as well as the second-most data), yet they don't talk on the phone for long periods of

Thus, the majority of this plan's income comes from the use of words and data.

e

PlanName	Total Minutes	Total Data uses in MB	Total text	Total Bills
Data10	967	22356	22573	178.71
Data2	359	1912	15332	87
Data25	421	31308	16045	209.62
Data50	986	124257	108095	495.5
UnlBasic	1932	83997	34941	741.23
UnlPrime	1395	95495	134917	826.12
UnlSuper	1143	32243	34703	343.26



Analysis

The least of the eight mobile plans, Data 2 uses the least amount of minutes, data, and texts overall. The least amount of money is raised by this strategy.
Users of UnlPrime, which generates the greatest income, consume data and messages the most frequently. Also, it is because the users
text quite a lot in this plan.