SQL Project Requirements for DWSales Table

Project 1: Basic Sales Reporting

Objective: Create simple reports to track key performance metrics.

Requirements:

1. Generate a report that shows total sales, total quantity, and total profit for the entire year.
2. Create a summary table showing total sales by month.
3. Provide a breakdown of sales by product category and sub-category.
4. Identify the top 10 products by total sales.
5. Write queries that summarize total sales, total profit, and total discount by shipping mode.

Project 2: Customer Segmentation

Objective: Identify customer segments to target for future marketing efforts.

Requirements:

1. Create customer profiles by summarizing total sales and profit per customer.
2. Group customers by market segment and provide the total number of customers, average sales per customer, and total profit per segment.
3. Identify the top 10 customers by total sales and their respective regions.
4. Identify which products are most popular in each market segment.
5. Analyze customer purchasing frequency (e.g., customers who have made more than 3 purchases).

Project 3: Sales Performance Dashboard

Objective: Build a SQL-driven sales dashboard that tracks key performance indicators (KPIs).

Requirements:

1. Show total sales, profit, and quantity sold for the current month compared to the previous month.

2. Display a breakdown of sales by region and market segment.

3. Create KPIs for average order value (AOV), customer lifetime value (CLV), and profit margin.

4. Track sales growth or decline month-over-month and year-over-year.

5. Provide a visual report of sales trends over time using date-based aggregations.

Project 4: Inventory and Product Analytics

Objective: Analyze product performance and inventory turnover to inform stock management.

Requirements:

1. Calculate the total number of unique products sold within the last year.

2. Rank products by profit margin and identify the top 10 high-margin products.

3. Calculate product sales velocity by determining how many units of each product are sold per month.

4. Identify which products have declining sales or have not been sold in the last 6 months.

5. Create a report to identify inventory turnover for each product category and sub-category.

Project 5: Shipping and Logistics Optimization

Objective: Optimize shipping processes by analyzing delivery times and costs.

Requirements:

1. Calculate the average shipping time for each shipping mode by comparing order date and ship date.

2. Identify the regions with the longest average shipping times.

3. Provide insights into which shipping mode yields the highest profit margin.

4. Analyze any correlations between shipping times and total sales or customer satisfaction (if data is available).

5. Recommend the best shipping modes for high-value customers based on historical data.

Project 6: Customer Retention and Loyalty Analysis

Objective: Analyze customer retention and create strategies for improving customer loyalty.

Requirements:

1. Calculate the retention rate by analyzing customers who made repeat purchases in consecutive years.

2. Identify customers who have not made a purchase in over 12 months and create a list for a re-engagement marketing campaign.

3. Create a customer lifetime value (CLV) metric that calculates the total profit from each customer over time.

4. Determine which customer segments (market segments, regions) have the highest and lowest retention rates.

5. Track customer purchasing patterns and identify potential churn risks based on inactivity or reduced purchasing frequency.

Project 7: Marketing Campaign ROI Analysis

Objective: Analyze the return on investment (ROI) for various marketing campaigns.

Requirements:

1. Track which customers were part of each marketing campaign by analyzing the market_segment or region data.

2. Calculate total sales generated by each campaign and the total profit contribution.

3. Determine which campaigns yielded the highest return on investment (ROI) based on total profit.

4. Analyze sales trends before and after each marketing campaign to evaluate its impact.

5. Create a segmentation analysis to understand which customer groups responded best to each campaign.

Project 8: Predictive Sales Analytics

Objective: Use historical sales data to forecast future sales and trends.

Requirements:

1. Identify seasonal trends by analyzing sales data from previous years and group them by month.

2. Use SQL queries to generate a rolling 12-month sales forecast based on historical sales.

3. Predict which product categories are likely to see increased sales in the upcoming months based on past trends.

4. Create a forecasting report that breaks down future sales expectations by region and market segment.

5. Suggest potential growth strategies for underperforming categories based on past data analysis.

Project 9: Profitability Analysis by Region

Objective: Analyze profitability across different regions to optimize regional sales strategies.

Requirements:

1. Calculate the total profit and profit margin for each region.

2. Rank regions by profitability and total sales volume.

3. Identify regions with declining sales and provide insights on potential causes.

4. Analyze which product categories and sub-categories are most profitable in each region.

5. Create a report that recommends regions for increased marketing investment based on profitability and sales growth potential.

Project 10: Advanced Sales Growth Analytics

Objective: Dive deeper into sales growth metrics and analyze factors influencing growth.

Requirements:

1. Calculate the year-over-year (YoY) and quarter-over-quarter (QoQ) sales growth for the entire business.

2. Identify key drivers of sales growth, such as market segment or region performance.

3. Analyze which customer segments are contributing the most to sales growth.

4. Create a heatmap to visualize growth by product category and sub-category.

5. Develop a predictive model for future growth based on past performance metrics and market conditions.