Sterling Homes-Database Design

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Sterling Homes

Sterling Homes is a home building company that operates in several locations across Canada, including Calgary. They specialize in building single-family homes, town homes, and condominiums. Their focus is often on providing quality craftsmanship, innovative designs, and customer satisfaction.

Mission:

A Sterling Homes company is building a house and apartment, they want to record details of inventory like inventory stock, types, purchase data and also create centralized systems. A track sales data of property, which help for decision making and improve company growth.

A good database is helping to maintain data of company and help to know about customer preference, market trends and also perform strategic like price and product development and future development in real estate market.

Business Rules:

1.**Property Rules**:

- Each property should have unique identifier, which help to know accurate data of property.
- Property data must have information like type of homes and address and also price of property.
- Property price is more than zero and in numeric.

2. **Customer Rules**:

- Every customer should have unique identifier which create uniqueness in details of customer.
- Customer information should have information like name ,contact information and address detail ,in which street address and city zipcode.
- Customer contact details must have phone number or valid email id.

3.**Transaction Rules**:

- Each sale must have the unique identifier.
- Each transaction should have information about customer, listing price and employee details who responsible for this transaction.
- Sale transaction must have sold price and sale date.

4.**Employee Rules**:

- Each employee must have their unique identifier.
- Employee table must detail of employee name, contact information, roles and hire dates.

5.**Supplier Rules**:

- Each Supplier must have their unique identifier.
- Required fields like supplier name ,contact information and address .

Subjects:

1.**Stockouts**:

Sterling homes is facing problems regarding stockouts products, which may affect company growth and it takes more time complete task.

2.**Overstocking**:

Some time sterling homes are facing overstocking problems because of number of properties which may create huge loss for company and growth.

3.**Centralized System**:

Sterling homes wants to make centralized system in order to maintain all things at one platform which help to reduce time as well as it improves company growth.

4.**Record Accuracy**:

Sterling homes is using manual data entry which create data errors and lack of standardized process can lead to in accuracies.

5.**Decision-making**:

At Sterling Homes, our decision-making is driven by a combination of data from centralized systems, real-time market information, and historical performance metrics that help us adapt to market conditions, deploy assets and execute strategies effectively.

Tables:

Supplier Table: Manage supplier details such as names, contact information and address.

Inventory Table: Manage inventory item including product details, quantities, prices, suppliers and responsible employees.

Customer Table: store information about customers including their names, contact details and address.

Employee Table: records information about employees including their roles, contact information and hire dates.

Sales Table: Tracks Sales transactions, capturing the details as sale dates customer, employees involved and total amount.

Property Table: Manage details of properties available for sale, including address, listing prices and statuses.

List of attributes:

Supplier Table:

1. **Supplier_ID**:

   Supplier_id is the unique identifier that describe each supplier in the sterling homes database. supplier id is operates as the primary key into the database table that help to data retrieve and information handling.

2. **Supplier_Name**:

   The supplier_name represents the name of supplier which connected with sterling homes .it provide clear identifier of supplier details and it will reflect accurately legal entity.

3. **Contact_info**:

This field contains the contact information for the supplier. It can include phone numbers, email addresses, website URLs, or any other means of contacting the supplier. Having this information readily available is vital for communication purposes, such as placing orders, resolving issues, or making inquiries.

4.**Address**:

This field holds the physical address of the supplier. It typically includes details such as street address, city, state or province, postal code, and country

Inventory Table:

1.**inventory_id**:

This field use as a unique identifier for each inventory item in the table. it's typically a numeric. This is crucial for maintaining data integrity.

2.**Product_name**:

This field stores the description of product which help to identify the product and is often used in reports and sales transactions. Having accurate information about the product help management and sales departments to analyse.

3.**Quantity_available**:

This field represents the quantity of product available in the inventory.it stores in a numeric value which help to identify number of units available in stock.

4. **Unit_price**:

This field contains the price of products. Having unit price allows for circulating the total value of inventory, determining the cost of goods sold.

5.**Supplier_id**:

This field represents the unique identifies of supplier information. This field references from supplier table, which help to retrieve data of product.

6.**Date_received:**

This field records the date when inventory item was received. This field helps to track the inventory control through the date of receipt, managing stock turnovers.

7. **Employee_id**:

This field identifies the employee who are responsible for managing inventory items. Tracking employee involvement

provides accountability, facilitates auditing processes, and helps monitor employee performance in inventory management tasks.

Customer Table:

1.customer_id:

This field serves as unique identifier for each customer in database. The Customer_id acts as the primary key, guaranteeing the uniqueness and integrity of each customer entry.

2.**customer_name**:

This field store name of customers like first name and last name, which help to recognise customers orders and managing interactions.

3.**contact_info**:

This field stores contact details of customer like mobile number and email id ,which help to maintain

communication with them and provide order updates and promotions.

4.**address**:

This field stores the physical address of the customer.in this fields including details like street address, city, state, postal code and country. Recording customer's address to provide delivery service and help for analyse the sale of property according to area.

Employee Table:

1.employee_id:

This attribute serves as unique identifier for each employee in database.

2.employee_name:

This field store name of employee associated with the record.it helps to identifying individual employee.

3.employee_role:

This field contains the role of employee within sterling homes. This attribute defines the responsibility, duties and level of the employee within the organization.

4.hire_date:

This field represents the date when employee was hired by organizations. Tracking the hire date is essential for HR and organizations purpose like calculating employee tenure and managing benefits eligibility.

5.contact_info:

This field contains contact information of employee such as mobile phone and email id which help organization to provide information regarding work ,schedule and emergency notification.

Sales Table:

1.customer_id:

This field represents the customer unique identifier in customer table. This attribute references from customer table in order to record the sale details.

2.sales_id:

This field represents the unique sale transactions within database. This attribute acts as primary key ,ensuring uniqueness and integrity of each sales record.

3.sales_date:

This field records the date of sale transactions happened. tracking the sale dates is essential for analysing sales trends over time, monitoring sales performance.

4.property_id:

This field represents the unique property id from property table. It references from property table which help to retrieve data of property sale.

5.total amount:

This field stores the total amount of sales transaction.

6.employee_id:

This field represents the unique employee id from employee table.

Property Table:

1.property_id:

This field serves as unique identifiers. This id help to retrieve data of property detail.

2.address:

This field store the physical address of property.this attribute includes details such as street address, city, state and country.

3. status:

This field represents the status of property including property is ready for sale or not.

4.listing_price:

This field contains the listing price of property. This attribute provides valuable information about property market's value and pricing strategy.

Entity of relationships:

Sales and employees (one to many): an employee can be associated with multiple sales transactions.

Inventory and employee (many to many):an employee can manage multiple inventory items.

Inventory and suppliers (one to many): a supplier can supply multiple inventory items.

Sales and customers (one to many): a customer can be associated with multiple sales transactions.

Property and sales (one to many): each property record is unique and can have multiple sales records.

Data Dictionary:

I created a database for sterling homes company, which can help them to improve the data accuracy and maintain the inventory data.

I created six tables in database like supplier, employees, customer, Inventory sales and property table and also set key which help to retrieve data from different table .it is best for data analysis.

Property Table:

Fields	Key	Datatype
Property_id	Primary Key	Integer
address		Varchar
status		Varchar
Listing_price		decimal

Inventory Table

Fields	key	Datatype
inventory_id	Primary Key	Integer
Product_name		varchar
Quantity_available		Integer
Unit_price		decimal
supplier_id	Foreign key	integer
Date_received		date
Employee_id	Foreign key	integer

Customer Table:

Fields	key	Datatype
CustomerID	Primary Key	Integer
Customer_name		Varchar
Contact_info		Varchar
Address		Varchar

Suppliers Table:

Fields	key	Datatype
Supplier_id	Primary Key	Integer
supplier_name		Varchar
Contact_info		Varchar
Address		Varchar

Employee Table :

Fields	key	Datatype
Employee_id	Primary Key	Integer
employee_name		Varchar
Employee_role		Varchar
hire_date		date
Contact_info		varchar

Sales Table:

Fields	key	Datatype
customer_id	Foreign key	Integer
sales_id	Primary key	integer
sales_date		date
property_id	Foreign key	integer
total_amount		decimal
Employee_id	Foreign key	integer

Conclusion

In conclusion, the database design for Sterling Homes lays a solid foundation for efficient data management, enhanced business operations, and strategic decision-making. It empowers the company to leverage its data assets effectively, driving growth, innovation, and success in the competitive real estate market.

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