

Business Intelligence Analysis Report: Coffee Sales Performance Using PL/SQL Window Functions

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Project: Advanced SQL Analytics for Business Intelligence

1. Business Context

Company Profile

Industry: Coffee Distribution & Retail

Company Type: Regional Coffee Supplier

Department: Sales & Business Intelligence

Geography: Rwanda (Multiple Regions)

Customer Base: Retail, Wholesale, and Export clients

Core Business Operations

Distribution of premium Rwandan coffee varieties

Multi-channel sales across different customer segments

Regional operations covering Kigali, Southern, Northern, and Western regions

Product portfolio including Bourbon Arabica, Rwandan Robusta, and specialty blends

2. Data Challenge

Current Situation

The company possesses extensive transactional data but lacks advanced analytical capabilities to transform this data into actionable business intelligence. Sales performance is currently evaluated through basic monthly reports, missing critical insights into:

Regional performance variations and product preferences

Customer segmentation for targeted marketing strategies

Temporal patterns and growth trends across quarters

Product performance relative to market dynamics

Specific Analytical Gaps

Inability to rank products by performance across different regions and time periods

No visibility into cumulative sales trends and growth trajectories

Limited understanding of month-over-month performance changes

Absence of customer value segmentation for resource allocation

Lack of smoothed trend analysis to filter out monthly volatility

Data Complexity Factors

Multi-dimensional data (time, geography, products, customers)

Seasonal fluctuations in coffee sales

Diverse customer types with different buying patterns

Need for both granular and aggregated views

3. Expected Outcome

Strategic Decisions Enabled

Product Portfolio Optimization

Identify top-performing products by region/quarter

Make data-driven decisions on product promotion and inventory

Regional Strategy Development

Allocate marketing resources based on regional performance

Develop region-specific sales strategies

Customer Relationship Management

Implement tiered service levels based on customer value

Design targeted retention and growth strategies

Operational Planning

Forecast demand using trend analysis

Optimize inventory management across regions

Performance Monitoring

Establish KPIs for continuous performance tracking

Create early warning systems for sales declines

Specific Business Insights Expected

Identification of top 5 products per region each quarter

Monthly growth rates with trend analysis

Customer value segmentation into quartiles

3-month moving averages for smoothed performance tracking

Running totals for cumulative performance assessment

Measurable Business Impact

20% improvement in marketing ROI through targeted campaigns

15% reduction in inventory costs through better forecasting

25% increase in customer retention through segmented approaches

30% faster decision-making through automated insights

4. Success Metrics

Quantitative Measures

Sales growth percentage by region

Customer retention rates by segment

Inventory turnover improvements

Marketing campaign effectiveness

Qualitative Benefits

Enhanced strategic planning capability

Improved customer understanding

Data-driven culture development

Competitive advantage through analytics

5. Implementation Framework

Technical Approach

PL/SQL Window Functions for advanced analytics

Oracle Database for robust data management

Structured methodology covering five analytical dimensions

Project Deliverables

Comprehensive SQL scripts with window functions

Business intelligence reports and dashboards

Strategic recommendations based on findings

Documentation for ongoing analysis

Conclusion

This project addresses critical business intelligence gaps in the company's sales analytics capability. By implementing advanced PL/SQL window functions, the organization will transform raw transactional data into strategic insights, enabling data-driven decision making across sales, marketing, and operations departments. The expected outcomes will directly contribute to revenue growth, cost optimization, and competitive advantage in the regional coffee market.

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