Phase 1

Sterling Homes: Redefining Management Systems

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1. Introduction

Sterling Homes is one of the leading house builders situated in Calgary – Canada with the company's existence being established over seven decades ago. As a leader of construction solutions, Sterling Homes has proven to have excellent workmanship and creative designs that triumph in delivering quality and satisfaction to its clients. These companies are complete home builders and they sell all types of homes which are strong, functional and environmentally friendly. Sterling Homes raises the industry standards in the implementation of fresh technologies and the business strategy focused on the buyer, ultimately developing communities where families find joy.

2. Purpose

The purpose of Sterling Homes is to offer timely information that makes it easy for the clients to choose Sterling Homes for their home building needs in order to improve their situation. In this pursuit, we have endeavored to make use of advanced technology and various best practices that would help improve the efficacy of construction projects. The kind of information and processes we want to deliver will help our customers make sound decisions that leads to sustainable business and orderly development of our clients' business hence we want to create more livable communities and satisfactory homes for people.

3. Goals

It has been established that one of the main goals of integrating a centralized management system is to address the issue of increased efficiency in sales record keeping. This system will try to bring efficiency in tracking the construction materials used and the ones in stock and the sales transaction forms so as not to waste time in getting what is needed and how to dispense it.

4. Subjects

During our initial discussion to redefine the Sterling Homes database, the specification emerged through asking questions to address some operation priorities. Some of the concerns raised by the owner included stockouts, overstock, aggravation in data management and records. To address these, we prioritized:

- **Stockouts:** Ensuring that the inventory is not depleted to prevent cases where no sales can be made for a period.
- **Overstocking:** Another strategic area relates to managing inventory levels so that costs do not skyrocket and opportunities to reuse some of it are not wasted.
- **Centralized System:** Collecting data for bringing the data to a unified and standardized form for better management.
- **Record Accuracy:** Guaranteeing the availability of accurate information for detailed and effective operations would be crucial for the overall success of all of the organization's goals and objectives.
- **Decision-Making:** A key benefit of quality market research is the ability to produce accurate data for business decisions to be made from.

These focus areas were designed to address decisions related to inventory as well as improve performance and decision-making strategies.

5. List of Tables

Furthering our discussion, using the focus areas we defined earlier, we moved ahead to populate the Sterling Homes database with several tables. Specifically, each subject played a direct role of feeding into the selection process of a table in a way that the database structure of the company was adequately provided for.

- **Employees Table**: Stores information about employees including their unique identifier, name, role, contact information, and hire date.
- **Inventory Table**: Manages inventory items including their unique identifier, product name, available quantity, unit price, supplier information, date received, and the employee responsible for managing the item.
- **Sales Table**: Tracks sales transactions with details such as the unique identifier for each sale, sale date, customer information, property sold, employee handling the sale, and total amount of the sale.
- **Customers Table**: Stores information about customers including their unique identifier, name, contact information, and address.
- **Suppliers Table**: Manages supplier details such as their unique identifier, name, contact information, and address.
- **Property Table**: Manages details of properties including their unique identifier, address, status (e.g., available, sold), and listing price.

6.List of Attributes

After deciding on the tables for the Sterling Homes database, the exercise involved identifying the fields to be included in each of the tables based on the functions of the tables and the business operations of Sterling Homes.

Employees Table

- **employee_id**: Unique identifier for each employee.
- **employee_name**: Name of the employee.
- **employee_role**: Role of the employee.
- **contact_info**: Contact information of the employee.
- **hire_date**: Date when the employee was hired.

Customers Table

- **customer_id**: Unique identifier for each customer.
- **customer_name**: Name of the customer.
- **contact_info**: Contact information of the customer.
- **address**: Address of the customer.

Inventory Table

- **inventory_id**: Unique identifier for each inventory item.
- **product_name**: Name of the product.
- **quantity_available**: Quantity of the product available.
- **unit_price**: Price per unit of the product.
- **supplier_id**: Identifier for the supplier.
- **date_received**: Date when the inventory item was received.
- **employee_id**: Identifier for the employee managing the inventory.

Suppliers Table

- **supplier_id**: Unique identifier for each supplier.
- **supplier_name**: Name of the supplier.
- **contact_info**: Contact information of the supplier.
- **address**: Address of the supplier.

Property Table

- **property_id**: Unique identifier for each property.
- **address**: Address of the property.
- **status**: Status of the property (e.g., available, sold).
- **listing_price**: Listing price of the property.

Sales Table

- **sale_id**: Unique identifier for each sales transaction.
- **sale_date**: Date of the sale.
- **customer_id**: Identifier for the customer.
- **property_id**: Identifier for the property sold.
- **employee_id**: Identifier for the employee handling the sale.
- **total_amount**: Total amount of the sale.

7. Entity Relationship

Since the fields in the Sterling Homes database tables have been selected, the next process was to define relationships between these tables in order to enhance integrity of data and also to ease operations on this data such as querying or updating.

- **Sales and Employees**
  - Relationship(One-to-Many)
  - Definition: an employee can be associated with multiple sales transactions.
- **Inventory and Employees**
  - Relationship(Many-to-Many)
  - Definition: an employee can manage multiple inventory items.
- **Inventory and Suppliers**
  - Relationship(One-to-Many)
  - Definition: a supplier can supply multiple inventory items.
- **Sales and Customers**
  - Relationship(One-to-Many)
  - Definition: a customer can be associated with multiple sales transactions.
- **Property and Sales**
  - Relationship(One-to-Many)
  - Definition: each property record is unique and can have multiple sales records.

8. Conclusion

In conclusion, the implementation of a centralized inventory management system by Sterling Homes marks a pivotal stride towards operational efficiency and enhanced decision-making. By addressing stock issues and streamlining processes, the company is poised for sustained growth and success in the housing market. With a heightened focus on improving sales recording accuracy, Sterling Homes demonstrates its commitment to leveraging data-driven insights for strategic advantage. These advancements not only optimize operations but also set a new standard for excellence in the industry, positioning Sterling Homes as a leader prepared to navigate future challenges and capitalize on emerging opportunities.

Appendix

Data Dictionary

Employees Table:

This table schema defines columns for employee information, including unique identifiers, names, roles, contact information, and hire dates.

Column Name	Data Type	Description	Constraints
employee_id	INTEGER	Unique identifier for each employee	Primary Key
employee_name	VARCHAR	Name of the employee	Not Null
employee_role	VARCHAR	Role of the employee	Not Null
contact_info	VARCHAR	Contact information of the employee	Not Null
hire_date	DATE	Date when the employee was hired	Not Null

Customers Table:

This table schema outlines columns for customer data, including unique identifiers, names, contact information, and addresses.

Column Name	Data Type	Description	Constraints
customer_id	INTEGER	Unique identifier for each customer	Primary Key
customer_name	VARCHAR	Name of the customer	Not Null
contact_info	VARCHAR	Contact information of the customer	Not Null
address	VARCHAR	Address of the customer	Not Null

Inventory Table:

This table schema defines columns for inventory management, including unique identifiers, product names, available quantities, unit prices, supplier identifiers, dates of receipt, and employee identifiers.

Column Name	Data Type	Description	Constraints
inventory_id	INTEGER	Unique identifier for each inventory item	Primary Key
product_name	VARCHAR	Name of the product	Not Null
quantity_available	INTEGER	Quantity of the product available	Not Null
unit_price	DECIMAL	Price per unit of the product	Not Null
supplier_id	INTEGER	Identifier for the supplier	Foreign Key (suppliers.supplier_id), Not Null
date_received	DATE	Date when the inventory item was received	Not Null
employee_id	INTEGER	Identifier for the employee managing the inventory	Foreign Key (employees.employee_id), Not Null

Suppliers Table:

This table schema defines columns for supplier information, including unique identifiers, names, contact information, and addresses.

Column Name	Data Type	Description	Constraints
supplier_id	INTEGER	Unique identifier for each supplier	Primary Key
supplier_name	VARCHAR	Name of the supplier	Not Null
contact_info	VARCHAR	Contact information of the supplier	Not Null
address	VARCHAR	Address of the supplier	Not Null

Property Table:

This table schema outlines columns for property data, including unique identifiers, addresses, statuses, and listing prices.

Column Name	Data Type	Description	Constraints
property_id	INTEGER	Unique identifier for each property	Primary Key
address	VARCHAR	Address of the property	Not Null
status	VARCHAR	Status of the property (e.g., available, sold)	Not Null
listing_price	DECIMAL	Listing price of the property	Not Null

Sales Table:

This table schema defines columns for sales transactions, including unique identifiers, sale dates, customer identifiers, property identifiers, employee identifiers, and total sale amounts.

Column Name	Data Type	Description	Constraints
sale_id	INTEGER	Unique identifier for each sales transaction	Primary Key
sale_date	DATE	Date of the sale	Not Null
customer_id	INTEGER	Identifier for the customer	Foreign Key (customers.customer_id), Not Null
property_id	INTEGER	Identifier for the property sold	Foreign Key (property.property_id), Not Null
employee_id	INTEGER	Identifier for the employee handling the sale	Foreign Key (employees.employee_id), Not Null
total_amount	DECIMAL	Total amount of the sale	Not Null

THANK YOU