

# **SQL PROJECT GUIDED**

## **PGP - DSBA**

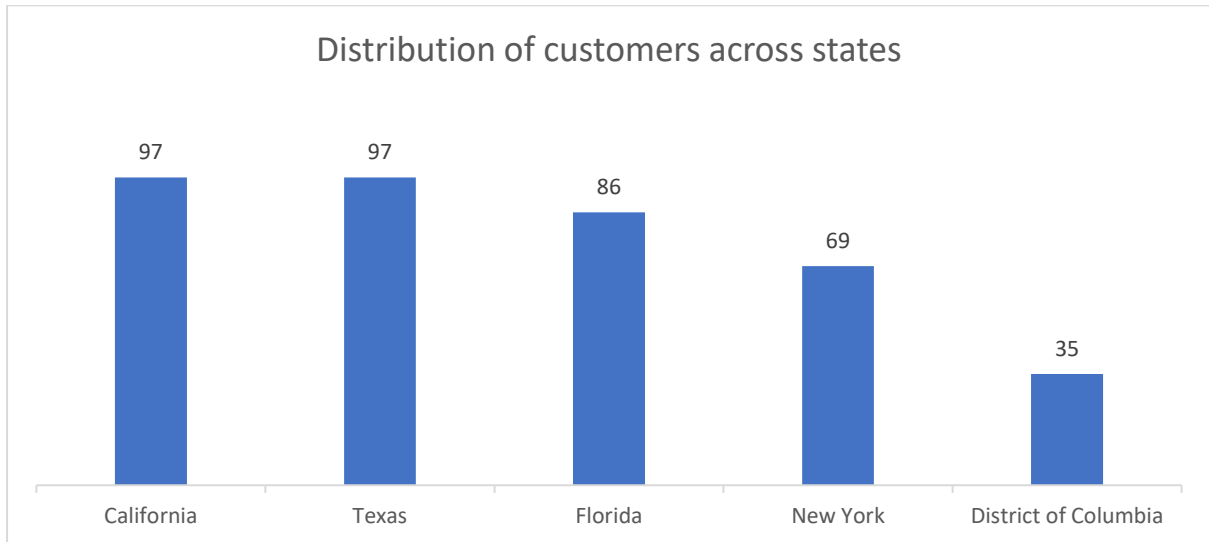
**BY ROSHINIPRIYA C B – March'24 Batch**

## BUSINESS OVERVIEW

Total Revenue	Total Revenue	Total Customers
83115001.1	83115001.1	994
Avg Rating	Last Otr Revenue	Last Otr Orders
3.5	15280009.98	199
Avg Davs to Shio	% Good Feedback	
32	45%	

# Customer Metrics

## Distribution of Customers across States

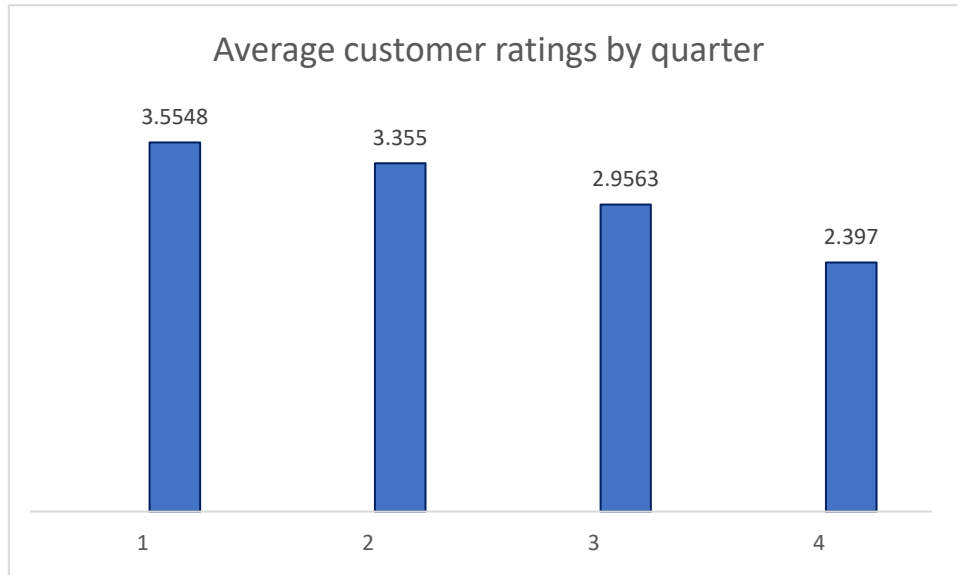


**Hint:** You can use a bar chart to show the top 5 states with most customers. State in the x-axis and Customer Count as the y-axis

## Observations / Findings

- California & Texas have equal number of customers, suggesting similar market sizes & customer reach in these two states.
- The District of Columbia has the fewest customers, with only 35 customers.
- The number of customers drops significantly between New York and the District of Columbia, indicating a potential disparity in customer engagement or population density.

# Average Customer Ratings by Quarter



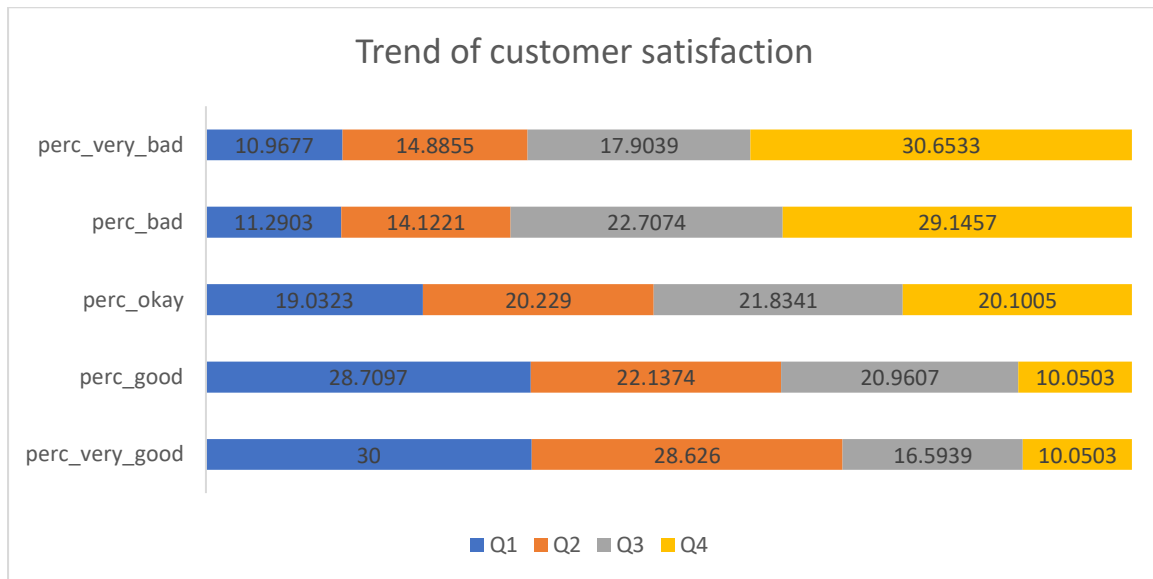
**Note – 1,2,3,4 in x-axis represents each quarter**

**Hint: You can make a bar chart with Quarter Number on the x-axis and the average customer rating in the y-axis**

## Observations / Findings

- There is a noticeable decline in average customer ratings from Quarter 1 to Quarter 4
- Quarter 1 has the highest average customer rating possibly due to factors like seasonal promotions or new product releases.
- Quarter 4 has the lowest average rating which could signal customer dissatisfaction or negative experiences during this period.

# Trend of Customer Satisfaction



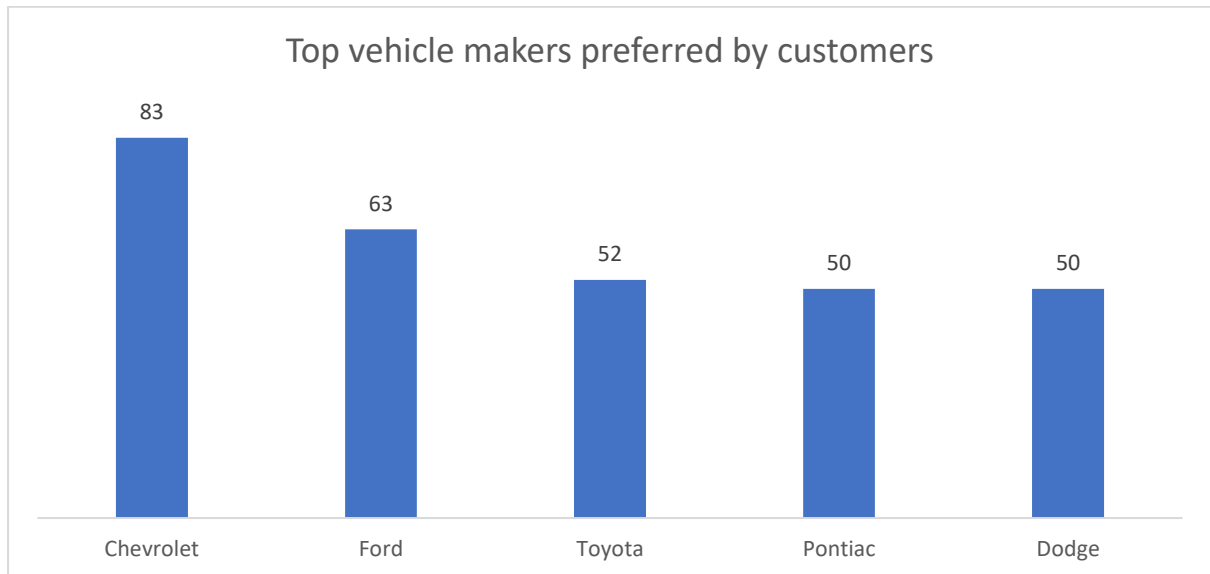
Note - Q1,Q2,Q3,Q4 represent each quarter

**Hint: You can make a 100% Stacked bar chart with Quarter Number on the x-axis and percentage split of customer feedback [good, very good, bad, very bad, okay] in the y-axis with a colour legend**

## Observations / Findings

- The percentage of very good and good rating is decreasing each quarter indicating customer dissatisfaction.
- The percentage of very bad rating is increasing every quarter indicating decrease in customer satisfaction.
- Performance in Q1 and Q2 is better compared to Q3 and Q4 as there is major decline in the satisfaction ratings.

# Top Vehicle makers preferred by customers



**Hint: You can make a bar chart with top N vehicle makers on the x-axis and the number of customers in the y-axis**

## Observations / Findings

- Chevrolet is the most preferred vehicle maker among customers
- Ford follows as the second most preferred
- Toyota, Pontiac and Dodge are almost preferred equally among customers

# Most preferred vehicle make in each state

state	vehicle_maker
Alabama	Dodge
Alaska	Chevrolet
Arizona	Pontiac,Cadillac
Arkansas	Suzuki,Chevrolet,Pontiac,Volkswagen,Mitsubishi,GMC
California	Ford,Dodge,Audi,Nissan,Chevrolet
Colorado	Chevrolet
Connecticut	Chevrolet,Mercury,Maserati,Volvo
Delaware	Mitsubishi
District of Columbia	Chevrolet
Florida	Toyota
Georgia	Toyota
Hawaii	Ford,Toyota,Pontiac,Nissan,Cadillac,GMC
Idaho	Dodge
Illinois	Ford,GMC,Chevrolet
Indiana	Mazda
Iowa	Chrysler,Chevrolet,Hyundai,Isuzu,Dodge,Mazda,Porsche,Jeep,Ford,Pontiac,Subaru
Kansas	GMC,Lexus,Buick,Mercedes-Benz,Suzuki,Honda,Dodge,Volkswagen,Ford,Mazda,Maserati,Nissan,Saab
Kentucky	Acura,Mercury,Audi,Ram,Volvo,Pontiac,Nissan,Mercedes-Benz
Louisiana	BMW,Nissan,Ford,Pontiac,Kia
Maine	Mercedes-Benz
Maryland	Ford
Massachusetts	Dodge,Chevrolet
Michigan	Ford
Minnesota	GMC
Mississippi	Dodge,Toyota
Missouri	Chevrolet
Montana	Chevrolet,Mitsubishi,Dodge
Nebraska	Chevrolet,Mercedes-Benz,Volkswagen,Nissan,Pontiac,Toyota,Cadillac
Nevada	Pontiac
New Hampshire	Chrysler,Lincoln,Lexus
New Jersey	Mercedes-Benz,Hyundai
New Mexico	Dodge
New York	Toyota,Pontiac
North Carolina	Volvo
North Dakota	Hyundai,Ford
Ohio	Chevrolet

Oklahoma	Toyota,Ferrari,Mazda
Oregon	Toyota
Pennsylvania	Toyota
South Carolina	Acura,Buick,BMW,Kia,Mazda,Mitsubishi,Dodge,Jaguar,Isuzu
Tennessee	Mazda
Texas	Chevrolet
Utah	Maybach,Volkswagen,Isuzu,Subaru,Lincoln,Chevrolet,Oldsmobile,Pontiac,Dodge,Buick
Vermont	Mazda
Virginia	Ford
Washington	Chevrolet
West Virginia	Mercedes-Benz
Wisconsin	Pontiac,Chevrolet,Acura,Mazda,Nissan,Cadillac,Dodge,Honda
Wyoming	Buick

**Hint: You can provide a list of states and the with the vehicle make most preferred there in the form of text or a neatly formatted table.**

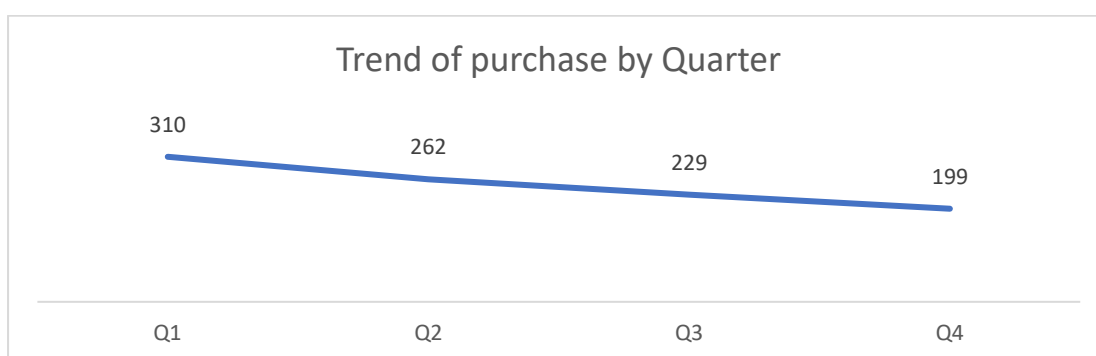
## Observations / Findings

- Chevrolet appears to be the most common vehicle maker across multiple states
- Kansas has a notable presence of luxury vehicle makers such as Lexus, Mercedes-Benz, Maserati, and Saab, suggesting a preference for high-end cars in this state.
- Arkansas shows a wide variety of vehicle makers, including Suzuki, Chevrolet, Pontiac, Volkswagen, Mitsubishi, and GMC. This indicates a diverse preference for different car brands within the state.



# Revenue Metrics

## Trend of purchases by Quarter



**Q1,Q2,Q3,Q4 represent each quarter**

**Hint: You can use a line chart with Quarter Number in the x-axis and No of Orders in the y-axis**

## Observations / Findings

- Highest number of purchases are observed in 1st quarter (Q1)
- Quarter 4 (Q4) has the least number of orders which is mainly due to customer dissatisfaction
- Each quarter shows a decline in purchases, with no increases at any point.

# Quarter on Quarter % change in Revenue

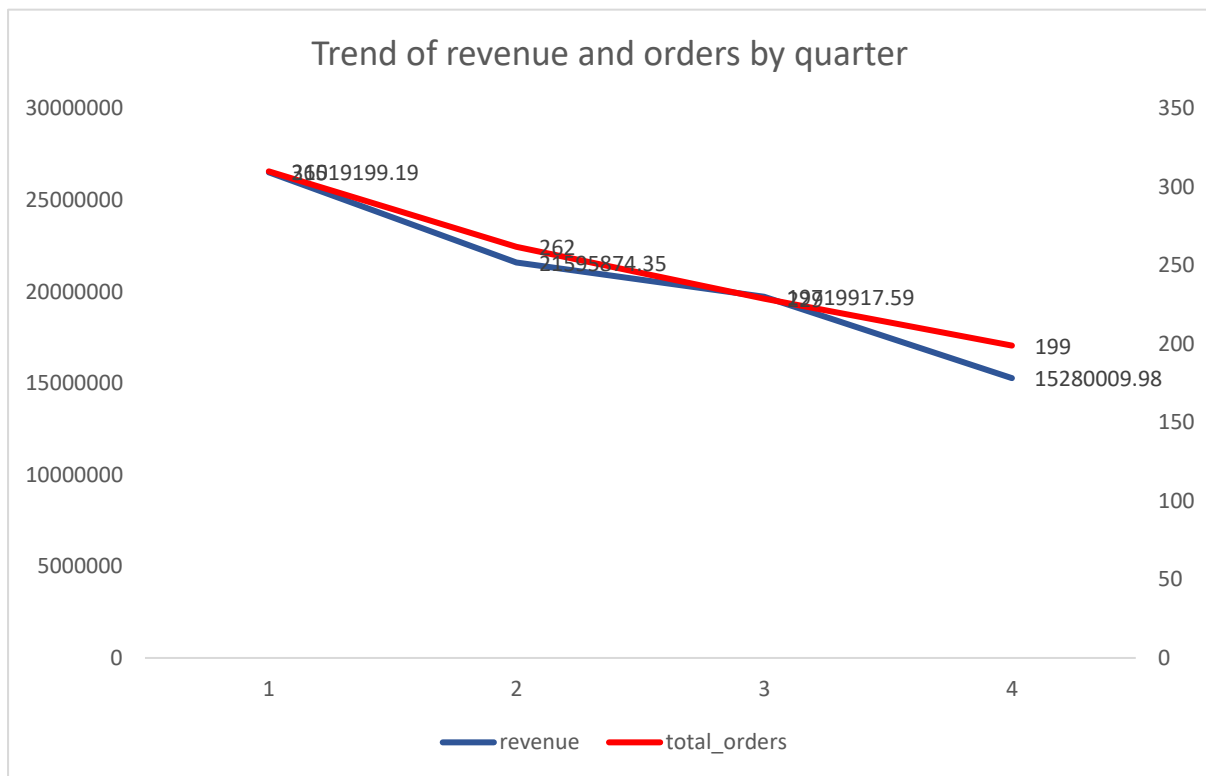
quarter_number	revenue	previous_revenue	qoq_perc_change
1	26519199.2	NA	NA
2	21595874.4	26519199.19	-18.565134
3	19719917.6	21595874.35	-8.686644
4	15280010	19719917.59	-22.514839

**Hint:** You can use a line chart with Quarter Number in the x-axis and revenue in the y-axis, and give the % change as text at each point, OR you can just have a neatly formatted table with the % changes, if that would look cleaner

## Observations / Findings

- The revenue decreases each quarter, starting from 26,519,199.2 in Q1 to 15,280,010 in Q4.
- The largest percentage decrease in revenue occurs in Q4, with a -22.51% change from the previous quarter.
- This sharp decline might indicate a seasonal effect, a major market shift, or an operational issue.

# Trend of Revenue and Orders by Quarter



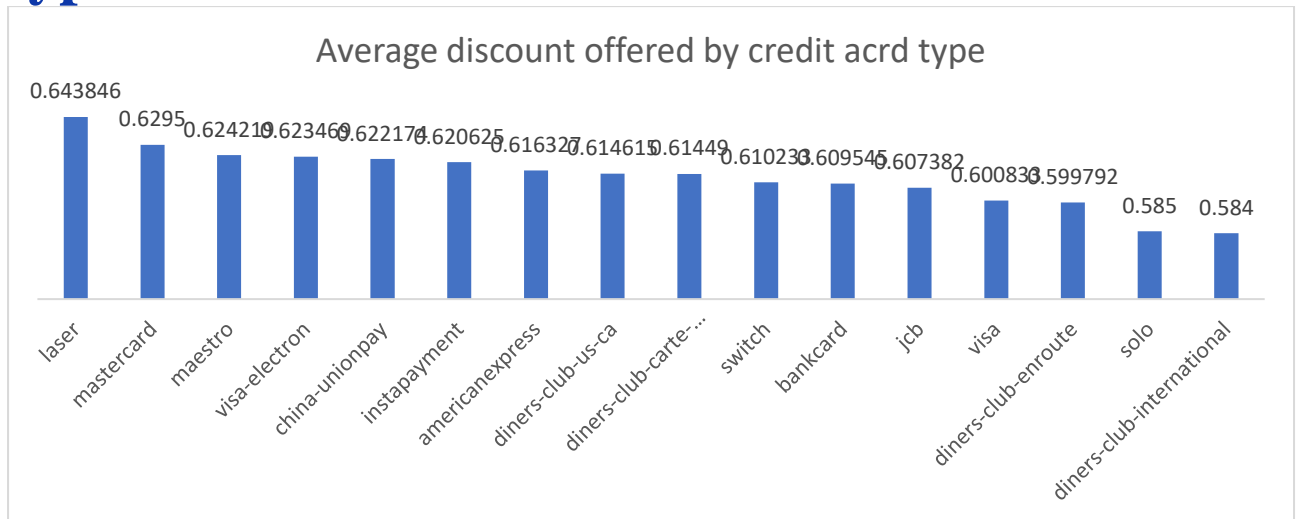
**Hint:** You can create a dual axis line chart with Quarter Number in the x-axis, and Revenue as the 1st y-axis and Orders as the 2nd y-axis in the same chart.

## Observations / Findings

- The revenue drops from approximately \$26.5 million in Q1 to about \$15.3 million in Q4.
- The total orders drop from 310 in Q1 to 199 in Q4.
- The most significant drop in both revenue and total orders occurs between Q3 and Q4.

# Shipping Metrics

## Average discount offered by Credit Card type

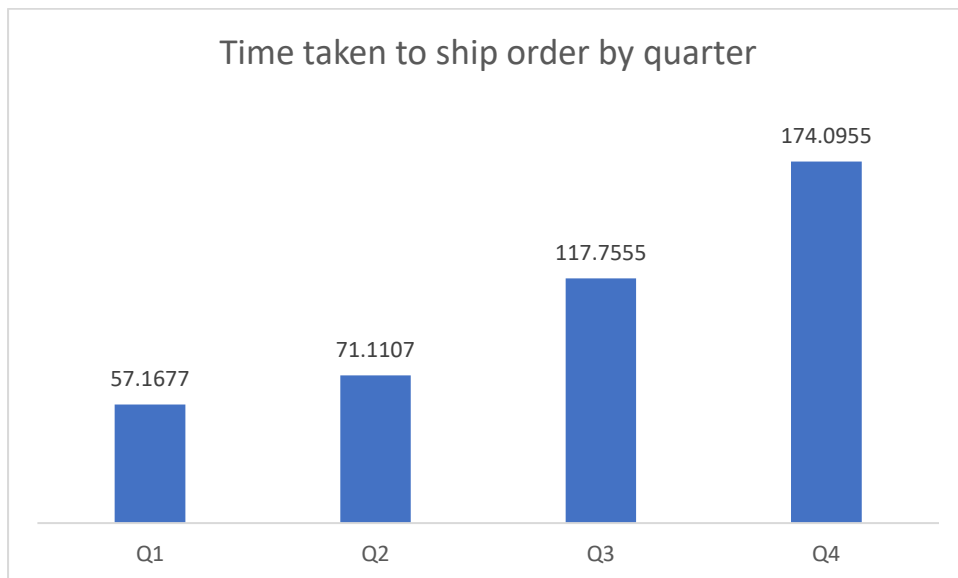


**Hint: You can make a bar chart with Card Types on the x-axis and average discount offered in the y-axis OR a well formatted table can convey the message**

## Observations / Findings

- The 'laser' credit card type offers the highest average discount at approximately 0.643846.
- The difference between the highest and lowest average discounts is relatively small, indicating that the average discounts offered by these credit card types do not vary significantly.
- The top three credit card types with the highest average discounts are 'laser' (0.643846), 'mastercard' (0.6295), and 'maestro' (0.624219).

# Time taken to ship orders by Quarter



Q1,Q2,Q3,Q4 represent each quarter

**Hint: You can make a bar chart with Quarter Number on the x-axis and average time to ship in the y-axis**

## Observations / Findings

- There is a consistent increase in average shipping time from Q1 to Q4
- The average shipping time more than triples from Q1 (57.1677) to Q4 (174.0955), highlighting a significant seasonal impact on shipping efficiency.
- The most significant increase in average shipping time occurs between Q3 (117.7555) and Q4 (174.0955), suggesting a substantial rise in shipping delays during the last quarter.

# INSIGHTS AND RECOMMENDATIONS:

- The highest number of purchases occurs in Q1, while Q4 has the least number of orders, mainly due to customer dissatisfaction.
- The percentage of very good and good ratings is decreasing each quarter, while the percentage of very bad ratings is increasing, indicating growing customer dissatisfaction.
- California and Texas have similar market sizes, indicating balanced customer reach in these states. District of Columbia has the fewest customers, suggesting limited market penetration or engagement.
- Revenue decreases each quarter, starting from approximately \$26.5 million in Q1 to about \$15.3 million in Q4. The largest percentage decrease in revenue occurs in Q4, indicating potential seasonal effects, market shifts, or operational issues.
- Improve shipping processes to reduce delays, especially in Q4, by optimizing logistics and increasing shipping capacity during peak seasons.
- Expand the range of vehicle offerings in states like Kansas and Arkansas to cater to diverse customer preferences.
- Introduce seasonal promotions and new product releases in Q3 and Q4 to boost customer ratings and purchases.
- Implement strategies to improve customer satisfaction in Q3 and Q4, such as enhanced customer service, better product quality, and addressing common complaints.