Marketing Analysis

RFM

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been

Problem.

An automobile parts manufacturing company has collected data on transactions for 3 years. They do not have any in-house data science team, thus they have hired you as their consultant. Your job is to use your data science skills to find the underlying buying patterns of the customers, provide the company with suitable insights about their customers,
and recommend customized marketing strategies for different segments of customers.

01
Overview

We provide a lay of the land view and describe the data we are working with

02
EDA

We run exploratory analysis and look at high level insights

03
RFM

We segment our customers using RFM and showcase our result

04
Recommendations

We run inferences and showcase our analysis and give recommendations to business

Lay of the land.

In this section we describe the high-level view of the data and where the business sit currently.

0%

Missing Data

There is no missing data

2yrs 5mnths

The data covers a period of 2 years and 5 months

2747

The data has 2747 rows and 20 columns

94.5%

94.5% of our deals are small and medium with medium making up 49.1%

298

There are 298 unique orders in the data

89

There are 89 unique customers in the data

#1

The USA is the top Sales Country

7

We have sold 7 unique product lines in the period

9 760 221

We have received 9 760 221 in revenue for the period

70% of our sales come from 5 countries, namely;
USA, Spain, France, Australia and the UK.

EDA

In this section we explore the data and find high level insights that speak to our data. We will under-take the following:

1. Uni-variate analysis
2. Multi-variate Analysis
3. Time Series Analysis

USA is the top seller

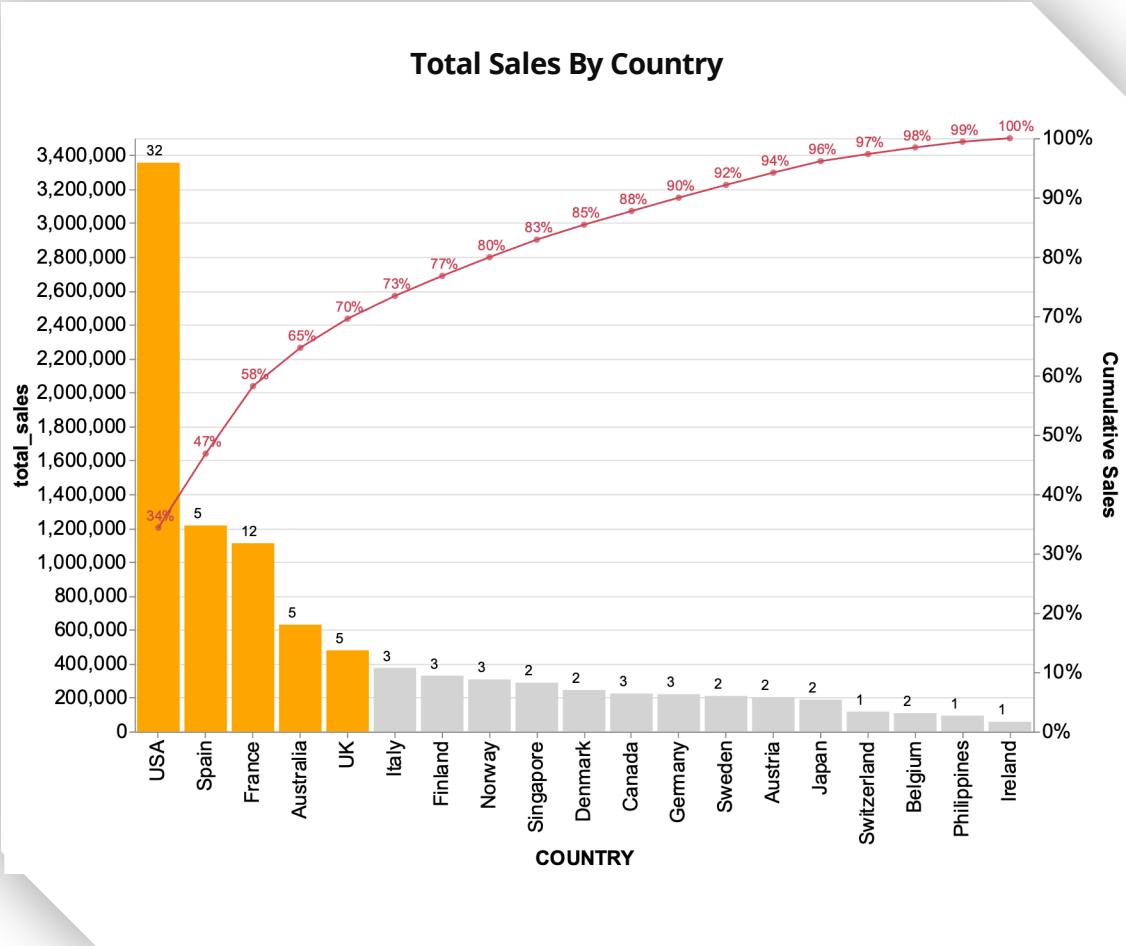
The USA has most of our customers and 32% of the clients make up for 34% of our total sales over the duration. The rate of return per client in the US is on average less than one percent but this could be due to a mix of client types. This is our most valuable market

70% of sales comes from 5 countries

We make 82% of our sales form the top 9 countries. We make 70% of our total sales from the top 5 countries. Most of our sales are driven by a few

Our highest return per customer country is Spain

We can see that Spain has the most valuable customers in terms of return as 5 clients give us 13% of our sales making them our most valuable clients in terms of return per client. These are most likely clients buying high margin items and luxury goods and more of a niche market



50% of our sales come form 25 clients

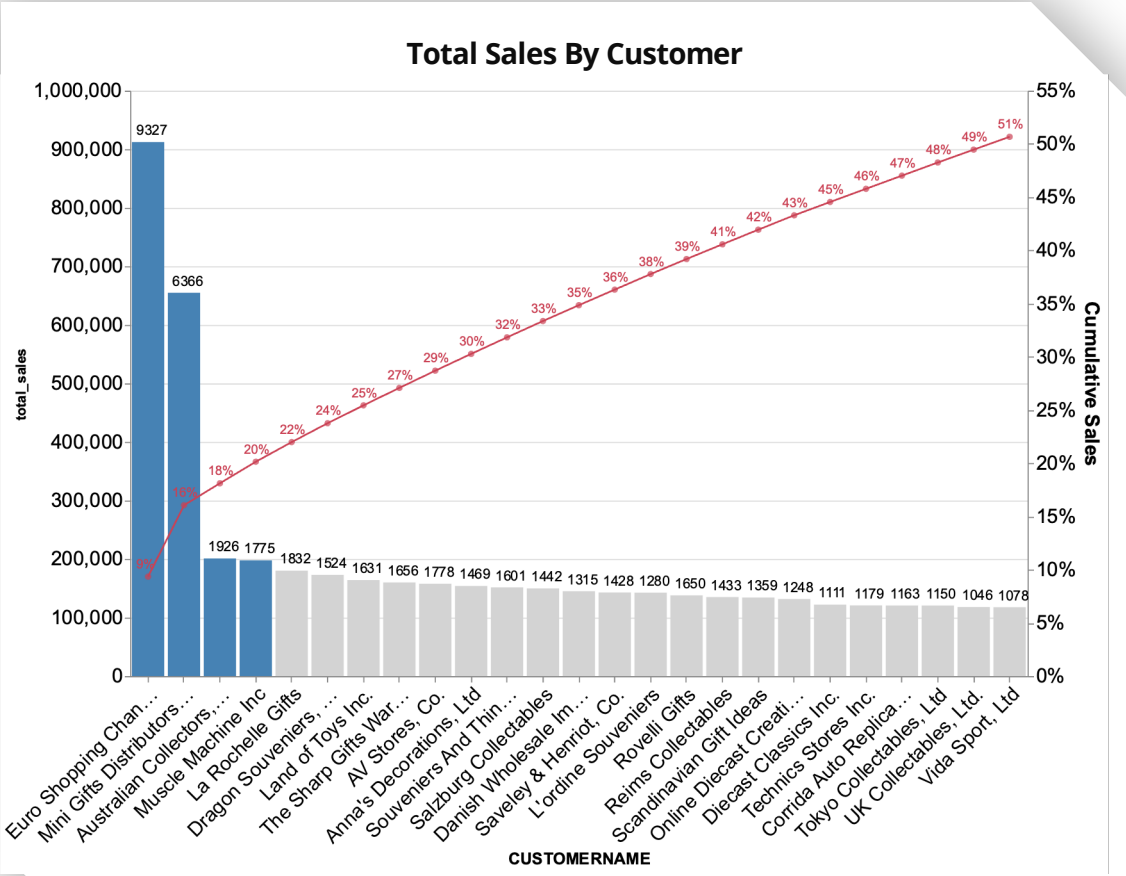
50% of our sales come from 25 of our customers

20% of our sales come form 4 clients

20% of our total sales come from our top clients who are Euro Shopping, Mini Gifts, Australian Collectors and Muscle Machine Inc.

Euro Shopping Our biggest Customer

The total sales are generally correlated with the number of unique orders each of the clients have made with Euro Shopping Channel being our biggest customer with 26 orders (9 more than the second). They have ordered a total of 9327 items.

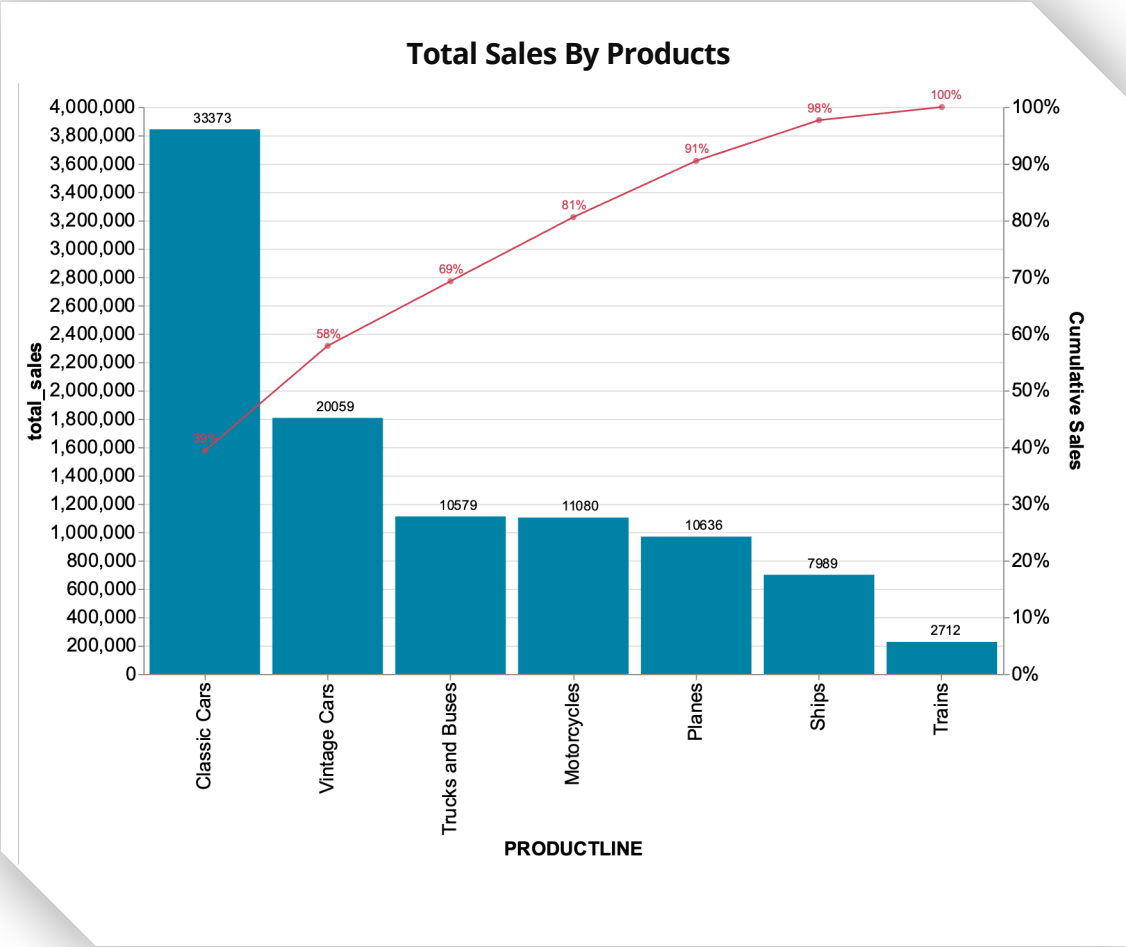


58% of our sales come from Car Sales

58% of our business is from selling classic cars

We have sold 33 373 cars to date

Our orders of cars totaled 33 373 cars to date, and this is the highest volume product constituting 39% of our total sales value and it is by far the biggest driver of our revenue

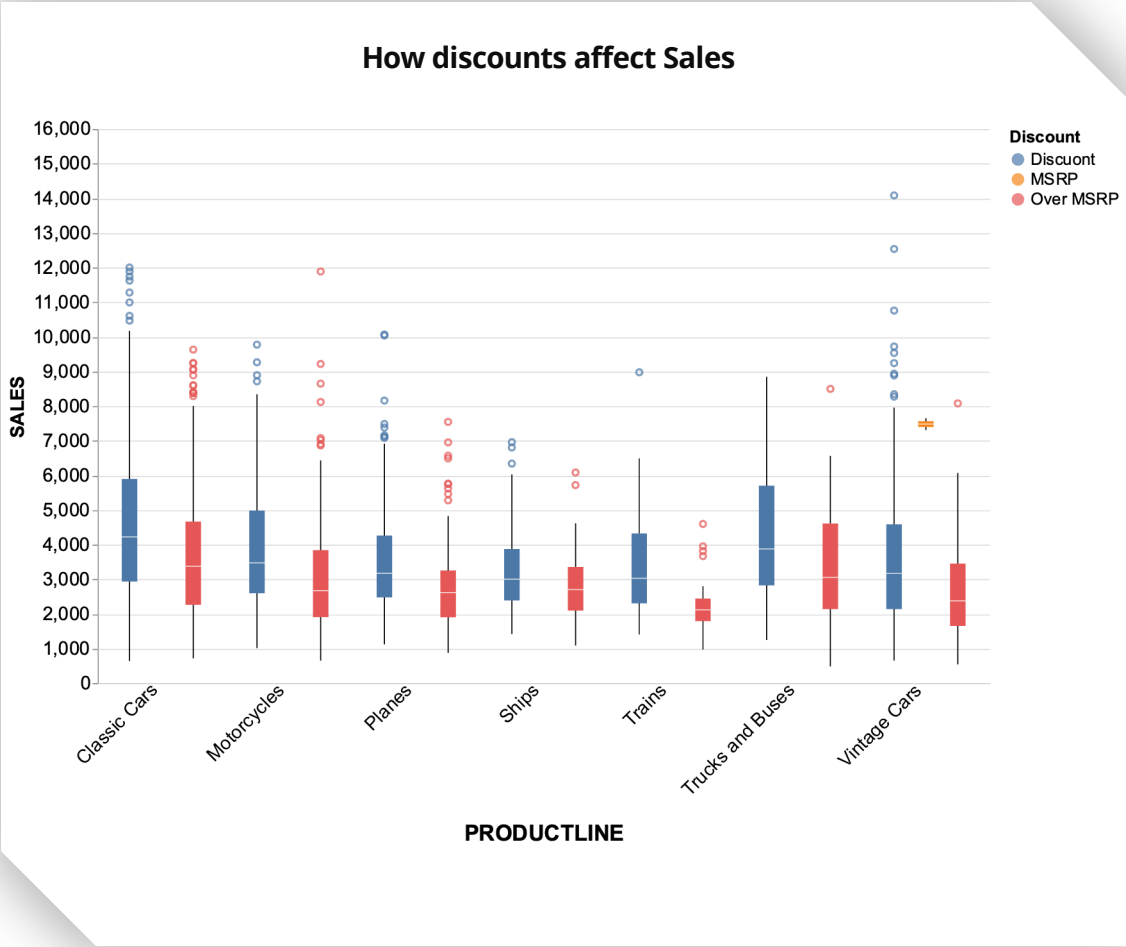


Discounts help us sell

We can see that discounts help us sell more product as the product sold under the recommended manufacturer selling price outsell those that are either sold at the MSRP or over

We hardly sell at the MSRP

Our consistent strategy is to either sell at above or below the manufacturer recommended price for all our products. Vintage Cars have a few sales that were sold at the MSRP and this out-sold other categories. We need further investigation to identify a potential pricing strategy.



Observations

SALES by DEALSIZE:
As expected, 'Small' deals have lower sales values, 'Medium' deals have higher sales values, and 'Large' deals have the highest sales values. This categorization seems to reflect the sales value well.

SALES by PRODUCTLINE:
Different product lines show different sales distributions. Some product lines have a wider range of sales values, indicating that they may have more variability in the number of items sold or in their prices. This could suggest that certain product lines have more premium options or bulk sales.

SALES by COUNTRY:
The sales by country show significant variation. Some countries have a higher median sales value, which could indicate a stronger market or a preference for more expensive products. This information can be vital for tailoring marketing strategies to different regions.

DISCOUNTS:
We can see that the higher the percentage discount, the higher the sales

SALES vs PRICEEACH:
There is a cluster of points at the lower end, indicating that many transactions happen with lower-priced items. However, the spread increases with price, indicating variability in sales amounts for higher-priced items.

SALES vs QUANTITYORDERED:
There is a positive relationship between the quantity ordered and sales, which is expected since more items would generally lead to higher sales. However, the relationship doesn't appear to be strictly linear, suggesting tha factors like discounts or bulk pricing may be in play.

SALES vs DEAL SIZE:
Most of our sales are from the medium deal.

- There is clear seasonality in the data
- Our highest sales occur in the month of November so we should prepare for this by running promotions and discounts
- 2019 was the best performing year with the highest sales

How are we trending over time

In this section we explore the trend of the data and we look at how the data trends over:

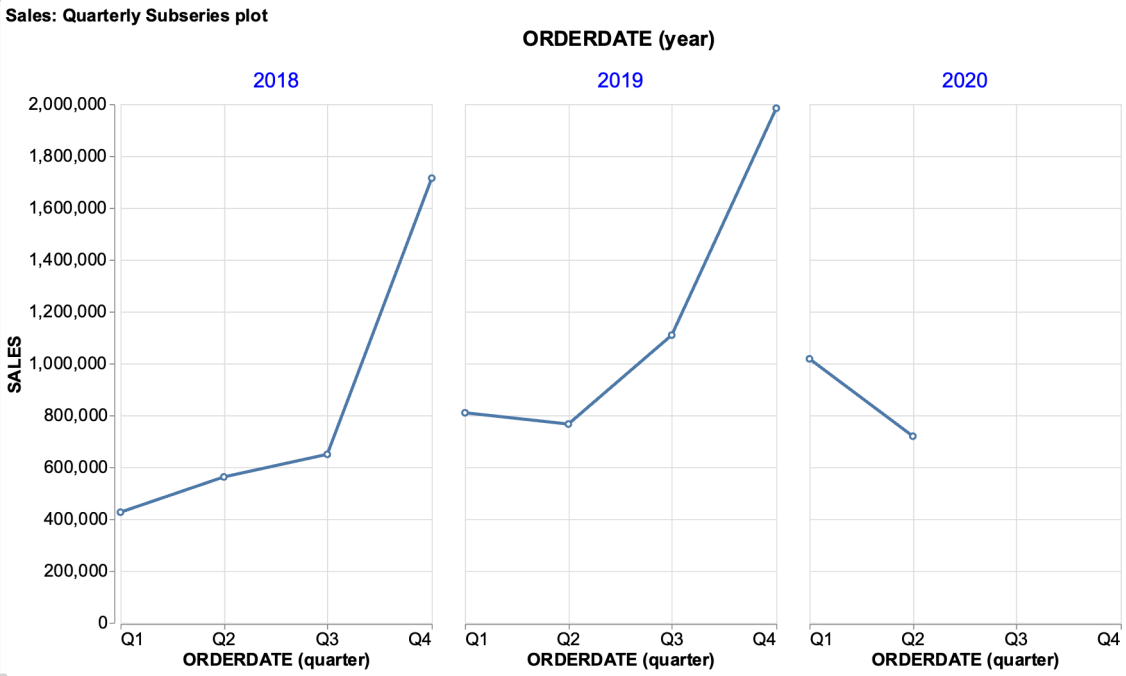
1. Yearly
2. Quarterly
3. Monthly

Quarter four has the highest sales

The fourth quarter has the highest sales compared to all the other quarters.

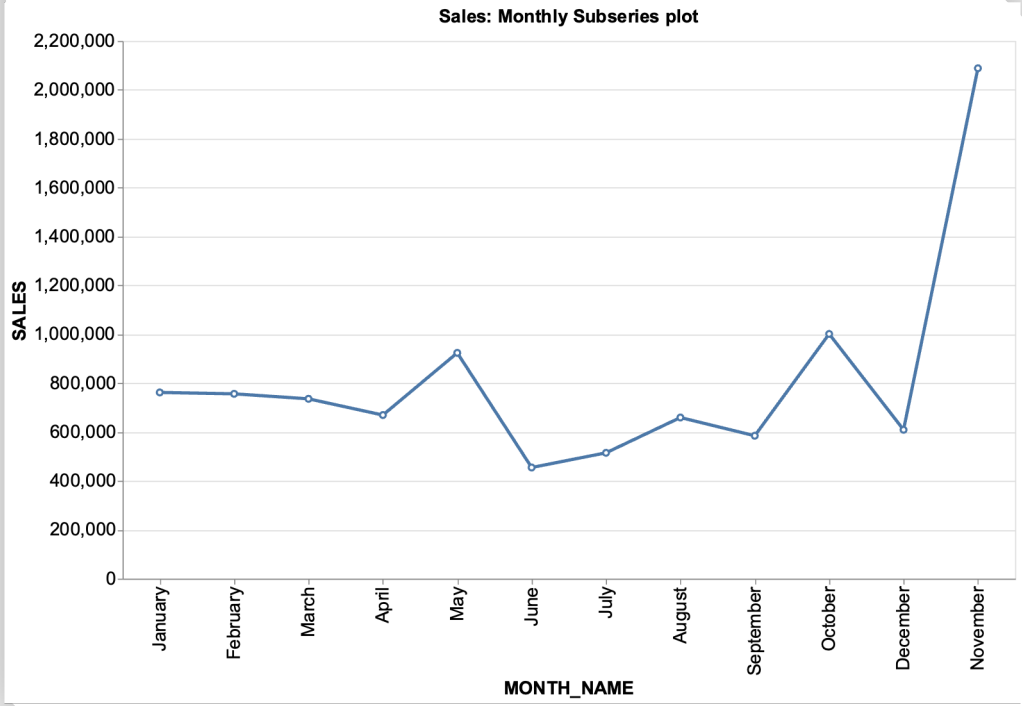
The quarterly trend is clear

The quarterly sales generally follow the same the direction and the same.



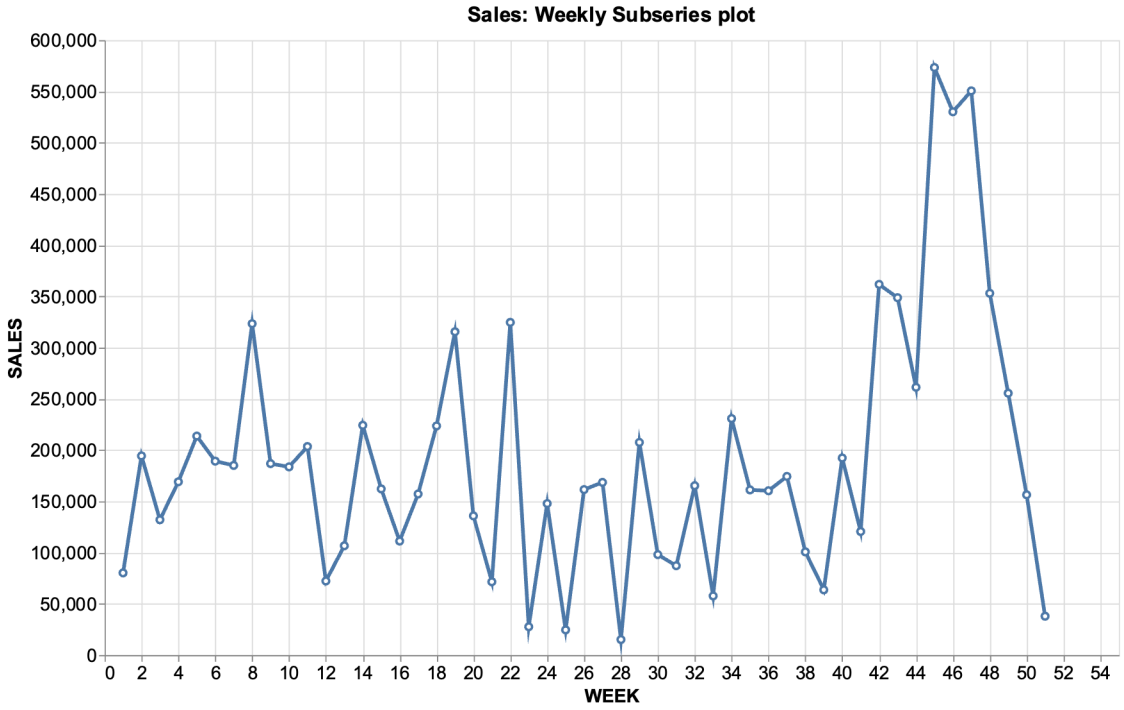
The quarterly trend is clear

We see there are two clear spikes in the timelines with a spike in May and November. This shows that there is seasonality in the sales data



Weekly sales

The weekly plot also shows a high peak in the latter parts of the year (fourth quarter) which coi-incides with all our other graphs and analysis showing increased demand in the last quarter



Classic car quarter 4 average discount are low.

All other products except Classic cars have an average percentage discount that is greater than zero during the end of the year. We can potentially set up a promotion selling discounted cars at slightly lower prices to boost sales as we have shown that

RFM Analysis

RFM Analysis: RFM stands for Recency, Frequency, and Monetary Value. It is a marketing analysis tool used to identify and segment customers based on their behavior.

1.Recency (R): How recently a customer has made a purchase.
2.Frequency (F): How often a customer makes a purchase.
3.Monetary Value (M): How much money a customer spends on purchases.

Parameters and Assumptions:
•Recency (R): This parameter measures the time since the last purchase. The assumption is that more recent customers are likely to make additional purchases.
•Frequency (F): This parameter measures how often a customer makes a purchase. The assumption is that customers who make more frequent purchases are more valuable.
•Monetary Value (M): This parameter measures the total monetary value of a customer's purchases. The assumption is that customers who spend more are more valuable.

We are required to produce four segments for our clients.

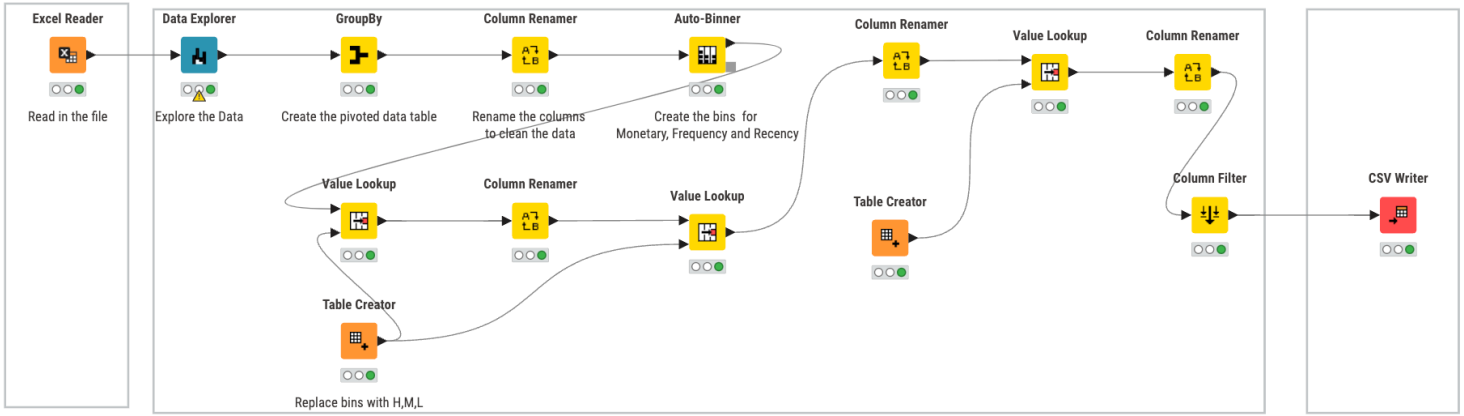
KNIME WORKFLOW

Parameters Used:

We have used 3 quantiles based on the Monetary, Frequency and Recency buckets to bin or bucket our values into 3 buckets.

Low : [0.0.25) quantiles
Medium: [0.25 , 0.75)
High: [0.75, 1.0]

Knime Workflow



SEGMENTS

We identify four segments in the data:

High Value Customers, Loyal Customers, At-Risk and Churned customers

High Value Customers (H, H, H)

These are the customers with the highest frequency, highest recency and the highest spenders, they are basically our most valuable and most loyal customers. There are a total of 11 High value customers. There are 11 High value customers

Loyal Customers (H/M, H/M, M/L/H)

These are customers with high or medium frequency regardless of their recency or monetary values. Their recency is however not low. According to the definition there are 35 loyal customers.

At Risk (L, H/M, H/M)

These are customers with a low recency and have either a high or medium monetary and medium or high Frequncy. There are 15 at risk clients

Churned or Low Priority (L,L/M, L/M)

These are clients who do not buy frequently and spend less, they have basically churned. There are 28 churned or low priority clients

RFM Table

	Monetary	H	M	L
Recency	Frequency			
H	H	11.000000	1.000000	
	M	1.000000	9.000000	1.000000
M	H	3.000000	3.000000	
	M	5.000000	11.000000	1.000000
	L		11.000000	10.000000
L	H	1.000000	1.000000	1.000000
	M	1.000000	6.000000	5.000000
	L		2.000000	5.000000

Customer Segmentation.

11
HIGH VALUE CUSTOMERS

- Anna's Decorations
- Australian Collecttors
- DieCast Classics
- Euro Shopping Central
- La Rochelle Gifts
- Land of Toys

35
LOYAL CUSTOMERS

- AV Stores
- Auto Canal Petit
- Collectibles for Less
- Gift Depot Inc.
- Lyon Souveniers
- Oulu Toy Supplies, Inc

15
AT RISK CUSTOMERS

- Toys4GrownUps.com
- Stylish Desk Decors, co.
- Signal Gift Stores
- Marseille Mini Autos
- Cruz & Sons Co.

28
CHURNED OR LOW PRIORITY

- Signal Collectibles Ltd.
- Iberia Gift Imports, Corp.
- Double Decker Gift Stores
- Bavarian Collectibles Imports, CO.
- DieCast Collectables

- **12.4%** of our clients are champions or our best customers.
- **39.3%** of our customers are Loyal Customers
- **16.8%** of our clients are at risk.
- **31.5%** of the customers are Churned or Low Value Customers
- We recommend running targeted campaigns based on the value per customer
- We recommend running clustering to identify similar customers so that we can create profiles enabling us to create a unified customer strategy

Recommendations

The different segments have their own strategies that can be used to promote the behavior that will result in higher earnings over time

Champions:
- Develop an exclusive loyalty programs to reward their behavior
- Provide exclusive offers and early access to new products
- Engage with personalized commination and thank you messages

Loyal Customers:
- Create bundles offers to increase their transaction size
- Offer a loyalty program to promote their behavior
- Offer membership or subscription services for steady services
- Encourage product reviews and referrals to brin in new customers

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Recommendations

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At Risk:
- Send out re-engagement emails or emails or communications
- Offer them a “We Miss You” discount or incentive
- Conduct a survey to understand why they have not purchased recently

Churned or Low-Value Customers:
-Offer clearance or outlet products to entice price-sensitive buyers

Other general strategies include:
Data-driven personalization - Leverage data analytics across all segments to tailor the customer experience.
Customer Journey Mapping - Regularly map customer journeys to identify pain points and opportunities for engagement.