

Practical Guideline for Real-Life Dashboard Project

1. Project Overview

This project is designed to simulate a real-world business scenario where you will act as a data analyst for a mid-sized retail company. Your role is to analyse sales, customer behaviour, inventory, and financial performance using the given database. This project will help you develop practical skills in SQL, data visualization, and business analytics without relying on Power BI or Tableau.

Business Context:

The company manages orders, products, customers, and employees through a centralized database. The goal is to derive actionable insights for decision-making, optimize inventory, and improve overall business performance.

Business Challenges:

- High order fulfilment time affecting customer satisfaction.
 - Inconsistent inventory levels leading to stockouts or excess stock.
 - Poor customer segmentation reducing targeted marketing effectiveness.
 - Inefficient financial management impacting profitability.
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2. Data Preparation and Cleaning

To ensure accurate insights, it's crucial to clean and preprocess the data. Key steps include:

- Removing duplicate records.
- Handling missing values appropriately.
- Standardizing date formats.
- Resolving data type mismatches (e.g., converting text to numbers).
- Verifying referential integrity between tables.

Data Model Checks:

- Verify primary and foreign key relationships.
 - Ensure each customer has at least one order.
 - Confirm that every order has valid product codes.
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3. Project Goals and KPIs

Sales Analysis:

- Total Revenue and Profit Margins
- Top 10 Best-Selling Products

- Monthly and Quarterly Sales Trends
- Sales by Region and Office

Customer Insights:

- High-Value Customers
- Average Order Value per Customer
- Customer Retention and Churn Rates
- Customer Segmentation by Revenue

Inventory Management:

- Products with Low Stock
- Stock Turnover Rate
- Inventory Value Analysis
- Stock Forecasting for Optimal Reordering

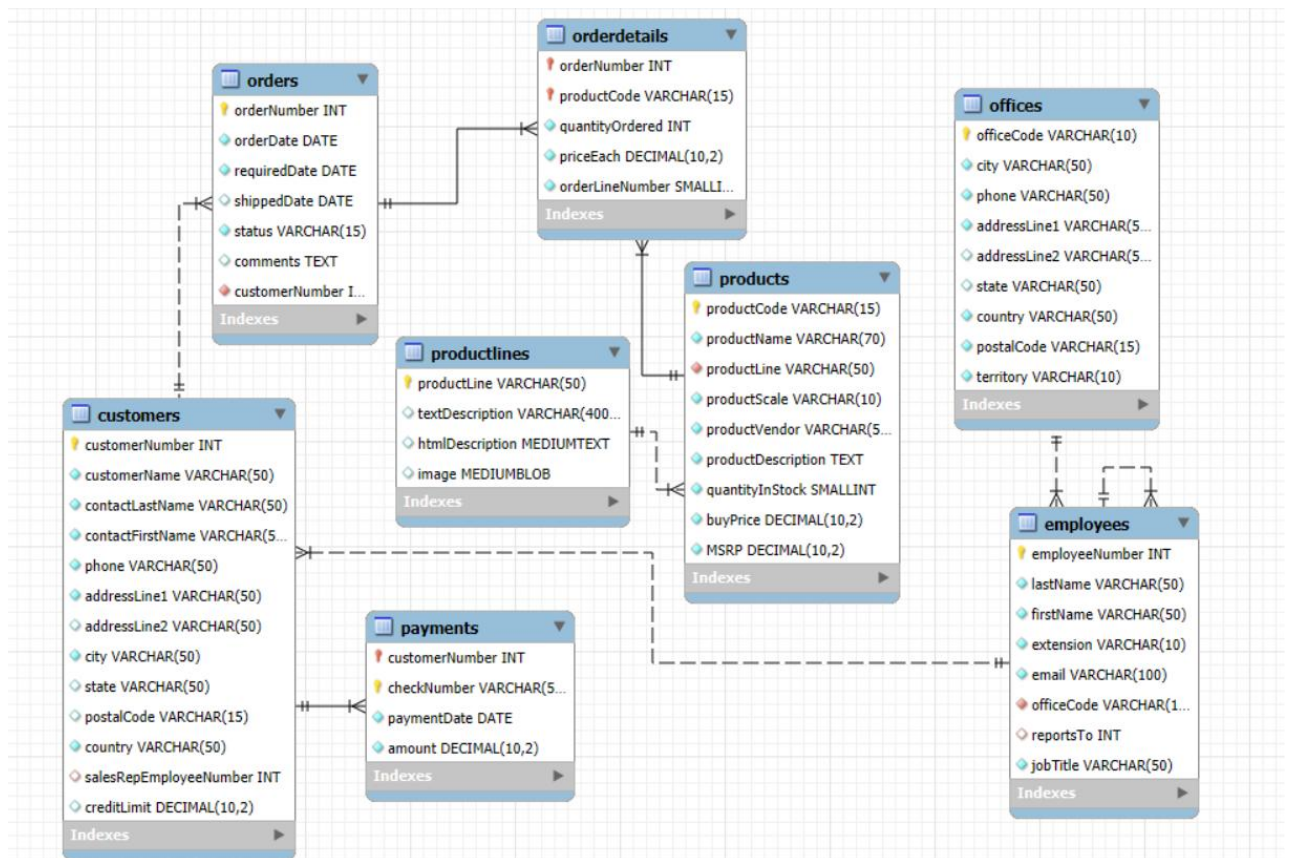
Order Management:

- Order Fulfilment Time
- Order Status Distribution
- Top 10 Orders by Value
- Order Volume by Region

Financial Analysis:

- Total Revenue vs. Total Cost
 - Overdue Payments
 - Cash Flow Analysis
 - Profitability by Product Line
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4. Data Modelling



For your assistance, Modelling Design had been added in the project. Make this in Excel Power Pivot Modelling Panel:

5. Dashboard Designs

To make the project realistic and impactful, we will create the following dashboards:

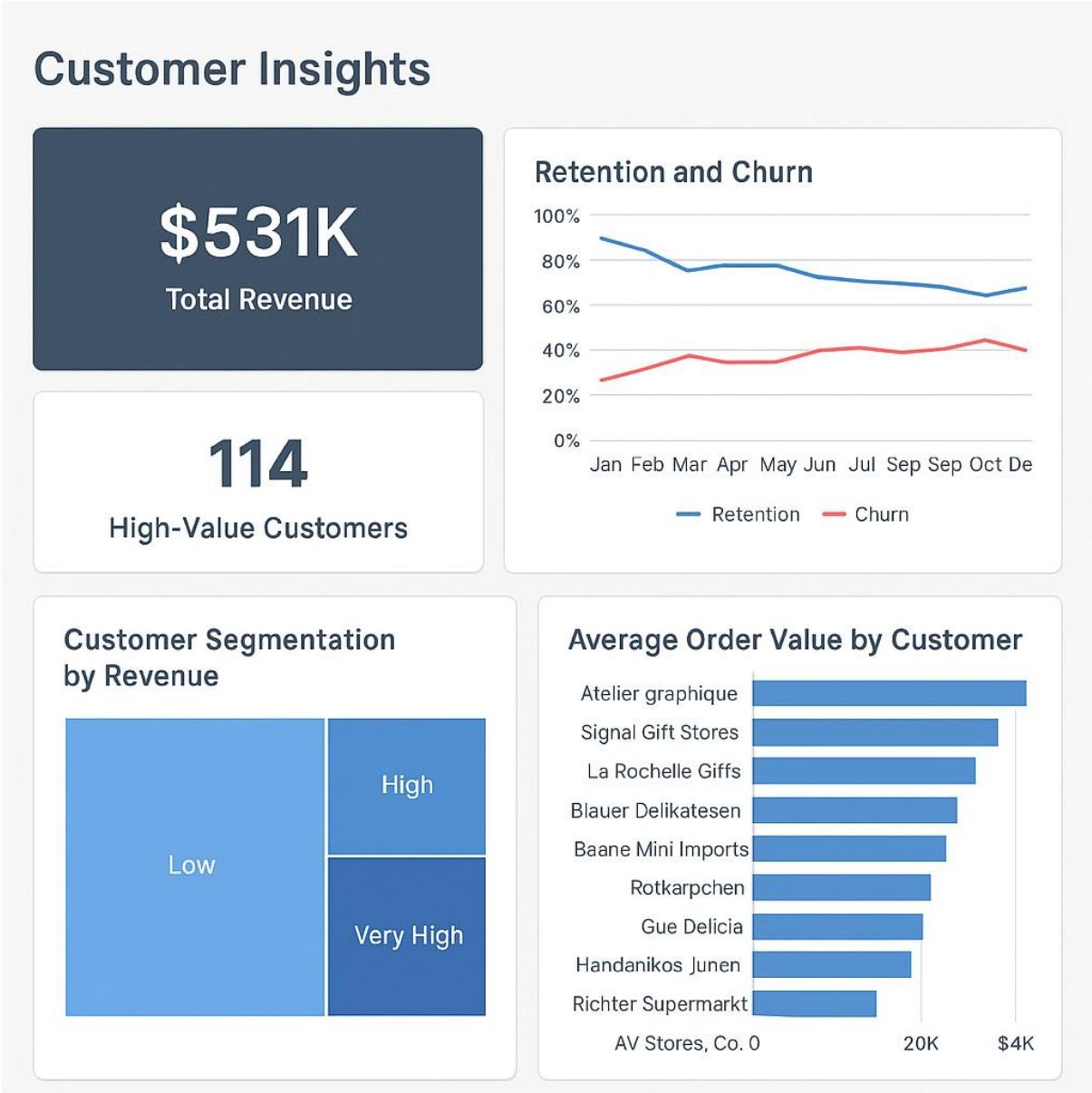
Dashboard 1: Sales Performance Dashboard

- Total Revenue, Monthly Trends, and Top-Selling Products
- Regional Sales Distribution (using Maps or Region-wise Analysis)
- Yearly Growth Rate and Profit Margins



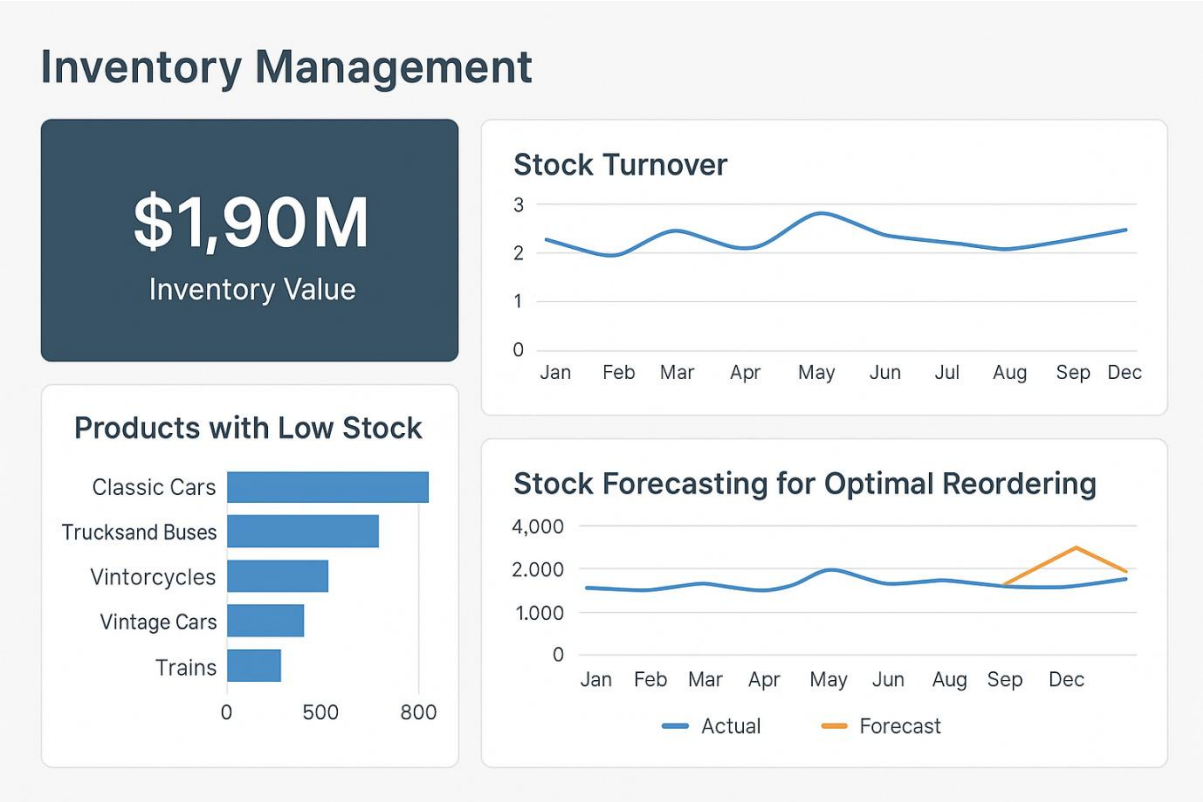
Dashboard 2: Customer Insights Dashboard

- High-Value Customers and Segmentation
- Customer Retention and Churn Analysis
- Average Order Value and Purchase Frequency



Dashboard 3: Inventory Management Dashboard

- Current Stock Levels, Low Stock Alerts, and Inventory Value
- Stock Turnover Rates and Forecasting
- Product Line Performance Overview



Dashboard 4: Order Management Dashboard

- Order Fulfilment Times and Status Distribution
- Top 10 High-Value Orders and Order Volume Trends
- Delayed and Cancelled Orders Analysis



Dashboard 5: Financial Analysis Dashboard

- Revenue vs. Cost Analysis
- Overdue Payments and Cash Flow Trends
- Profitability by Product Line and Region



6. Case Studies

Include practical exercises like:

- Analysing customer lifetime value.
 - Tracking product stock levels for better inventory management.
 - Identifying regional sales trends for targeted marketing.
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7. Project Delivery and Evaluation

- Prepare a final report with insights and recommendations.
- Use Excel for visualization and report formatting.
- Focus on clear, actionable insights with data-driven justifications.