**Report for Foxcore Retail Database Implementation**

**1. Introduction**

Foxcore Retail, founded by Liam Corrigan and Mitchell Fox, began as a small venture offering novelty items at events across Ontario. Over time, the business grew, but the manual sales tracking and fragmented data systems led to inefficiencies and errors in inventory and performance tracking. To resolve these issues, the development of a relational database solution was proposed to centralize data, improve operational efficiency, and enable comprehensive reporting.

**2. Problem Statement**

Foxcore Retail faced the following challenges:

* Manual sales tracking and paper-based record-keeping.
* Disjointed data management, leading to inefficiencies.
* Errors in sales, inventory, and performance tracking.
* Lack of a centralized database to optimize event and product performance.
* Missed opportunities for insights due to fragmented data.

**3. Database Entities and Relationships**

Entities include:

* **Event**: Represents an occurrence at a venue.
* **Venue**: The location where the event takes place.
* **Booth**: Specific spots at an event managed by salespeople.
* **Product**: Items sold by the company.
* **Salesperson**: Staff responsible for sales at the booths.
* **Sales**: Transactions involving products sold by salespeople at booths.

**Relationships**:

* Each event takes place at a venue.
* Each event has one or more booths.
* A booth is managed by one or more salespeople.
* Products are involved in sales transactions.
* Each salesperson is associated with a sales transaction.

**4. Database Schema**

The following tables were created to represent the business entities:

* **Event**: Stores event details like EventID, EventName, StartDate, EndDate, and EventType.
* **Venue**: Holds venue-related information like VenueID, VenueName, and Address.
* **Booth**: Represents booths within events and includes BoothID, EventID, and Location.
* **Product**: Stores product information like ProductID, ProductName, WholesaleCost, and MinSellingPrice.
* **Salesperson**: Stores details about salespeople.
* **Sales**: Holds sales transaction details, connecting products, booths, and salespeople.

**5. Data Population**

Data was populated into the database for demonstration purposes. This included adding sample events, venues, booths, products, salespeople, and sales transactions.

**Example Data:**

* **Event**: Music Festival, Trade Show, Rib Fest.
* **Product**: Bubble Gun, Cooling Towel, Emoji Pillow.
* **Salesperson**: John Doe, Jane Smith, Michael Johnson.
* **Sales**: Recorded sales for products at specific events.

**6. Report Queries**

Two reports were generated from the database to analyze performance:

1. **Total Sales by Event Type**:

sql

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SELECT e.EventType, SUM(s.QuantitySold) AS TotalSales

FROM Event e

LEFT JOIN Booth b ON e.EventID = b.EventID

LEFT JOIN Sales s ON b.BoothID = s.BoothID

GROUP BY e.EventType;

**Results**:

* + Music Festival: 45 total sales.
  + Rib Fest: (No sales data available yet).
  + Trade Show: (No sales data available yet).

1. **Salesperson Performance**:

sql

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SELECT CONCAT(sp.FirstName, ' ', sp.LastName) AS Salesperson,

COUNT(s.SaleID) AS TotalSales,

SUM(s.QuantitySold) AS TotalQuantitySold,

SUM(s.QuantitySold \* s.SellingPrice) AS TotalRevenue

FROM Salesperson sp

JOIN Sales s ON sp.SalespersonID = s.SalespersonID

GROUP BY sp.SalespersonID;

**Results**:

* + John Doe: 1 sale, 20 items sold, $250 in revenue.
  + Jane Smith: 1 sale, 15 items sold, $120 in revenue.
  + Michael Johnson: 1 sale, 10 items sold, $180 in revenue.

**7. Conclusion**

The implementation of a relational database for Foxcore Retail has addressed the primary challenges of manual tracking and fragmented data management. The centralized database structure has improved the company's ability to track sales, manage inventory, and generate valuable reports. The solution provides a solid foundation for improved operational efficiency and data-driven decision-making.

**8. Future Enhancements**

The following enhancements are proposed for future versions of the database system:

* **Real-Time Data Integrity**: Ensuring the consistency and accuracy of data in real time.
* **Advanced Analytics**: Introducing more sophisticated data analysis techniques to generate deeper insights.
* **Mobile Access**: Enabling access to the database and reports through mobile platforms.
* **Customer Relationship Management (CRM)**: Integrating CRM features to improve customer engagement.
* **Supply Chain Optimization**: Enhancing inventory and supplier management capabilities.
* **Data Security and Compliance**: Strengthening security measures and ensuring compliance with data protection regulations.

**9. Final Notes**

By addressing its operational inefficiencies through this database solution, Foxcore Retail is well positioned to grow and scale its business effectively.