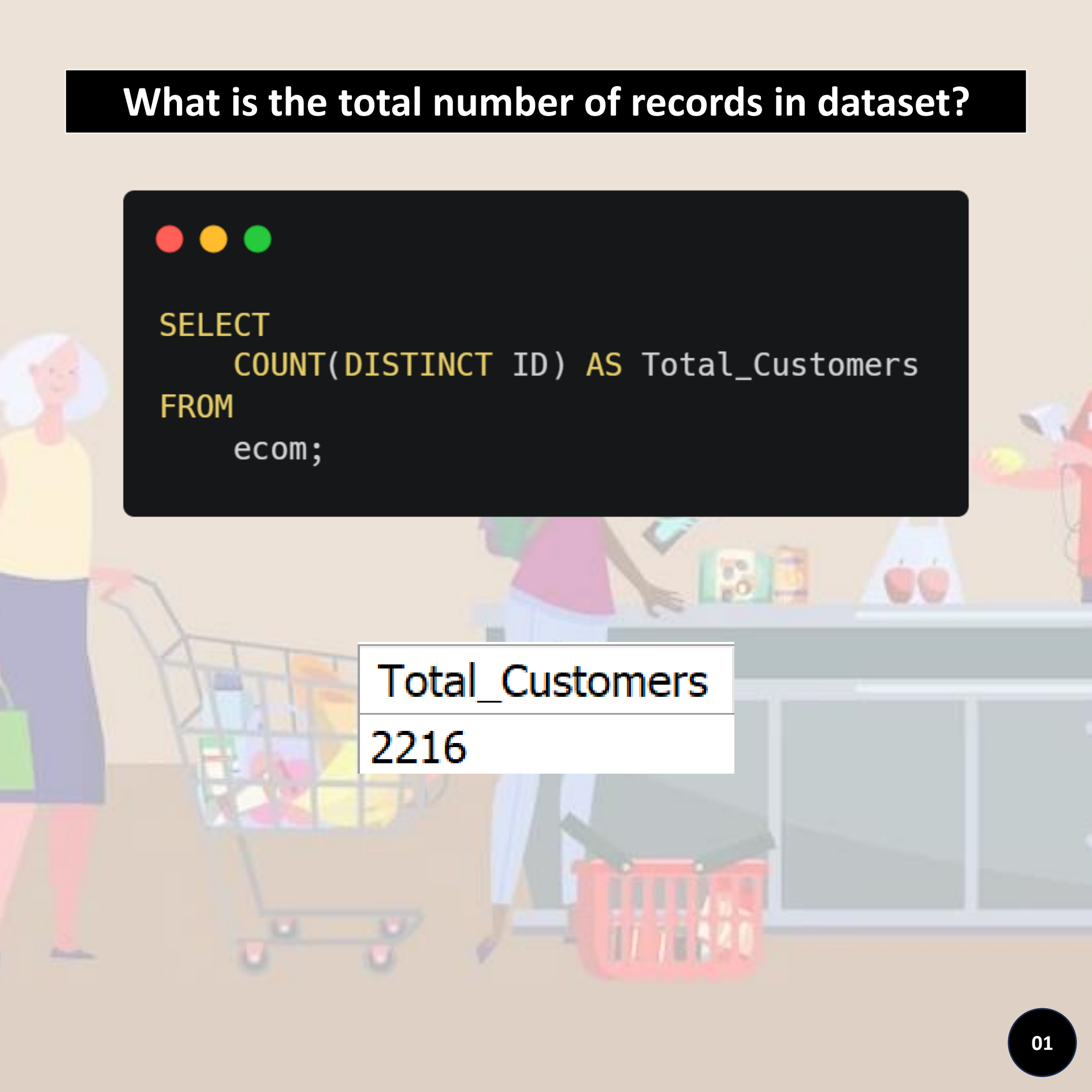
What is the total number of records in dataset?

```sql
SELECT
    COUNT(DISTINCT ID) AS Total_Customers
FROM
    ecom;
```



Total_Customers
2216

List unique education levels present in the dataset.

```sql
SELECT DISTINCT
    Education, COUNT(*) AS Customers
FROM
    ecom
GROUP BY Education;
```

Education	Customers
Graduation	1116
PhD	481
Master	365
2n Cycle	200
Basic	54

Calculate the average income of customers.

```sql
SELECT
    ROUND(AVG(Income),0) AS Avg_Income
FROM
    ecom;
```

Avg_Income
52247

Find the customer with the highest amount spent on clothes.

```sql
SELECT
    ID AS Customer_ID, A_Clothes AS Amount_on_Clothes
FROM
    ecom
ORDER BY A_Clothes DESC
LIMIT 1;
```

Customer_ID	Amount_on_Clothes
737	1493

Count the number of customers who made a complaint.

```sql
SELECT
    COUNT(*) AS Number_Of_Customers
FROM
    ecom
WHERE
    Complain = 1;
```

Number_Of_Customers
21

Identify the most common payment method used by customers.

```sql
SELECT
    Payment_Method, COUNT(*) AS count
FROM
    ecom
GROUP BY Payment_Method
ORDER BY count DESC
LIMIT 1;
```

Payment_Method	count
Cash	763

List the unique years of customer enrollment.

```sql
SELECT DISTINCT
    YEAR(Dt_Customer) AS Year
FROM
    ecom
ORDER BY Year;
```

Year
2012
2013
2014

Retrieve the customer ID, education level, and income of top 5 customers who spent the most on furniture.

```sql
SELECT
    ID as Customer_ID, Education, Income,
    A_Furniture AS Amount_On_Furniture
FROM
    ecom
ORDER BY A_Furniture DESC
LIMIT 5;
```

Customer_ID	Education	Income	Amount_On_Furniture
7342	2n Cycle	59184	259
3091	2n Cycle	75774	258
4676	Master	73705	258
762	2n Cycle	75774	258
0	Graduation	70951	254

Calculate the Recency,Frequency, and Monetary values for each customer (RFM analysis).

```sql
SELECT
    ID AS Customer_ID,
    Recency,
    NumDealsPurchases + NumWebPurchases AS Frequecy,
    A_Clothes + A_Tech_Electronics + A_Books + A_Furniture + A_Foods + A_Cosmetics AS Monetary
FROM
    ecom
```

Customer_ID	Recency	Frequecy	Monetary
4619	9	27	277
10311	0	25	359
238	76	24	1082
6237	92	23	416
5430	0	21	684
8432	0	21	684
3594	74	21	747
8148	88	19	859
8581	4	19	751
5207	41	19	793

Determine the percentage of customers who have churned.

```sql
SELECT
    CONCAT(ROUND((SUM(Churns) / COUNT(Churns)) * 100, 2),
           '%') AS Cust_Churn_Percentage
FROM
    ecom;
```

Cust_Churn_Percentage
19.04%

Retrieve the top 5 customers with the highest overall spending.

```sql
SELECT
    ID AS Customer_ID,
    A_Clothes + A_Tech_Electronics + A_Books + A_Furniture + A_Foods + A_Cosmetics
    AS Overall_Spending
FROM
    ecom
ORDER BY Overall_Spending DESC
LIMIT 5;
```

Customer_ID	Overall_Spending
5735	2525
5350	2525
1763	2524
4580	2486
4475	2440

Identify the most popular category (highest total spending) among customers.

```sql
SELECT
    'Clothes' AS Category, SUM(A_Clothes) AS Spending
FROM
    ecom
UNION SELECT
    'Tech_Electronics' AS Tech_Electronics,
    SUM(A_Tech_Electronics) AS Spending
FROM
    ecom
UNION SELECT
    'Books' AS Books, SUM(A_Books) AS Spending
FROM
    ecom
UNION SELECT
    'Furniture' AS Furniture, SUM(A_Furniture) AS Spending
FROM
    ecom
UNION SELECT
    'Foods' AS Foods, SUM(A_Foods) AS Spending
FROM
    ecom
UNION SELECT
    'Cosmetics' AS Cosmetics, SUM(A_Cosmetics) AS Spending
FROM
    ecom
ORDER BY Spending DESC;
```

Category	Spending
Clothes	676083
Books	370063
Cosmetics	97427
Furniture	83405
Foods	59896
Tech_Electronics	58405

Calculate the average satisfaction level for each education level.

```sql
SELECT
    Education,
    ROUND(AVG(CASE
                WHEN Satisfaction_Level = 'Unsatisfied' THEN 1
                WHEN Satisfaction_Level = 'Neutral' THEN 2
                WHEN Satisfaction_Level = 'Satisfied' THEN 3
                ELSE 0
            END),
            2) AS average_satisfaction_level
FROM
    ecom
GROUP BY Education;
```

Education	average_satisfaction_level
Graduation	2.00
Basic	2.00
2n Cycle	2.02
PhD	2.03
Master	2.03

List customers who made purchases on more than three websites

```sql
SELECT
    ID AS Customer_ID
FROM
    ecom
WHERE
    NumWebPurchases >= 3;
```

Customer_ID
5524
4141
5324
7446
965
6177
4855
2125
8180
2114

Perform a cohort analysis based on the year of customer enrollment.

```sql
SELECT
    YEAR(Dt_Customer) AS Enrollment_Year,
    MONTH(Dt_Customer) AS Enrollment_Month,
    ROUND(AVG(A_Clothes + A_Tech_Electronics + A_Books +
              A_Furniture + A_Foods + A_Cosmetics),0)
              AS Avg_monthly_Spending
FROM
    ecom
GROUP BY Enrollment_Year , Enrollment_Month
ORDER BY Enrollment_Year , Enrollment_Month;
```

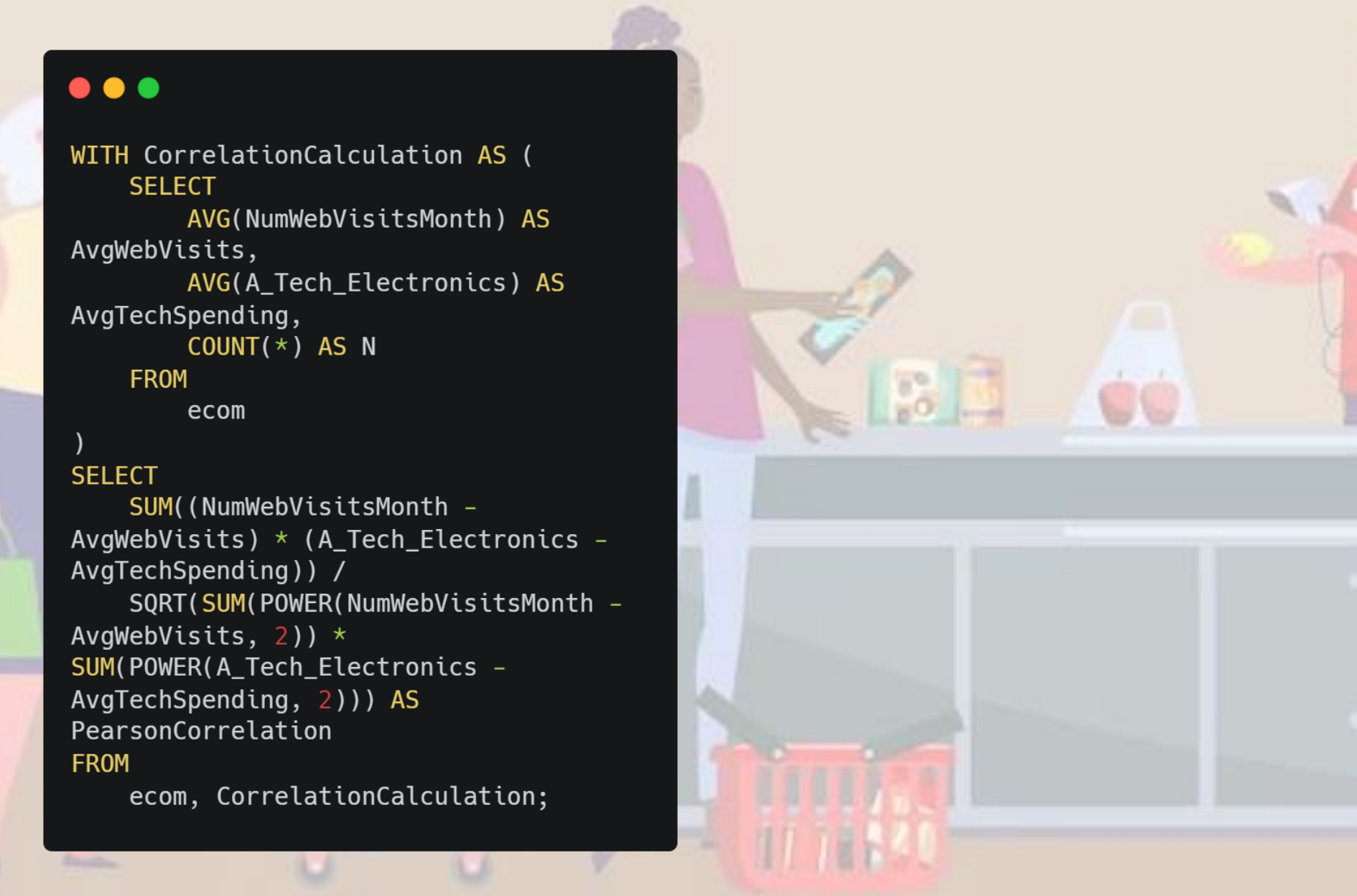
Enrollment_Year	Enrollment_Month	Avg_monthly_Spending
2012	7	679
2012	8	772
2012	9	880
2012	10	682
2012	11	798
2012	12	571
2013	1	667
2013	2	689
2013	3	666

Identify customers who have not made any purchases in the last six months.

```sql
SELECT
    ID as Customer_ID
FROM
    ecom
WHERE
    Recency > 6;
```

Customer_ID
5524
2174
4141
6182
5324
7446
965

Determine the correlation between the number of web visits and the amount spent on technology.



```sql
WITH CorrelationCalculation AS (
    SELECT
        AVG(NumWebVisitsMonth) AS
AvgWebVisits,
        AVG(A_Tech_Electronics) AS
AvgTechSpending,
        COUNT(*) AS N
    FROM
        ecom
)
SELECT
    SUM((NumWebVisitsMonth -
AvgWebVisits) * (A_Tech_Electronics -
AvgTechSpending)) /
    SQRT(SUM(POWER(NumWebVisitsMonth -
AvgWebVisits, 2)) *
SUM(POWER(A_Tech_Electronics -
AvgTechSpending, 2))) AS
PearsonCorrelation
FROM
    ecom, CorrelationCalculation;
```

Implement a query to calculate the Customer Lifetime Value (CLV) for each customer.

```sql
SELECT
    ID AS Customer_ID,
    (A_Clothes + A_Tech_Electronics + A_Books + A_Furniture + A_Foods + A_Cosmetics)
    AS Spending,
    YEAR(NOW()) - YEAR(Dt_Customer) AS Lifetime_Years,
    ROUND(((A_Clothes + A_Tech_Electronics + A_Books + A_Furniture + A_Foods + A_Cosmetics) /
(YEAR(NOW()) - YEAR(Dt_Customer))),
          2) AS Revenue_per_Year
FROM
    ecom;
```

Customer_ID	Spending	Lifetime_Years	Revenue_per_Year
5524	1617	12	134.75
2174	27	10	2.70
4141	776	11	70.55
6182	53	10	5.30
5324	422	10	42.20
7446	716	11	65.09
965	590	12	49.17