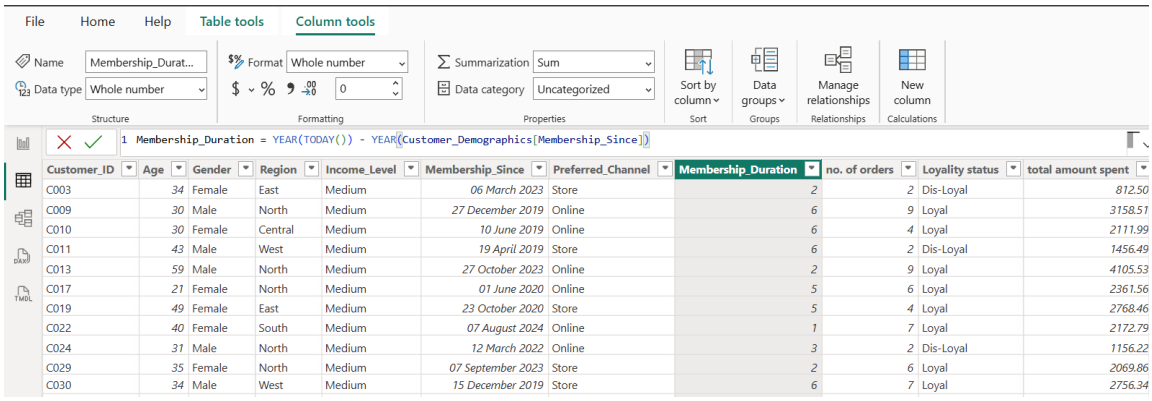
C3 Project: Retail Customer Retention Analytics – TARGET

Task 1: Data Modelling & Cleaning

- Data Cleaning-Using Power query editor, firstly file is imported to power query and data is transformed, duplicate rows removed, data types corrected, table merged where-ever needed.
- Data Modelling- after loading file to Power BI desktop created necessary relationships.
- Membership_Duration = Today – Membership_Since

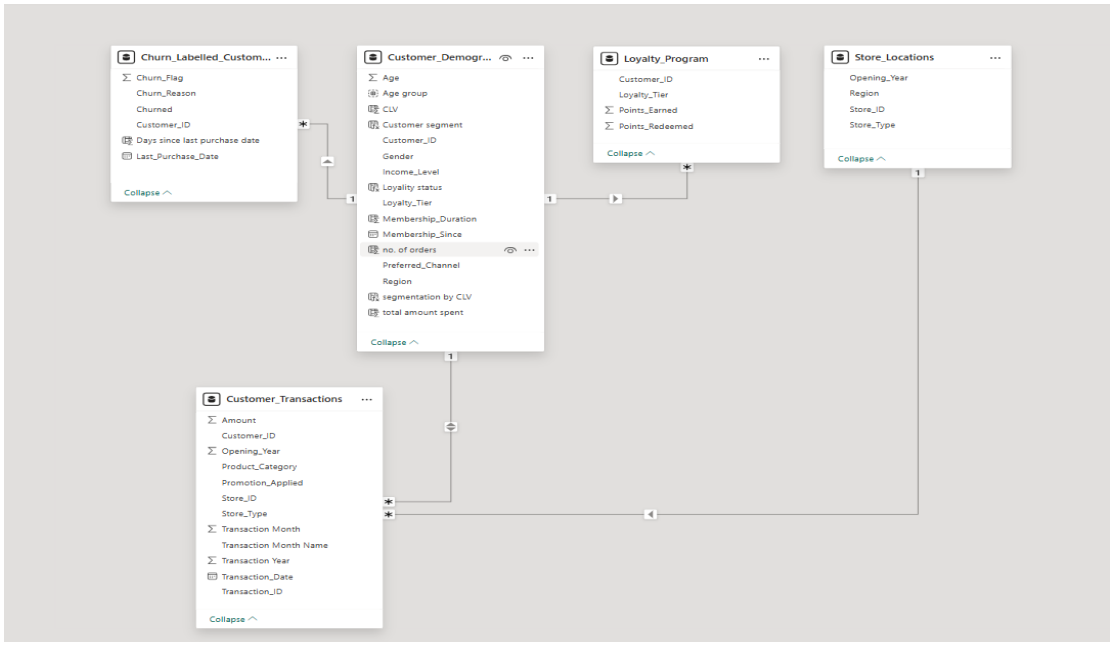


Customer_ID	Age	Gender	Region	Income_Level	Membership_Since	Preferred_Channel	Membership_Duration	no. of orders	Loyality status	total amount spent
C003	34	Female	East	Medium	06 March 2023	Store	2	2	Dis-Loyal	812.50
C009	30	Male	North	Medium	27 December 2019	Online	6	9	Loyal	3158.51
C010	30	Female	Central	Medium	10 June 2019	Online	6	4	Loyal	2111.99
C011	43	Male	West	Medium	19 April 2019	Store	6	2	Dis-Loyal	1456.49
C013	59	Male	North	Medium	27 October 2023	Online	2	9	Loyal	4105.53
C017	21	Female	North	Medium	01 June 2020	Online	5	6	Loyal	2361.56
C019	49	Female	East	Medium	23 October 2020	Store	5	4	Loyal	2768.46
C022	40	Female	South	Medium	07 August 2024	Online	1	7	Loyal	2172.79
C024	31	Male	North	Medium	12 March 2022	Online	3	2	Dis-Loyal	1156.22
C029	35	Female	North	Medium	07 September 2023	Store	2	6	Loyal	2069.86
C030	34	Male	West	Medium	15 December 2019	Store	6	7	Loyal	2756.34

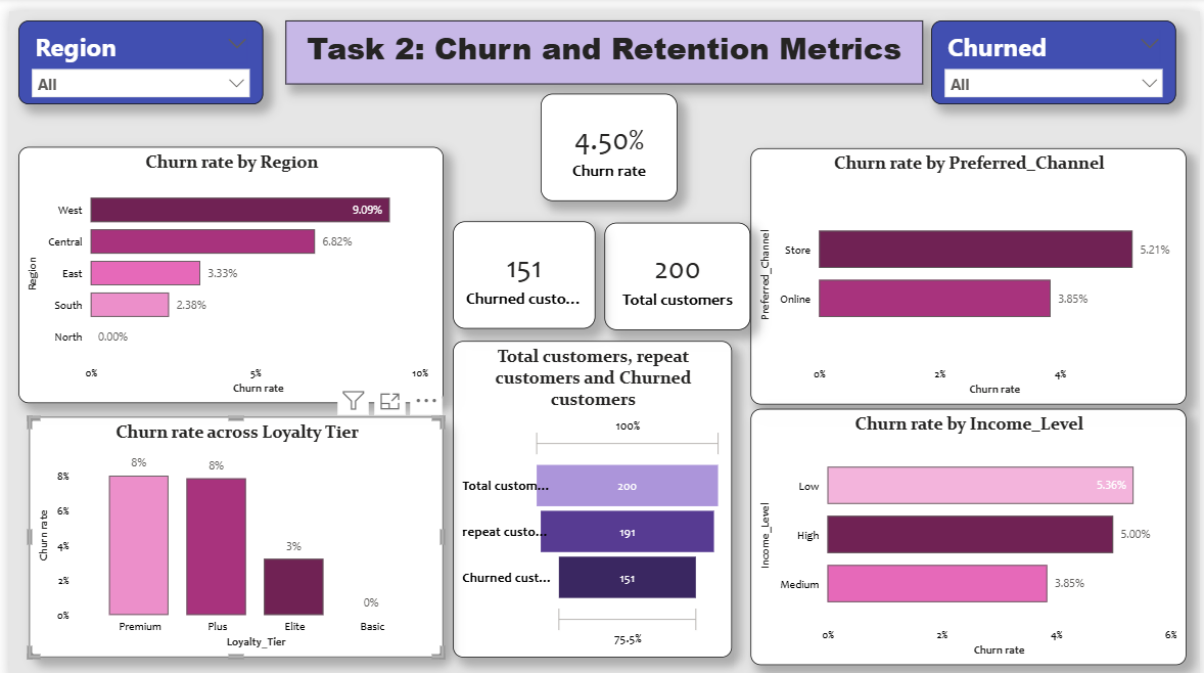
- Extract Transaction_Year, Transaction_Month : Using add column and then Date in the power query to extract year and month.

Transaction_ID	Customer_ID	Store_ID	Product_Category	Transaction_Date	Amount	Promotion_Applied	Transaction Year	Transaction Month	Transaction Month Name
T0015	C021	S20	Apparel	10 May 2023	149.7	No	2023	5	May
T0043	C178	S11	Groceries	07 July 2023	395.23	No	2023	7	July
T0047	C114	S11	Electronics	10 June 2023	711.06	No	2023	6	June
T0070	C042	S20	Electronics	04 May 2024	421.89	No	2024	5	May
T0085	C118	S11	Home & Living	17 June 2023	211.32	Yes	2023	6	June
T0105	C161	S20	Electronics	20 March 2023	658.65	Yes	2023	3	March
T0107	C077	S11	Apparel	30 May 2024	352.42	No	2024	5	May
T0111	C195	S11	Home & Living	17 January 2024	137.83	No	2024	1	January
T0114	C131	S20	Groceries	22 January 2024	263.32	Yes	2024	1	January
T0132	C109	S20	Groceries	15 February 2023	131.15	No	2023	2	February
T0135	C171	S20	Groceries	11 August 2024	81.29	Yes	2024	8	August
T0155	C065	S20	Groceries	19 December 2023	675.55	Yes	2023	12	December

- Data model created



Task 2: Churn & Retention Metrics



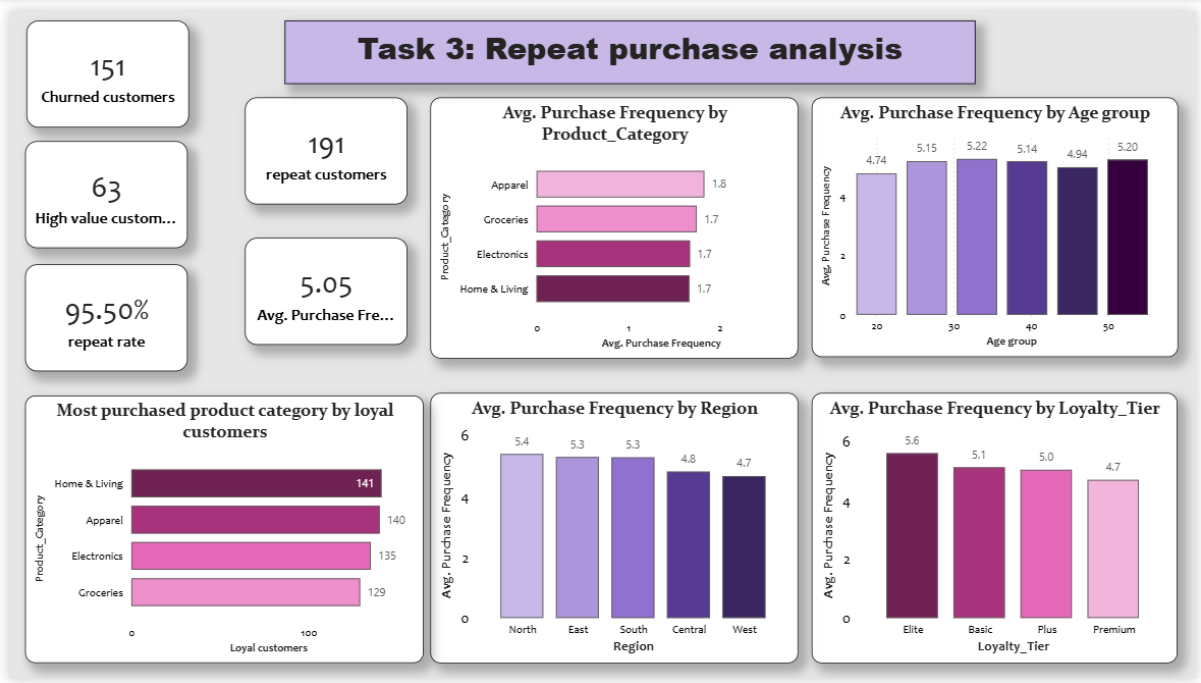
Task 3: Repeat Purchase Analysis

- **Segmentation of customers**

```
1 Customer segment = if([Total transactions]<=3,"Low-Tier", if([Total transactions]>=9, "High-Tier","Mid-Tier"))
```

ibership_Since	Preferred_Channel	Membership_Duration	no. of orders	Loyality status	total amount spent	CLV	segmentation by CLV	Customer segment
06 March 2023	Store	2	2	Dis-Loyal	812.50	406.25	Low	Low-Tier
27 December 2019	Online	6	9	Loyal	3158.51	526.42	Low	High-Tier
10 June 2019	Online	6	4	Loyal	2111.99	352.00	Low	Mid-Tier
19 April 2019	Store	6	2	Dis-Loyal	1456.49	242.75	Low	Low-Tier
27 October 2023	Online	2	9	Loyal	4105.53	2052.77	High	High-Tier
01 June 2020	Online	5	6	Loyal	3361.56	472.31	Low	Mid-Tier

- **Compare avg. purchase frequency by Region, Age Group, Loyalty Tier**
- **Identify most purchased product categories by loyal customers**



Loyal customers prefer Home & Living and Apparel categories, indicating strong repeat demand in lifestyle products.

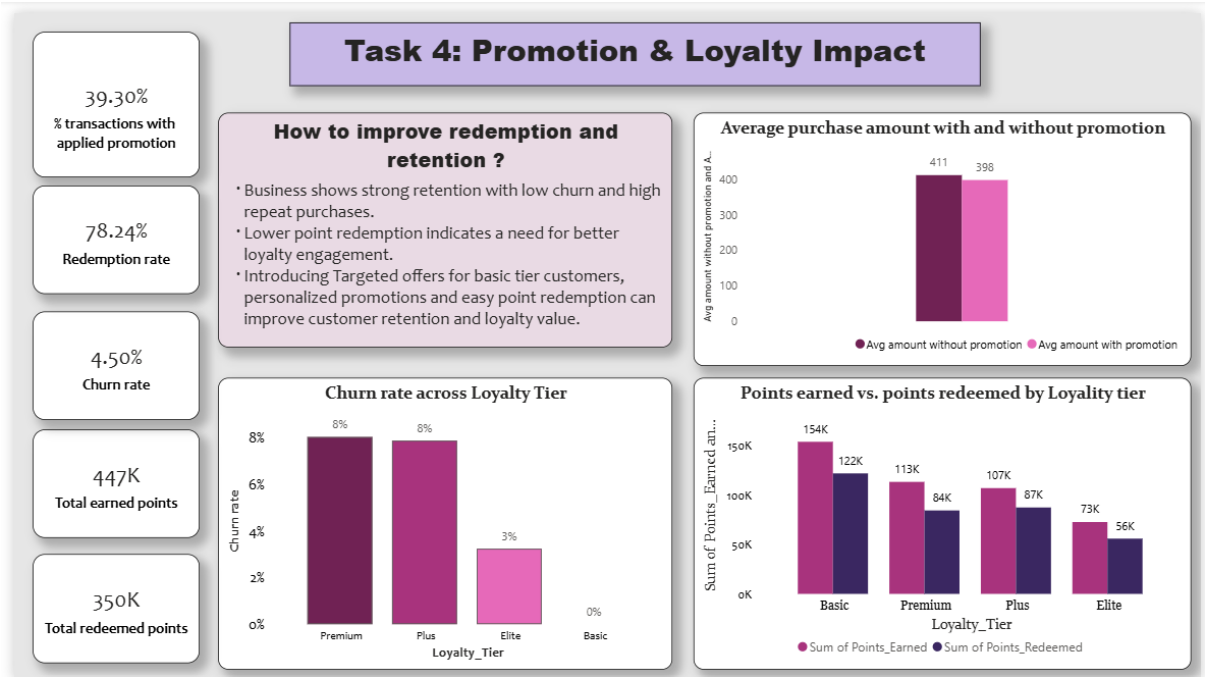
Task 4: Promotion & Loyalty Impact

- **Calculate % of transactions with promotion applied.**

```
transactions with applied promotion = CALCULATE(COUNTROWS(Customer_Transactions),Customer_Transactions[Promotion_Applied]
="Yes")
```

```
% transactions with applied promotion = DIVIDE([transactions with applied promotion], [Total transactions])
```

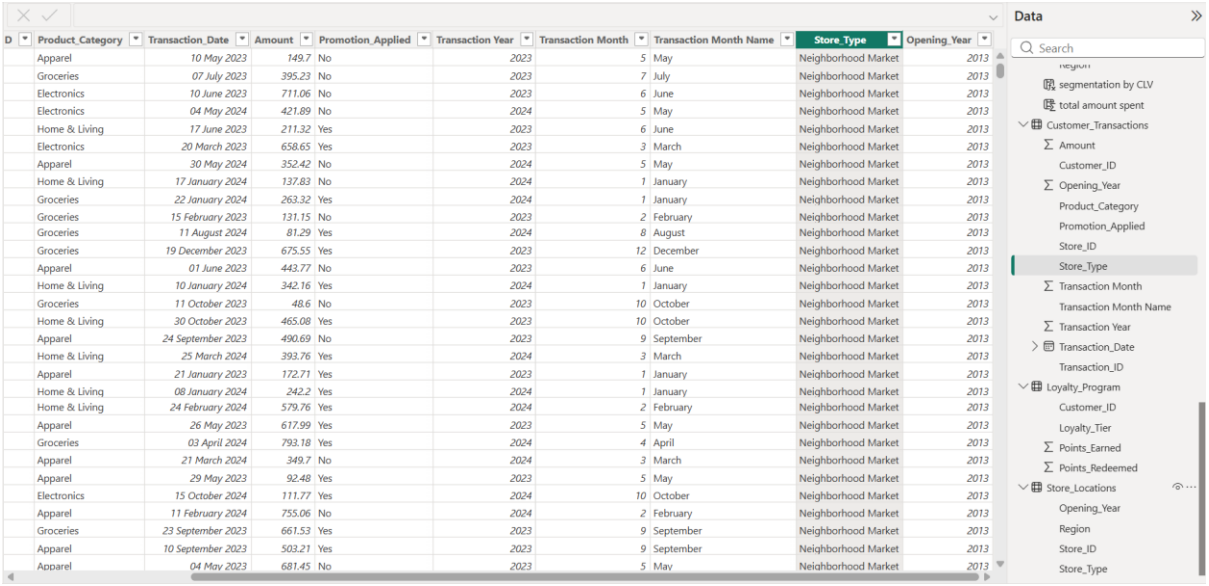
- **Compare average purchase amount with vs. without promotions.**



- **Give recommendations to improve redemption & retention**.
  - Business shows strong retention with low churn and high repeat purc hases.
  - Lower point redemption indicates a need for better loyalty engageme nt.
  - Introducing Targeted offers for basic tier customers, personalized pro motions and easy point redemption can improve customer retention and loyalty value.

Task 5: Store & Channel Performance vs Retention

- Merge store data with transactions: Using merge queries store



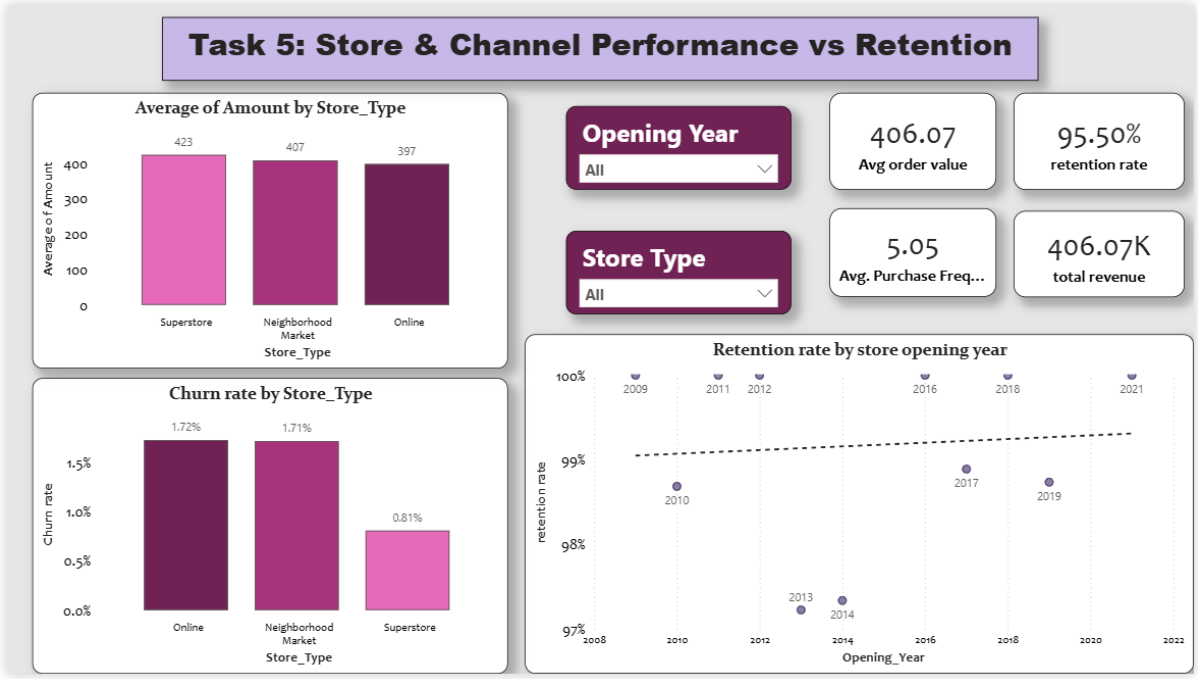
D	Product_Category	Transaction_Date	Amount	Promotion_Applied	Transaction Year	Transaction Month	Transaction Month Name	Store_Type	Opening_Year
	Apparel	10 May 2023	149.7	No	2023	5	May	Neighborhood Market	2013
	Groceries	07 July 2023	395.23	No	2023	7	July	Neighborhood Market	2013
	Electronics	10 June 2023	711.06	No	2023	6	June	Neighborhood Market	2013
	Electronics	04 May 2024	421.89	No	2024	5	May	Neighborhood Market	2013
	Home & Living	17 June 2023	211.32	Yes	2023	6	June	Neighborhood Market	2013
	Electronics	20 March 2023	658.65	Yes	2023	3	March	Neighborhood Market	2013
	Apparel	30 May 2024	352.42	No	2024	5	May	Neighborhood Market	2013
	Home & Living	17 January 2024	137.83	No	2024	1	January	Neighborhood Market	2013
	Groceries	22 January 2024	263.32	Yes	2024	1	January	Neighborhood Market	2013
	Groceries	15 February 2023	131.15	No	2023	2	February	Neighborhood Market	2013
	Groceries	11 August 2024	81.29	Yes	2024	8	August	Neighborhood Market	2013
	Groceries	19 December 2023	675.55	Yes	2023	12	December	Neighborhood Market	2013
	Apparel	01 June 2023	443.77	No	2023	6	June	Neighborhood Market	2013
	Home & Living	10 January 2024	342.16	Yes	2024	1	January	Neighborhood Market	2013
	Groceries	11 October 2023	48.6	No	2023	10	October	Neighborhood Market	2013
	Home & Living	30 October 2023	465.08	Yes	2023	10	October	Neighborhood Market	2013
	Apparel	24 September 2023	490.69	No	2023	9	September	Neighborhood Market	2013
	Home & Living	25 March 2024	393.76	Yes	2024	3	March	Neighborhood Market	2013
	Apparel	21 January 2023	172.71	Yes	2023	1	January	Neighborhood Market	2013
	Home & Living	08 January 2024	242.2	Yes	2024	1	January	Neighborhood Market	2013
	Home & Living	24 February 2024	579.76	Yes	2024	2	February	Neighborhood Market	2013
	Apparel	26 May 2023	617.99	Yes	2023	5	May	Neighborhood Market	2013
	Groceries	03 April 2024	793.18	Yes	2024	4	April	Neighborhood Market	2013
	Apparel	21 March 2024	349.7	No	2024	3	March	Neighborhood Market	2013
	Apparel	29 May 2023	92.48	Yes	2023	5	May	Neighborhood Market	2013
	Electronics	15 October 2024	111.77	Yes	2024	10	October	Neighborhood Market	2013
	Apparel	11 February 2024	755.06	No	2024	2	February	Neighborhood Market	2013
	Groceries	23 September 2023	661.53	Yes	2023	9	September	Neighborhood Market	2013
	Apparel	10 September 2023	503.21	Yes	2023	9	September	Neighborhood Market	2013
	Apparel	04 May 2023	681.45	No	2023	5	May	Neighborhood Market	2013

- Visualize:

○ Avg. transaction amount by **Store Type**

○ Churn rate by store type

○ Correlation between **store opening year & retention**



Task 6: Customer Lifetime Value

- CLV = Total Amount Spent / Membership Duration (Years)

```
total amount spent = calculate(sum(Customer_Transactions[Amount]),ALLEXCEPT(Customer_Demographics,Customer_Demographics[Customer_ID]))
CLV = Customer_Demographics[total amount spent]/Customer_Demographics[Membership_Duration]
```

- Segment customers into **Low, High CLV**
  - ○ Above Average CLV as High
  - ○ Below Average CLV value- Low

```
1 segmentation by CLV = IF(Customer_Demographics[CLV]>=AVERAGE(Customer_Demogra
```

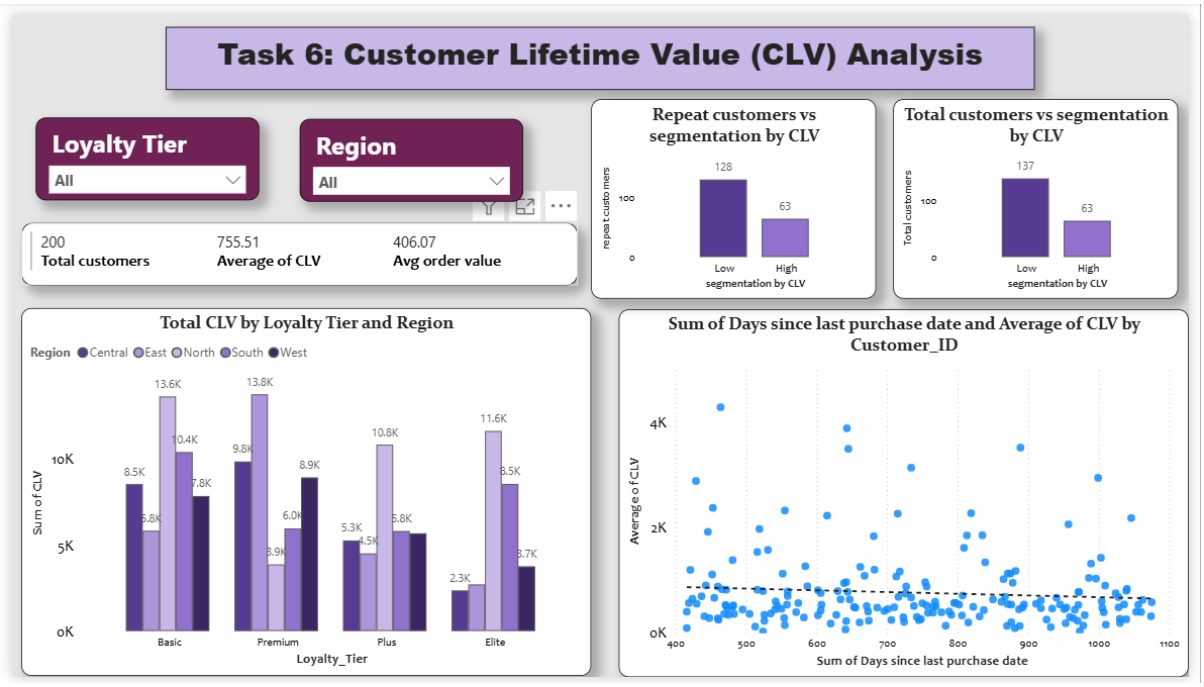
Create a new group to combine multiple values into one.

gion	Income_Level	Membership_Since	Preferred_Channel	Membership_Duration	no. of orders	Loyality status	total amount spent	CLV	segmentation by CLV
st	Medium	06 March 2023	Store	2	2	Dis-Loyal	812.50	406.25	Low
rth	Medium	27 December 2019	Online	6	9	Loyal	3158.51	526.42	Low
ntral	Medium	10 June 2019	Online	6	4	Loyal	2111.99	352.00	Low
st	Medium	19 April 2019	Store	6	2	Dis-Loyal	1456.49	242.75	Low
rth	Medium	27 October 2023	Online	2	9	Loyal	4105.53	2052.77	High
rth	Medium	01 June 2020	Online	5	6	Loyal	2361.56	472.31	Low
st	Medium	23 October 2020	Store	5	4	Loyal	2768.46	553.69	Low
uth	Medium	07 August 2024	Online	1	7	Loyal	2172.79	2172.79	High
rth	Medium	12 March 2022	Online	3	2	Dis-Loyal	1156.22	385.41	Low
rth	Medium	07 September 2023	Store	2	6	Loyal	2069.86	1034.93	High
st	Medium	15 December 2019	Store	6	7	Loyal	2756.34	459.39	Low

● Visualize:

○ CLV vs Days Since Last Purchase

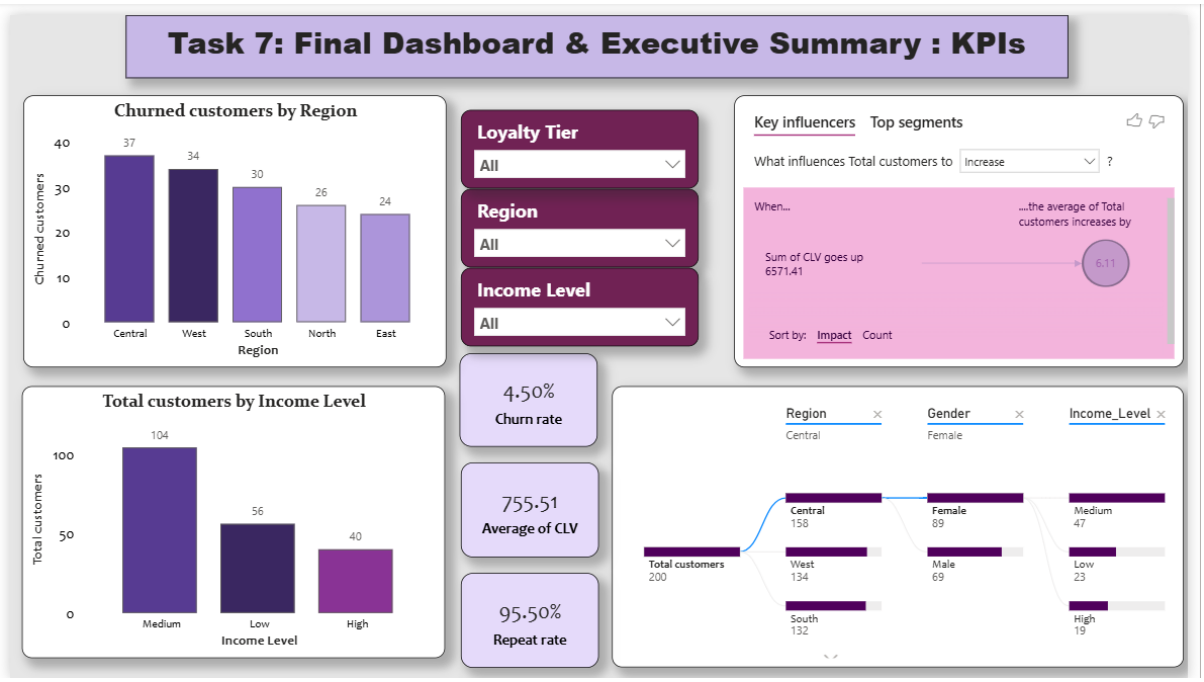
○ CLV by Loyalty Tier & Region



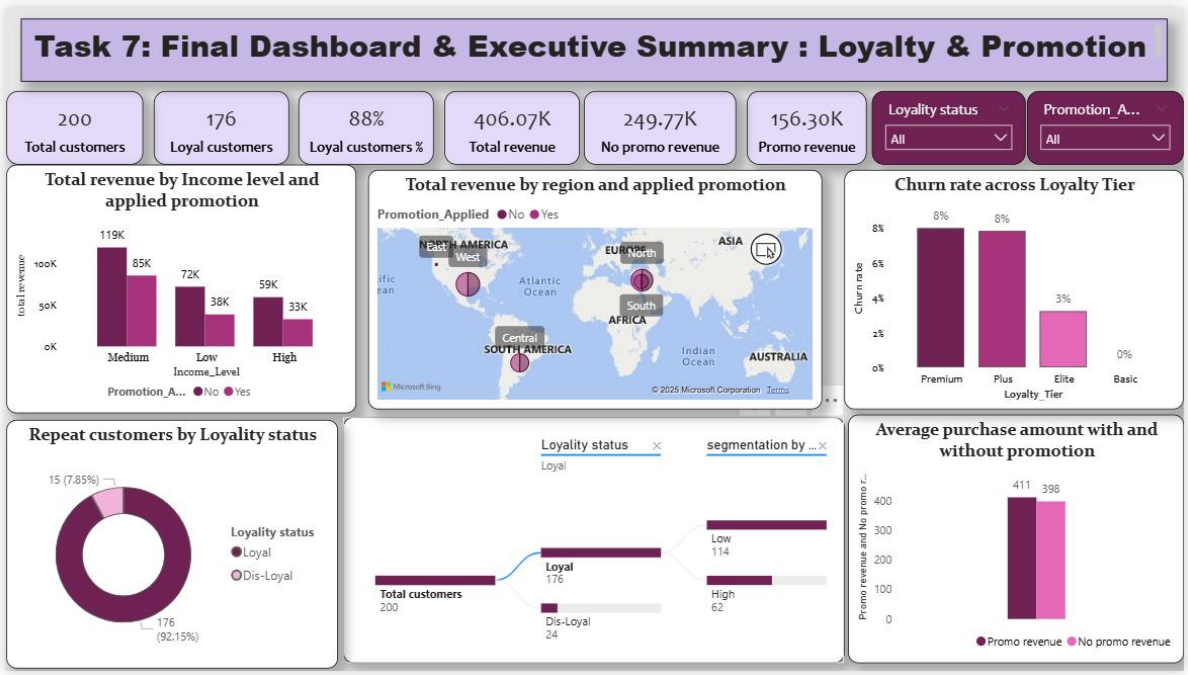
Task 7: Final Dashboard & Executive Summary (20 Marks)

- Multi-page Power BI Report:

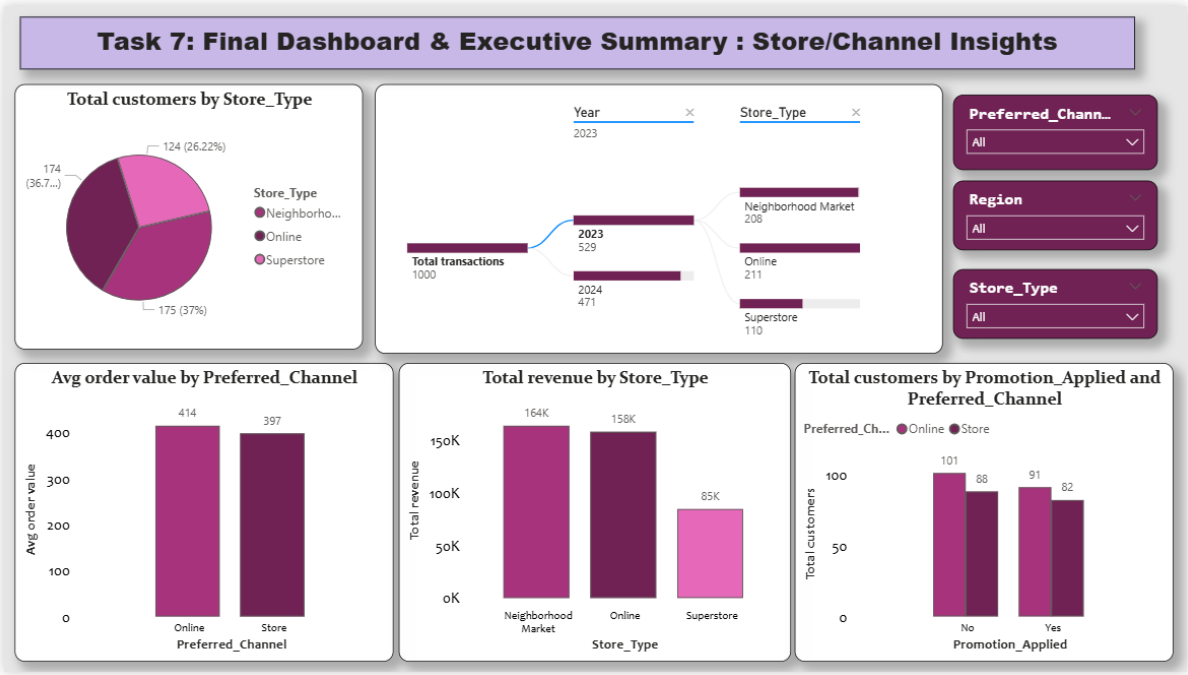
  - Page 1: KPIs (Churn, CLV, Repeat Rate)



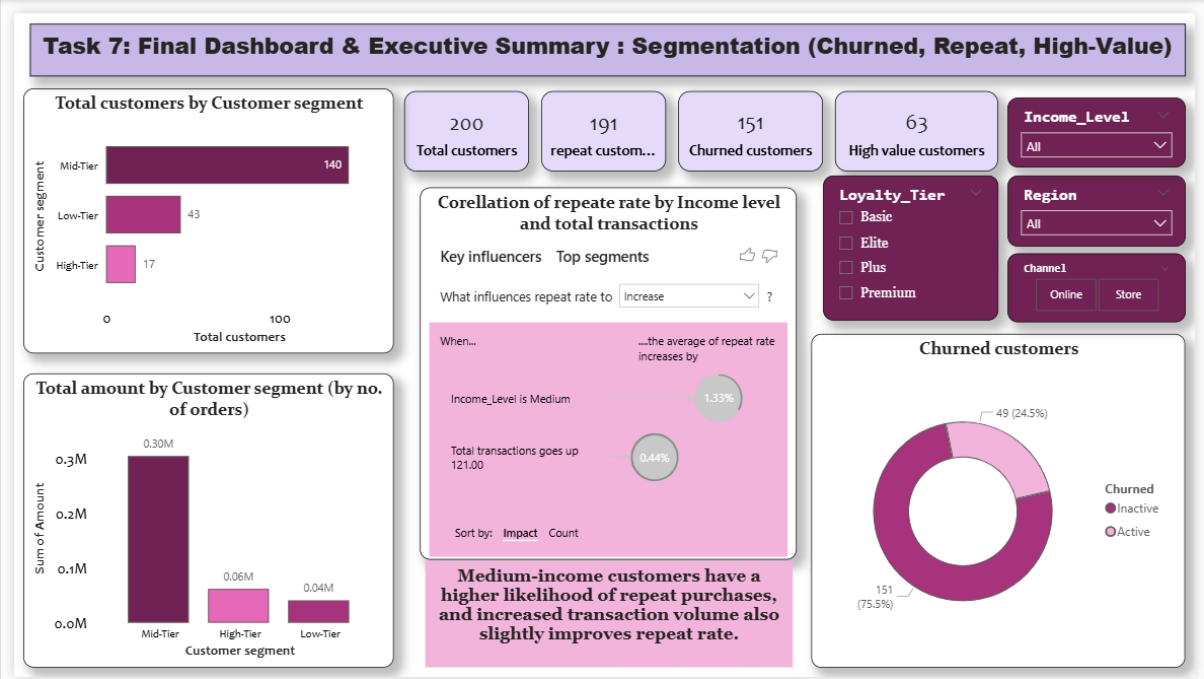
  - Page 2: Loyalty & Promotion Impact



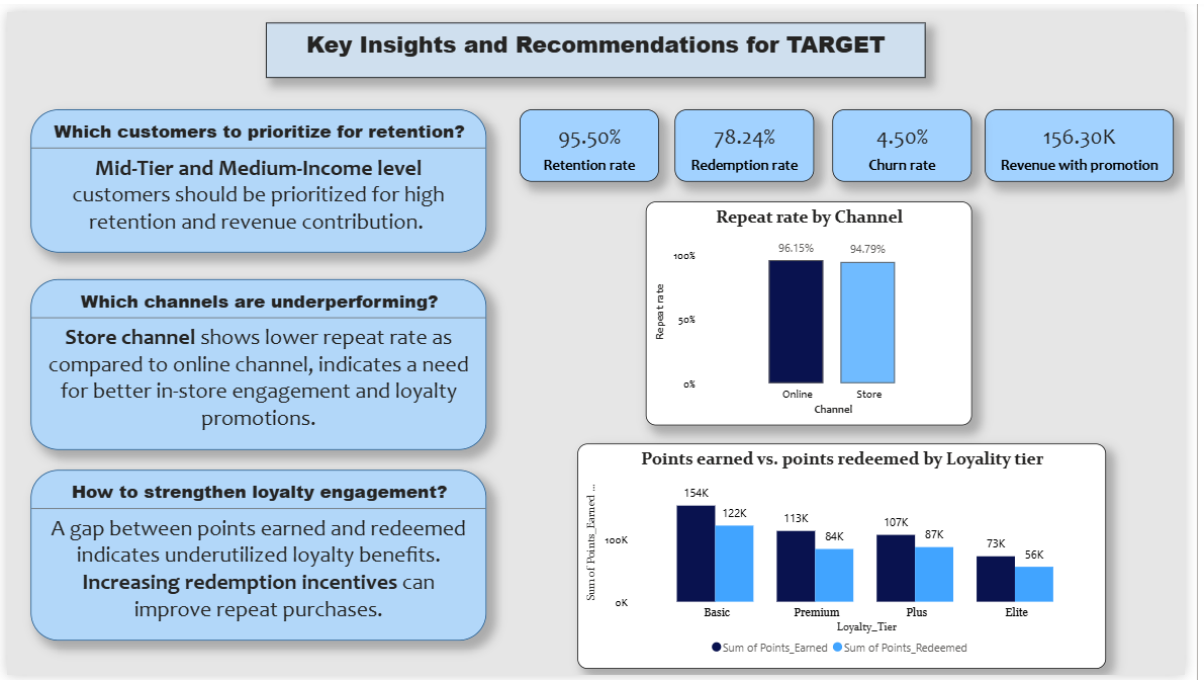
○ Page 3: Store/Channel Insights



○ Page 4: Segmentation (Churned, Repeat, High-Value)



- Slicers: Region, Channel, Income, Loyalty Tier
- Provide Top 3 Recommendations for Target:
    - Which customers to prioritize for retention?
    - Which channels are underperforming?
    - How to strengthen loyalty engagement?



Task 8: Video explanation: Expressing the finding and actionable insights

https://www.loom.com/share/a44f5f76d2164401995c88fdc7eca8ce