SQL and Databases:

Project Report

By: <ADITYA BHAT>

Business Overview

Total Revenue	Total Orders	Total Customers	Avg Rating
48.61 M	1000	1000	3.06

Last Qtr Revenue	Last Qtr Orders	Avg Days to Ship	% Good Feedback Last Qtr
8.5 M	199	105	10.05%

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Customer Metrics

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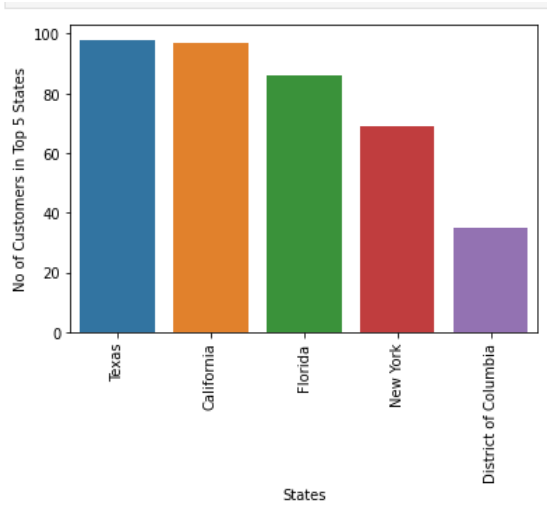
Distribution of Customers across States



Observations / Findings

- Texas has the most number of customers and Wyoming, Maine and Vermont has the least number of customers
- Most of the customers are from states with high population

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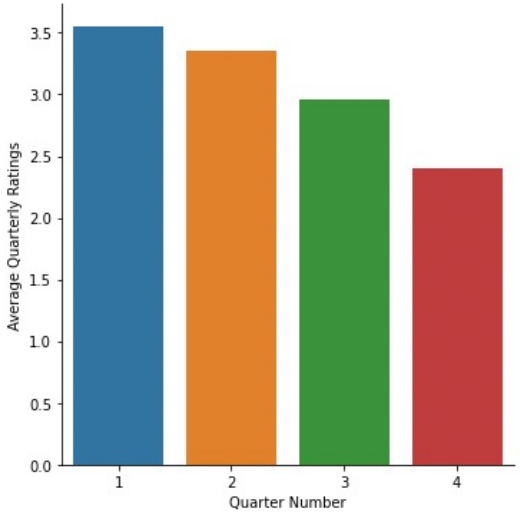
Average Customer Ratings by Quarter



Observations / Findings

- The average rating is decreasing over time with the 1st quarter having 3.5 stars on average to the last quarter with 2.3 stars ratings

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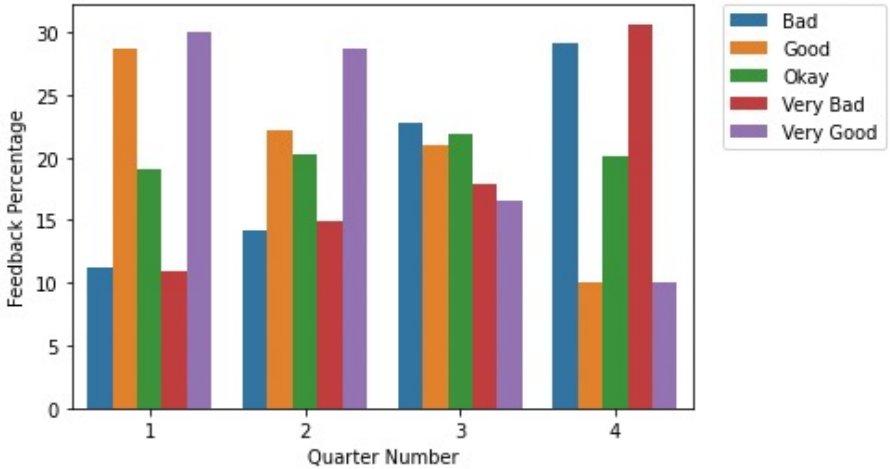
Trend of Customer Satisfaction



Observations / Findings

- Customers seem to be dissatisfied over time as the the number of bad and very bad feedback is significantly higher in the 3rd and 4th quarter versus the 1st and 2nd
- The number of customers who were neither too satisfied or dissatisfied (okay category) is about the same every quarter
- The service is deteriorating over time which is evident from the customer feedback. Maybe they need to invest more in customer services department by hiring more people or improve training for existing personnel

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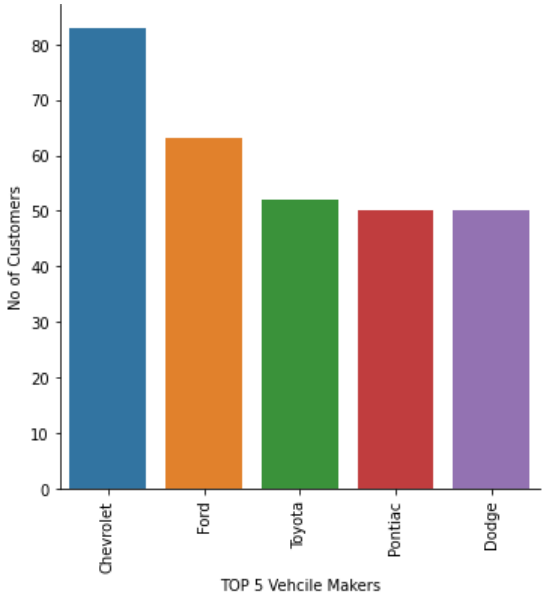
Top Vehicle makers preferred by customers



Observations / Findings

- Chevrolet is the most popular vehicle brand preferred by the customers followed by ford
- It looks like customers prefer American manufacturers over international manufacturers

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Most preferred vehicle make in each state (Top 10 states with Most customers)

STATE	Vehicle Maker
Texas	Chevrolet
Florida	Toyota
California	Ford, Chevrolet, Nissan Dodge, Audi
Ohio	Chevrolet
Alabama	Dodge
Colorado	Chevrolet
Maryland	Ford
New York	Toyota, Pontiac
Virginia	Ford
Washington	Chevrolet

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Revenue Metrics

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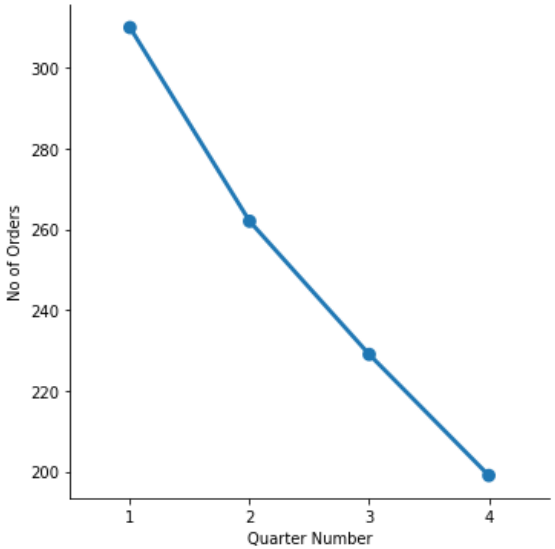
Trend of purchases by Quarter



Observations / Findings

- The number of orders is decreasing over time which might be correlated with customer satisfaction or lack of inventory

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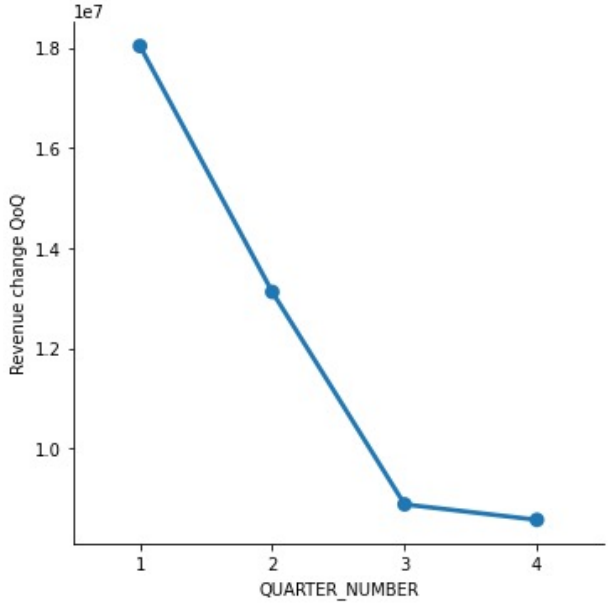
Quarter on Quarter % change in Revenue



Quarter Number	Revenue change (%)
1	NaN
2	-27.2
3	-32.31
4	-3.4

Observations / Findings

- The Revenue is decreasing every quarter
- There is nearly 32.3% decrease in revenue between 2nd and 3rd Quarter
- The revenue loss seems to be stabilizing in the 4th quarter

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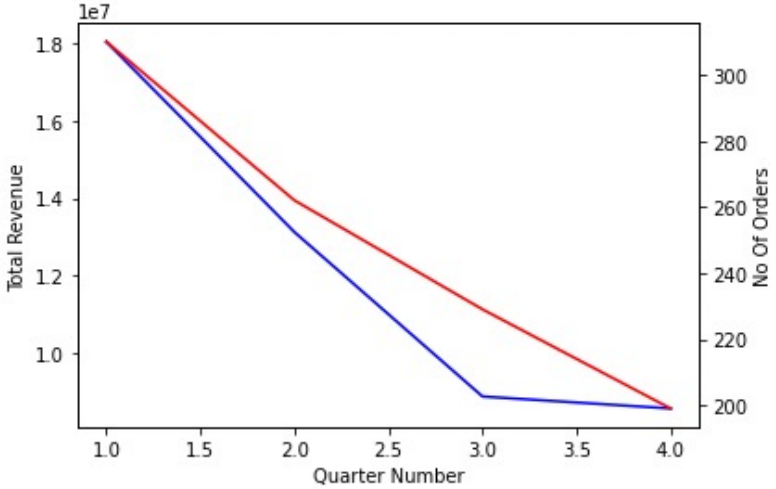
Trend of Revenue and Orders by Quarter



Observations / Findings

- The revenue and no of orders are decreasing over time which is evident from the line plot above and are highly correlated

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Shipping Metrics

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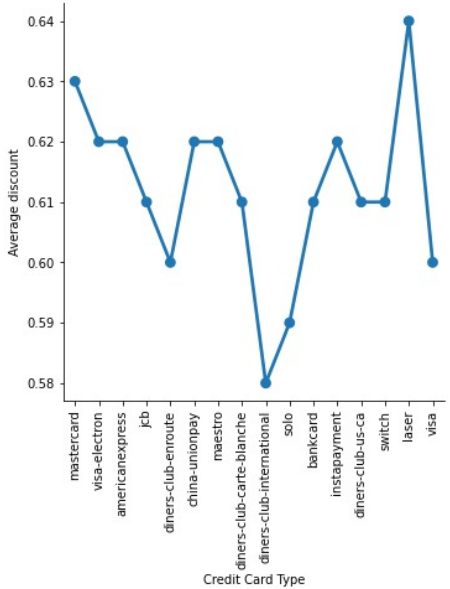
Average discount offered by Credit Card type



Observations / Findings

- The average discount ranges from 58% to 64% depending on the card type
- Diners club international has the smallest discount and Laser credit card has the highest discount

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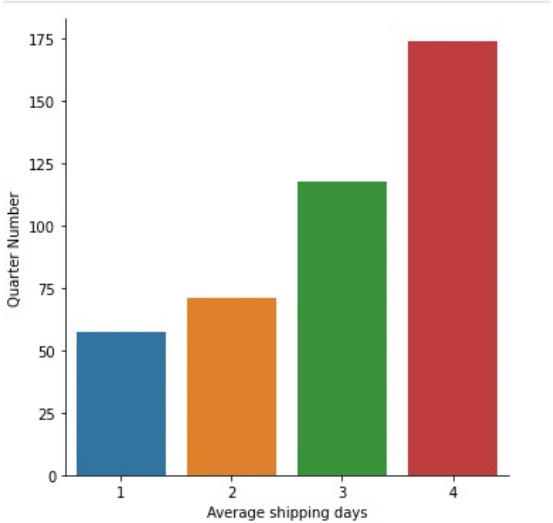
Time taken to ship orders by Quarter



Observations / Findings

- Average time to ship the car from the order date is significantly increasing every quarter
- The average ship times are three times higher in the 4th quarter when compared to 1st quarter

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Insights and Recommendations

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Insights:

- The customer feedback is changing significantly from very good to very bad over the quarters
- The revenue and number of orders are also significantly decreasing
- The average shipping days are also significantly increasing every quarter

Recommendations:

- Hire more personnel across the board and especially in customer service
- Optimize the time taken to ship the orders by better planning by maybe increasing the inventory which might help reduce the delay in shipping
- Provide training for personnel to improve customer service
- Decrease the discount provided for each credit card
- Target states with highest customer base (TX,FL,CA,NY,DC) to improve sales
- Focus on targeting sales for American manufactured vehicles to increase the number of orders

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