Online Retail dataset

Analytical SQL Case Study

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01

Introduction

Background about the Case Study

Whoa!

In an effort to increase revenue, the marketing department, wanted to Identifying segments of customers and their behavioral patterns over different time intervals. This is particularly important in dynamic and ever-changing markets, where customers are driven by ever changing market competition and demands. This could lead to the prediction of ‘churn’, or which customers are leaving the company’s loyalty. Also, the provision of customized service to the customers has been observed that keeping old customers generates more profit than attracting new ones.

Data-driven insight into these trends should help the marketing team determine what might be good for the business or not.

Ask

- What is the total price and total quantity per each invoice ?
- Which product is selling the most? And if they are making the most profits or not!
- What is the % of each product from total profits?
- Which products usually sold together ?
- What is the most selling month?
- What is the average order size by customer?
- What are the top-selling products by month ?
- What is the monthly revenue growth rate?

02

Prepare and process

Background about the Case Study

Prepare

The data used for this analysis was collected and it contains all the transactions occurring between 01/12/2010 and 09/12/2011 for a UK-based and registered non-store online retail. The company mainly sells unique all-occasion gifts. Many customers of the company are wholesalers.

- We used this dataset for analysis using analytical SQL to predict the sale of items or to predict the products which h ave been purchased previously and the user is most likely to buy the same products in their next order.. Etc.

Process Phase:

Several tools was used for the analysis:

PostgresSQL

It provides a quick and simple way to transform the data and to analyze it. Postgres SQL was used in this case study.

Tableau

Used to create visualizations from Database, as the platform lends itself to “drag and drop” functionality and allows one to create simple yet clear visuals and to join data from various sources.

03

Analyses and Sharing

Exploring and visualizing the data

Max price and Max quantity for invoice

Max Total Spending per Invoice

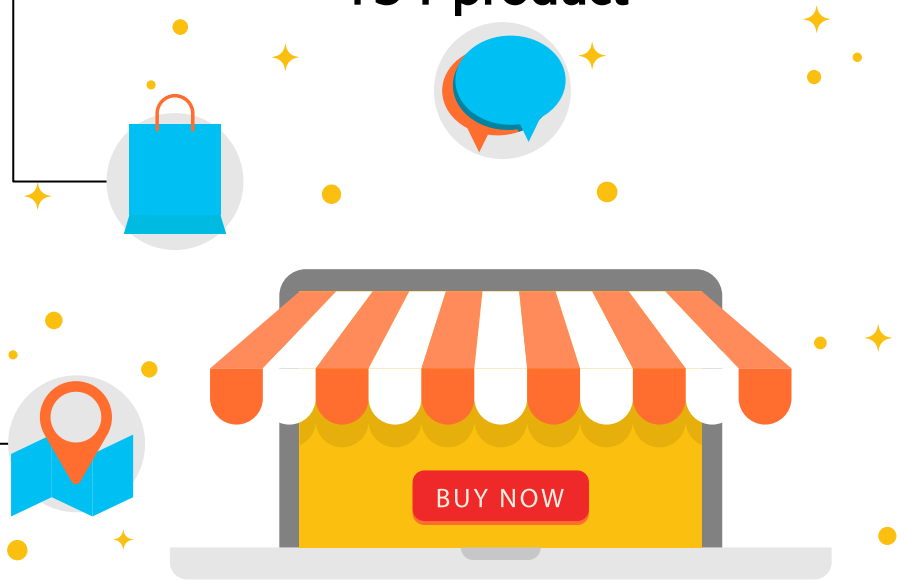
18841$

Max Number of Product per Invoice

154 product

Most Spent Customer

"customer_id"
"12955"



Top 6 products per Quantity and their selling in all Time:

1
"84077"
1789$
Saturn has several rings

2
"84879"
9115$
It’s hotter than Mercury

4323$
3
"22197"
Earth is the third planet

4059$
4
"21787"
It’s actually a cold place

5
"21977"
2064$
It’s the biggest planet

6
"21703"
9115$
It’s the smallest planet

Does they make the most profits or not ?

	stockcode character varying (50)	total_quantity bigint	total_price double precision
1	84077	7824	1789
2	84879	6117	9115
3	22197	5918	4323
4	21787	5075	4059
5	21977	4691	2064
6	21703	2996	826
7	17096	2019	343
8	15036	1920	1329
9	23203	1803	3357
10	21790	1579	1012
11	22988	1565	1731
12	23215	1492	2697
13	20974	1478	825

Does The product with the most quantity sold is the product who is gaining the most profits ?

The answer is no!

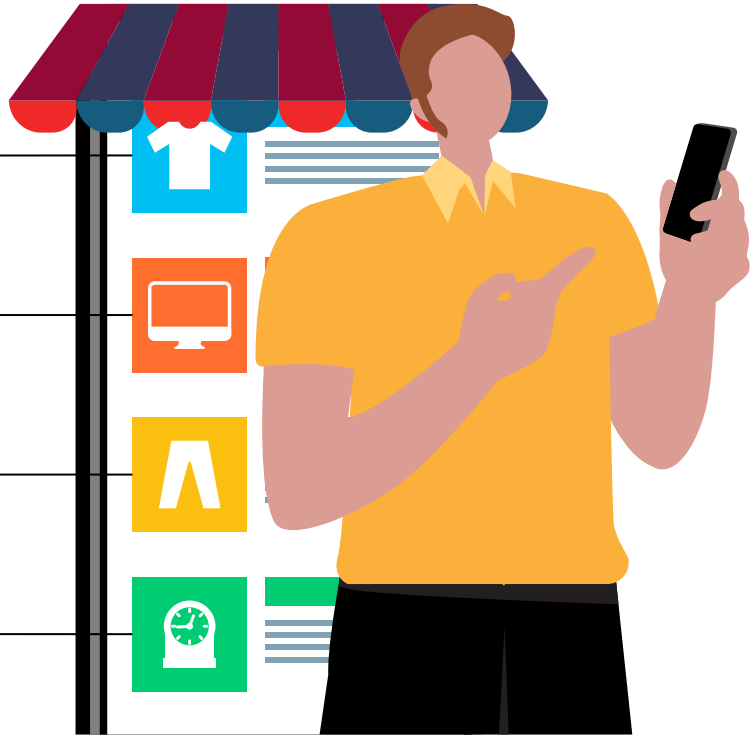
What is the % of each product from total profits?

	stockcode character varying (50)	total_quantity bigint	total_price double precision	profit_percentage text
1	84879	6117	9115	3.56%
2	22197	5918	4323	1.69%
3	21787	5075	4059	1.59%
4	22191	451	3461	1.35%
5	23203	1803	3357	1.31%
6	21479	759	2736	1.07%
7	23215	1492	2697	1.05%
8	22970	1160	2494	0.98%
9	22570	720	2458	0.96%
10	22992	1359	2308	0.90%

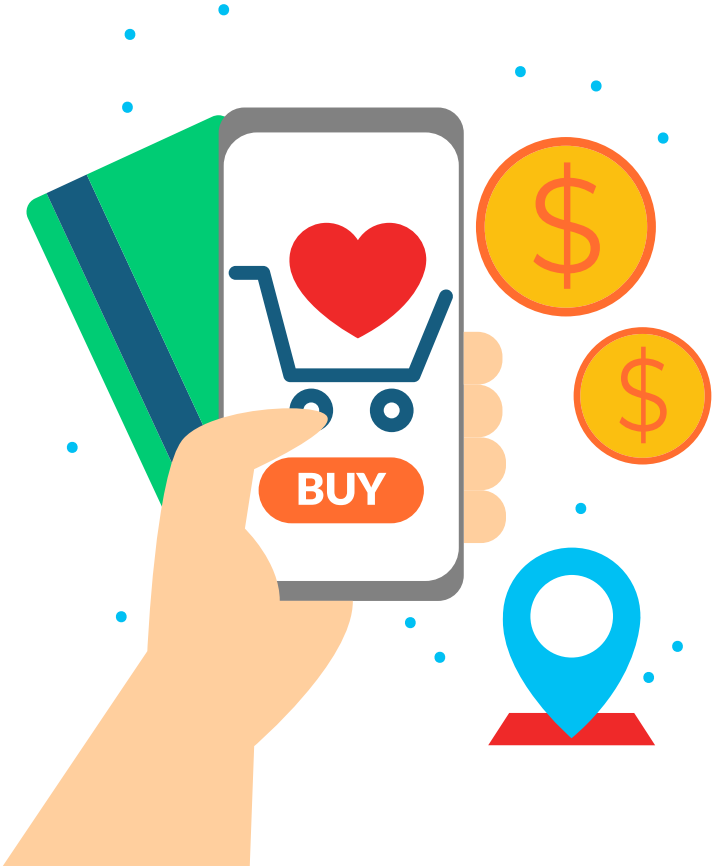
This Means that “84879” product is the most product who is generating profits.

Top Products that are sold together the most

They are sold together 23 times	"20724”/"2235”
They are sold together 22 times	"20725”/"2072"
They are sold together 21 times	"20725”/"2238"
They are sold together 21 times	"20725”/"2238"



The most selling months during 2010 & 2011



2010	12	With a profit 13422.96$
2011	11	With a profit 45633.38$
2011	8	With a profit 38374.64$
2011	9	With a profit 27853.82$
2011	10	With a profit 19735.07$
2011	5	With a profit 19496.18$

The average order size by customer

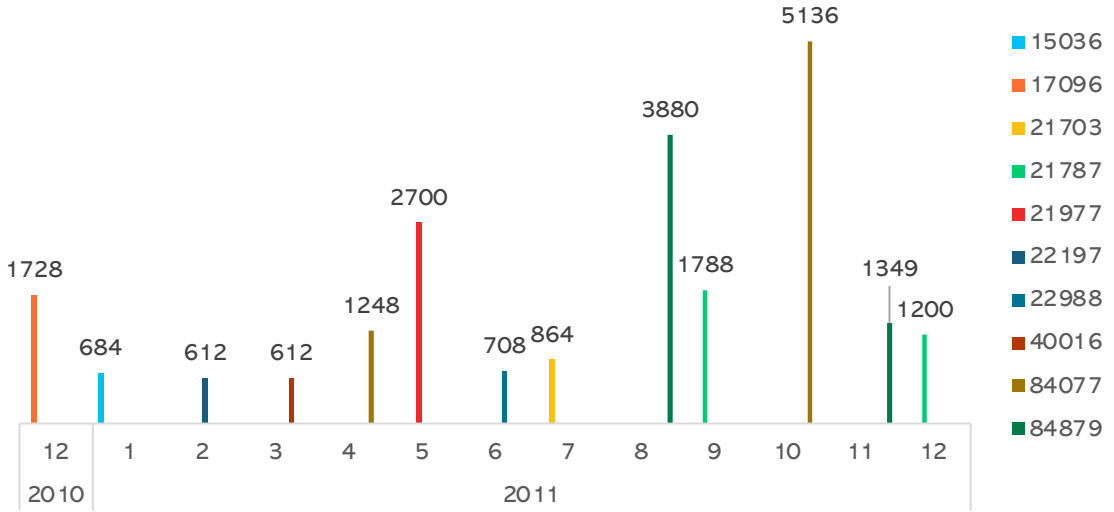
Avg Order By profit

2324$

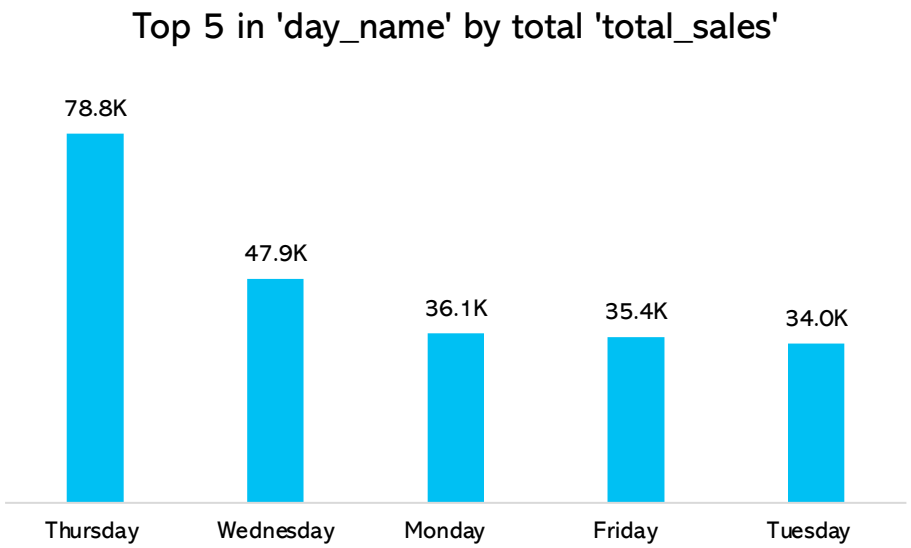
Avg order Size

116 Item

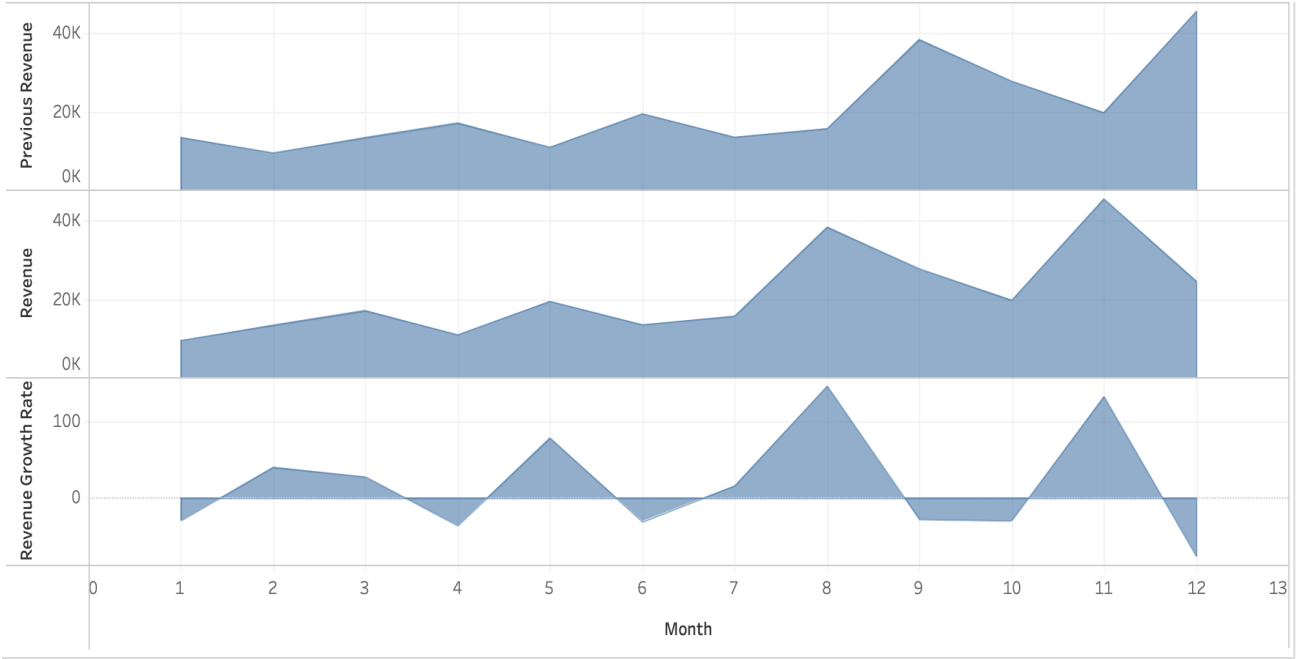
Top selling product by month:



Top 5 days in 'day_name' by total 'total_sales'

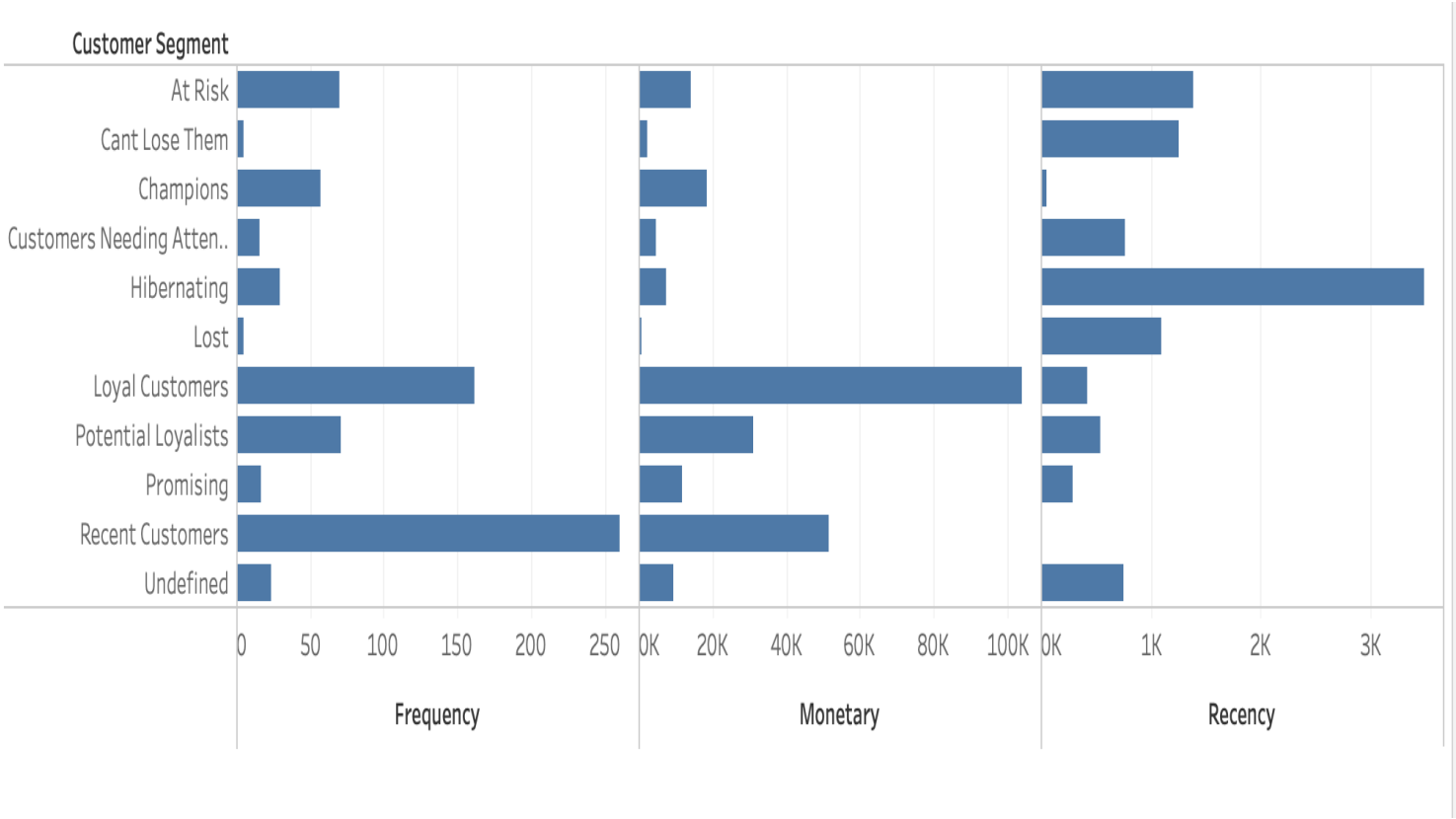


Monthly revenue growth rate

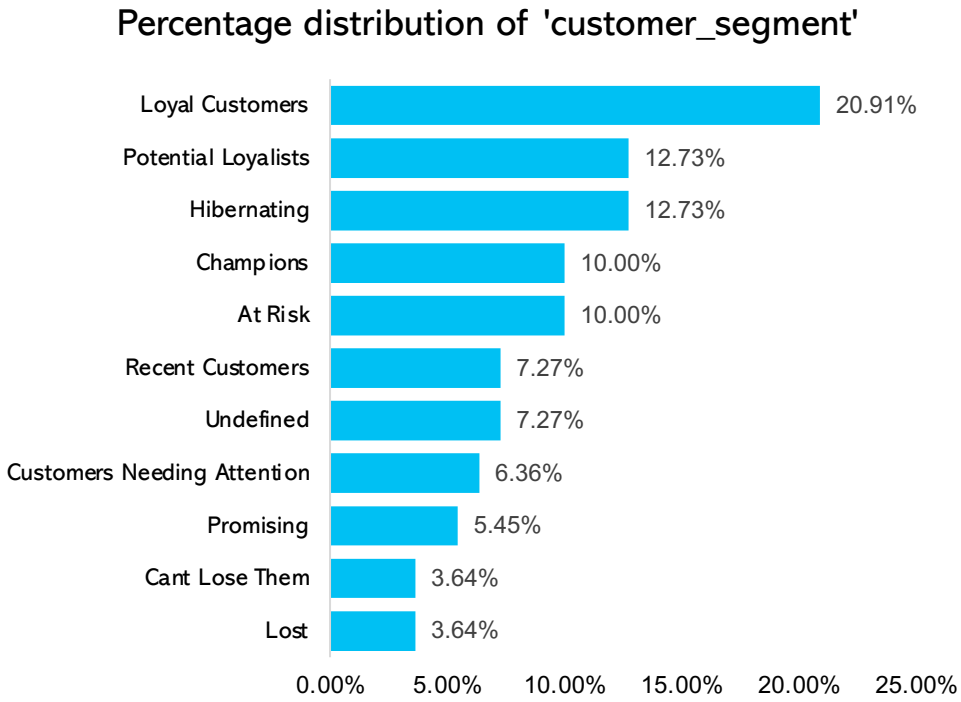


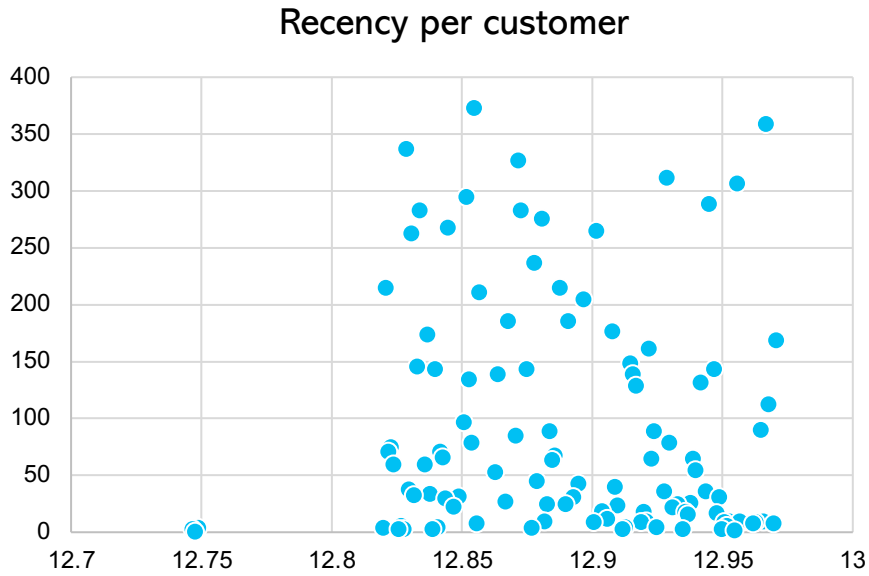
Monetary model for customers behavior

Number of Customer needing attention : 7



Monetary model for customers behavior





04

Act and Recommend

Recommendations

Recommendation

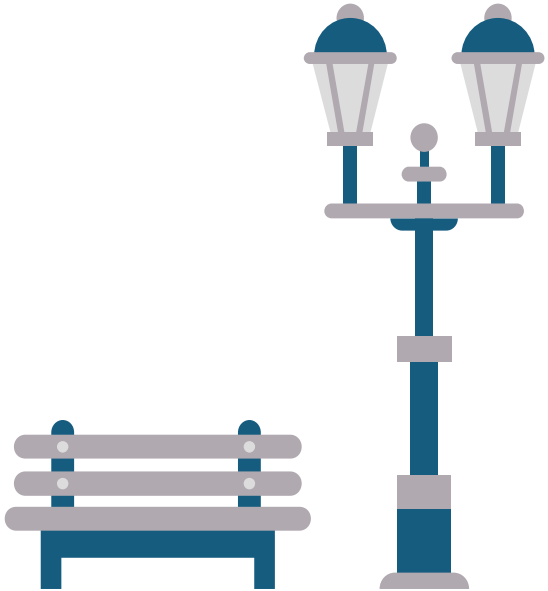
A.Offer personalized promotions.

The store could offer discounts and promotions on items that are frequently purchased together, based on the customer's purchase history that we provided before

Recommendation

B. Implement a customer loyalty program to increase customer retention and lifetime value. This program could include:

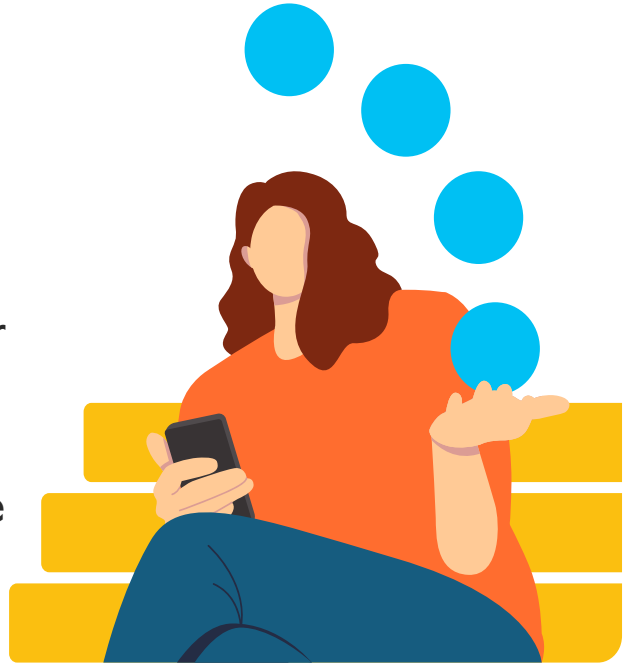
1. Offering discounts and rewards: Reward loyal customers with discounts, exclusive offers, and rewards for repeat purchases to encourage them to continue shopping.
2. Personalizing communication: Personalize communication and offers to each individual customer, making them feel valued and more likely to continue shopping with the business.
3. Providing early access to new products: Offer loyal customers early access to new products and exclusive collections, incentivizing them to continue shopping and providing a sense of exclusivity.
4. Hosting exclusive events: Host exclusive events for loyal customers, such as private sales or VIP events, to foster a sense of community and further incentivize them to continue shopping.



Recommendation

“On the Days most purchases ” way to Increase marketing efforts on those days

Since those days has the highest number of purchases, you may want to consider increasing your marketing efforts on those days to capitalize on this trend. You could send out targeted email campaigns or social media ads to encourage customers to make a purchase on those days.



Thank you!