DBD 281

Project

Members

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Table of Contents

Table of Figures

Introduction

Zephyr Motors is a company that has been profitable for the last 5 years. With branches located in all 9 provinces of the country, the company prides itself on selling quality vehicles, as well as various car parts. The company has a team of well-trained employees who are dedicated to personally helping customers find their perfect vehicle. The is committed to ensuring quality service and products and aims to maintain a certain standard of quality, which includes maintaining relationships with suppliers and ensuring that products are competitive.

The company is currently still using outdated methods of data storage which includes records on paper, and this is causing the company to fall behind on keeping records and this is becoming a problem as the company cannot keep up with sales and other business operations. To manage its large and growing customer base, Zephyr Motors needs a reliable database that can store and organize information about customers, sales, stock, suppliers and employees.

The database will be created based on the entities and attributes that will be identified in the ERD. The company will be able to use the database to transform the data into useful information. This will assist the company in making business decisions. Overall, Zephyr Motors' success is the result of hard work and dedication. With a reliable database, it can continue to provide excellent service to its customers.

Normalization Process

0NF

Figure 1: 0 Normal Form Diagram

1NF

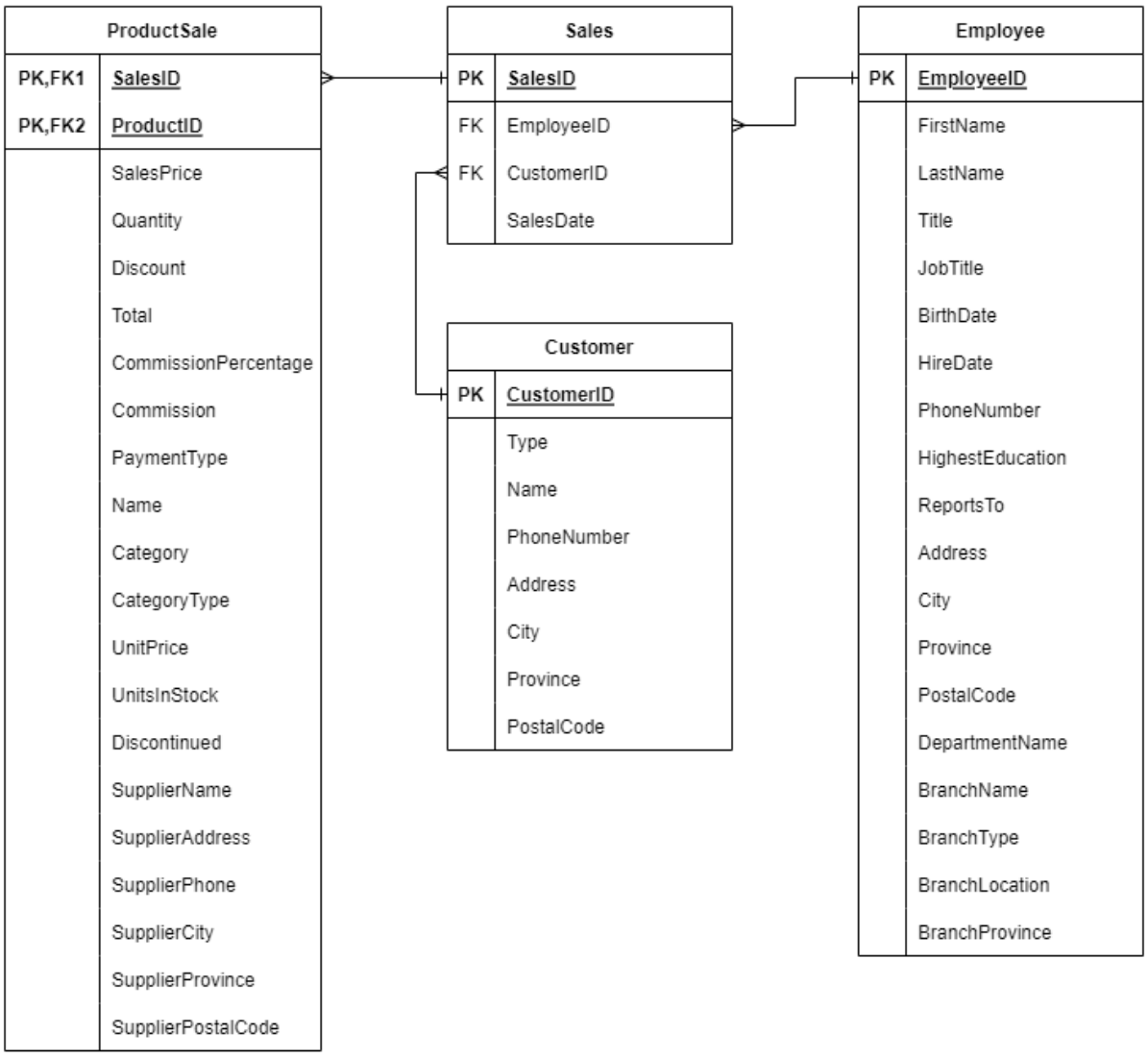

Figure 2: 1 Normal Form Diagram

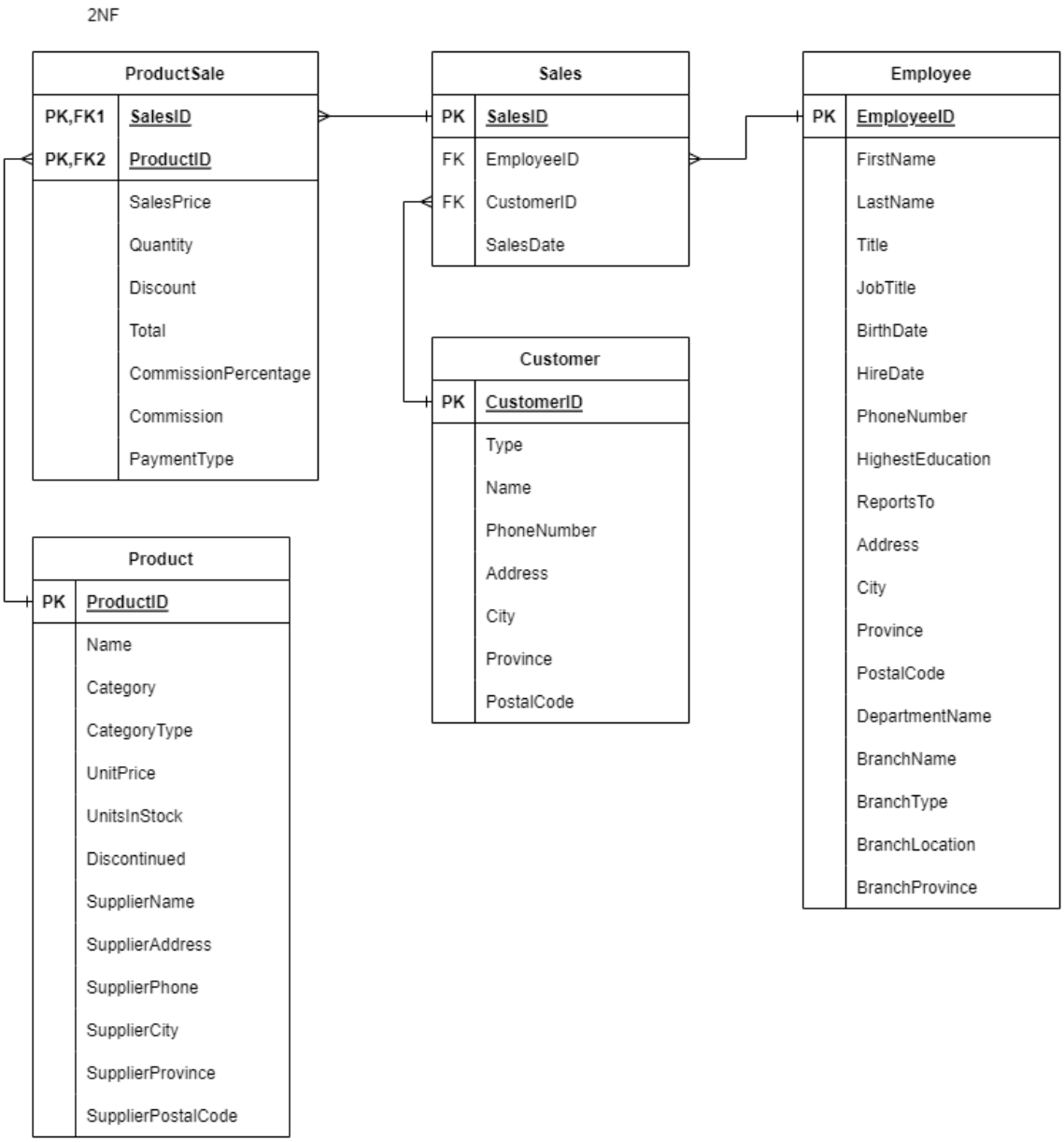

Figure 3: 2 Normal Form Diagram

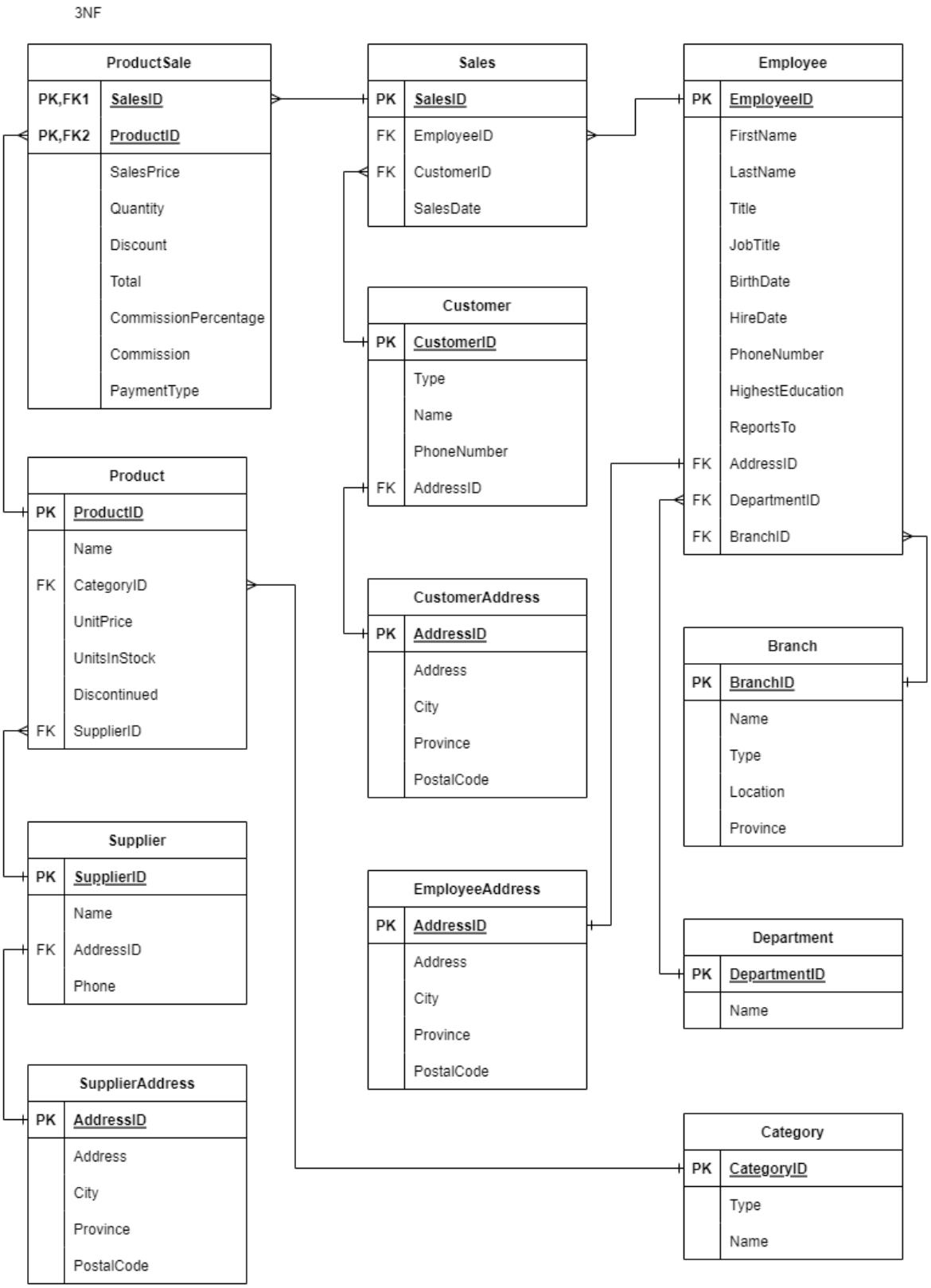

Figure 4: ERD / 3 Normal Form Diagram

Entity Identification and Explanation

Tables

- SupplierAddress: This table is used to store all the supplier addresses.
- CustomerAddress: This table is used to store all the customer addresses.
- EmployeeAddress: This table is used to store all the employee addresses.
- Supplier: This table contains all the supplier's (that supply the products that the company sells) information, like name and phone number.
- Category: This stores all the different categories for each product.
- Product: This table stores all the important information about the product. This consists of the name, to which category it belongs to, price, units in stock, if it's discontinued and who supplies it.
- Department: This stores a list of all the different departments that each employee belongs to.
- Branch: This contains the information about each branch. This consists of the name and location.
- Employee: This table stores all the employee's personal information as well as their company information, like what branch they work, their job description, department and who they report to.
- Customer: This contains all the information about the customers that have bought from the company.
- Sale: This is the most important table, seeing as it saves all the sales that happen within the company. This contains what customer bought what product and by whom it was sold.
- ProductSale: Each sale can have many products and each product can have many sales, thus this bridge table was created. This stores the total sales price per sale, per product.

Database Objects

Stored Procedure

The stored procedure is used to insert a new sale into the database. It will add a new record for the sale into both the “Sales” and “ProductSale” tables. After the inserts are completed, the quantity sold will be subtracted from the units in stock column for the specific product from the Product table.

Function

This function will return the number of years each employee has worked for the company. This will be calculated with the hire date and the current date.

Trigger

This trigger will be placed on the insert statement for the employee table and check to see that when adding the new employee, that they are at least 16 years old.

Cursor

This cursor will display the total number of products sold as well as the sales prices, per product. This will show per month, per year.

Login

A login will be created per department and assign each employee to their relevant login.

Backup

A backup of the entire database will be created.

List of questions or queries

Query 1: This query will show the total sales per branch.

Query 2: This query will show the total sales per product.

Query 3: Average age of employees per department will be displayed.

Query 4: Total amount of products sold per category, including the total sale price.

View: Displays all of the information about each sale (SaleID, Employee Name, Customer Name, Sales Date, Product, Quantity, Total Price)

Insert: This inserts a new product in the Product table.

Update: Update employee address for an employee.

Delete: Remove an employee from the Employee table.