Business Requirements Document (BRD)

Project Title: E-Commerce Sales Analysis & Reporting System
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1. Executive Summary

This project aims to design and implement a SQL-driven data analysis and reporting solution for an e-commerce retailer. By analyzing sales, customer, and product datasets, the project will deliver actionable insights to support decisions in inventory management, marketing strategy, and regional performance tracking. The solution will include automated SQL queries, dashboards, and structured documentation to ensure scalability and reproducibility.

2. Business Objectives

- Provide visibility into monthly and regional sales performance to guide resource allocation.
- Identify top-performing products and categories to improve inventory planning.
- Track customer purchasing behavior to inform targeted marketing campaigns.
- Deliver insights in a format accessible to both executives (high-level trends) and analysts (detailed query outputs).
- Foster a data-driven culture by standardizing reporting processes.

3. Project Scope

In Scope
- Excel and Python-based data extraction, transformation, and loading into SQL.
- Exploratory analysis though SQL queries
- Development of dashboards via Tableau for visualization.
- Documentation of queries, assumptions, and findings.
- Original, clean, and aggregated datasets (Static CSV/Excel files).
- Weekly reporting and dashboards.

Out of Scope
- Real-time streaming data integration.
- Machine learning or predictive modeling.
- Building full production-ready APIs.
- Integration with external CRM or ERP systems.

4. Stakeholders

Category	Stakeholder	Role / Interest Level	Engagement Strategy
Low Power / Low Interest	Customer Support Team	May occasionally reference dashboards	Consider needs, but minimal direct involvement
Low Power / High Interest	Marketing Analysts	Rely on insights to refine campaigns	Keep informed with regular updates
High Power / Low Interest	Finance Team	Care about accuracy but not daily operations	Provide finalized reports and summaries
High Power / High Interest	Executive Team, Product Managers	Use insights for strategy and decision-making	Engage throughout, provide progress reports and demos

5. Business Requirements

1. Ability to report monthly revenue by product category and region.
2. Identification of top and bottom 10 products by sales.
3. Customer segmentation by purchase frequency and average spend.
4. Inventory insights: products with declining demand.
5. Marketing ROI measurement through campaign vs. sales lift.
6. Automated SQL queries to reduce manual reporting.
7. Dashboard visualization with drill-down functionality.

6. Functional Requirements

- Data must be cleaned efficiently through Python to account for discrepancies.
- SQL scripts must aggregate data by time, region, product, and customer segments.
- Queries must handle datasets up to 1M rows efficiently.
- Dashboard must load in under 5 seconds for standard filters.
- Reports must be exportable to Excel and PDF for business users.
- Traceability: Each business requirement maps to at least one functional deliverable.

7. Constraints, Assumptions & Risks

Constraints
- Limited to provided datasets; no live API connections.
- Timeframe: 4 weeks.
- Tools: PostgreSQL, Python, Tableau, Excel.

Assumptions
- Data is complete and accurate.
- Stakeholders will be available for feedback at milestones.

Risks

- Poor data quality may require additional cleaning.
- Scope creep if additional KPIs are requested mid-project.

8. Acceptance Criteria

- SQL scripts generate correct outputs validated against sample data.
- Dashboard provides accurate, up-to-date reporting aligned with requirements.
- Executive stakeholders confirm insights meet their decision-making needs.
- Documentation is clear, with reproducible workflows.

9. Milestones & Deliverables

Week	Deliverable	Description
8/18/2025 – 8/22/2025	BRD, ETL Development & Dataset Review	Finalize BRD, strengthen and validate dataset integrity, confirm scope
8/25/2025 – 8/29/2025	SQL Query Development	Write & test core queries (sales, products, customers)
9/1/2025 – 9/5/2025	Dashboard Development	Build and refine Tableau/Power BI dashboards
9/8/2025 – 9/12/2025	Final Report & Presentation	Deliver final dashboards, documentation, and executive summary

10. Traceability Matrix

Business Requirement	Functional Requirement	Deliverable
Monthly revenue reporting	SQL time-series queries	Monthly Sales Report (Dashboard)
Top products analysis	SQL aggregation & ranking	Product Performance Report
Customer segmentation	SQL joins & grouping	Customer Insights Dashboard
Inventory insights	SQL declining trend detection	Inventory Report
Campaign ROI	SQL filter on marketing vs sales	Campaign Impact Report

11. Approval

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