

# **Summary Report**

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## **1. Business Understanding**

The objective of this project is to analyse historical sales data from the Adventure Works dataset to identify revenue trends, customer purchasing behaviour, product performance, and regional sales distribution. The goal is to generate actionable insights that support better decision-making around sales strategy, customer retention, and product portfolio optimization.

Key business questions include:

- How do sales trend over time?
  - Who are the top revenue-generating customers?
  - Which products and product categories drive revenue?
  - Which territories perform best and worst?
  - How do repeat customers differ from one-time buyers?
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## **2. Data Understanding**

The Adventure Works dataset contains transactional sales data, including:

- Order dates
- Customer IDs
- Product information
- Sales amount
- Territory information

Five SQL queries were written to extract analytical datasets:

1. Monthly Sales
  2. Top Customers by Revenue
  3. Product Revenue
  4. Sales by Territory
  5. Customer Behaviour
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### **3. Data Preparation**

Data preparation was performed using SQL and included:

- Aggregating sales by month, product, customer, and territory
- Creating calculated metrics such as total sales and total orders
- Classifying customers as repeat or one-time based on order frequency
- Validating aggregations before loading into Power BI

The query results were imported into Power BI and organized into a single report containing three pages:

- Sales Overview
  - Customer Behaviour
  - Product Revenue Analysis
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### **4. Modeling (Analytical Logic)**

Analytical models were built using:

- Time-based aggregations
  - Ranking and sorting logic
  - Customer segmentation (repeat vs one-time)
  - Revenue contribution analysis
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## **5. Evaluation (Key Findings)**

### **Sales Trends**

- Strong month-to-month fluctuations with an overall upward trend from 2011 to 2014.
- Sales peak in early-year and mid-year periods, showing seasonal demand.
- March 2014 recorded the highest monthly sales (~7.2M).
- Peak values increase year-over-year, indicating revenue growth.

### **Territory Performance**

- Southwest (~24M) and Canada (~16M) are top-performing territories.
- Germany, the Northeast, and France underperform.

### **Customer Behaviour**

- Repeat Customers: 37.7%
- One-Time Customers: 62.3%
- A small group of customers contributes a disproportionately large share of revenue.
- Repeat customers likely generate higher lifetime value.

### **Product Performance**

- Mountain-200 series products dominate revenue.
- LL, ML, and HL product ranges generate minimal revenue.

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## **6. Deployment (Recommendations)**

- Implement retention programs to increase repeat purchases.
- Develop loyalty strategies for high-value customers.
- Expand strong-performing product lines.
- Reassess weak products for repositioning or discontinuation.
- Investigate underperforming territories

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Focused on data-driven decision-making, risk analytics, and machine learning

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