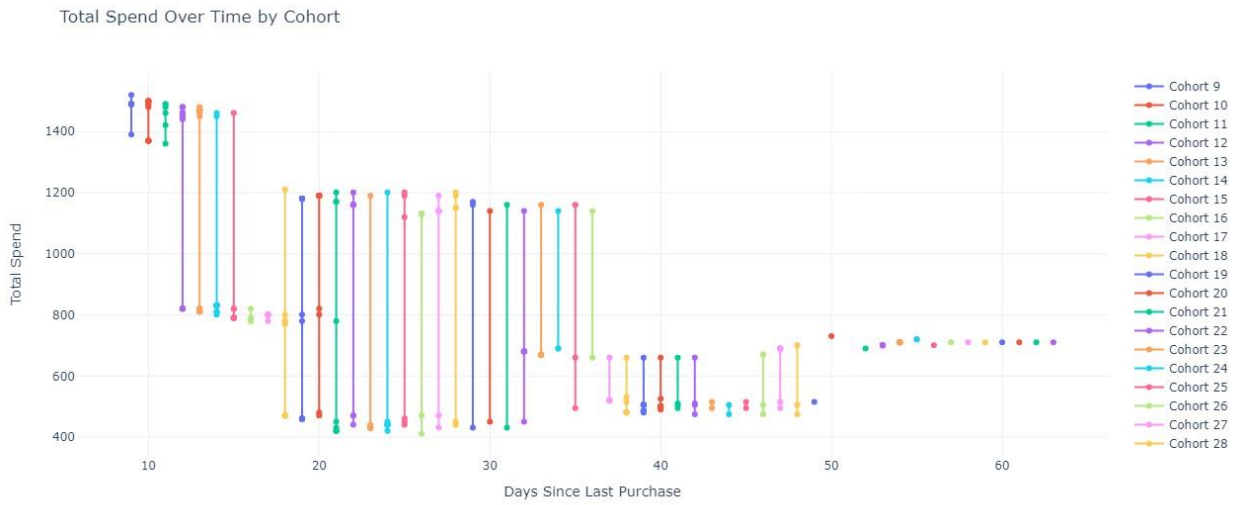
Cohort Analysis Project Using Python:

1. **Total Spend Over Time:**



Columns: Total Spend, Days Since Last Purchase

Analyze how the total spending changes over time. Group customers into cohorts based on their Days Since Last Purchase and track their total spending over subsequent periods.

Each line represents a different cohort, which is a group of customers who signed up for the service during the same time period. The x-axis shows the number of days since the last purchase, and the y-axis shows the total amount spent.

Here are some of the key takeaways from the graph:

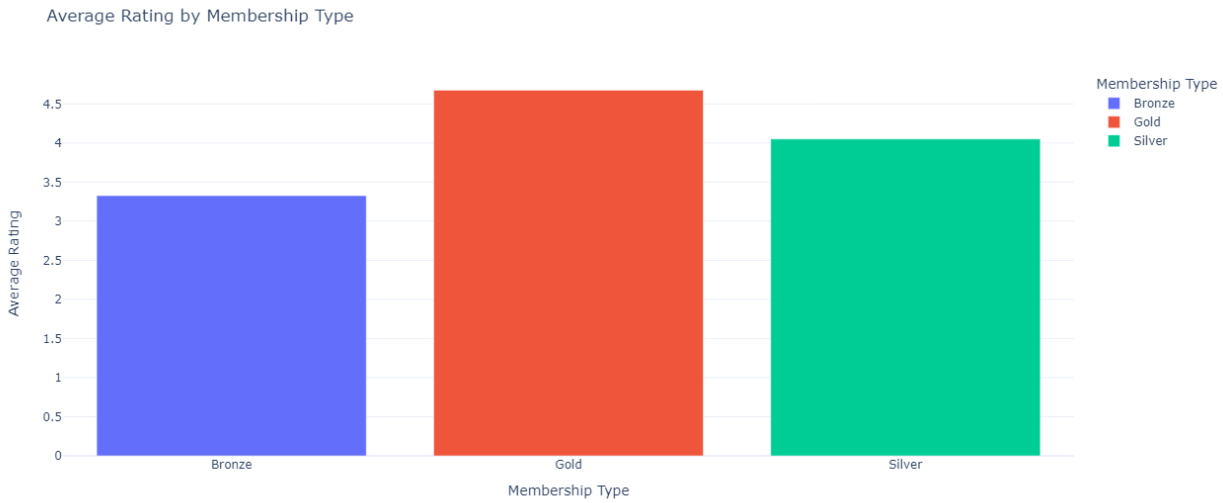
- Cohorts 9 and 10 have the highest total spend, followed by cohorts 11 and 12.
- All the cohorts show a decline in total spending over time. This is likely because customers are spending less money on the service as time goes on.
- There is a lot of variation in the total spend between cohorts. For example, Cohort 9 has spent much more than Cohort 18.

This graph is valuable for understanding how customer behavior changes over time. By analyzing cohort data, businesses can identify trends and patterns that can help them improve their marketing and retention strategies.

Here are some additional questions that you could ask about this graph:

- What is the average total spending per customer?
- What is the churn rate for each cohort?
- What are the reasons why customers are spending less money over time?

2. **Average rating given by customers based on the membership type:**



Columns: Customer ID, Average Rating, Membership Type

Analyze the average rating given by customers. Group customers into cohorts and see if there are any patterns in rating behavior.

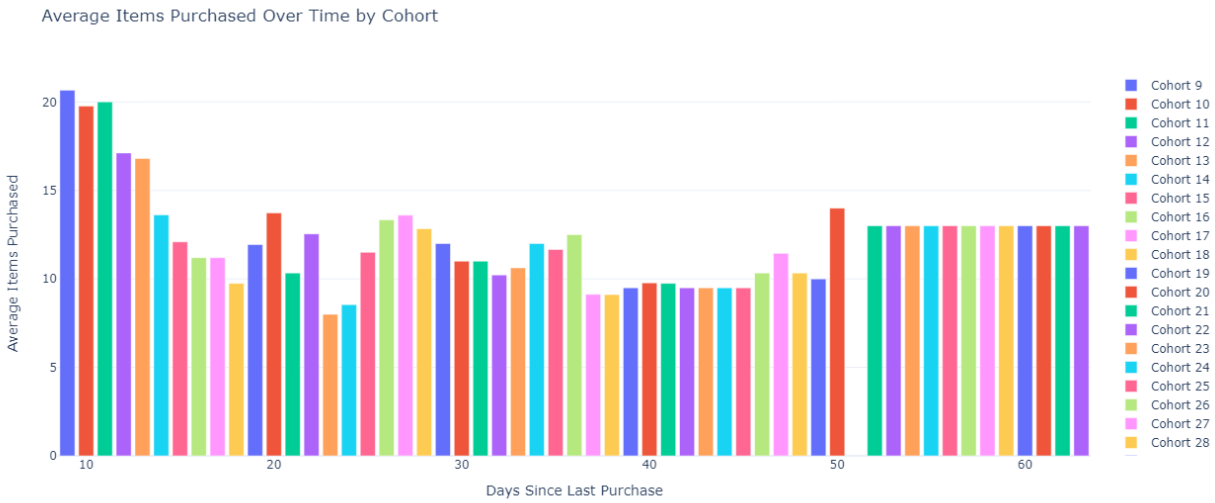
Each bar represents a different type of membership, which is a group of customers who signed up for the service. The x-axis shows the Membership Type, and the y-axis shows the Average rating given by them.

Here are some of the key takeaways from the graph:

- Members with the Gold membership have a good satisfaction rate and have an average rating of 4.6.
- Members with the Silver membership have a decent satisfaction rate and have an average rating of 4.0.
- Members with the Bronze membership show a dissatisfaction rate and have an average rating of 3.3.
- There is a lot of variation in the average rating between the membership types. The level of dissatisfaction increases as the membership hierarchy decreases.

These results give suggestions on which type of customers should be targeted to increase sales and customer satisfaction.

3. Items Purchased Over Time:



Columns: CustomerID, ItemsPurchased, DaysSinceLastPurchase

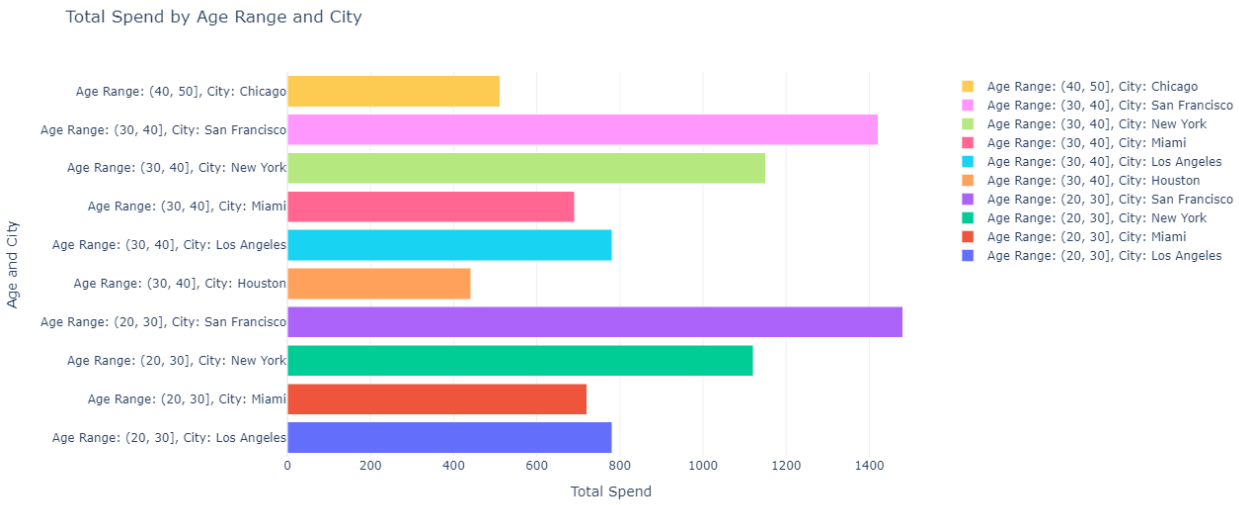
Explore how the number of items purchased changes over time. Group customers into cohorts based on their first purchase date.

Each bar represents a different cohort, a group of customers who bought items during the same period. The x-axis shows the days since the last purchase, and the y-axis shows the average number of items purchased.

Here are some of the key takeaways from the graph:

- Cohorts 9 and 10 have the highest number of items purchased, followed by cohorts 10 and 11.
- All the cohorts show a decline in total spending over time. This is likely because customers are spending less on the service as time passes.
- There is a lot of variation in the total spend between cohorts. For example, Cohort 9 has spent much more than Cohort 18.

4. City and Age-Based Analysis:



Columns: Age, Total Spend, City

Investigate how the total spending of customers changes with age and city. Group customers into cohorts based on age ranges and city to analyze spending.

- Customers in the 30-40 age range spend the most money on the e-commerce site, regardless of city.
- Customers in San Francisco spend the most money of all the cities shown, regardless of age range.
- Customers in Miami spend the least money of all the cities shown, regardless of age range.
- There is a wider range of spending in the 30-40 age range than in the other age ranges.

The dataset was taken from Kaggle. Link: https://www.kaggle.com/datasets/uom190346a/e-commerce-customer-behavior-dataset