OLAP Queries Analysis Report

Introduction
 This report presents insights derived from three OLAP-style analyses on the retail data warehouse: total sales by country and quarter (roll-up), monthly sales for a specific country (drill-down), and total electronics sales by country (slice). The goal is to understand sales performance trends and support decision-making.

Roll-Up Analysis (Total Sales by Country and Quarter)
 The roll-up query aggregates sales at a higher level of granularity. From the results:

- **Top-performing countries:** Netherlands, United Kingdom, and Canada consistently show high total sales across quarters.

- **Trends:** Sales fluctuate seasonally, with peaks typically in Q1 and Q2 of 2025, indicating potential periods of high demand.

- **Insights for management:** Resource allocation and marketing campaigns can be prioritized for high-performing countries during peak quarters.

Drill-Down Analysis (Monthly Sales for Australia)
 The drill-down query provides a detailed view for Australia by month:

- **Observations:** Highest monthly sales occur in January 2025, with noticeable dips in December 2024 and August 2024.

- **Implications:** Seasonal promotions, inventory planning, and localized marketing strategies can be optimized based on monthly trends.

Slice Analysis (Total Electronics Sales by Country)
 This analysis focuses on a specific category to understand product-specific performance:

- **Top electronics markets:** Canada, Netherlands, and USA lead in electronics sales, whereas Australia and the United Kingdom show lower totals.

- **Decision support:** Helps management focus electronics-related marketing, stocking, and supply chain strategies in top-performing regions.

General Insights and Limitations
 The data warehouse structure allows rapid aggregation and analysis at multiple granularity levels, supporting strategic and tactical decision-making. However, since **synthetic data** was used, the observed trends and totals may not fully reflect real-world customer behavior.

The warehouse is effective for demonstrating ETL and OLAP operations, but real business decisions would require authentic sales data.

Conclusion

Overall, the OLAP queries reveal country-level and category-level sales patterns, enabling informed operational and strategic planning. Roll-up, drill-down, and slice analyses complement each other by providing both aggregated and detailed perspectives.