

Questions for MySQL Project: Inventory Management System

1. Yearly Sales Trends by Product

Question: Calculate the yearly sales (Quantity * Price) for each product, and display the trend for the last 3 years.

Display: ProductName, Year, Total Sales

2. Top 5 Products with the Highest Sales Growth

Question: Identify the top 5 products that have experienced the highest growth in sales (Quantity * Price) between the current year and the previous year.

Display: ProductName, Sales Growth Percentage, Current Year Sales, Previous Year Sales

3. Customers Who Have Placed Orders for Products with the Highest Sales

Question: Find customers who have placed orders for products that have the highest total sales (Quantity * Price).

Display: CustomerName, ProductName, Total Sales

4. Products That Have Been Ordered But Never Restocked

Question: Identify products that have been ordered at least once but have never been restocked (i.e., StockLevel remains unchanged).

Display: ProductName, StockLevel, OrderID, OrderDate

5. Average Order Quantity for Each Customer

Question: Calculate the average order quantity for each customer.

Display: CustomerName, Average Order Quantity

6. Customers Who Have Ordered Products from Multiple Categories

Question: Find customers who have ordered products from more than one product category.

Display: CustomerName, Number of Categories Ordered From

7. Products with Sales Below Reorder Level

Question: Identify products whose total sales (Quantity * Price) are below the reorder level.

Display: ProductName, Total Sales, ReorderLevel

8. Products with the Highest Sales That Have Low Stock

Question: Find the products with the highest sales (Quantity * Price) but a stock level below the reorder level.

Display: ProductName, Total Sales, StockLevel, ReorderLevel

9. Total Sales for Each Customer by Month

Question: Calculate the total sales for each customer for each month.

Display: CustomerName, Month, Total Sales

10. Products with the Highest Quantity Sold But Low Profit

Question: Identify products that have sold the highest quantity but generated low total profit (Quantity * (Price - Cost)).

Display: ProductName, Total Quantity Sold, Total Profit

11. Top 3 Customers with the Highest Number of Returned Orders

Question: Identify the top 3 customers with the highest number of returned orders.

Display: CustomerName, Number of Returned Orders

12. List of unpaid customers whose orders have been delivered

Question: Write an SQL query to retrieve the list of unpaid customers whose orders have been delivered.

Display: CustomerName, OrderID, OrderDate, OrderStatus, PaymentStatus

13. Products with Sales Above the Average Sales for Their Category

Question: Identify products whose total sales (Quantity * Price) exceed the average sales for their category.

Display: ProductName, Category, Total Sales, Category Average Sales

14. Total Sales per Category for the Last Year

Question: Calculate the total sales for each product category in the last year.

Display: Category, Total Sales (Last Year)

15. Find the Most Profitable Customer

Question: Identify the most profitable customer based on the total profit (Total Sales - Total Cost) of their orders.

Display: CustomerName, Total Sales, Total Cost, Total Profit

16. Stock Turnover Ratio for Each Product

Question: Calculate the stock turnover ratio for each product, defined as Total Sales / Average Stock Level.

Display: ProductName, Stock Turnover Ratio

17. Sales Analysis for Products Based on Seasonal Trends

Question: Calculate and display the sales (Quantity * Price) for each product based on seasonal trends (quarterly analysis).

Display: ProductName, Quarter, Total Sales

18. Customers with the Most Frequently Purchased Products

Question: Find the customers who have ordered the most frequently purchased products.

Display: CustomerName, ProductName, Number of Orders

19. Top 5 Products by Gross Margin

Question: Find the top 5 products with the highest gross margin (Price - Cost), and display their sales.

Display: ProductName, Gross Margin, Total Sales

20. Predictive Stock Alerts for Products with Declining Sales

Question: Identify products with declining sales (current month vs. previous month) and generate predictive alerts for low stock.

Display: ProductName, Last Month Sales, Current Month Sales, Predicted Low Stock Alert

21. Monthly Growth Rate of Sales per Category

Question: Calculate the monthly growth rate of sales for each category.

Display: Category, Month, Growth Rate (%)

22. Sales Distribution by Product and Customer Segments

Question: Create a report that shows the sales distribution for each product based on customer segments (e.g., age, location).

Display: ProductName, CustomerSegment, Total Sales

23. Top 3 Products with the Most Returns

Question: Identify the top 3 products with the most returns.

Display: ProductName, Number of Returns

24. Top Performing Product Category Based on Sales

Question: Identify the product category with the highest sales in the last 6 months.

Display: Category, Total Sales

25. Sales Comparison Between New and Returning Customers

Question: Compare the total sales from new customers and returning customers over the last year.

Display: CustomerType (New/Returning), Total Sales

26. Profitability Analysis for Products by Supplier

Question: Calculate the profitability of each product by supplier, defined as Total Sales - (Cost * Quantity).

Display: SupplierName, ProductName, Profitability

27. Inventory to Sales Ratio for Each Product

Question: Calculate the inventory to sales ratio for each product, defined as StockLevel / Total Sales.

Display: ProductName, StockLevel, Total Sales, Inventory to Sales Ratio

28. Customers Who Have Ordered High-Value Products (Above \$500)

Question: Identify customers who have ordered products with a total value above \$500.

Display: CustomerName, ProductName, OrderTotal Value

29. Sales Impact Analysis After Promotional Discounts

Question: Analyze the sales impact before and after a promotional discount was applied to a product.

Display: ProductName, Sales Before Discount, Sales After Discount

30. Top 5 Products by Net Profit

Question: Find the top 5 products that generate the highest net profit (Total Sales - Total Cost).

Display: ProductName, Net Profit, Total Sales