Strategic Analysis of Grocery Retail Performance

Introduction

The grocery retail industry is facing complex challenges in harmonizing customer data across various touchpoints, including physical stores, e-commerce platforms, and loyalty programs. These challenges hinder the optimization of operations and the delivery of a personalized shopping experience. Fragmented customer data, seasonal demand fluctuations, and intense competition often result in missed sales opportunities, inefficient marketing efforts, inventory imbalances, and higher customer churn. This case study focuses on addressing these issues by developing a unified data pipeline and analytics solution for a mid-sized grocery chain. By consolidating data into a centralized model, the goal is to enhance operational efficiency, improve customer engagement, optimize marketing strategies, and drive revenue growth through informed decision-making.

Objectives

* Improve customer lifetime value (CLV) by targeting high-value customers and reducing churn through personalized engagements.
* Streamline inventory management by refining demand forecasting and tracking fulfillment rates, while optimizing stock levels and turnover ratios.
* Assess the ROI of marketing campaigns and identify the most profitable channels and promotions to maximize marketing spend.
* Understand sales trends across seasons and adjust marketing spend and inventory levels accordingly to drive higher sales.
* Utilize actionable insights to support growth strategies, including effective cross-selling and upselling opportunities, along with tailored promotions.

Key Analysis Questions

1. Which customer segments contribute the most to revenue, and how can they be targeted to improve customer retention?
2. How effective is the current inventory management system across stores, and where can improvements be made in stock management and demand forecasting?
3. Which marketing campaigns and channels provide the highest return on investment, and how can marketing strategies be optimized for better engagement?
4. What are the key drivers of seasonal sales trends, and how can marketing and inventory strategies be adjusted to capitalize on these patterns?
5. Which product categories generate the highest revenue, and how can inventory levels be optimized to meet customer demand more effectively?
6. How can high-value customers be identified and engaged to maximize their lifetime value and increase overall business profitability?

Data Transformation

---removing text part from rating column

UPDATE customer\_feedback

SET RATING = REGEXP\_REPLACE(RATING, '[^0-9]', '');

/\*

ALTER TABLE INVENTORY\_TRACKING

ADD (

REORDER\_STATUS VARCHAR(20),

STOCK\_DIFF INTEGER,

REORDER\_QUANTITY INTEGER

);

\*/

---added columns and extracted data for further analysis

UPDATE INVENTORY\_TRACKING

SET

REORDER\_STATUS = CASE

WHEN STOCK\_LEVEL < REORDER\_LEVEL THEN 'Reorder Needed'

ELSE 'Stock Sufficient'

END,

STOCK\_DIFF = STOCK\_LEVEL - REORDER\_LEVEL,

REORDER\_QUANTITY = CASE

WHEN STOCK\_LEVEL < REORDER\_LEVEL THEN REORDER\_LEVEL - STOCK\_LEVEL

ELSE 0

END

---update state name based on the city data

UPDATE CUSTOMERS

SET State = CASE

WHEN City = 'Mumbai' THEN 'Maharashtra'

WHEN City = 'Visakhapatnam' THEN 'Andhra Pradesh'

WHEN City = 'Lucknow' THEN 'Uttar Pradesh'

WHEN City = 'Indore' THEN 'Madhya Pradesh'

WHEN City = 'Madurai' THEN 'Tamil Nadu'

WHEN City = 'Surat' THEN 'Gujarat'

WHEN City = 'New Delhi' THEN 'Delhi'

WHEN City = 'Hyderabad' THEN 'Telangana'

WHEN City = 'Kolkata' THEN 'West Bengal'

WHEN City = 'Patna' THEN 'Bihar'

WHEN City = 'Bangalore' THEN 'Karnataka'

WHEN City = 'Chennai' THEN 'Tamil Nadu'

WHEN City = 'Ahemdabad' THEN 'Gujarat'

WHEN City = 'Pune' THEN 'Maharashtra'

WHEN City = 'Vijayawada' THEN 'Andhra Pradesh'

WHEN City = 'Chandigarh' THEN 'Chandigarh'

WHEN City = 'Jaipur' THEN 'Rajasthan'

WHEN City = 'Nashik' THEN 'Maharashtra'

WHEN City = 'Coimbatore' THEN 'Tamil Nadu'

WHEN City = 'Goa' THEN 'Goa'

ELSE 'Unknown'

END;

---calculate percentage\_change and forecast\_accuracy using actual and forecasted values

UPDATE HISTORICAL\_FORECASTS

SET

PERCENTAGE\_CHANGE = ROUND(

((ACTUAL\_SALES\_QUANTITY - FORECASTED\_SALES\_QUANTITY)::NUMERIC / FORECASTED\_SALES\_QUANTITY) \* 100, 2

),

FORECAST\_ACCURACY = ROUND(

100 - ABS(

((ACTUAL\_SALES\_QUANTITY - FORECASTED\_SALES\_QUANTITY)::NUMERIC / FORECASTED\_SALES\_QUANTITY) \* 100

), 2

);

---update state name based on the city data

UPDATE STORES

SET STATE = CASE

WHEN CITY = 'Thane' THEN 'Maharashtra'

WHEN CITY = 'Pune' THEN 'Maharashtra'

WHEN CITY = 'Noida' THEN 'Uttar Pradesh'

WHEN CITY = 'Nashik' THEN 'Maharashtra'

WHEN CITY = 'Mumbai' THEN 'Maharashtra'

WHEN CITY = 'Lucknow' THEN 'Uttar Pradesh'

WHEN CITY = 'Kolkata' THEN 'West Bengal'

WHEN CITY = 'Kanpur' THEN 'Uttar Pradesh'

WHEN CITY = 'Indore' THEN 'Madhya Pradesh'

WHEN CITY = 'Gwalior' THEN 'Madhya Pradesh'

WHEN CITY = 'Bengaluru' THEN 'Karnataka'

WHEN CITY = 'Ajmer' THEN 'Rajasthan'

ELSE 'Unknown'

END;

Merging Tables

DROP TABLE IF EXISTS \_sales\_marketing\_perforance;

---Sales and Marketing Performance Table

create table \_sales\_marketing\_perforance as

select distinct

st.TRANSACTION\_ID, st.customer\_id, st.product\_id, st.store\_id, st.TRANSACTION\_DATE, st.QUANTITY as SALES\_QUANTITY,

st.UNIT\_PRICE AS SALES\_UNIT\_PRICE, st.TOTAL\_AMOUNT AS SALES\_TOTAL\_AMOUNT,

pp.start\_date as Promotion\_start\_date, pp.end\_date as Promotion\_end\_date, pp.regular\_price, pp.promotional\_price,

pp.units\_sold as promotion\_units\_sold, pp.revenue\_generated as promotion\_revenue\_generated, pp.promotion\_cost, pp.roi as promotion\_roi,

c.campaign\_name, c.campaign\_id, c.start\_date as campaign\_start\_date, c.end\_date as campaign\_end\_date, c.budget as campaign\_budget,

c.target\_audience as campaign\_target\_audience, c.success\_metrics as campaign\_success\_metrics,

mc.MARKETING\_CHANNEL\_ID, mc.CHANNEL\_NAME as marketing\_channel\_name, mc.COST\_PER\_ENGAGEMENT,

pt.promotion\_type\_id, pt.promotion\_type\_name, pt.description as promotion\_description, pt.minimum\_purchase\_required,

pt.maximum\_discount\_value,

pm.payment\_method\_id, pm.payment\_type,

ct.channel\_type\_id, ct.channel\_type\_name,

cpl.revenue\_attributed as campaign\_revenue\_attributed,

from SALES\_TRANSACTIONS st

join PROMOTION\_PERFORMANCE pp

on pp.product\_id=st.product\_id and pp.channel\_type\_id=st.channel\_type\_id

join CAMPAIGNS c

on c.campaign\_id= pp.campaign\_id

join MARKETING\_CHANNELS mc

on mc.MARKETING\_CHANNEL\_ID=c.MARKETING\_CHANNEL\_ID

join PROMOTION\_TYPES pt

on pt.promotion\_type\_id=c.promotion\_type\_id

join payment\_methods pm

on pm.payment\_method\_id=st.payment\_method\_id

join channel\_types ct

on ct.channel\_type\_id=st.channel\_type\_id and ct.channel\_type\_id=pp.channel\_type\_id

join CAMPAIGN\_PRODUCT\_LINK cpl

on cpl.campaign\_id=c.campaign\_id

DROP TABLE IF EXISTS \_Customer\_insights;

---Customer Insights Table

create table \_Customer\_insights as

select distinct

c.customer\_id, c.full\_name as customer\_name, c.email as customer\_email, c.gender as customer\_gender, c.date\_of\_birth as customer\_dob,

c.city as customer\_city, c.state as customer\_state, c.loyalty\_program\_member,

ce.marketing\_channel\_id, ce.channel\_type\_id, ce.campaign\_id, ce.engagement\_type as customer\_engagement\_type, ce.time\_spent,

cf.product\_id, cf.order\_channel\_id, cf.rating as feedback\_ratings, cf.feedback\_type,

lt.store\_id, lt.transaction\_id, lt.loyalty\_points\_earned, lt.loyalty\_points\_redeemed, lt.loyalty\_balance,

lp.loyalty\_program\_id, lp.program\_name, lp.points\_earning\_rate, lp.POINTS\_REDEEMING\_RATE, lp.EXPIRY\_PERIOD,

dt.device\_type\_id, dt.device\_name, dt.os\_type,

ft.FULFILLMENT\_STATUS, ft.ORDER\_TYPE,

am.ENGAGEMENT\_CHANNEL,

wt.PAGE\_VIEWED, wt.IN\_MINITES, wt.SESSION\_START\_TIME, wt.SESSION\_END\_TIME,

from customers c

join CUSTOMER\_ENGAGEMENT ce

on c.customer\_id=ce.customer\_id

join CUSTOMER\_FEEDBACK cf

on cf.customer\_id=ce.customer\_id

join LOYALTY\_TRANSACTIONS lt

on lt.store\_id=cf.store\_id

join LOYALTY\_PROGRAMS lp

on lp.loyalty\_program\_id=lt.loyalty\_program\_id

join WEBSITE\_TRAFFIC wt

on wt.customer\_id= c.customer\_id

join DEVICE\_TYPES dt

on dt.device\_type\_id=wt.device\_type\_id

join FULFILLMENT\_TRACKING ft

on ft.TRANSACTION\_ID=lt.TRANSACTION\_ID

join ATTRIBUTION\_MODELS am

on am.CUSTOMER\_ID=c.CUSTOMER\_ID or am.transaction\_id=cf.TRANSACTION\_ID

DROP TABLE IF EXISTS \_Inventory\_demand\_forecast;

---Inventory and Demand Forecast Table

create table \_Inventory\_demand\_forecast as

select distinct

it.supplier\_id, it.stock\_level, it.reorder\_level, it.reorder\_status, it.stock\_diff, it.reorder\_quantity,

hf.FORECASTED\_SALES\_QUANTITY, hf.ACTUAL\_SALES\_QUANTITY, hf.PERCENTAGE\_CHANGE,

hf.FORECAST\_ACCURACY,

--- it.product\_id,hf.product\_id, pa.product\_id,it.store\_id,hf.store\_id, hf.category\_id, p.category\_id,

p.product\_id, p.product\_name, p.subcategory, p.brand, p.unit\_price, p.online\_exclusive,

s.store\_id, s.store\_name, s.city, s.state, s.store\_type,

c.category\_id, c.category\_name, c.parent\_category,

supp."Supplier\_ID", supp."Supplier\_Name",

pa.SUPPORT, pa.CONFIDENCE, pa.LIFT,

from INVENTORY\_TRACKING it

join HISTORICAL\_FORECASTS hf

on hf.product\_id=it.product\_id

join products p

on p.product\_id=it.product\_id

join stores s

on s.store\_id=it.store\_id

join suppliers supp

on supp."Supplier\_ID"=it.supplier\_id

join categories c

on c.category\_id=p.category\_id

join PRODUCT\_ASSOCIATIONS pa

on pa.product\_id=p.product\_id

Data Analysis

Key Performance Indicator (KPIs)

* Total Sales Revenue
* Average Feedback Rating
* Overall Inventory Stock Level
* Average Time Spent per Customer

---Total Sales Revenue

SELECT

SUM(SALES\_TOTAL\_AMOUNT) AS total\_sales\_revenue

FROM \_SALES\_MARKETING\_PERFORANCE;

---Average Feedback Rating

SELECT

round(AVG(FEEDBACK\_RATINGS),2) AS average\_feedback\_rating

FROM \_CUSTOMER\_INSIGHTS;

---Overall Inventory Stock Level

SELECT

SUM(STOCK\_LEVEL) AS total\_stock\_level

FROM \_INVENTORY\_DEMAND\_FORECAST;

---Average Time Spent per Customer

SELECT

round(AVG(TIME\_SPENT),2) AS average\_time\_spent\_per\_customer

FROM \_CUSTOMER\_INSIGHTS;

Customer Lifetime Value (CLV) Calculation

Objective: Identify the top 10 customers with the highest cumulative sales to evaluate customer lifetime value (CLV) and prioritize key customer segments.

---Customer Lifetime Value (CLV) Calculation

SELECT

ci.CUSTOMER\_NAME,

SUM(sm.SALES\_TOTAL\_AMOUNT) AS LIFETIME\_VALUE

FROM

\_CUSTOMER\_INSIGHTS ci

JOIN

\_SALES\_MARKETING\_PERFORANCE sm ON ci.CUSTOMER\_ID = sm.CUSTOMER\_ID

GROUP BY

ci.CUSTOMER\_NAME

ORDER BY

LIFETIME\_VALUE DESC

LIMIT 10;

Customer Engagement by Channel

Objective: Analyzae customer engagement across channels by measuring the number of engaged customers and their average time spent to identify the most effective channels.

---Customer Engagement by Channel

SELECT

ci.ENGAGEMENT\_CHANNEL,

COUNT(DISTINCT ci.CUSTOMER\_ID) AS ENGAGED\_CUSTOMERS,

AVG(ci.TIME\_SPENT) AS AVG\_TIME\_SPENT

FROM

\_CUSTOMER\_INSIGHTS ci

GROUP BY

ci.ENGAGEMENT\_CHANNEL

ORDER BY

AVG\_TIME\_SPENT DESC;

Top 10 Customers by Loyalty Points Balance

Objective: Identify the top 10 customers with the highest loyalty points balance to assess customer loyalty and reward program effectiveness.

---Top 10 Customers by Loyalty Points Balance

SELECT

CUSTOMER\_NAME,

MAX(LOYALTY\_BALANCE) AS LOYALTY\_BALANCE

FROM \_CUSTOMER\_INSIGHTS

GROUP BY CUSTOMER\_NAME

ORDER BY LOYALTY\_BALANCE DESC

LIMIT 10;

Campaign ROI Analysis

Objective: Evaluate the return on investment (ROI) of marketing campaigns by analyzing revenue generated, costs incurred, and net ROI to identify the most profitable campaigns.

---Campaign ROI Analysis

SELECT

CAMPAIGN\_NAME,

SUM(PROMOTION\_REVENUE\_GENERATED) AS REVENUE,

SUM(PROMOTION\_COST) AS COST,

SUM(PROMOTION\_REVENUE\_GENERATED) - SUM(PROMOTION\_COST) AS NET\_ROI

FROM \_SALES\_MARKETING\_PERFORANCE

GROUP BY CAMPAIGN\_NAME

ORDER BY NET\_ROI DESC;

Loyalty Program Effectiveness

Objective: Assess the performance of loyalty programs by analyzing membership count, points earned, and points redeemed to determine their impact on customer engagement and retention.

---Loyalty Program Effectiveness

SELECT

PROGRAM\_NAME,

COUNT(DISTINCT CUSTOMER\_ID) AS TOTAL\_MEMBERS,

SUM(LOYALTY\_POINTS\_EARNED) AS TOTAL\_POINTS\_EARNED,

SUM(LOYALTY\_POINTS\_REDEEMED) AS TOTAL\_POINTS\_REDEEMED

FROM \_CUSTOMER\_INSIGHTS

GROUP BY PROGRAM\_NAME

ORDER BY TOTAL\_POINTS\_EARNED DESC;

Most Popular Marketing Channels

Objective: Identify the most effective marketing channels by analyzing customer reach and engagement to optimize channel strategies.

---Most Popular Marketing Channels

SELECT

MARKETING\_CHANNEL\_NAME,

COUNT(DISTINCT CUSTOMER\_ID) AS CUSTOMER\_COUNT

FROM \_SALES\_MARKETING\_PERFORANCE

GROUP BY MARKETING\_CHANNEL\_NAME

ORDER BY CUSTOMER\_COUNT DESC;

Customer Feedback Distribution

Objective: Analyze the distribution of customer feedback types to understand customer sentiments and prioritize areas for improvement.

---Customer Feedback Distribution

SELECT

FEEDBACK\_TYPE,

COUNT(\*) AS FEEDBACK\_COUNT

FROM \_CUSTOMER\_INSIGHTS

GROUP BY FEEDBACK\_TYPE

ORDER BY FEEDBACK\_COUNT DESC;

Most Popular Products

Objective: Identify the top 10 products with the highest sales volumes to understand customer preferences and optimize inventory management.

---Most Popular Products

SELECT

P.PRODUCT\_NAME,

SUM(S.SALES\_QUANTITY) AS TOTAL\_SALES

FROM \_SALES\_MARKETING\_PERFORANCE S

JOIN \_INVENTORY\_DEMAND\_FORECAST P ON S.PRODUCT\_ID = P.PRODUCT\_ID

GROUP BY P.PRODUCT\_NAME

ORDER BY TOTAL\_SALES DESC

LIMIT 10;

City-Wise Sales Performance

Objective: Analyze sales revenue across cities to identify top-performing locations and guide regional sales strategies.

---City-Wise Sales Performance

SELECT

I.CITY,

SUM(S.SALES\_TOTAL\_AMOUNT) AS TOTAL\_REVENUE

FROM \_SALES\_MARKETING\_PERFORANCE S

JOIN \_INVENTORY\_DEMAND\_FORECAST I ON S.STORE\_ID = I.STORE\_ID

GROUP BY I.CITY

ORDER BY TOTAL\_REVENUE DESC;

Product Category-Wise Sales Analysis

Objective: Evaluate sales performance across product categories to identify revenue-driving categories and refine product strategies.

---Product Category-Wise Sales Analysis

SELECT

C.CATEGORY\_NAME,

SUM(S.SALES\_TOTAL\_AMOUNT) AS TOTAL\_REVENUE

FROM \_SALES\_MARKETING\_PERFORANCE S

JOIN \_INVENTORY\_DEMAND\_FORECAST C ON S.PRODUCT\_ID = C.PRODUCT\_ID

GROUP BY C.CATEGORY\_NAME

ORDER BY TOTAL\_REVENUE DESC;

Gender-Wise Loyalty Program Participation

Objective: Analyze loyalty program participation by gender to understand demographic engagement and tailor marketing strategies accordingly.

---Gender-Wise Loyalty Program Participation

SELECT

CUSTOMER\_GENDER,

COUNT(DISTINCT CUSTOMER\_ID) AS LOYALTY\_MEMBERS

FROM \_CUSTOMER\_INSIGHTS

WHERE LOYALTY\_PROGRAM\_MEMBER = 'Yes'

GROUP BY CUSTOMER\_GENDER

ORDER BY LOYALTY\_MEMBERS DESC;

Store Fulfillment Status

Objective: Analyze order fulfillment status to evaluate operational efficiency and identify areas for improvement in the order processing workflow.

---Store Fulfillment Status

SELECT

FULFILLMENT\_STATUS,

COUNT(\*) AS ORDER\_COUNT

FROM \_CUSTOMER\_INSIGHTS

GROUP BY FULFILLMENT\_STATUS

ORDER BY ORDER\_COUNT DESC;

Promotion Type Effectiveness

Objective: Evaluate the effectiveness of different promotion types by analyzing units sold and revenue generated to optimize future promotional strategies.

---Promotion Type Effectiveness

SELECT

PROMOTION\_TYPE\_NAME,

SUM(PROMOTION\_UNITS\_SOLD) AS UNITS\_SOLD,

SUM(PROMOTION\_REVENUE\_GENERATED) AS REVENUE\_GENERATED

FROM \_SALES\_MARKETING\_PERFORANCE

GROUP BY PROMOTION\_TYPE\_NAME

ORDER BY REVENUE\_GENERATED DESC;

Customer Age Group Analysis

Objective: Segment customers by age group to understand demographic distribution and tailor marketing strategies for different age categories.

---Customer Age Group Analysis

SELECT

CASE

WHEN YEAR(CURRENT\_DATE) - YEAR(TO\_DATE(CUSTOMER\_DOB, 'DD-MM-YYYY')) < 18 THEN 'Under 18'

WHEN YEAR(CURRENT\_DATE) - YEAR(TO\_DATE(CUSTOMER\_DOB, 'DD-MM-YYYY')) BETWEEN 18 AND 35 THEN '18-35'

WHEN YEAR(CURRENT\_DATE) - YEAR(TO\_DATE(CUSTOMER\_DOB, 'DD-MM-YYYY')) BETWEEN 36 AND 50 THEN '36-50'

ELSE 'Above 50'

END AS AGE\_GROUP,

COUNT(\*) AS CUSTOMER\_COUNT

FROM \_CUSTOMER\_INSIGHTS

GROUP BY AGE\_GROUP

ORDER BY CUSTOMER\_COUNT DESC;

Product Stock Health

Objective: Assess product stock levels by analyzing total stock, stock discrepancies, and reorder levels to ensure efficient inventory management and prevent stockouts.

---Product Stock Health

SELECT

PRODUCT\_NAME,

SUM(STOCK\_LEVEL) AS TOTAL\_STOCK\_LEVEL,

SUM(STOCK\_DIFF) AS TOTAL\_STOCK\_DIFF,

sum(REORDER\_LEVEL) as REORDER\_LEVE

FROM \_INVENTORY\_DEMAND\_FORECAST

GROUP BY PRODUCT\_NAME

ORDER BY TOTAL\_STOCK\_LEVEL ASC

limit 10

Payment Methods Popularity

Objective: Analyze the popularity of different payment methods by counting the number of transactions to identify preferred payment options and optimize payment systems.

---Payment Methods Popularity

SELECT

PAYMENT\_TYPE,

COUNT(TRANSACTION\_ID) AS TRANSACTIONS

FROM \_SALES\_MARKETING\_PERFORANCE

GROUP BY PAYMENT\_TYPE

ORDER BY TRANSACTIONS DESC;

Identify High-Value Customers

Objective: Identify the top 10 high-value customers based on loyalty balance and total time spent, to focus on retention and personalized marketing strategies.

---Identify High-Value Customers

SELECT

CUSTOMER\_NAME,

LOYALTY\_BALANCE,

SUM(TIME\_SPENT) AS TOTAL\_TIME\_SPENT,

FROM \_CUSTOMER\_INSIGHTS

GROUP BY CUSTOMER\_ID, CUSTOMER\_NAME, LOYALTY\_BALANCE

ORDER BY LOYALTY\_BALANCE DESC

LIMIT 10;

Store-Wise Inventory Analysis

Objective: Analyze store-wise stock levels to assess inventory management across locations and identify potential stock optimization opportunities.

---Store-Wise Sales and Inventory Analysis

SELECT

I.STORE\_NAME,

sum(I.STOCK\_LEVEL) AS SUM\_STOCK\_LEVEL

FROM \_SALES\_MARKETING\_PERFORANCE S

JOIN \_INVENTORY\_DEMAND\_FORECAST I ON S.STORE\_ID = I.STORE\_ID

GROUP BY I.STORE\_NAME

Insights

Overall Business Performance:

* + Total sales revenue: $335.57M
  + Average feedback rating: 3.44 (indicating room for improvement)
  + Total stock level: 53,403 (ensuring supply stability)
  + Average customer time spent: 71.36 minutes (strong in-store engagement)

Top Products, Markets & Engagement:

* + Best-selling product: 'Libero' (75,240 units)
  + Top market: Pune ($49.62M in sales)
  + Leading feedback topics: 'Service' (324) and 'Product Quality' (267)
  + Highest engagement channel: Text Messages (80.6 min avg. engagement time)

Marketing & Customer Value:

* + Most profitable campaign: 'End of Season' ($179.47M ROI)
  + Most engaging campaign: 'Search Engine Marketing' (71 engaged customers)
  + Highest lifetime value customer: Ali Armstrong ($71.94M LTV)
  + Highest loyalty balance: Floyd Lowery (949.91 points)

Category Revenue, Demographics & Inventory:

* + Highest revenue-generating category: Mitzie Keller ($32.91M revenue)
  + Dominant customer demographic: 18-35 age group (799 customers)
  + Preferred payment method: Digital Wallets (2,779 transactions)
  + Low-stock item: IKEA Wardrobes Comfort (15 units, -35 deficit)
  + Best inventory management: Khalilah Neal (61,152 units in stock)

Loyalty, Promotions & Fulfillment:

* + Customer with highest total time spent: Jonelle Jensen (1,320 min)
  + Highest loyalty balance: Floyd Lowery (949.91 points)
  + Best-performing promotion: Discount Promotion (481,358 units sold, $337.41M revenue)
  + Top fulfillment status: 'Out for Delivery' (281 orders)
  + Loyalty memberships: Evenly distributed across genders

Conclusion

This analysis of the grocery retail industry provides a comprehensive framework for addressing the key challenges faced by businesses in optimizing customer experience, operational efficiency, and marketing effectiveness. By integrating data from various sources, this project has successfully identified critical insights that will allow the grocery chain to streamline inventory management, enhance customer engagement, and improve the ROI of marketing campaigns.

The findings highlight the importance of understanding customer behavior, optimizing product offerings, and using targeted strategies to boost loyalty and retention. Additionally, by leveraging seasonal trends and regional sales data, the business can better align its inventory and promotional strategies to maximize sales and minimize stock imbalances.

Overall, the implementation of a unified data pipeline and advanced analytics solutions will empower the business to make data-driven decisions that drive growth, improve profitability, and ensure a personalized shopping experience for customers. This approach will ultimately contribute to long-term success and a competitive advantage in the rapidly evolving grocery retail market.

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ALTER TABLE public.actor

DROP COLUMN last\_update; (deleting column)

DROP TABLE public.actor\_details; (deleting table name)

SELECT viewname

FROM pg\_views

WHERE definition LIKE '%actor%'; (to check view that are listed to the table)

SELECT \*

FROM pg\_depend

WHERE refobjid = 'actor'::regclass; (check all dependencies on the table)

DROP TABLE actor CASCADE; (delete table with all dependencies)

ALTER TABLE actors RENAME TO actor; (change table name)

ALTER TABLE actor ADD COLUMN actor\_name VARCHAR(255); (used to add new column in table)

update merged\_actor\_film

set zzzz=concat(category\_name, ' ' , actor\_name)

\*/