Project Report

Sales Revenue Data Creation, Analysis, Analytics and Dashboard for a Multi-Region Retail Industry

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For this project, I designed and implemented a comprehensive **Retail Sales Dashboard** using advanced Excel and database skills. The workflow began by designing a scalable sales data model and generating 1,500+ realistic transaction records in **MySQL**, simulating a retail environment across multiple products, regions, and time periods.

I structured the database, wrote SQL scripts to create and populate tables, and then exported the cleaned dataset to CSV for further analysis.

In Excel, I leveraged **Power Query** to import and transform the raw data, ensuring data quality and consistency. Using **Power Pivot**, I built relationships between tables (including a custom date table), enabling advanced time-based analysis and DAX calculations.

The dashboard features **dynamic Pivot Tables and Pivot Charts**, interactive slicers, KPI cards, and clear visual cues.

Key business metrics such as **total orders, revenue, units sold, and average revenue per order** are highlighted, with deep dives by product, region, category, tier, and time period. I also implemented forecasting tools and trend analysis, providing actionable insights.

Business questions answered by the dashboard include:

- Which products and regions generate the highest revenue?
- What are the monthly and yearly sales trends?
- How do different categories and performance tiers compare?
- What is the year-to-date (YTD) performance, and how does forecasting inform future expectations?
- How do filters like region, product, category, and time period influence sales outcomes?

This end-to-end workflow—from **SQL data generation and export**, to advanced Excel analytics and visualization—demonstrates my ability to bridge database management and business intelligence for impactful decision-making.

Tools Used

- **MySQL** (database creation, table design, SQL queries for data generation and extraction)
- **Excel (Advanced)**
- **Power Query** (data import, cleaning, transformation)
- **Power Pivot** (Data Modeling, relationships, DAX)
- **Pivot Tables & Pivot Charts** (summarization and visualization)
- **Slicers** (interactive dashboard filtering)
- **Excel Formulas** (advanced calculations, lookups, KPIs)
- **ODBC Connector** (database-to-Excel connection)
- **CSV (Comma Separated Values)** (data export/import)
- **Excel Forecast Sheet** (trend and forecasting analysis)
- **Conditional Formatting** (for KPI and data highlights)
- **Excel Icons/Shapes** (for dashboard design and clarity)

Concepts Used

- **SQL Database Design:** Table creation, data types, primary keys, dummy data insertion, query and export
- **Data Cleaning & Transformation:** Removing duplicates, handling missing values, formatting, enrichment
- **Data Modeling:** Fact and dimension tables, relationships (1-to-many), star schema basics
- **Power Query ETL:** Import, clean, merge, and shape data for analysis
- **Power Pivot Data Model:** Loading tables, creating relationships, using Diagram View
- **DAX (Data Analysis Expressions):** Calculated measures (e.g., YTD Revenue), time intelligence (YTD, MTD, QTD), business KPIs
- **PivotTable Analytics:** Multi-dimensional summarization, dynamic grouping (by region, product, time, category, tier)
- **KPI Cards:** Calculation and visualization of business-critical metrics
- **Slicers:** Interactive filtering across dashboard components
- **Dashboard Design:** Layout planning, use of color/iconography, clean UX
- **Time Intelligence:** Date tables, YTD/MTD/QTD analysis, custom time periods
- **Forecasting:** Time series trend analysis, Excel's built-in forecast tool
- **Insight Extraction:** Enabling end-users to answer key business questions dynamically