Internship Project Report on E-commerce Project

01 Executive Summary

This report presents the findings from an internship project focused on analyzing customer data for an e-commerce company. The primary objective was to extract actionable insights from the dataset, which includes customer demographics, spending habits, and interactions with marketing campaigns. This analysis aimed to enhance understanding of customer behavior, evaluate the effectiveness of marketing campaigns, and propose strategies for improving business performance. The insights derived from this project have significant implications for the company's marketing strategies and overall operations.

02 Introduction

Background

The rapid growth of e-commerce has transformed the retail landscape, providing companies with vast amounts of customer data. This project was initiated to leverage this data to gain a deeper understanding of customer behavior and to optimize marketing efforts.

Objectives

1. Analyze customer demographics and spending patterns.
2. Evaluate the effectiveness of marketing campaigns.
3. Provide actionable insights for enhancing customer engagement and business performance.

Scope

The analysis covers various aspects of customer data, including demographic information, purchase behavior, and responses to marketing campaigns. The report outlines the methodologies used, presents the findings, and offers recommendations based on the insights gained.

03 Description of the Organization

Company Overview

The organization is a prominent e-commerce platform known for its diverse product range and customer-centric approach. It operates globally and serves a wide customer base with a focus on providing a seamless shopping experience.

Products and Services

The platform offers a vast array of products, including electronics, fashion, home goods, and more. Additionally, it provides personalized recommendations and engages customers through various marketing campaigns.

Organizational Structure

The company is structured into several key departments, including Marketing, Sales, Customer Service, and Data Analytics. Each department plays a crucial role in the company's operations and strategic initiatives.

Market Position and Competitiveness

The company holds a strong market position due to its extensive product offerings, competitive pricing, and excellent customer service. It continuously strives to enhance its market competitiveness through data-driven strategies and customer insights.

04 Experiential Learning

Data Collection and Preparation

The dataset used for this project includes the following key variables:

- Customer ID
- Birth year
- Education
- Marital status
- Income
- Household composition
- Enrollment date
- Recency of purchases
- Complaints
- Campaign acceptances
- Spending categories

Data cleaning and preparation involved handling missing values, outliers, and ensuring data consistency to maintain the quality of the analysis.

Analytical Tools and Techniques

Various analytical tools and techniques were employed to analyze the data:

- **Descriptive Analytics**: Used to summarize and describe the main features of the dataset, providing a clear overview of customer demographics and spending patterns.
- **Predictive Analytics**: Machine learning models were applied to predict future customer behavior and campaign success, enabling the company to make data-

  Driven decisions.

- **Segmentation Analysis**: Customers were segmented based on demographics and spending patterns to identify distinct groups with similar characteristics.

Descriptive Analytics

Descriptive analytics provided insights into customer demographics, such as age distribution, education levels, marital status, and income brackets. Spending patterns were analyzed to identify high-value customers and popular product categories.

Predictive Analytics

Predictive models, such as regression analysis and classification algorithms, were used to forecast future customer behavior and determine the likelihood of campaign success. These models helped in understanding the factors that influence customer purchases and campaign responses.

Segmentation Analysis

Segmentation analysis identified key customer segments, such as frequent buyers, high spenders, and those responsive to specific marketing campaigns. This information was crucial for tailoring marketing strategies to different customer groups.

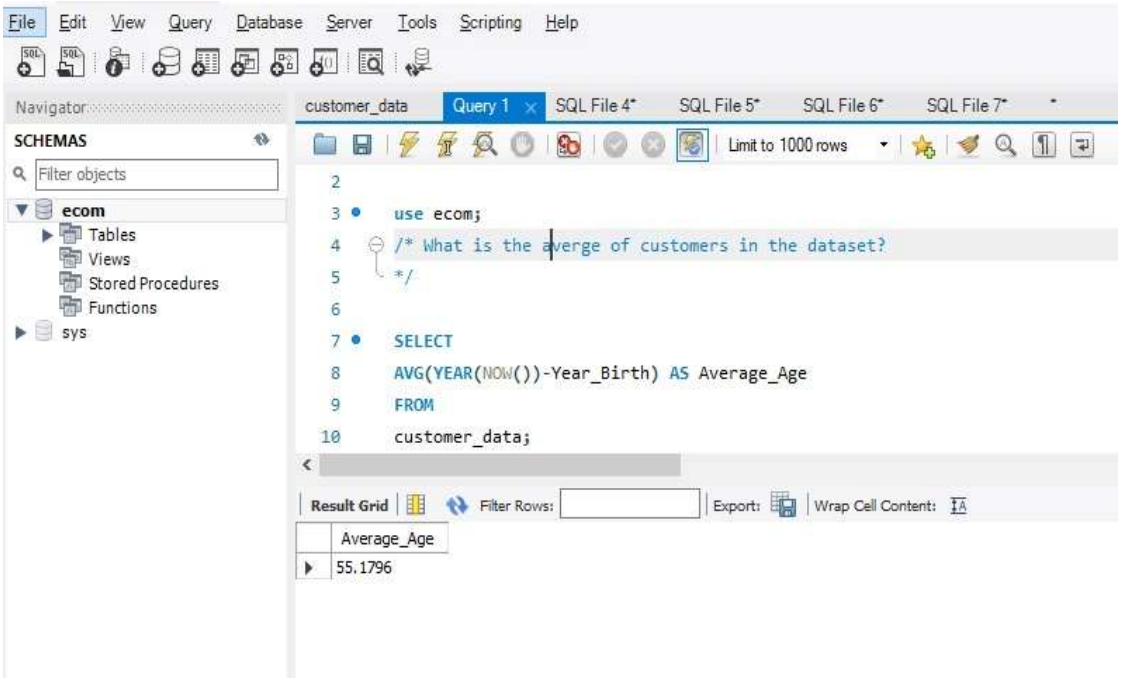
Findings and Insights

- **Customer Demographics**: The analysis revealed that the majority of customers are aged between 25-45 years, with a significant portion holding a college degree. Income levels varied, with a notable segment earning above the median income
- **Spending Patterns**: High-value customers were identified, contributing significantly to total sales. Popular product categories included electronics and fashion.
- **Campaign Effectiveness:** Certain marketing campaigns were more successful in driving customer engagement and purchases. Personalized campaigns showed higher acceptance rates compared to generic ones.

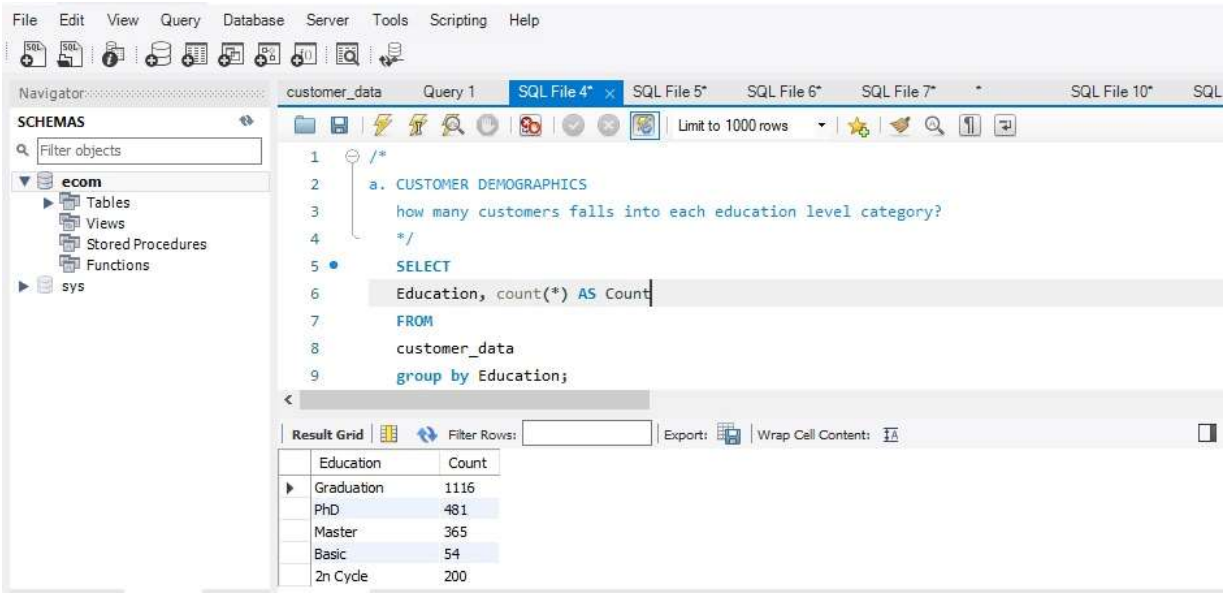
I found the following insights

1. **Customer Demographics**

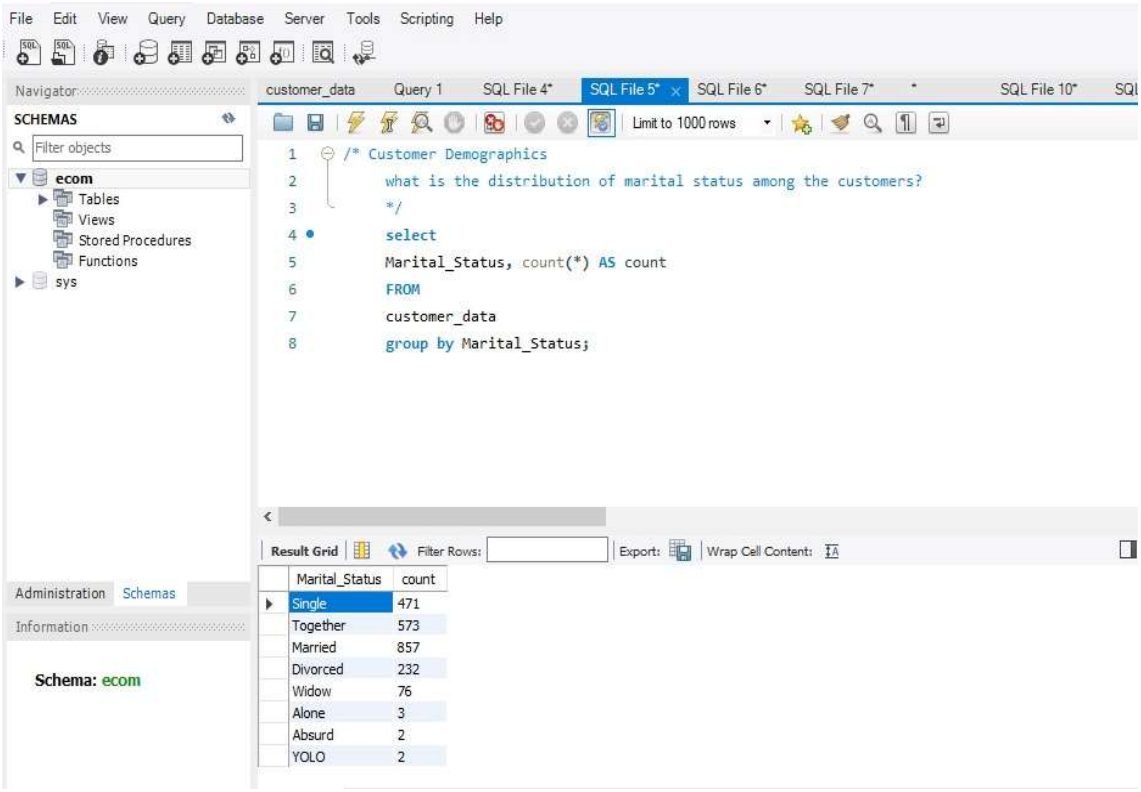
i. What is the average age of customers in the dataset?



ii. How many customers fall into each education level category?



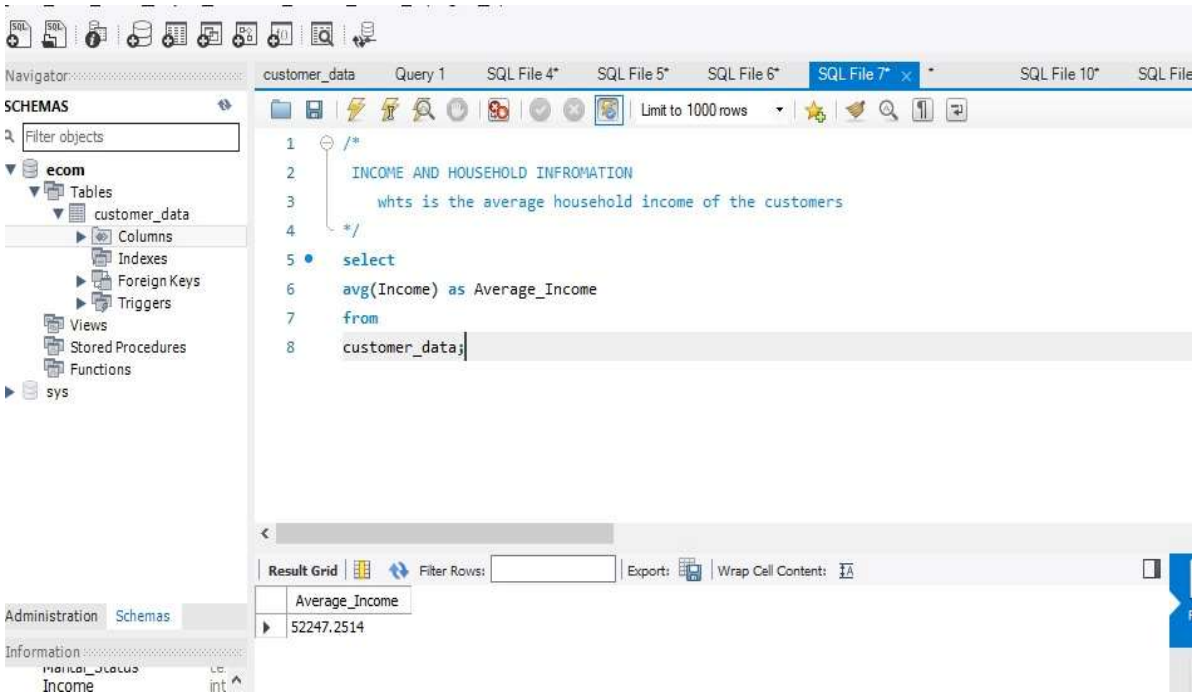
iii. What is the distribution of marital statuses among the customers?



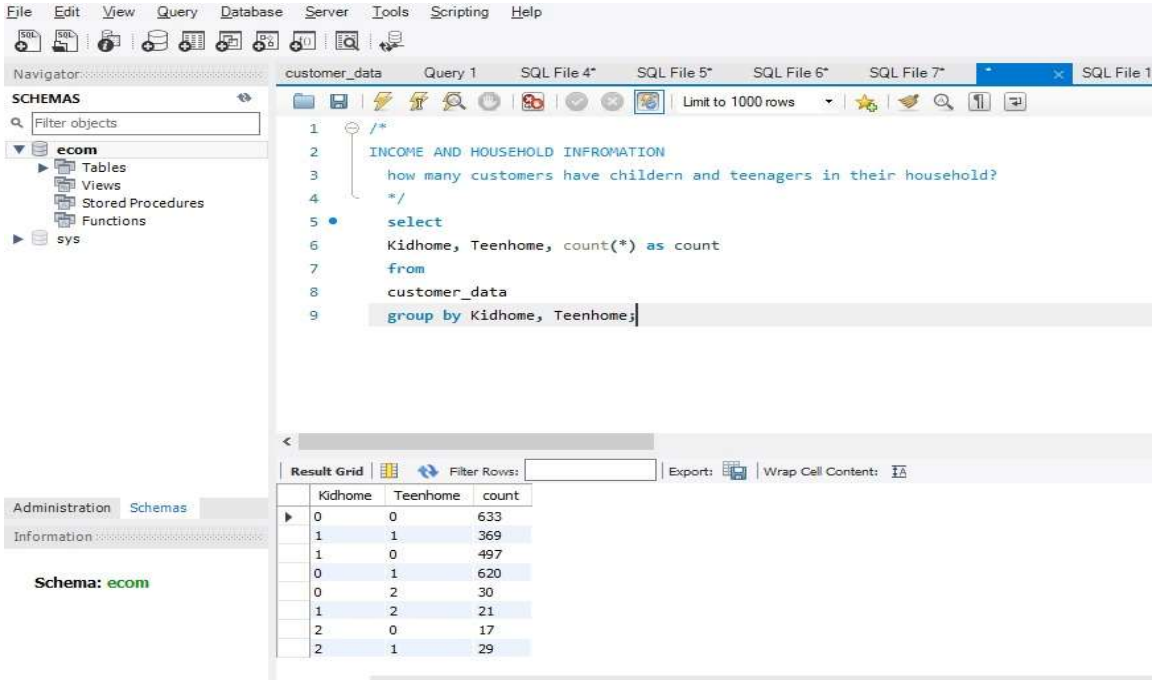
2. Income and

Household Information

i. What is the average household income of the customers?

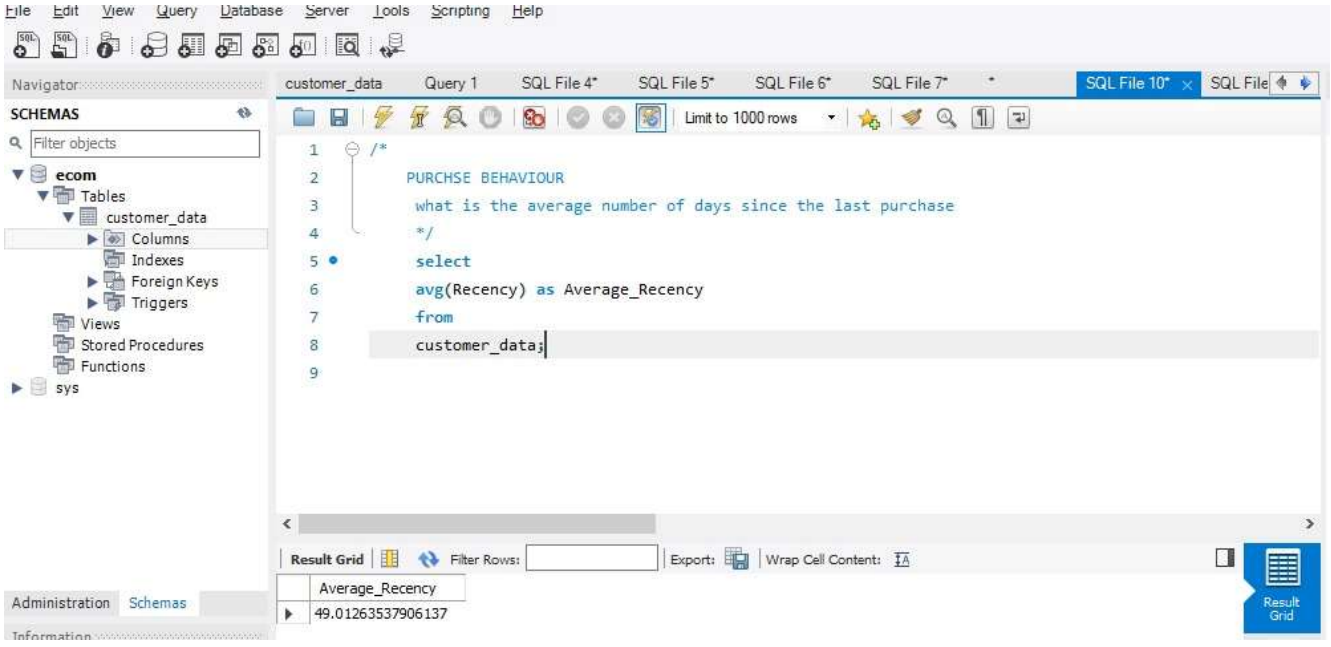


ii. How many customers have children and teenagers in their households?

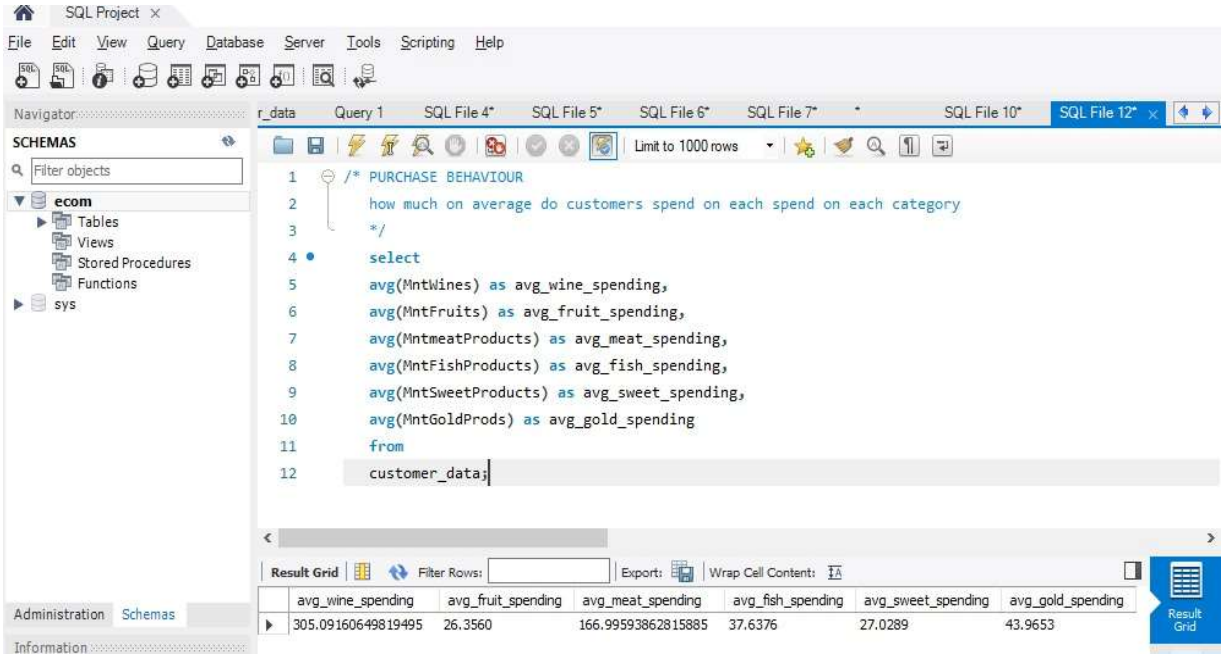


3. Purchase Behavior

i. What is the average number of days since the last purchase?

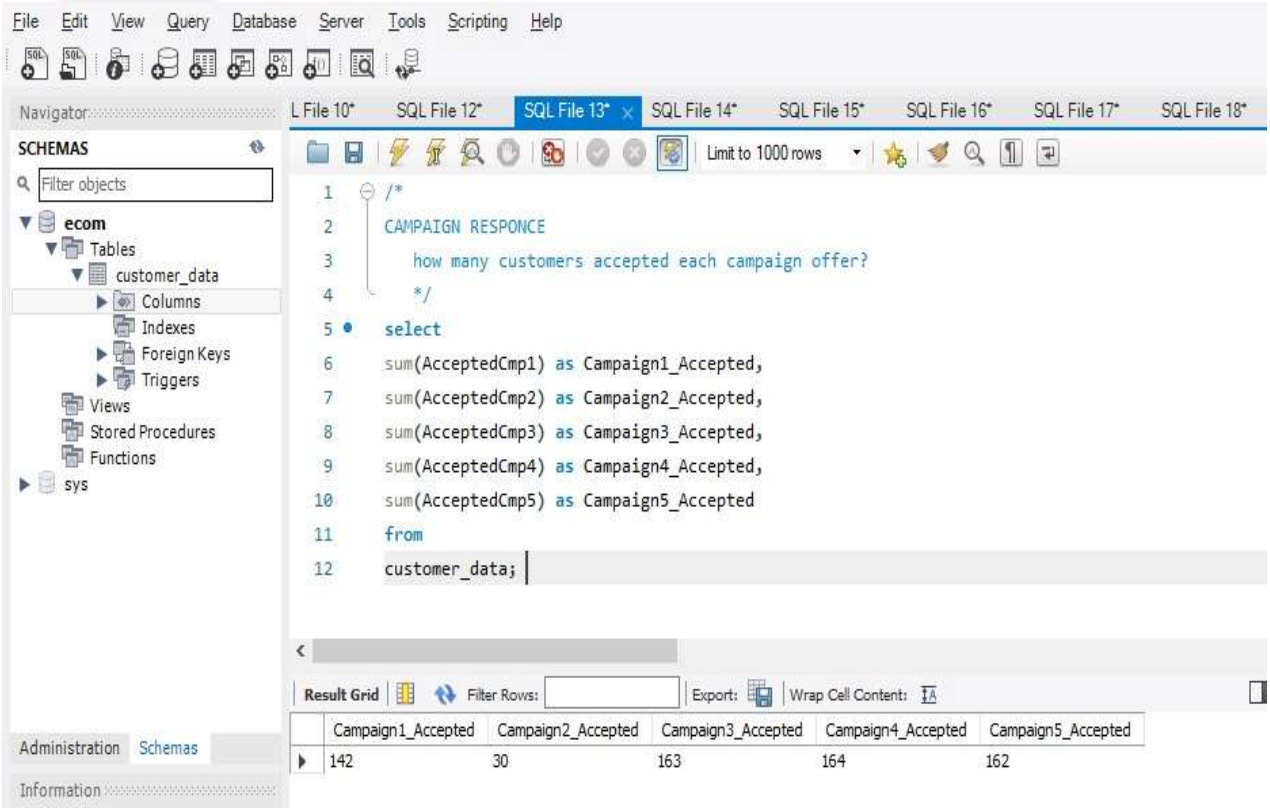


ii. How much on average do customers spend on each product category?

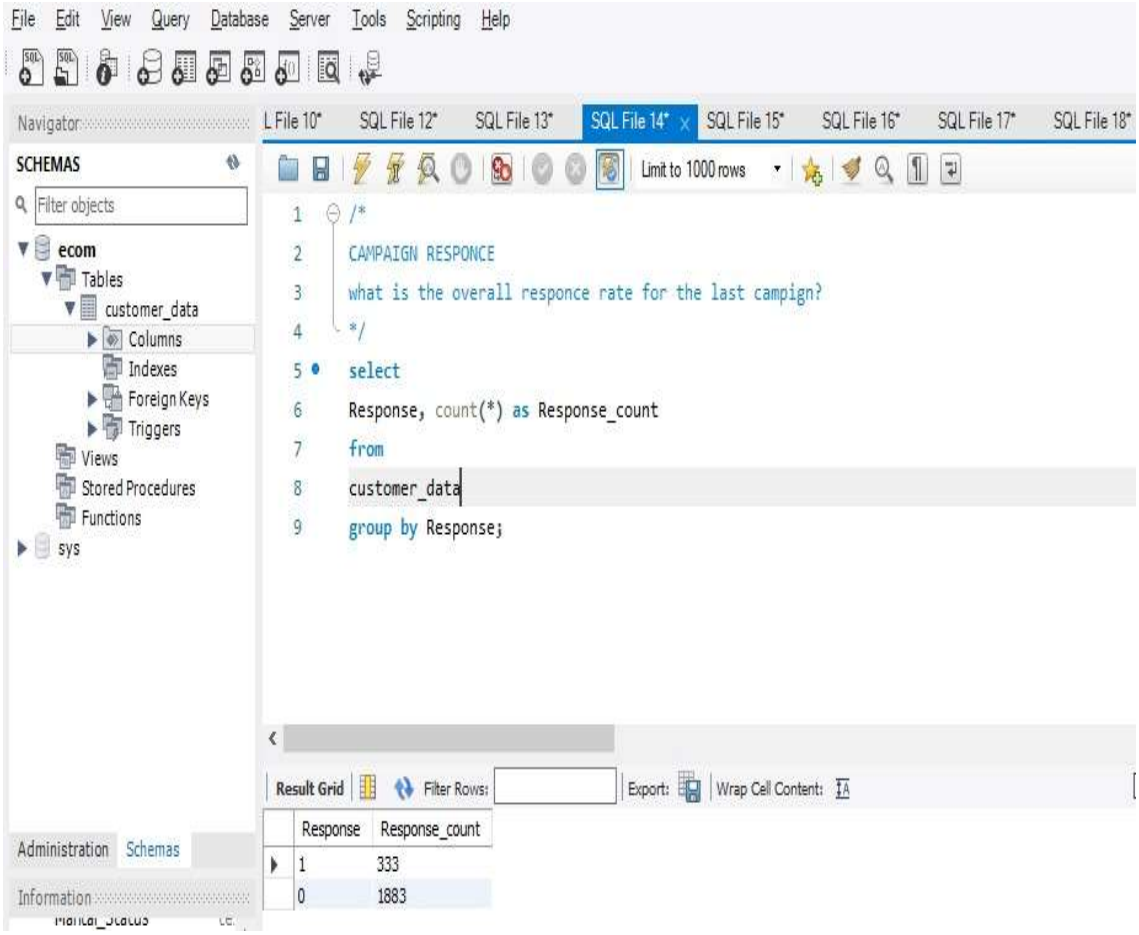


4. Campaign Response:

i. How many customers accepted each campaign offer?

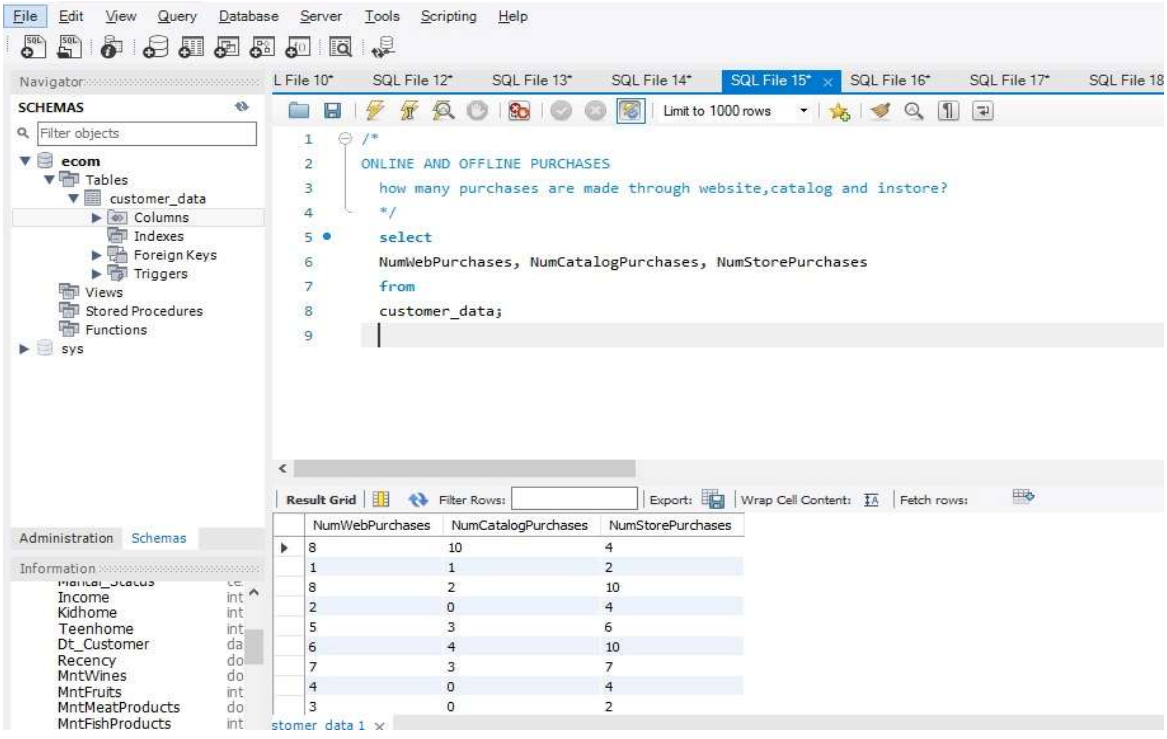


ii. What is the overall response rate for the last campaign?

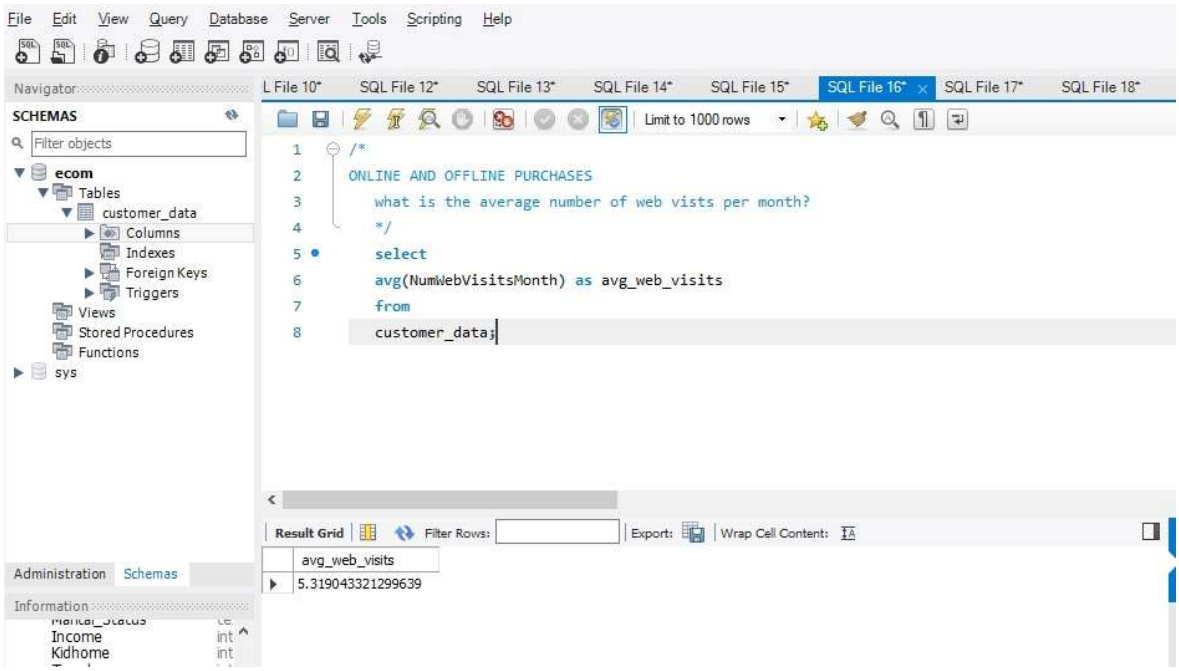


5. Online and Offline Purchases

i. How many purchases are made through the website, catalog, and in-store?

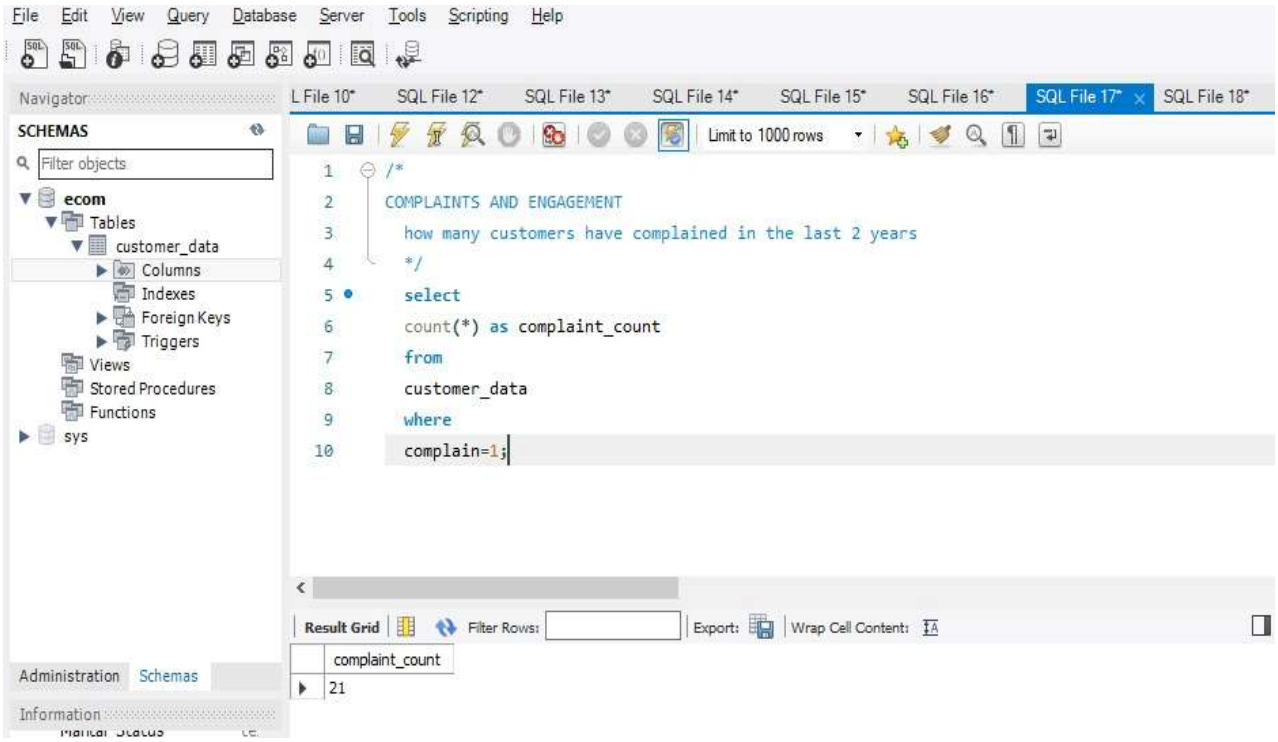


ii. What is the average number of web visits per month?

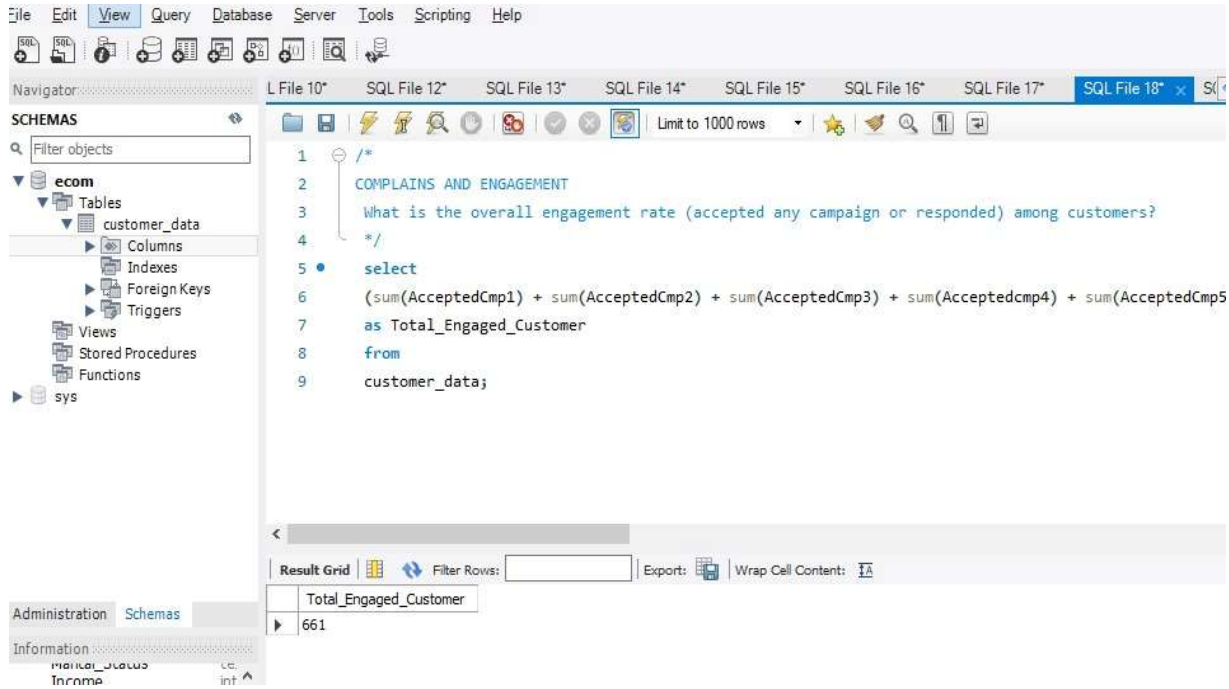


6. Complaints and Engagement

i. How many customers have complained in the last 2years?

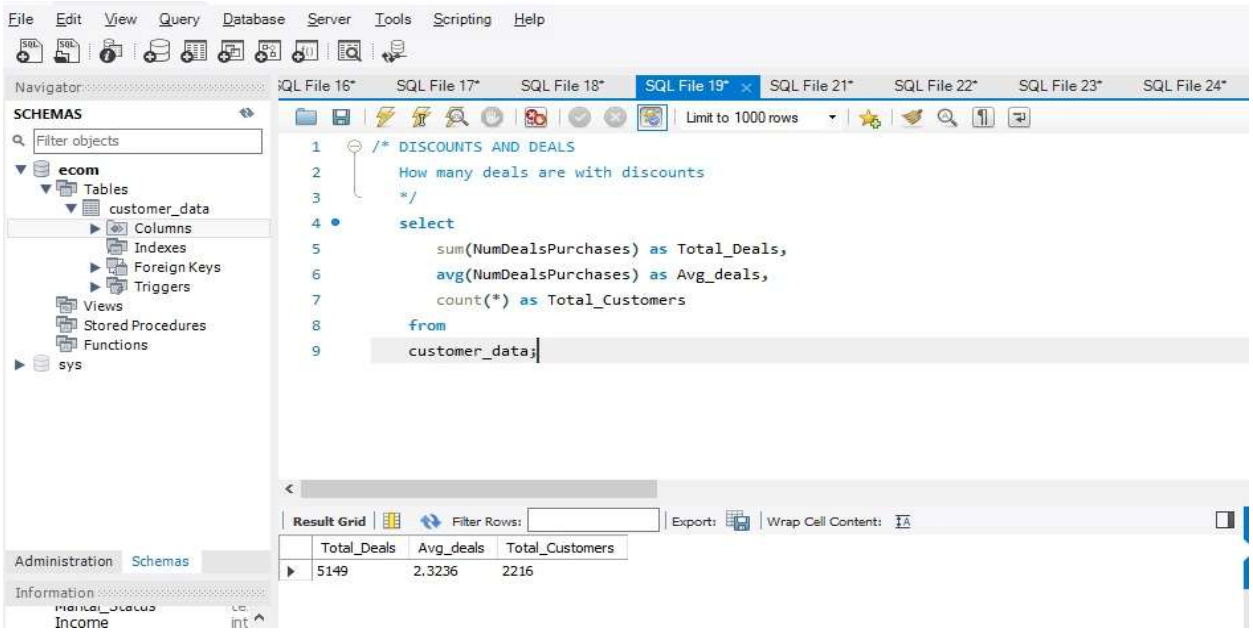


ii. What is the overall engagement rate (accepted any campaign or responded) among customers?

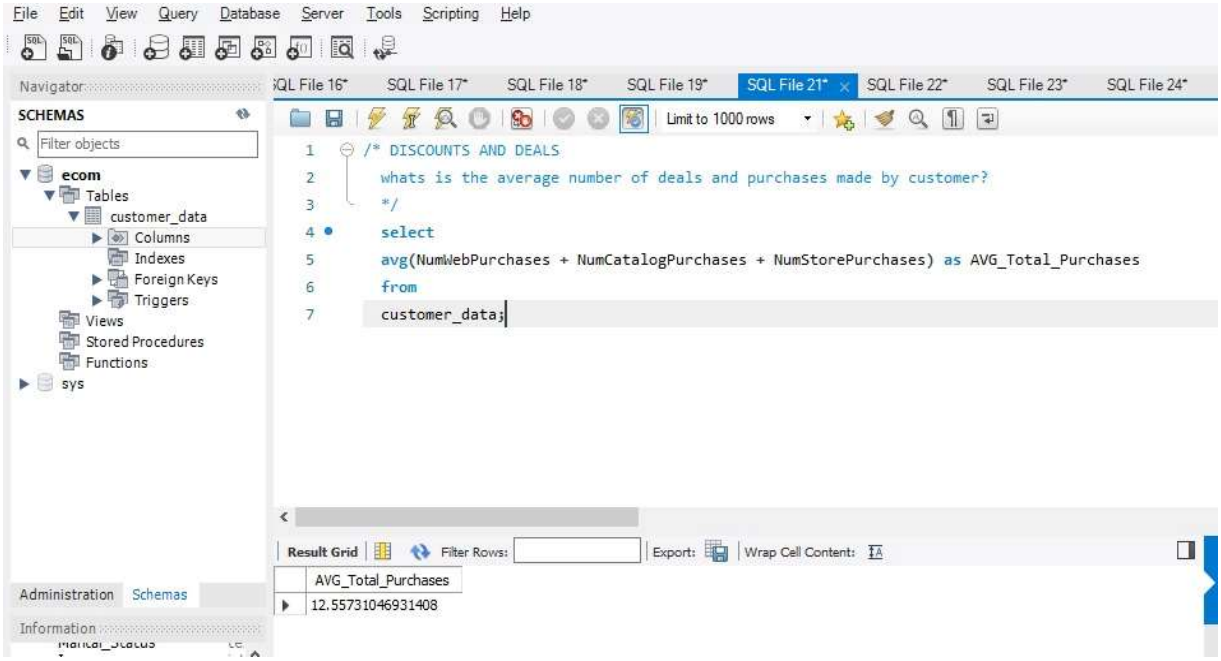


7. Discounts and Deals

i. How many deals are made with discounts?

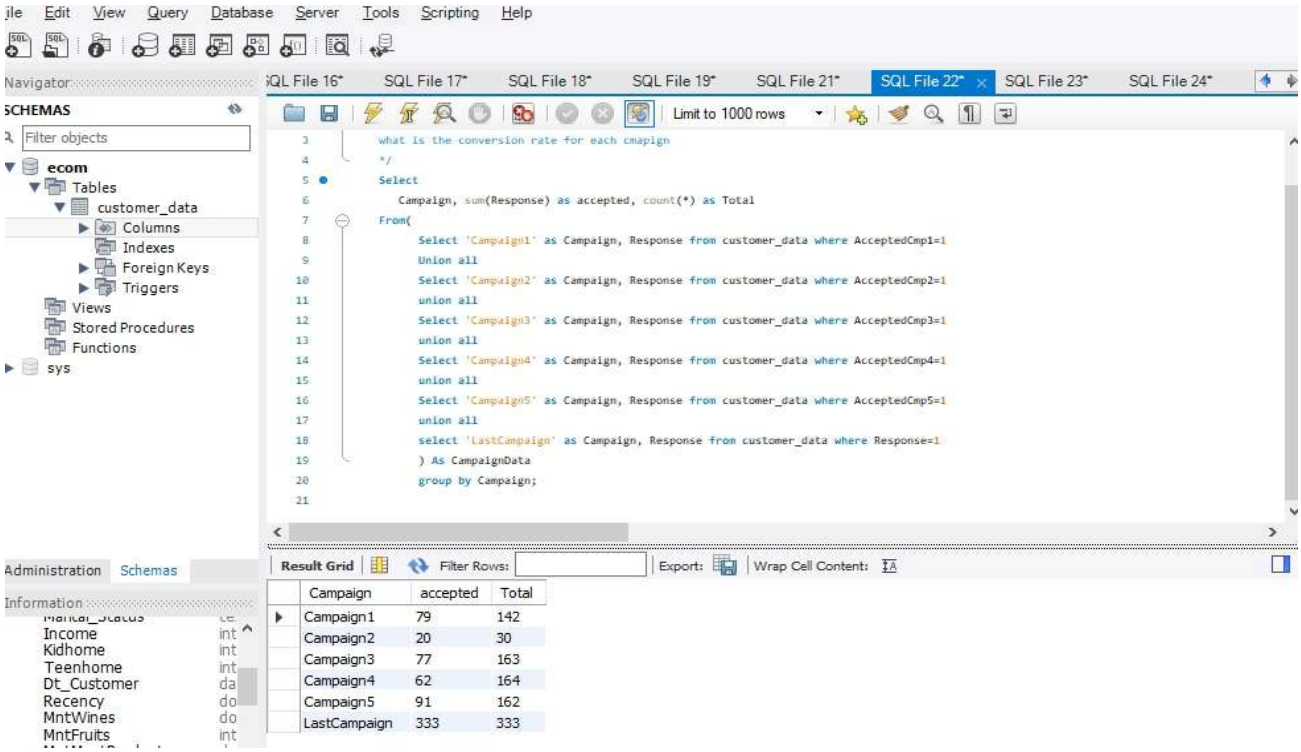


ii. What is the average number of deals and purchases made by customers?

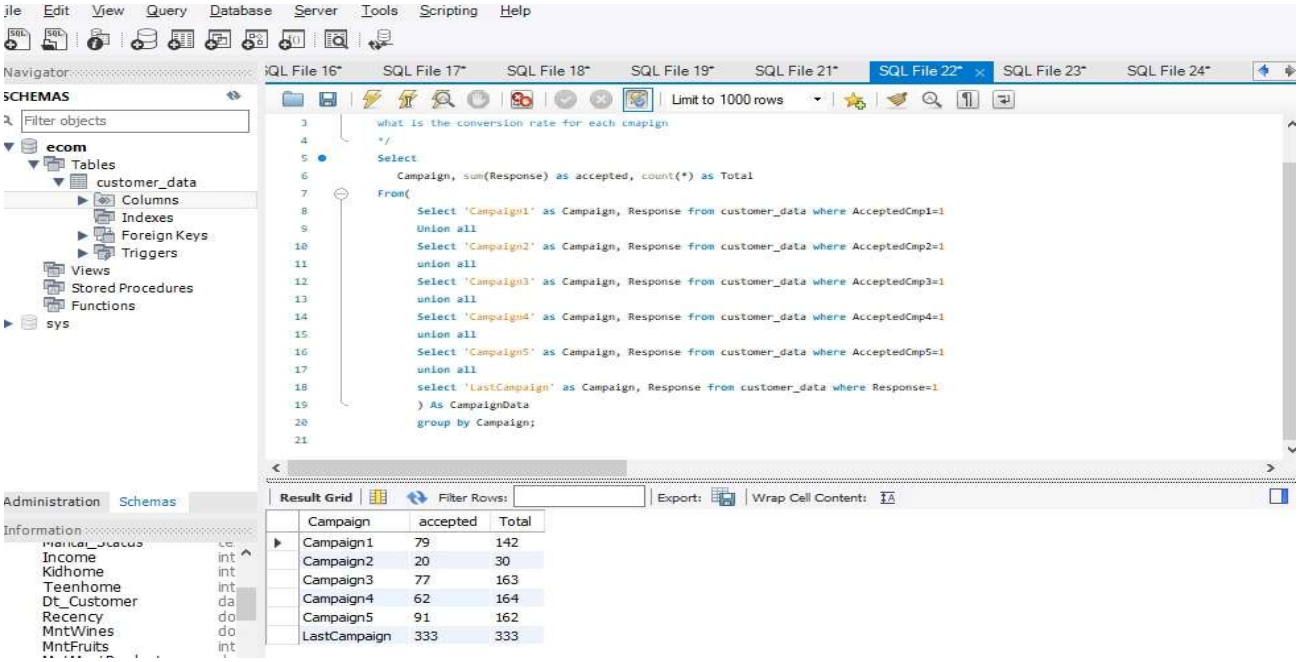


8. Campaign Effectiveness

i. What is the conversion rate for each campaign?



ii. Which campaign has the highest acceptance rate?

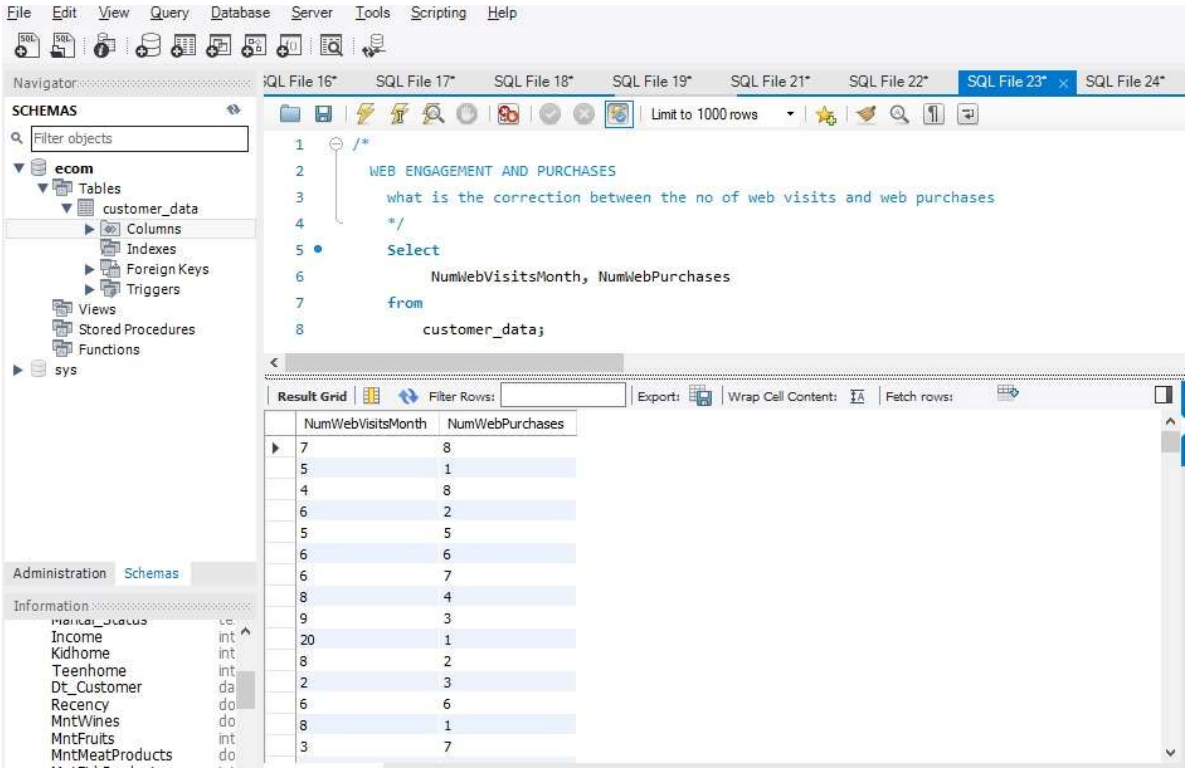


```
/*
what is the conversion rate for each cmapign
*/
Select
   Campaign, sum(Response) as accepted, count(*) as Total
From(
     Select 'Campaign1' as Campaign, Response from customer_data where AcceptedCmp1=1
     Union all
     Select 'Campaign2' as Campaign, Response from customer_data where AcceptedCmp2=1
     union all
     Select 'Campaign3' as Campaign, Response from customer_data where AcceptedCmp3=1
     union all
     Select 'Campaign4' as Campaign, Response from customer_data where AcceptedCmp4=1
     union all
     Select 'Campaign5' as Campaign, Response from customer_data where AcceptedCmp5=1
     union all
     select 'LastCampaign' as Campaign, Response from customer_data where Response=1
     ) As CampaignData
     group by Campaign;
```

Campaign	accepted	Total
Campaign1	79	142
Campaign2	20	30
Campaign3	77	163
Campaign4	62	164
Campaign5	91	162
LastCampaign	333	333

9. Web Engagement and Purchases

i. What is the correlation between the number of web visits and web purchases?

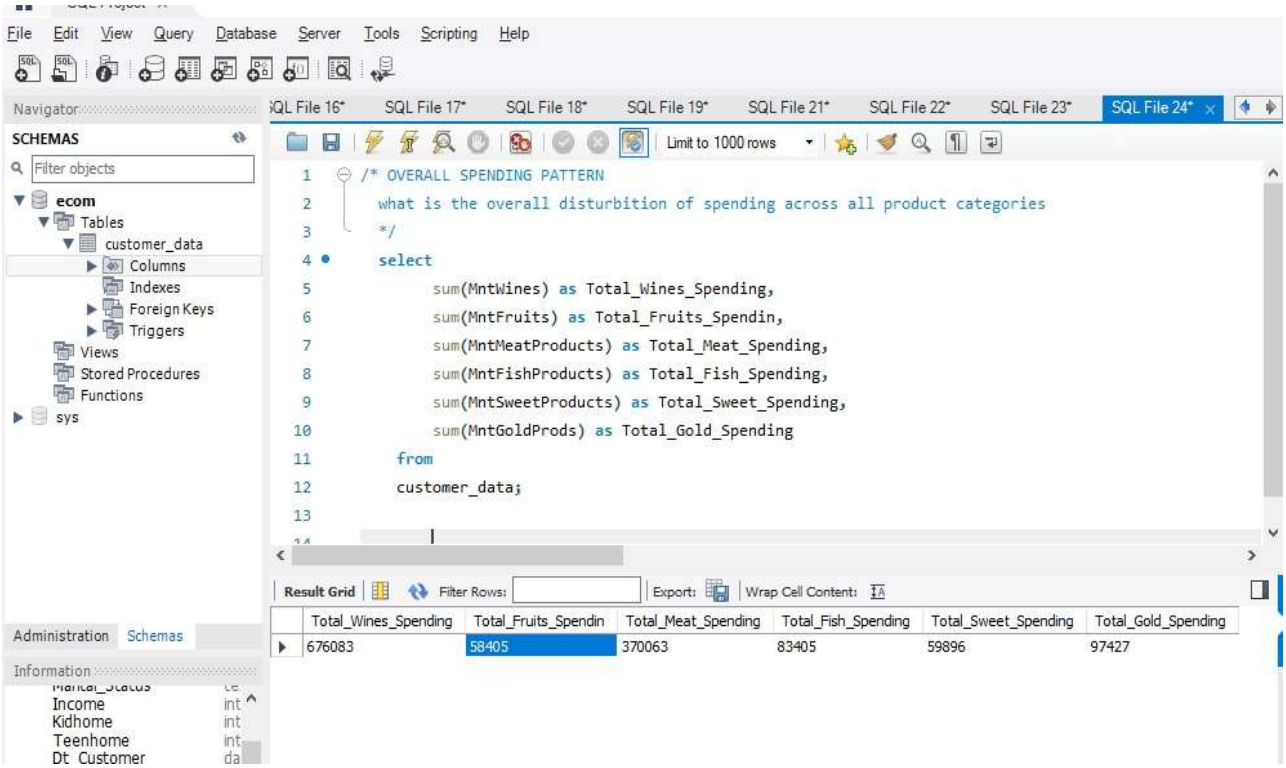


```
/*
WEB ENGAGEMENT AND PURCHASES
  what is the correction between the no of web visits and web purchases
  */
  Select
       NumWebVisitsMonth, NumWebPurchases
  from
       customer_data;
```

NumWebVisitsMonth	NumWebPurchases
7	8
5	1
4	8
6	2
5	5
6	6
6	7
8	4
9	3
20	1
8	2
2	3
6	6
8	1
3	7

10. Overall Spending Patterns

i. What is the overall distribution of spending across all product categories?



05 Internship Outcomes and Conclusion

Key Outcomes

1. **Enhanced Customer Understanding**: Gained deep insights in to customer demographics and behavior, which can inform future marketing and sales strategies.
2. **Improved Campaign Strategies**: Identified effective marketing tactics and areas for improvement, allowing the company to optimize its campaigns.
3. **Actionable Recommendations**: Provided strategic recommendations to the marketing team to enhance customer engagement and increase sales.

Conclusion

The internship provided a comprehensive understanding of data analytics in an e-commerce context. The insights derived from the analysis can significantly contribute to the

company's marketing strategies and overall business performance. By leveraging customer data, the company can better understand its customers, tailor its marketing efforts, and ultimately drive growth and success.