RFM-based Customer Segmentation Analysis

This report is regarding the RFM Analysis and Customer Segmentation on the E-Commerce Website Sales Dataset

RFM Analysis Process

RFM Analysis (Recency-Frequency-Monetary Value) is a process by which customers in a sales setting are analyzed and segmented based upon three core values:

- How long it has been until their last purchase (Recency)
- How often they purchase products (Frequency)
- How much have they spent in the entire dataset (Monetary Value)

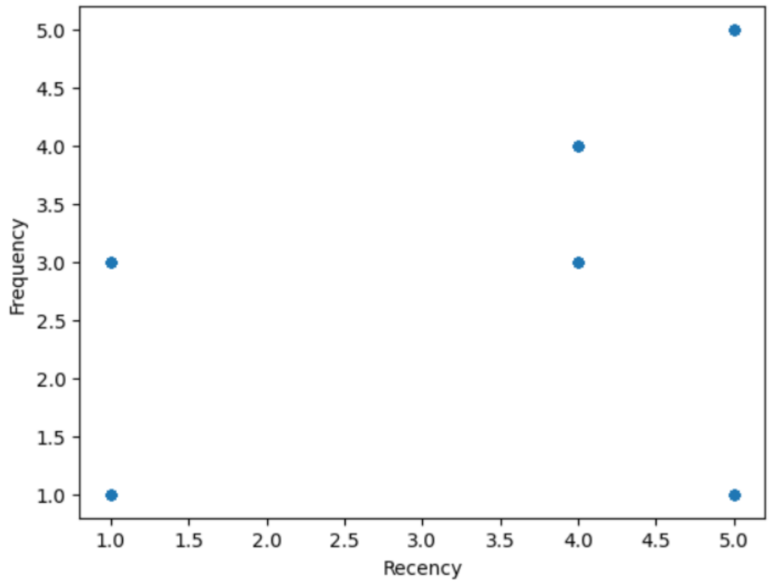
Based upon these values, customers can be assigned a certain rank and these ranks can be used to segment customers into different segments. These segments have different marketing strategies.

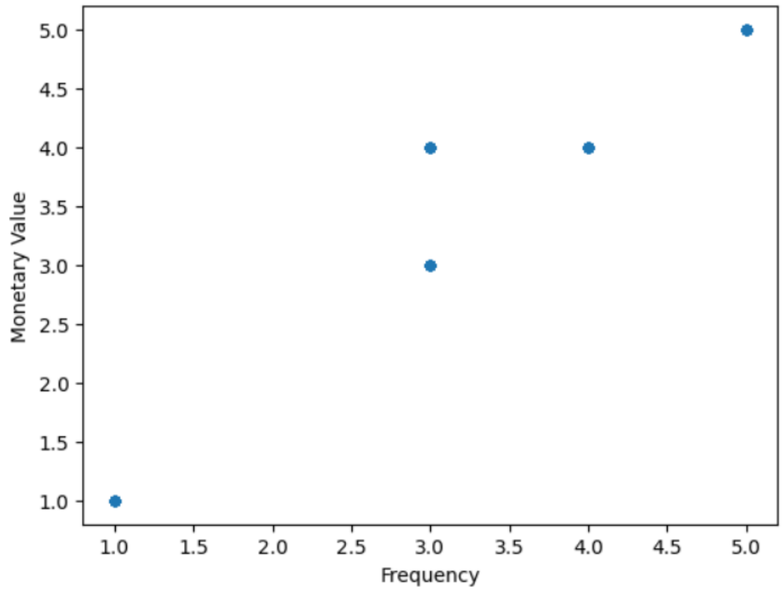
To start the process, we choose a reference data. For this we will take the most recent date in the dataset and compare every customer's most recent purchase with that date. This comparison can be used to calculate Recency

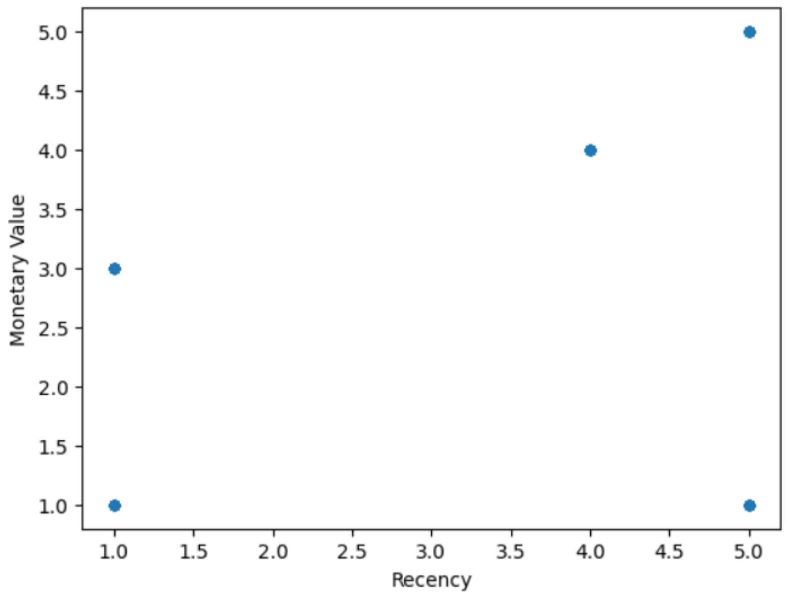
Next we count the total number of purchases made by that customer to obtain Frequency

We can then aggregate the total revenue obtained from that employee to gain Monetary Value

These three values have unique correlations with each other



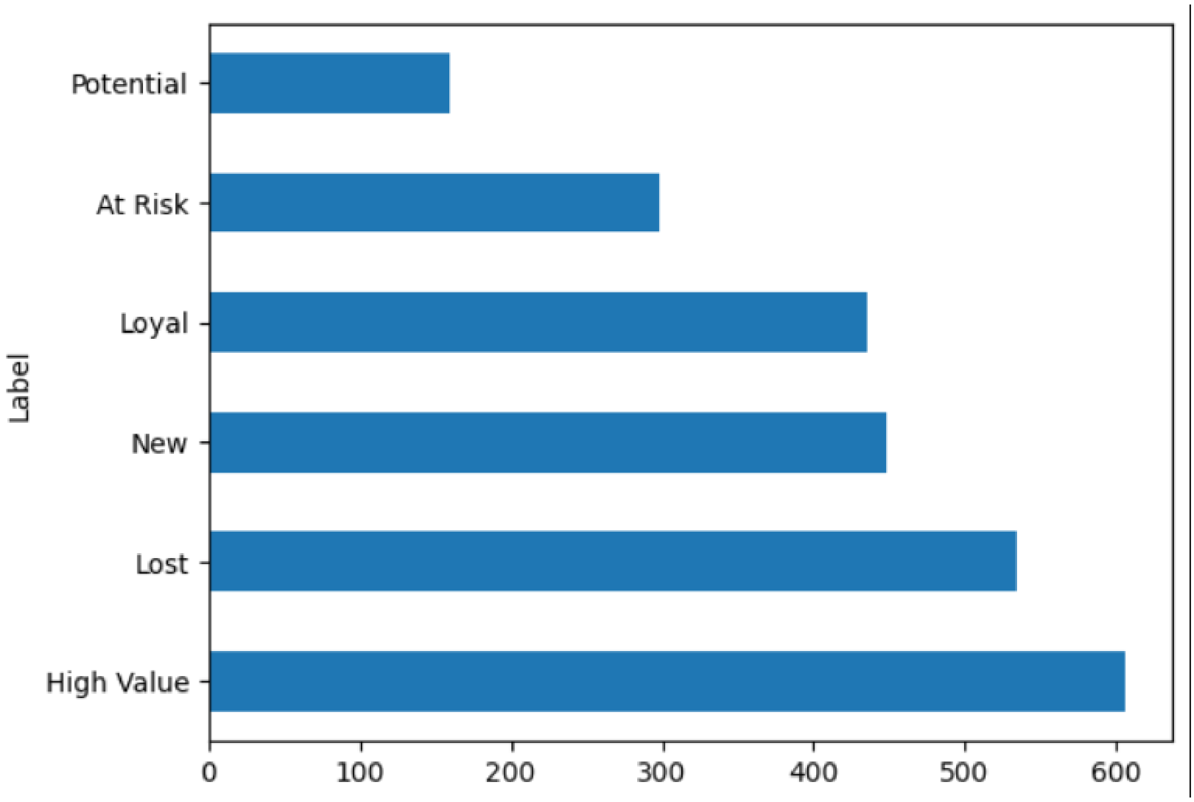


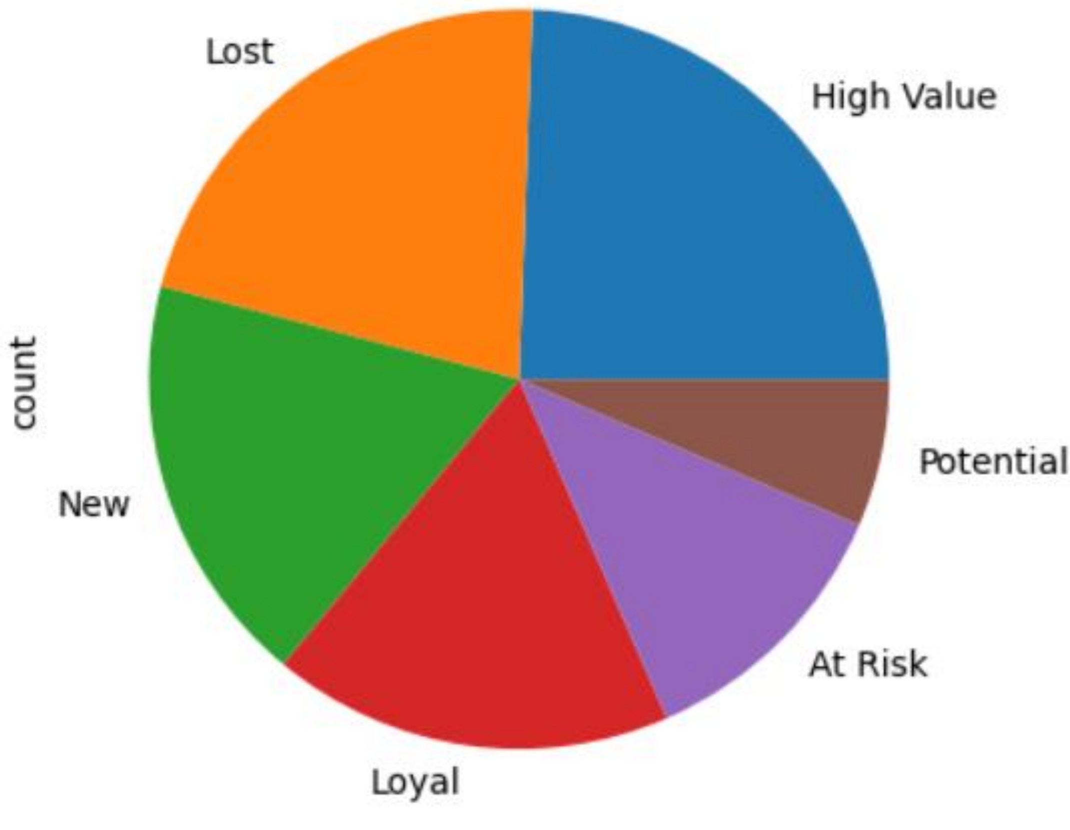


All three score were then ranked from 1 to 5, 5 being the highest rank and 1 being the lowest.

Once the ranks were assigned, customers were assigned certain segments based on certain RFM values. The number of customers in each segment were then obtained

Recency	**Frequency**	**Monetary Value**	**Label**	**Count**
5	5	5	High Value	606
4	4	4	Loyal	435
1	3	3	At-Risk	298
5	1	1	New	448
1	1	1	Lost	534
4	3	4	Potential Loyalist	160


Potential
At Risk
Loyal
New
Lost
High Value
Label
0
100
200
300
400
500
600


Lost
High Value
count
New
Potential
At Risk
Loyal

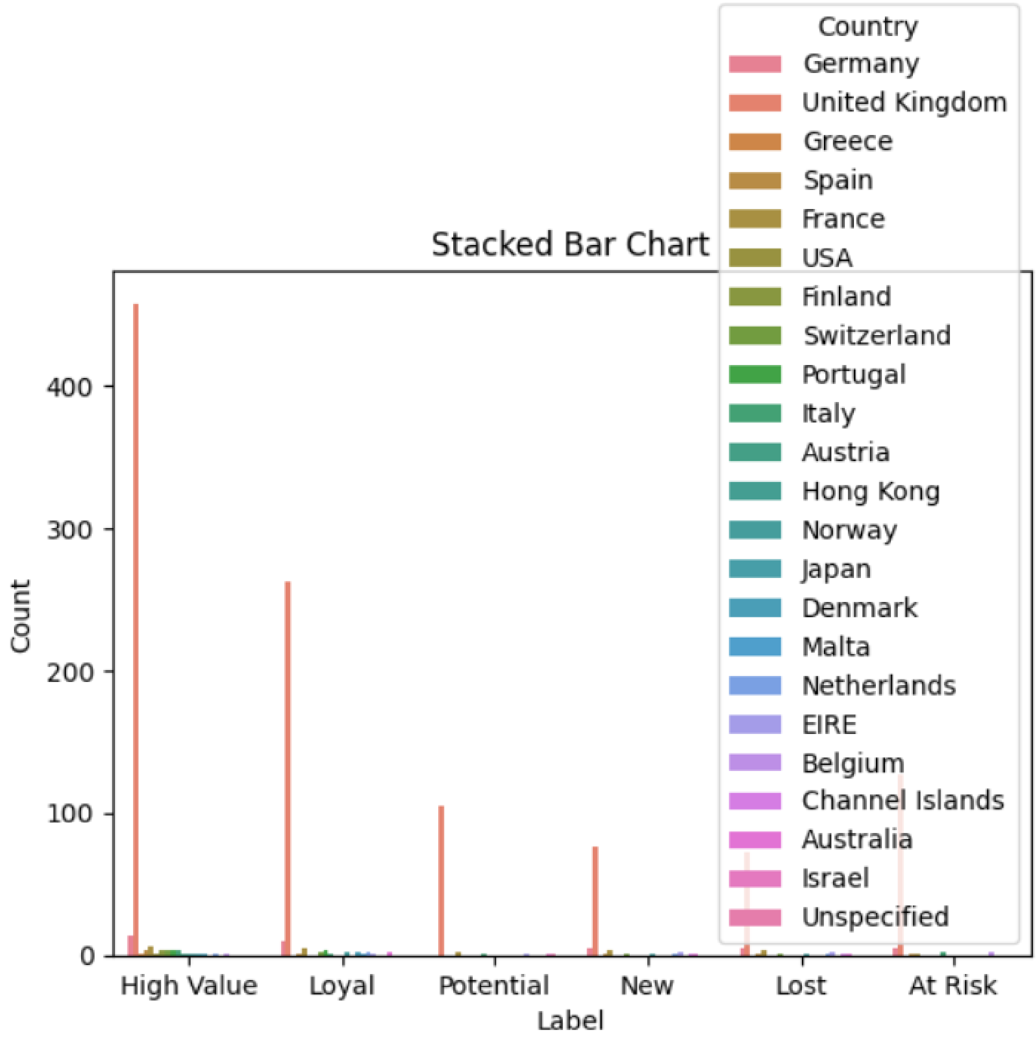
Results

Each customer segment represents a different type of customer

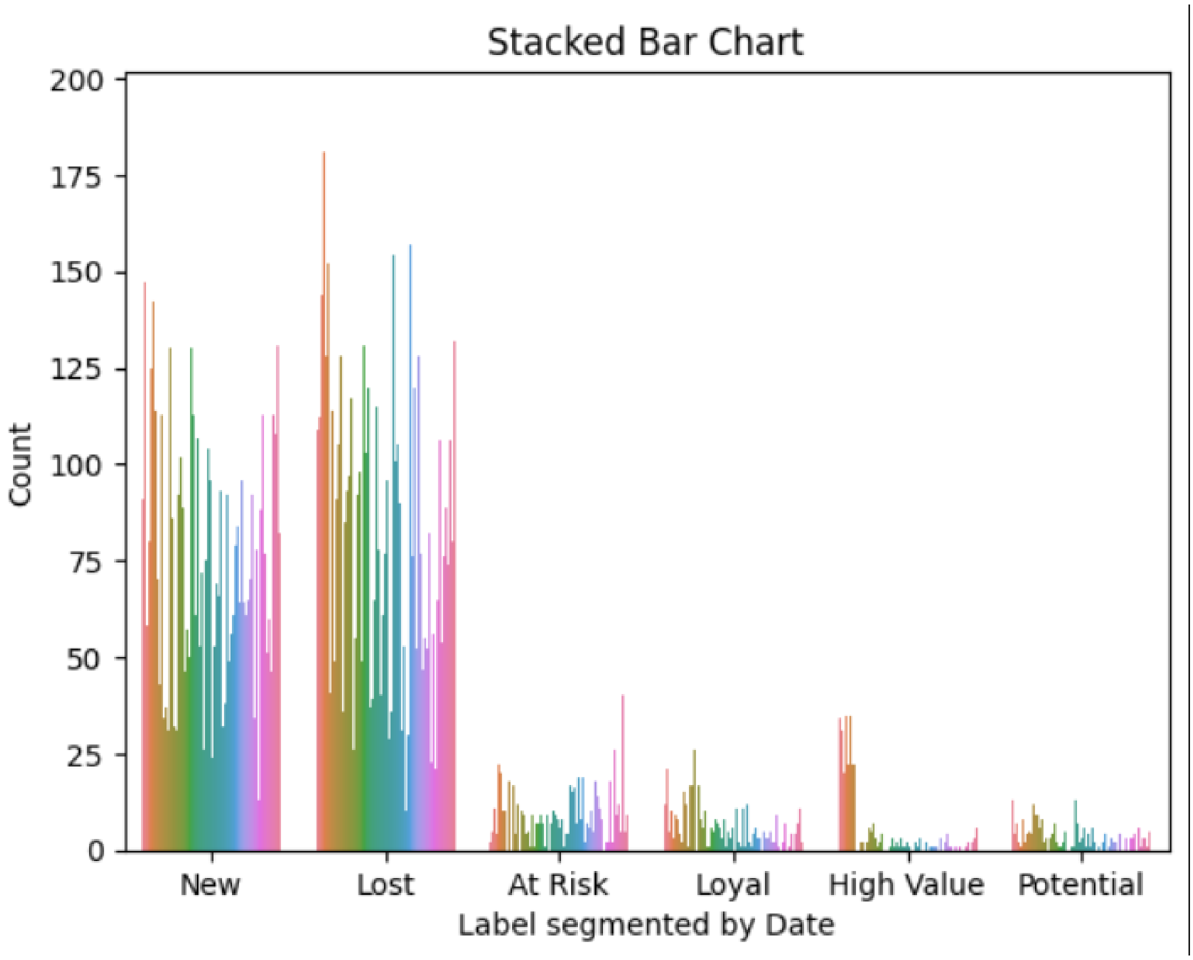
- High Value customers purchase frequently, in great quantity, and purchased something very recently. These customers have the highest impact on the business in terms of revenue
- Loyal customers purchase slightly less frequently, in smaller quantities and less recently than high value customers but are still loyal to the website. These customers have slightly less impact on the business
- At-Risk customers haven't purchased anything in a while, don't purchase very frequently and haven't purchased a lot. These customers have average impact on the business
- New customers have just recently purchased something, even if not a lot or not very frequently. These customers do not have much impact on the business, but there is scope for them to make larger impact in the future.
- Lost customers haven't purchased anything in a very long while, haven't purchased anything at all, and haven't spent any money. These customers have the least impact and do not contribute much to the company's success
- Potential Loyalist customers used to be At-Risk but are slowly becoming Loyal and may become so in the next business quarter. These customers may increase their medium impact depending on business decisions.

Analyzing the data, we note a few things.

- High Value Customers mostly conduct transactions from the United Kingdom



- New Customers usually join early in the year and are lost early in the year as well, whereas High Value customers are few but generate the most revenue



Marketing Strategies

- High Value Customers from other regions can be encouraged to spend more by promoting regional sales discounts or offers to increase the number of High Value Customers
- New Customers can be encouraged to keep using the website by offering coupons and other benefits on regular use of the E-Commerce Website
- Lost Customers can be prompted to re-engage with the website by offering return sales to customers who had made purchases before a certain date
- At-Risk Customers can be offered the same discounts as High Value customers
- Loyal Customers can be encouraged to continue as they are by employing the same strategy as with New Customers, and this same strategy can also be applied to Potential Customers