Optimizing a Sales Database for Business Insights At Bloom ELECTRONICS

CASE STUDY

ABOUT

Bloom Electronics stands out as a prominent retail company headquartered in FCT, Nigeria. Specializing in the distribution of top-tier TV brands, the company has firmly established itself in the bustling heart of Wuse Market. Over the past few years, Bloom Electronic has not only garnered a stellar reputation for delivering high-quality products but has also become synonymous with unparalleled customer service.

BUSINESS CASE

As Bloom Electronics continues to grow, the management team has recognized the importance of having a central repository for their business data. They need a robust and reliable database solution to ensure seamless operations and facilitate data-driven decision-making.

Business Challenges

Challenge 1

Understanding Customer Preferences

Bloom Tech struggles to understand customer preferences across different branches and product lines.

Challenge 2

Sales Performance Analysis

Difficulty in evaluating the sales performance of different branches and identifying the best-performing product lines.

Challenge 3

Pricing Strategy Optimization

The need to optimize pricing strategies based on customer types and product preferences.

Your Task

As a Data Engineer at Bloom Electronics, your primary role is to develop a database system that effectively stores and manages the company's diverse data, with a focus on ensuring data integrity, security, and accessibility. This system will be pivotal in analyzing customer preferences by tracking detailed customer interactions, enabling comprehensive sales performance analysis across various branches and product lines, and facilitating the optimization of pricing strategies.

Implementation

1

Data Definition Language

Create a **database** for Bloom Electronics
Create a Sale_data table to store sales data
Create a staff_data table to store staff data
Create customer_data table to store customer data
Create product_data to store the product data

DATA DICTIONARY

Product table

```
ProductID INT           -- Numeric identifier for the product
ProductName VARCHAR     -- Name of the product
Brand VARCHAR           -- Brand of the product
Model VARCHAR           -- Model of the product
Type VARCHAR            -- Type of the product
Size INT                -- Size of the product in inches
Price DECIMAL           -- Price of the product
Description VARCHAR     -- Description of the product
WarrantyPeriod VARCHAR  -- Warranty period for the product
```

Customer table

```
CustomerID INT          -- Numeric identifier for the customer
FirstName VARCHAR       -- First name of the customer
LastName VARCHAR        -- Last name of the customer
EmailAddress VARCHAR    -- Email address of the customer
Address VARCHAR         -- Address of the customer
PhoneNumber VARCHAR     -- Phone number of the customer
```

Implementation

Staff table

```
StaffID INT                -- Numeric identifier for the staff member
FirstName VARCHAR          -- First name of the staff member
LastName VARCHAR           -- Last name of the staff member
Position VARCHAR           -- Position or role of the staff member
ContactNumber VARCHAR      -- Contact number of the staff member
Email VARCHAR              -- Email address of the staff member
```

Sale table

```
SalesID INT                -- Numeric identifier for the sale
ProductID INT              -- Numeric identifier for the product sold
CustomerID INT             -- Numeric identifier for the customer
StaffID INT                -- Numeric identifier for the staff member involved
Quantity INT               -- Quantity of the product sold
SellingPrice DECIMAL       -- Selling price per unit
Discount DECIMAL           -- Discount applied to the sale
TotalPrice DECIMAL         -- Total price of the sale
PaymentMethod VARCHAR      -- Payment method used
SaleDate DATE              -- Date of the sale
```

2

Import Data into PostgreSQL Table

Load the data from sale_csv into sale table
Load staff_csv into the staff table
Load product_csv into the product table
Load customer_csv into the customer table

3 Add a New Sales Transaction Record

Insert a new record into the sale table. Assume you have a new transaction with the following details:

salesID	productID	customerID	StaffID	Quantity	Selling Price	Discount	Total Price	Payment method	Date
10011	201	42	502	2	4500	0	3000	paypal	7/7/2022
10012	213	51	504	4	1500	0	6000	bank deposit	12/17/2022

4 Alter Statement – Sale table

- Add a column to store the customer's Location. Fill it **with "FCT"**
- Rename the "Payment method" column to " Payment_channel".

5 Task: Payment Method with the Highest Sales

Objective: Determine the leading payment method in contributing to total sales for optimizing payment processing strategies.

6 **Task: Price Range Analysis by brand**
Objective: Find the range of prices for each brand.

7 **Retrieve the product details and the corresponding staff information for each sale made.**

8 **Task: Best-Performing Brand**
Objective: Identify the brand with the highest total sales.

9 **Task: Get the product details and the names of the staff members involved in each sale, including the transaction ID and payment method.**

Happy Querying!!!