Sales Analytics Project - README

Project Overview

This is a comprehensive data analytics project designed for LinkedIn portfolio showcase, demonstrating skills in SQL, data visualization, and business intelligence dashboard development.

Business Question

"Why did sales drop in Q2 2024, and which products or regions were affected?"

Key Findings

- **25.9% sales decrease** in Q2 2024 vs Q2 2023
- **Office Supplies** most affected category ($42,752)
- **East Region** most impacted ($33,319)
- **$53,552** in lost revenue

Technologies Used

- **SQL (SQLite)** - Database management and analysis
- **Python** - Data visualization (matplotlib, seaborn, pandas)
- **React** - Interactive dashboard development
- **Tailwind CSS** - Modern UI design

Project Structure

```
├── superstore_sales_data.csv         # Simulated dataset
├── superstore_sales.db               # SQLite database
├── sales_analysis.sql                # SQL queries
├── create_visualizations.py          # Python visualization script
├── sales_analysis_dashboard.png      # Generated charts
├── sales-dashboard/                  # React dashboard application
├── Sales_Analytics_Project_Report.md  # Comprehensive documentation
└── Sales_Analytics_Project_Report.pdf # PDF report
```

How to Run

1. Database Analysis

```
sqlite3 superstore_sales.db < sales_analysis.sql
```

2. Generate Visualizations

```
python3 create_visualizations.py
```

3. Run Interactive Dashboard

```
cd sales-dashboard
pnpm run dev --host
```

Key SQL Queries

Quarterly Sales Trend

```sql
SELECT
 strftime("%Y", order_date) AS sales_year,
 CASE
   WHEN strftime("%m", order_date) BETWEEN "01" AND "03" THEN "Q1"
   WHEN strftime("%m", order_date) BETWEEN "04" AND "06" THEN "Q2"
   WHEN strftime("%m", order_date) BETWEEN "07" AND "09" THEN "Q3"
   WHEN strftime("%m", order_date) BETWEEN "10" AND "12" THEN "Q4"
 END AS sales_quarter,
 SUM(sales) AS total_sales
FROM sales
GROUP BY sales_year, sales_quarter
ORDER BY sales_year, sales_quarter;
```

Dashboard Features

- **Overview Tab**: Visual dashboard with charts and KPIs
- **SQL Analysis Tab**: Display of actual queries used
- **Key Insights Tab**: Business recommendations and findings

Business Impact

This analysis provides executives with:
1. Clear identification of the sales problem magnitude
2. Specific product categories requiring attention
3. Regional performance variations
4. Actionable recommendations for recovery

Skills Demonstrated

- Advanced SQL query writing and database management
- Statistical analysis and data visualization
- Modern web development with React
- Business intelligence and executive reporting
- End-to-end data analytics project management

Contact

This project showcases data analytics capabilities suitable for senior analyst and business intelligence roles. The methodology and technical implementation demonstrate real-world applicability for enterprise environments.