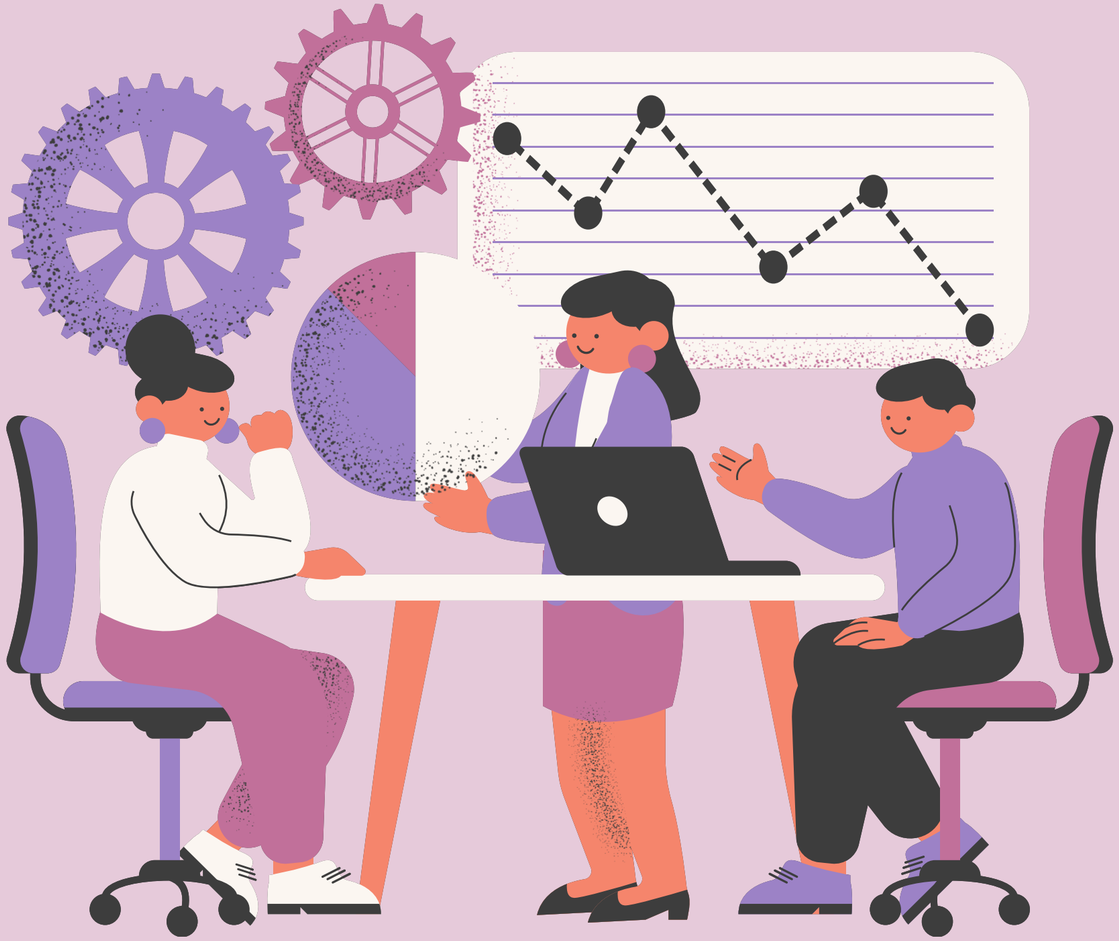
SQL Project
On

Marketing Customer Value



Data Description

The Marketing dataset is a comprehensive collection of information on 9,134 customers, each characterized by 24 distinct attributes. This dataset includes details such as customer demographics (state, gender, education, marital status), financial metrics (income, customer lifetime value, monthly premium), and insurance-specific information (coverage type, policy type, number of open complaints, total claim amount). Additionally, it captures customer interactions with marketing efforts, such as their response to campaigns and the sales channel through which they were acquired. This rich dataset is aimed at analyzing customer behaviour, optimizing marketing strategies, and improving customer relationship management.

- Customer: Unique identifier for each customer.
- State: State of residence for the customer.
- Customer Lifetime Value: A measure of the total worth to a business of a customer over the whole period of their relationship.
- Response: Indicates if the customer responded to the marketing campaign.
- Coverage: Type of insurance coverage.
- Education: Education level of the customer.
- Effective To Date: Date when the policy became effective.
- Employment Status: Employment status of the customer.
- Gender: Gender of the customer.
- Income: Annual income of the customer.
- Location Code: Code indicating the type of location.
- Marital Status: Marital status of the customer
- Monthly Premium Auto: Monthly premium amount for auto insurance.
- Months Since Last Claim: Number of months since the customer's last insurance claim.
- Months Since Policy Inception: Number of months since the policy was first initiated.
- Number of Open Complaints: Number of open complaints the customer has.
- Number of Policies: Number of insurance policies the customer holds.
- Policy Type: Type of insurance policy
- Policy: Specific policy held by the customer.
- Renew Offer Type: Type of offer made at policy renewal
- Sales Channel: The Channel through which the policy was sold
- Total Claim Amount: Total amount claimed by the customer.
- Vehicle Class: Class of the insured vehicle
- Vehicle Size: The size of the insured vehicle

Count of total customers

```
SELECT
     COUNT(Customer) AS Customer_count
FROM Marketing;
```

Results | Messages

	Customer_count
1	9134

A total of 9,134 customers have participated in the marketing campaign.

Positive and Negetive Response Rate

Results | Messages

	pos_response_rate_pct	neg_response_rate_pct
1	14.320000000000	85.680000000000

The campaign has achieved a positive response rate of 14.32% and a negative response rate of 85.68%.

```sql
WITH TotalResponses AS (
    SELECT ROUND(COUNT(*),2) AS total_count
    FROM marketing
),

PosResponses AS (
    SELECT ROUND(COUNT(*),2) AS pos_count
    FROM marketing
    WHERE Response = 'Yes'
),
NegResponses AS (
    SELECT ROUND(COUNT(*),2) AS neg_count
    FROM marketing
    WHERE Response = 'No'
)

SELECT
        ROUND((pos.pos_count * 100.0 / total.total_count),2) AS pos_response_rate_pct,
        ROUND((neg.neg_count * 100.0 / total.total_count),2) AS neg_response_rate_pct
FROM
    TotalResponses total,
    PosResponses pos,
    NegResponses neg;
```

Gender wise responses

```sql
WITH PosResponses AS (
    SELECT
        COUNT(*) AS pos_response,
        Gender
    FROM Marketing
    WHERE Response = 'Yes'
    GROUP BY Gender
),
NegResponses AS (
    SELECT
        COUNT(*) AS neg_response,
        Gender
    FROM Marketing
    WHERE Response = 'No'
    GROUP BY Gender
)

SELECT
    pos.Gender,
    pos.pos_response,
    neg.neg_response
FROM
    PosResponses pos
JOIN
    NegResponses neg
ON
    pos.Gender = neg.Gender;
```

Results | Messages

	Gender	pos_response	neg_response
1	F	660	3998
2	M	648	3828

Female customers have exhibited a higher positive response rate compared to male customers.

Positive Responses by renew offer

```sql
SELECT
    COUNT(*) AS pos_response,
    [Renew Offer Type]
FROM marketing
WHERE Response= 'Yes'
GROUP BY [Renew Offer Type]
ORDER BY pos_response DESC;
```

Renewal offer type 2 has received the highest response rate.

Results | Messages

	pos_response	Renew Offer Type
1	684	Offer2
2	594	Offer1
3	30	Offer3

Responses by Marital status

```
SELECT
    COUNT(*) AS Pos_response,
    [Marital Status]
FROM Marketing
WHERE Response= 'Yes'
GROUP BY [Marital Status]
ORDER BY Pos_response ASC;
```

Results | Messages

	Pos_response	Marital Status
1	288	Single
2	324	Divorced
3	696	Married

Married customers have shown a higher response rate compared to single customers.

Response rate by Sales Channel

```sql
SELECT
    COUNT(*) AS pos_response,
    [Sales Channel]
FROM marketing
WHERE Response= 'Yes'
GROUP BY [Sales Channel]
ORDER BY pos_response DESC;
```

Results | Messages

	pos_response	Sales Channel
1	666	Agent
2	294	Branch
3	192	Call Center
4	156	Web

The agent sales channel has the highest response rate. Meanwhile, under Personal L1, the personal auto policy has the highest average claim.

Policy and type wise Total Claim Amount

```sql
SELECT
    [Policy Type],Policy,
    AVG([Total Claim Amount]) AS avg_claim
FROM Marketing
WHERE Response = 'Yes'
GROUP BY [Policy Type], Policy
ORDER BY avg_claim DESC;
```

Results | Messages

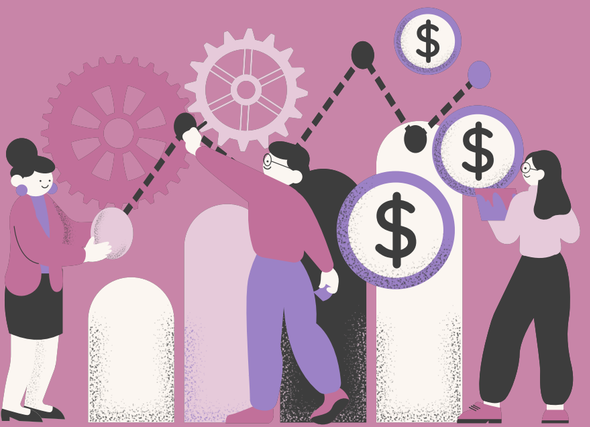
	Policy Type	Policy	avg_claim
1	Personal Auto	Personal L1	471.702702
2	Special Auto	Special L1	467.166666
3	Personal Auto	Personal L3	454.444444
4	Corporate Auto	Corporate L1	442.229166
5	Personal Auto	Personal L2	442.072131
6	Corporate Auto	Corporate L2	429.431818
7	Special Auto	Special L3	429.387096
8	Special Auto	Special L2	426.736842
9	Corporate Auto	Corporate L3	412.138157

Vehicle Class wise total claim amount with positive response

```sql
SELECT
    [Vehicle Class],
    SUM([Total Claim Amount]) AS TOTAL_CLAIM
FROM marketing
WHERE Response= 'YES'
GROUP BY [Vehicle Class]
ORDER BY TOTAL_CLAIM DESC;
```

Results | Messages

	Vehicle Class	TOTAL_CLA...
1	Four-Door Car	228102.00
2	SUV	166134.00
3	Two-Door Car	94572.00
4	Sports Car	44580.00
5	Luxury SUV	35766.00
6	Luxury Car	14310.00



Four-door cars have the highest total claim amount.

Total claim by Vehicle Class and Policy

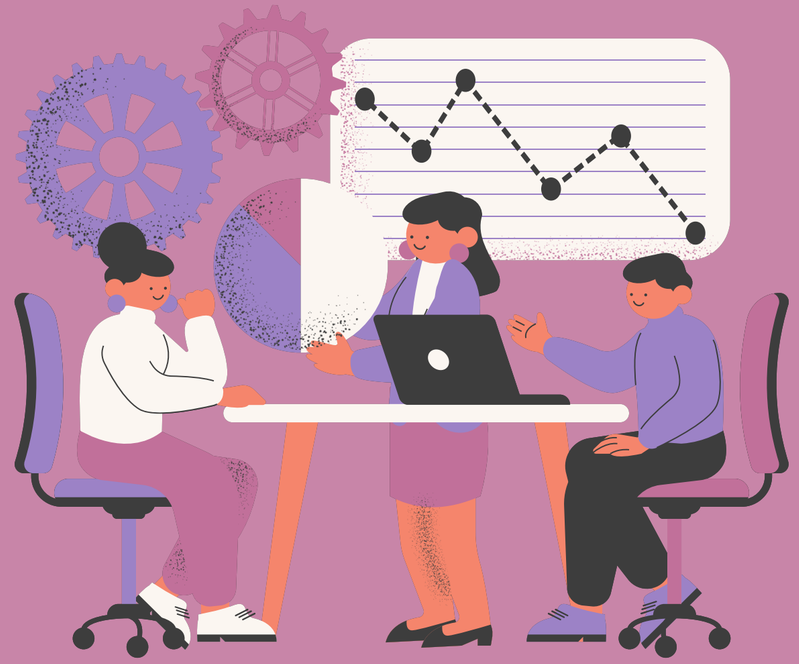
```sql
SELECT TOP 10
    [Vehicle Class],
    POLICY,
    SUM([Total Claim Amount]) AS TOTAL_CLAIM
FROM Marketing
WHERE Response= 'YES'
GROUP BY [Vehicle Class], POLICY
ORDER BY TOTAL_CLAIM DESC;
```

Results | Messages

	Vehicle Class	POLICY	TOTAL_CLA...
1	Four-Door Car	Personal L3	82408.00
2	SUV	Personal L3	58210.00
3	Four-Door Car	Personal L2	48454.00
4	SUV	Personal L2	42966.00
5	Two-Door Car	Personal L3	35712.00
6	Four-Door Car	Personal L1	34611.00
7	Four-Door Car	Corporate L3	27985.00
8	SUV	Personal L1	22254.00
9	Two-Door Car	Personal L2	22194.00
10	SUV	Corporate L3	18666.00

Four-door cars with personal loans have the highest total claim amount.

Customer's lifetime value by response rate



```sql
SELECT
    MAX([Customer Lifetime Value]) AS max_lifetime_value,
    MIN([Customer Lifetime Value]) AS min_lifetime_value
FROM Marketing
WHERE Response = 'Yes'
GROUP BY Response;
```

Results | Messages

	max_lifetime_value	min_lifetime_value
1	41787.90	2004.35

The query displays both the maximum and minimum lifetime values.

customers who responded 'Yes' and have an income greater than 50000 Claim for premium coverage

```sql
WITH PREMIUM_CLAIM AS (
SELECT
    AVG([Total Claim Amount]) AS AVG_Claim,
    COVERAGE
FROM Marketing
WHERE Coverage = 'Premium'
GROUP BY Coverage),

CUST_SAL AS (
SELECT
    COUNT(Customer) AS cust,
    COVERAGE
FROM Marketing
WHERE Response= 'Yes' AND [Income]>50000
GROUP BY Coverage)

SELECT
    PREMIUM_CLAIM.AVG_Claim,
    CUST_SAL.cust
FROM PREMIUM_CLAIM
JOIN CUST_SAL
ON PREMIUM_CLAIM.COVERAGE=CUST_SAL.COVERAGE;
```

Results | Messages

	AVG_Claim	cust
1	651.378640	78

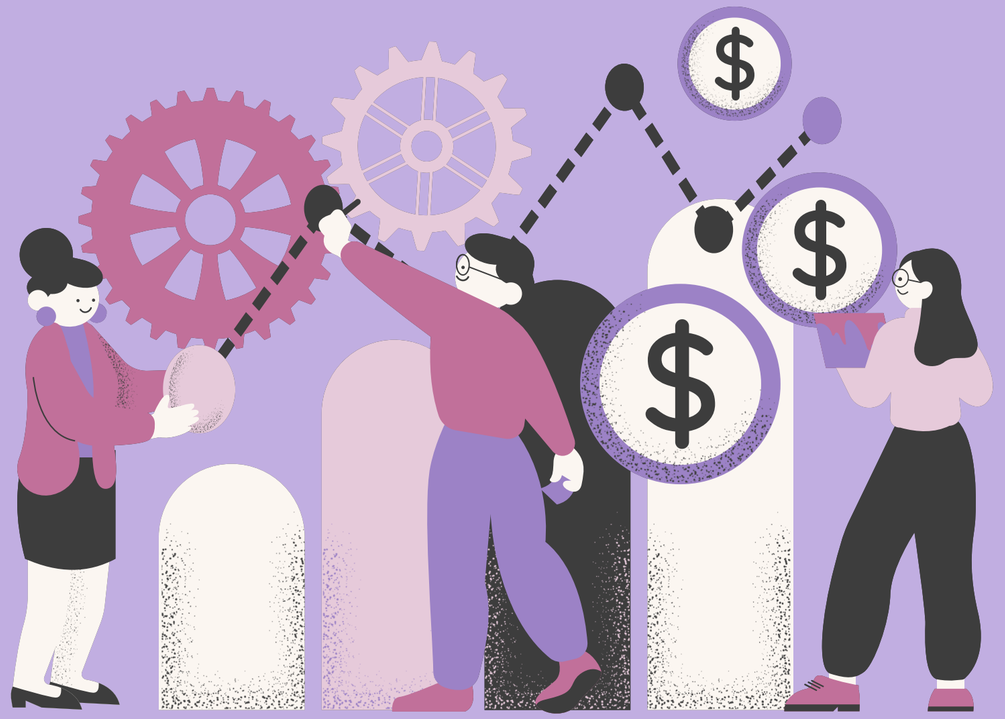
A total of 78 customers who responded 'Yes' and had an income greater than $50,000 claimed an average premium coverage of $651.37.

Top 3 customers with the highest 'Customer Lifetime Value'

Results | Messages

	Customer Lifetime Va...	Customer	State	Income
1	83325.38	FQ61281	Oregon	58958
2	74228.52	YC54142	Washington	0
3	73225.96	BP23267	California	39547

```sql
SELECT
    TOP 3 [Customer Lifetime Value],
    Customer,
    [State],
    Income
FROM Marketing
ORDER BY [Customer Lifetime Value] DESC;
```



The query displays the top 3 customers with the highest 'Customer Lifetime Value', categorized by their state and income.

Count of all customers who have an average monthly premium greater than the total claim amount.

```sql
SELECT COUNT(*) AS CUST_COUNT FROM (
    SELECT  customer, [Total Claim Amount], AVG([Monthly Premium Auto]) AS PREMIUM FROM Marketing
    GROUP BY  [Monthly Premium Auto], [Total Claim Amount], Customer
    HAVING AVG([Monthly Premium Auto])>([Total Claim Amount])
) AS SUB;
```

Results | Messages

	CUST_COUNT
1	721

There are 721 customers whose average monthly premium exceeds their total claim amount.

Number of customers who have more than 2 open complaints and their respective states

```
SELECT
    COUNT(customer) AS cust,
    [State]
FROM Marketing
WHERE [Number of Open Complaints]>2
GROUP BY  [State]
ORDER BY cust DESC;
```

Results | Messages

	cust	State
1	160	California
2	139	Oregon
3	89	Arizona
4	63	Nevada
5	46	Washington

The results indicate the count of all customers who have more than 2 open complaints, categorized by their respective states.

Average number of months since the last claim for customers grouped by their employment status

```sql
SELECT
    AVG([Months Since Last Claim]) AS AVG_MON,
    EmploymentStatus
FROM Marketing
GROUP BY EmploymentStatus
ORDER BY AVG_MON DESC;
```

Results | Messages

	AVG_MON	EmploymentStatus
1	15	Unemployed
2	15	Medical Leave
3	15	Employed
4	14	Disabled
5	14	Retired

The result displays the average number of months since the last claim for customers grouped by their employment status.

Top 3 customers within each state based on the Effective To Date

```sql
WITH ranked_cust AS (
    SELECT
        [State],
        Customer,
        [Customer Lifetime Value],
        [Effective To Date],
        ROW_NUMBER()
            OVER (PARTITION BY [State]
                    ORDER BY [Customer Lifetime Value] DESC) AS RANK_VALUE
        FROM Marketing
        )
    SELECT
        [State],
        Customer,
        [Customer Lifetime Value],
        [Effective To Date]
    FROM ranked_cust
    WHERE
        RANK_VALUE<=3
    ORDER BY
     [State], RANK_VALUE;
```

Results | Messages

	State	Customer	Customer Lifetime Value	Effective To Date
1	Arizona	JT47995	60556.19	01-01-2011
2	Arizona	EN65835	58753.88	01-06-2011
3	Arizona	XF89906	58207.13	1/13/11
4	California	BP23267	73225.96	02-09-2011
5	California	FB95288	64618.76	1/17/11
6	California	US30122	61134.68	2/28/11
7	Nevada	CL79250	52811.49	01-08-2011
8	Nevada	LU42720	48356.96	2/20/11
9	Nevada	CP92616	46805.22	2/25/11
10	Oregon	FQ61281	83325.38	1/31/11
11	Oregon	KH55886	67907.27	02-05-2011
12	Oregon	AZ84403	61850.19	02-04-2011
13	Washin...	YC54142	74228.52	1/26/11
14	Washin...	SK66747	66025.75	2/22/11
15	Washin...	AB31813	44771.30	02-12-2011

The result displays the top 3 customers partitioned by each state based on the effective date.

Thank you very much!