**Business Requirements Document (BRD)**

**Project Title: Superstore Sales Analytics Dashboard**

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**Date**: September 23, 2025

**1. Project Overview**

This project aims to build a data-driven dashboard that analyses sales performance for a retail superstore. SQL is used to create, transform, and query the dataset, while Power BI is leveraged to visualize insights and enable interactive exploration. The dashboard supports strategic decision-making across sales, marketing, and operations.

**2. Business Objectives**

* Provide a unified view of sales and profit across regions, states, and cities
* Identify top-performing and underperforming locations and product categories
* Segment customers by type and analyse their purchasing behaviour
* Evaluate the impact of discounts on profitability
* Monitor shipping modes and operational efficiency
* Track year-over-year sales trends and regional growth
* Enable forecasting and planning through Power BI visuals

**3. Technical Architecture**

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| **Layer** | **Technology** | |  |  | | --- | --- | |  | **Purpose** | |
| Data Layer | SQL (MySQL) | Data modelling, transformation, and aggregation |
| Visualization Layer | |  |  | | --- | --- | |  | Power BI | | |  |  | | --- | --- | |  | Interactive dashboards and storytelling | |
| Source Data | Superstore Dataset | Sales, profit, discount, shipping, customer info |

**4. SQL-Driven Logic**

* **Database Setup:**

CREATE DATABASE Super\_Store;

CREATE TABLE Sales (...);

* **Data Enrichment:**
* Add Order\_Date and Ship\_Date using DATE\_ADD() and RAND()
* Rename columns for clarity (Customer\_City, Customer\_State)
* **Aggregations & Insights:**
* Sales and profit by region/state/city
* Segment-wise sales
* Category and sub-category profitability
* Discount impact on profit
* Shipping mode analysis
* Year-over-year trends using YEAR(Order\_Date)
* Ranking categories by region using RANK() OVER(...)

**Power BI Visualizations**

* **KPI Cards:** Total Sales, Profit, Orders, Avg. Discount
* **Map:** Sales and profit distribution across U.S. states
* **Bar Charts:**
  + Sales by Region
  + Top 10 Profitable Cities
  + Shipping Mode Profitability
* **Donut Chart:** Sales by Category
* **Line Chart:** Sales Over Time
* **Scatter Plot:** Discount vs Profit
* **Table:** State-wise sales and profit
* **Filters/Slicers:** Ship Mode, Segment, Region, Category, Date Range

**5. Key Metrics & SQL Queries**

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| **Metric** | **SQL Logic** |
| Total Sales & Profit | SELECT SUM(Sales), SUM(Profit) FROM Sales; |
| Sales by Region | |  |  | | --- | --- | |  | SELECT Region, SUM(Sales), SUM(Profit) FROM Sales GROUP BY Region; | |
| Top Cities by Profit | SELECT Customer\_City, SUM(Profit) FROM  Sales GROUP BY Customer\_City ORDER BY  SUM(Profit) DESC LIMIT 10; |
| Segment Sales | SELECT Segment, SUM(Sales) FROM Sales  GROUP BY Segment; |
| Category Profitability | SELECT Category, Sub\_Category, SUM(Profit) FROM Sales GROUP BY Category, Sub\_Category; |
| Discount Impact | SELECT Discount, AVG(Profit), COUNT(\*)  FROM Sales GROUP BY Discount; |
| Shipping Mode Analysis | SELECT Ship\_Mode, COUNT(\*),  SUM(Profit), AVG(Profit) FROM Sales GROUP BY Ship\_Mode; |
| Yearly Trends | SELECT YEAR(Order\_Date),  SUM(Sales), COUNT(\*), AVG(Sales) FROM Sales GROUP BY YEAR(Order\_Date); |

1. **Data Requirements**

* **Source**: Superstore sales dataset
* **Fields**: Ship Mode, Segment, Region, Category, Sub-Category, Sales, Quantity, Discount, Profit, Order Date, Ship Date, Customer City, Customer State
* **Volume**: ~10,000 records
* **Frequency**: Static dataset for initial analysis

**7. Stakeholders**

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| --- | --- |
| **Role** | **Responsibility** |
| Business Analyst | Requirement gathering, SQL logic, dashboard design |
| Data Engineer | SQL schema setup, data transformation |
| Retail Managers | Strategic decisions based on insights |
| Marketing Team | Customer segmentation and targeting |
| Operations Team | Shipping and logistics optimization |

**8. Timeline**

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| --- | --- | --- | --- |
| **Phase** | |  |  | | --- | --- | |  | **Duration** | |
| Requirement gathering |  |
| SQL Development & Testing |  |
| Power BI Dashboard Build |  |
| Stakeholder Review |  |
| Final Deployment |  |

**9. Risks & Mitigation**

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| --- | --- |
| **Risk** | **Mitigation** |
| Data inconsistency | |  |  | | --- | --- | |  | Use SQL constraints and validation | |
| Performance lag | Optimize SQL queries and Power BI visuals |
| Forecasting accuracy | Use historical SQL aggregates and validate models |
| Scope creep | Lock SQL logic and dashboard requirements early |

**10. Success Criteria**

* SQL queries return accurate and meaningful insights
* Power BI dashboard is intuitive, responsive, and insightful
* Stakeholders can make informed decisions based on visualized data
* Forecasting models provide reasonable projections for planning

## **12. Approvals**

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| --- | --- | --- |
| **Name** | **Role** | **Approval Date** |
|  | Project Manager |  |
|  | Business Analyst |  |
|  | Stakeholder |  |