

Customer Insights Dashboard: From Raw Data to Smart Decisions

Unlocking trends, value, and strategy through data storytelling.
(For full summary, scroll to the end of the page).

1: RFM (Recency, Frequency, Monetary) Analysis

- Code example:
- CURRENT_DATE - MAX(purchase_date) AS Recency,
- COUNT(*) AS Frequency,
- SUM(total_purchase_amount) AS Monetary,
- CASE
- WHEN CURRENT_DATE - MAX(purchase_date) <=30 THEN 5
- WHEN CURRENT_DATE - MAX(purchase_date) <=90 THEN 4
- ELSE 3
- END AS R.

Description:

- This query performs RFM (Recency, Frequency, Monetary) Analysis on each row, assigning scores (5, 4, 3) based on specific conditions.
- **80% of customers had scores of R=3, F=3, M=5**
=> Not recent, average frequency, **high spenders**
- **20%** had other scores like:
 - o **R=5, F=3, M=4** → Active but spend less
 - o **R=3, F=4, M=3** → Inactive low-value customers
- => This helped us:
 - Reward high spenders with loyalty offers
 - Target low scorers with reactivation campaigns

	customer_name	recency	frequency	monetary	r	f	m
	character varying (100)	integer	bigint	bigint	integer	integer	integer
1	Roy Reynolds	776	5	12224	3	5	5
2	Katie Alvarado	637	2	4495	3	5	5
3	Bridget Andrews	791	6	14487	3	5	5
4	Mr. John Jimenez	890	5	19652	3	5	5
5	Kristine Cole	776	6	17853	3	5	5



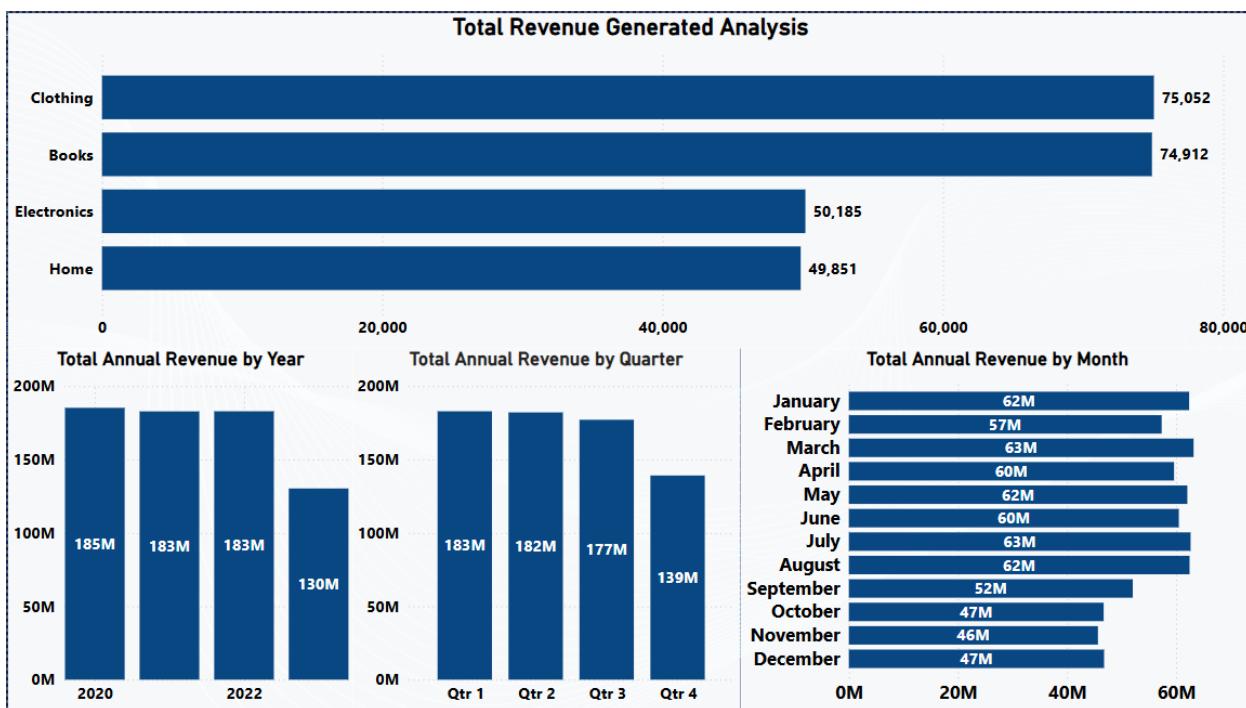
2: Changes in Total Revenue by Previous Year

- Code example:
- `SUM(total_purchase_amount) AS yearly_sales,`
- `LAG(SUM(total_purchase_amount), 1) OVER(ORDER BY EXTRACT(YEAR FROM purchase_date)) AS Prev_Year_Sales,`
- `(SUM(total_purchase_amount) - LAG(SUM(total_purchase_amount), 1) OVER(ORDER BY EXTRACT(YEAR FROM purchase_date))) AS Revenue_Change`
- `FROM f1`

Description:

- Sales peaked at 185M in early years (2020-2022). A steady decline begins at 2022.
- => **Action:** Focus marketing efforts in 2022 to boost yearly sales.

	extract numeric 	total_annual_revenue text 	previous_year text 	to_char text 
1	2020	185,276,174	[null]	[null]
2	2021	182,843,403	185,276,174	-02,432,771
3	2022	182,925,502	182,843,403	00,082,099
4	2023	130,297,604	182,925,502	-52,627,898



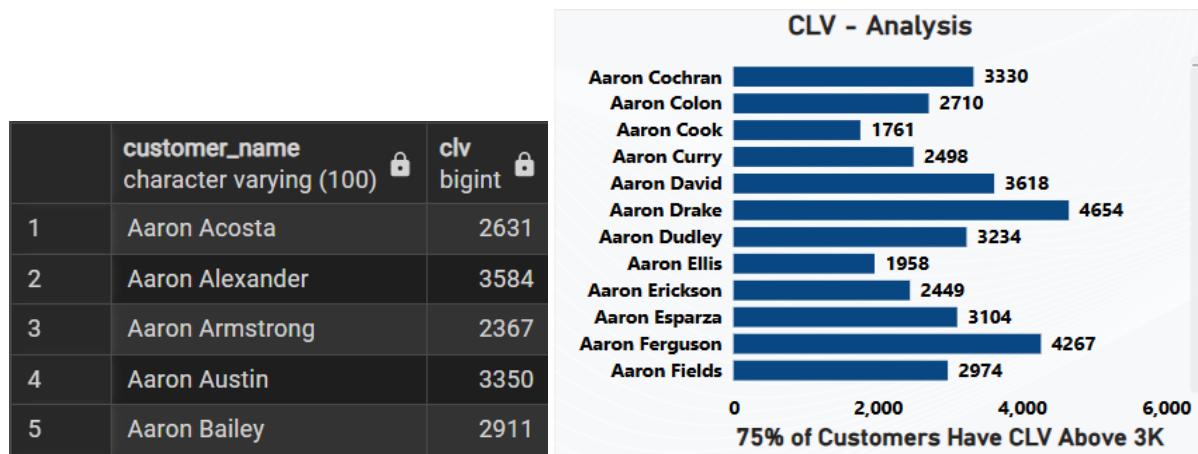
3: CLV (Customer Lifetime Value) Analysis

- Code example:
- $\text{SUM}(\text{total_purchase_amount})/\text{COUNT}(\text{DISTINCT}(\text{purchase_date})) \text{ AS CLV}$

- FROM f1
- GROUP BY customer_name

Description:

- Top customers like Aaron Alexander have a CLV over 3500.
=> Action: Create personalized retention campaigns for high-value customers.



4: Total Customers and Total Purchases

- Code example:
- SELECT COUNT(DISTINCT(customer_id)) AS Total_Customers,
- COUNT(customer_id) AS Total_Purchases from f1

Description:

- We have a total of 49,673 customers and total sales of 250,000.

	to_char text	total_customers_and_total_purchases
1	49,673	250,000

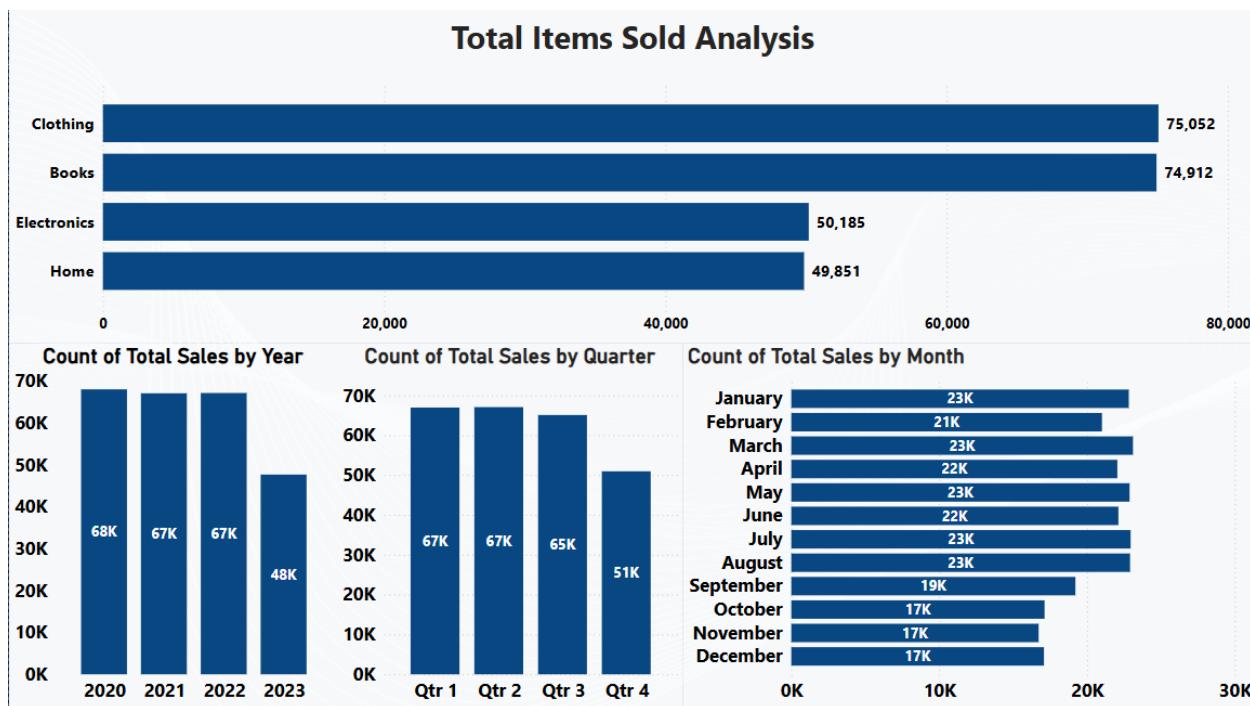
5: Yearly Sales Trend Analysis

- Code example:
- EXTRACT(YEAR FROM purchase_date), COUNT(*) as Sales_Count FROM f1
- GROUP BY EXTRACT(YEAR FROM purchase_date)
- ORDER BY EXTRACT(YEAR FROM purchase_date)

Description:

- High volume in early years (2020-2022), drops below 60K after 2022.
=> **Action:** Investigate yearly trends and introduce limited-time offers in 2023.

	extract numeric	total_annual_sales text
1	2020	68,045
2	2021	67,099
3	2022	67,169
4	2023	47,687



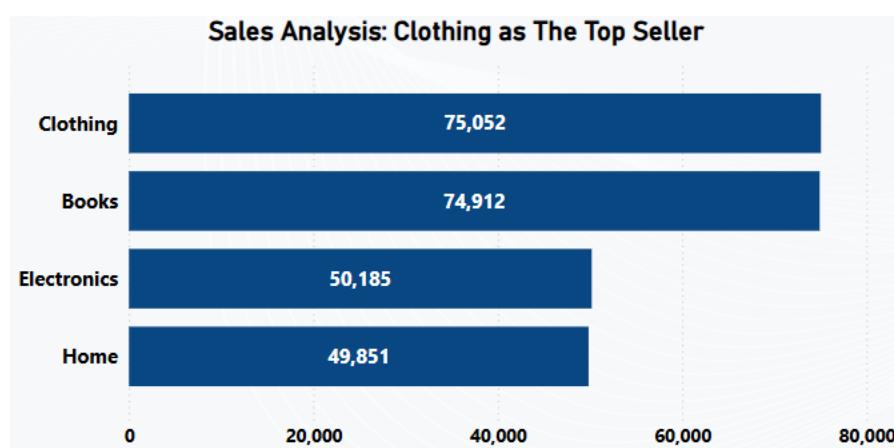
6: Most Popular Products (Top-Selling Items)

- Code example:
- COUNT(*) AS total_count FROM f1
- GROUP BY product_category
- ORDER BY total_count DESC

Description:

- Clothing and Books dominate sales; Electronics and Home trail behind.
 - Highest Amount of Clothing were sold in 2020 with the volume of 20,205.
 - Highest Amount of Books were sold in 2020 with the volume of 20,416.
- => **Action:** Increase ads for high performers and run promos to uplift Electronics & Home.

	product_category character varying (100)	total_revenue_generated text
1	Clothing	75,052
2	Books	74,912
3	Electronics	50,185
4	Home	49,851



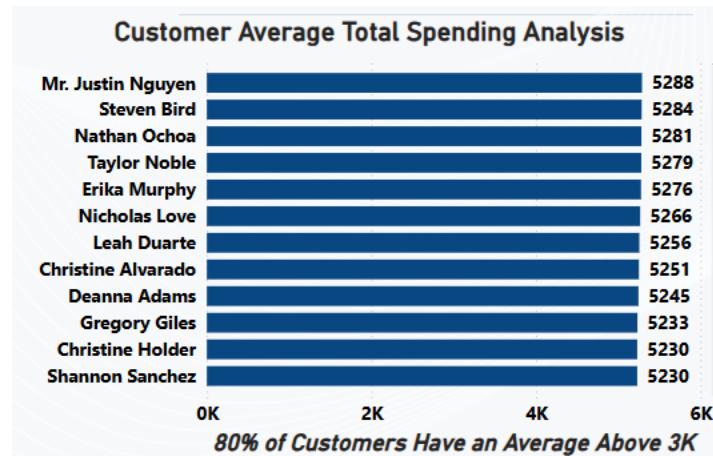
7: Average Purchase Amount Per Customer

- Code example:
- `ROUND(AVG(total_purchase_amount), 0) FROM f1`
- `GROUP BY customer_name`

exceed Description:

- Spending varies significantly by customer; top spenders 4K.
- => **Action:** Target top 10% spenders with VIP deals and upsell opportunities.

	customer_name character varying (100) 	round numeric 
1	Roy Reynolds	2445
2	Katie Alvarado	2248
3	Bridget Andrews	2415
4	Mr. John Jimenez	3930
5	Kristine Cole	2976



8: Total Revenue Generated From Sales

- Code example:
- `SELECT SUM(total_purchase_amount) AS total_revenue FROM f1`

	total_revenue_generated text 
1	681,342,683

Project Summary: Analyzed a raw dataset titled “*Ecommerce Customer Data Custom*” using Excel, SQL, and Power BI. Cleaned and formatted the data in Excel and Power Query, used SQL for CLV and RFM analysis, and built Power BI dashboards to uncover customer behavior, top-selling items, and sales trends.