**Data-Driven Analytics to Enhance Customers, Products and Sales Strategies**

# Part 1

## **Task 1: Customer Data Analysis :**

Interpretations:

1. The total number of customers in the database is 122.
2. In this task we identified the top 10 customers with the highest credit limits.

The customer 'Euro+ Shopping Channel' has the highest credit limit and that is

227600.

1. In this task we found the average credit limit for customers in each country . The

country France has the highest credit limit among the all country and that is 77691.66.

1. In this task we analyzed the distribution of customers across states.
2. Here we retrieved detailed customer information with contact details.
3. Here we identified customers who haven't placed any orders.
4. We calculated total sales for each customer. The customer 'Euro+ Shopping Channel' has the highest total sales and is 820689.54 and he customer 'Boards & Toys Co.' has the lowest total sales and is 7918.60.
5. We have listed customers with their assigned sales representatives.
6. We have retrieved customer information with their most recent payment details .The customer 'Reims Collectables' has the highest amount in most recent payment details and is 46656.94 .
7. In this task we identified customers who have exceeded their credit limit. The customer 'Dragon Souveniers , Ltd.' have exceeded the credit limit and it's credit limit is 103800.
8. We found names of customers who ordered from 'Ships' product line.
9. We identified customers who ordered the most expensive product and the customer 'Baane Mini Imports' has ordered the most expensive product and its ordered price 103.42.
10. In this task we found customers working in the same office as their sales representative.

Summary of Task 1 Interpretations:

In the customer data analysis, we found that there are a total of 122 customers in the database.

The top 10 customers with the highest credit limits were identified, with 'Euro+Shopping Channel' having the highest limit at 227,600.

We also calculated the average credit limit for customers in each country, revealing that France has the highest average credit limit among all countries at 77,691.66.

We analyzed the distribution of customers across states and retrieved detailed customer information, including those who haven't placed any orders.

Total sales for each customer were calculated, and 'Euro+ Shopping Channel' had the highest total sales at 820,689.54.

The analysis included listing customers with their assigned sales representatives and retrieving customer information with their most recent payment details.

'Reims Collectables' had the highest amount in the most recent payment details at 46,656.94.

Customers who exceeded their credit limit, ordered from the 'Ships' product line, and the one who ordered the most expensive product were also identified.

Lastly, we found customers working in the same office as their sales representative, providing insights into customer-sales representative relationships.

## **Task 2: Office Data Analysis**

Interpretations:

1. Here we provided basic information on all offices.
2. Here we counted the number of employees in each office . The office code having 1 has maximum number of employees and that is 6.
3. The office code having 2,3,5 and 7 has less than 4 number of employees.
4. We have listed offices along with their assigned territories.
5. From this task we found all the offices are assigned with certain number of employees.
6. The office code having 4 is the most profitable office based on total sales who belongs to Paris and it's total sales is 3083761.58.
7. From this task we found there are total 7 offices in the database.
8. We found the office with the highest number of employees .The office code having 1 has the highest number of employees and is 6.
9. Here we calculated the average credit limit for customers in each office .The office code 4 has the highest average credit limit and is 82924.13 .The office code 2 has the lowest average credit limit and is 77725.
10. Here we found number of offices in each country. USA has the maximum number of offices and is 3.

Summary of Task 2

In looking at the office data, we first got basic details about all the offices.

Then we checked how many employees work in each office, finding that some offices have fewer than four employees.

We also saw the territories assigned to each office.

The most profitable office, based on total sales, is in Paris with Office Code 4.

Overall, there are 7 offices in the database.

The office with Code 1 has the most employees.

We also figured out the average credit limit for customers in each office, showing differences between offices.

Lastly, we saw that the USA has the most offices.

This information helps the company make smart decisions about its offices.

# Part 2

## **Task 1: Employee Data Analysis**

Interpretations:

1. Here we found total number of employees .There are 23 employees are working.
2. Here We counted the number of employees in each office. The office code 1 has the maximum number of employees and is 6.
3. In the task we listed all employees with their basic information.
4. Here also we counted the number of employees holding each job title. The job title 'Sales Rep' has the maximum number of employees and is 17.All the other job title has only one employee.
5. Here identified employees who don't have a manager. The employee number 1002 has don't have manager.
6. In this task we have listed employees along with their assigned offices.
7. Here we identified sales representatives with the highest number of customers .The sales representatives 'Pamela Castillo' has the highest number of employees and is 10.
8. In this task we found the most profitable sales representative based on total sales. The sales representative 'Gerard Hernandez' is most the profitable representative and it's total sales is 125877.81.

Summary of Task 1:

We looked at employee data and found there are 23 employees in total.

Office Code 1 has the most employees with 6.

We listed all employees and counted how many have each job title, with 'Sales Rep' being the most common (17 employees).

We also found an employee (number 1002) without a manager. The list includes employees and their offices.

For sales reps, 'Pamela Castillo' has the most customers (10), and 'Gerard Hernandez' is the top performer with $125,877.81 in total sales.

Lastly, we found employees who sold more than the average for their office.

These insights help the company understand its workforce and make informed decisions.

## **Task 2: Product Data Analysis**

Interpretations:

1. Here we have listed all products with their basic information.
2. Here we have listed all products with their product lines information.
3. Here we counted the number of products in each product line. The product line 'Classic Cars' has the highest number of products and is 38.The product line 'Trains' has the lowest number of products and is 3.
4. Here we found the product line with the highest average product price. The product line 'Classic Cars' has the product line with highest average product price and is 64.44.
5. Here we found products with a price between 50 and 100.
6. Here we calculated total sales amount for each product line. The product line 'Classic Cars' has the highest total sales and is 3853922.49.
7. Here we have tried to found products with less than quantity of 10.But there are no products based on this condition.
8. Here we are showing list of products along with their descriptions.
9. Here we identified most expensive product based on MSRP .The product code 'S10\_1949' has the most expensive product and it's MSRP is 241.30.
10. Here we are calculated total sales for each product. The product code 'S18\_3232' has the highest total sales and is 276839.98.
11. Here we identified the best-selling products based on total sales .The product code 'S18\_3232' has the based selling products and the total 1808 number of units are sold for this code.
12. Here we identified the most profitable product line. The product line 'Classic Cars' is the most profitable product line and its' total sales is 3853922.49.
13. Here we found the best-selling product within each product line.
14. Here we have tried to phase some information less than 10 number of products and the product line are in 'Classic Cars' and 'Motorcycles'.Based on this condition we have not found any information.
15. Here we have found products ordered by more than 10 customers.
16. Here we found names of all products that have been ordered more than the average number of orders.

Summary of Task 2

In the analysis of product data, we first listed all products with their basic information and then provided details on each product line.

We counted the number of products in each product line, with 'Classic Cars' having the most 38.

We identified the product line with the highest average price, which turned out to be 'Classic Cars' as well.

Products with prices between 50 and 100 were listed.

Total sales for each product line were calculated, revealing 'Classic Cars' as the highest-selling category.

We looked for products with low inventory (less than 10), but none were found.

The most expensive product based on MSRP was identified as 'S10\_1949.'

Total sales for each product and the best-selling products were determined.

The most profitable product line was 'Classic Cars.' Additionally, we found the best-selling product within each product line. While attempting to identify low-inventory products in specific lines ('Classic Cars' and 'Motorcycles'), no information was found. Finally, we listed products ordered by more than 10 customers and products ordered more than the average number of orders.

These findings offer valuable insights into product performance, sales, and inventory levels.

# Part 3

## **Task 1: Order Data Analysis**

Interpretations:

1. Here we have listed of all orders with their basic information .
2. Here we have tried to found all order details of order number =10101.
3. Here we have tried to found all order details of product code ='S24\_3969'.
4. Here we found total quantity ordered of product code='S10\_1949'.
5. Here we have found all orders placed on order date '2003-02-17'.
6. Here we have found all orders placed by Customer Number = 148.
7. Here we found the total number of orders placed from '2003-04-02' to '2003-05-02'.
8. Here we found the average order amount for each customer. The customer number 455 has the highest average amount and that is 4139.92
9. Here found number of orders placed in each month. In the month november of year 2004 has the highest orders and is 33.
10. Here we identified orders which are pending.
11. Here we have listed orders along with customer details.
12. Here we have found most recent orders. The most orders are in between order date '2005-05-31'and '2005-06-08'.
13. Here we have found total sales for each order. The order number4 10165 has the highest total sales and is 67392.85.
14. Here we have found the highest-value order based on total sales. The order number 1016 has the highest total sales and is 67392.85.
15. Here we have listed 11 orders with their corresponding order details
16. Here we have found most frequently ordered products. The product code 'S18\_3232'has the maximum orders and is 53.
17. Here ae have found total revenue for each order. The order number 10165 has the highest total revenue and is 67392.85.
18. Here we found most profitable orders based on total revenue. The order number 10165 has the highest total revenue and is 67392.85.
19. Here we have listed of all orders with detailed product information.
20. Here we found orders with delayed shipping. The order number 10165 has delayed shipping.
21. Here we have found most popular product combinations within orders. The product code 'S50\_1341'and 'S700\_1691' has the highest number of order and is 28.
22. Here we found revenue for each order and identified the top 10 most profitable .The order number 10165 has the highest total revenue among this 10 most profitable order number and is 67392.85.

Summary of Task 1

In the order data analysis, we thoroughly examined various aspects.

We started by listing all orders and exploring specific ones like order number 10101 and product code 'S24\_3969.'

We calculated total quantities, checked orders on specific dates or by certain customers, and found the highest average order amount for customer number 455.

Monthly order counts, pending shipments, and detailed customer order lists were also covered.

We delved into the most recent orders, total sales per order, and identified high-value and profitable orders.

The analysis included insights into frequently ordered products, delayed shipments, and popular product combinations.

Finally, we assessed revenue for each order, highlighting the top 10 most profitable ones.

Overall, this analysis provides a comprehensive view of order trends, customer behaviors, and revenue patterns.

## **Task 2: Conclusion:**

a. Summary of all the interpretations obtained from all the tasks provided from in Part1, Part 2 and Part 3:

In customer data analysis, we discovered insights from a database of 122 customers.

We identified the top 10 customers with the highest credit limits, with 'Euro+ Shopping Channel' having the highest at 227,600.

The average credit limit for customers in each country revealed France with the highest average credit limit.

We analyzed customer distribution across states, retrieved detailed customer information, and identified customers who haven't placed any orders. Total sales for each customer were calculated, with 'Euro+ Shopping Channel' having the highest total sales.

Additionally, we explored customer information with sales representatives, identified customers exceeding their credit limits, and found customers who ordered specific products.

The analysis extended to the relationships between customers and their sales representatives.

In office data analysis, we provided basic information about all offices, counted employees in each office, and identified offices with fewer than four employees.

We also determined the most profitable office, the total number of offices, and the office with the highest number of employees.

Average credit limits for customers in each office and the number of offices in each country were calculated, providing valuable insights for decision-making.

Employee data analysis involved identifying the total number of employees, counting employees in each office, listing all employees with basic information, and determining the number of employees holding each job title.

We also identified employees without a manager and listed employees along with their assigned offices.

Insights into sales representatives with the highest number of customers and the most profitable sales representative were obtained.

In product data analysis, we listed all products with their basic information, along with product lines.

The number of products in each product line, the product line with the highest average product price,

and products within specific price ranges were examined.

Total sales for each product line, best-selling products, and the most profitable product line were identified.

We also found the best-selling product within each product line and products ordered by more than 10 customers.

Order data analysis included exploring orders with basic information, order details for specific orders and products, and total quantity ordered for a particular product.

We identified orders placed on specific dates, orders placed by specific customers, and the total number of orders placed in a particular month.

The average order amount for each customer and the number of orders placed in each month were calculated.

We also explored delayed shipping orders, identified popular product combinations, and determined the top 10 most profitable orders.

Finally, we explored revenue for each order and identified the top 10 most profitable orders, providing a comprehensive understanding of order patterns, customer behaviour, and revenue generation

b. Final business conclusions for project.

In summary, the analysis of customer data revealed key insights about top customers, their purchasing behaviour, and the effectiveness of sales representatives.

The examination of office data provided valuable information about office performance and employee distribution.

Employee data analysis highlighted the impact of sales representatives on customer engagement and profitability.

The exploration of product data unveiled trends in product sales, pricing, and customer preferences. Finally, the examination of order data allowed for a deep understanding of order patterns, customer behaviour, and revenue generation. Overall, these insights offer practical guidance for improving customer relations, optimizing sales strategies, and enhancing overall business performance.