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CPS 542 M3

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Database Management System Project Proposal

Inventory Management System

Description

The focus of my proposal is to design and develop an inventory management system database for a supermarket store. The database will allow the store manager and the business owner to keep track of all the items in their store what are their current stock quantities, who is the supplier for these items if in case the store runs out of any items from the inventory also how long does the item takes to be procured once the order is placed with the supplier. The database would hold proprietary information and is designed with the assumption that only business owners and staff working at the supermarket store are allowed to see that information.

Entities:

Items:

Items are the products that are sold by the business in the supermarket store. Attributes of Item table are Item ID, Item Name, Item Description, Item Price.

Order:

Once the items go below a particular threshold value set by the business in the inventory an order is generated to procure the item and maintain the stock levels in the inventory so that the item never goes out of stock. Attributes of Order table are Order ID, Warehouse Id, Supplier Id, Order Date.

Supplier:

A supplier in an inventory management system is a company or individual that provides goods or services to a business. By storing this information about suppliers, the inventory management system can help businesses to make better decisions about purchasing and inventory management.

Attributes of Supplier table are Supplier ID, Supplier Name, Supplier Name, Supplier Contact, Street Address, City, State, Country.

Warehouse:

A warehouse is a physical location which is either owned or rented by the business i.e., the superstore in our project where all the inventory of the superstore is maintained. Each warehouse will have a unique code assigned to it so that it can be identified in the system uniquely. Attributes of Warehouse table are Warehouse ID, Warehouse Name, Street Address, City, State, Country.

Staff:

Staff is any actor who is employed by the supermarket store to carry out their day-to-day operations. The staff table will contain a unique identifier to help identify any person working for business uniquely. It will also contain their first names and last names along with their position and other contact information. Attributes of Staff table are Staff Id, Warehouse Id, First Name, Last Name, Designation, Manager Id.

Shipment:

A shipping container is a collection of goods and they are transported from one place to another. In inventory management, shipment is often associated with an order and can be used to track the movement of inventory. The shipment table can be linked to the Shipment Facilitator table, Supplier table and the warehouse table to provide additional information about the shipment. Attributes of Shipment table are Shipment Id , Warehouse Id, Supplier Id, Facilitator Id, Dispatch Address, Delivery Address, Dispatch Date.

Shipment Facilitator:

A Shipment Facilitator is someone who provides the services of delivering the shipment from one place to another i.e., from supplier to warehouse. Attributes of Shipment Facilitator table are Facilitator Id, Facilitator Name, Facilitator Cost i.e., the cost charged by the facilitator for moving the shipment from supplier to warehouse.

Transaction:

A transaction is a logical entity that is associated with inward and outward movement of items from the warehouse. Every inward and outward movement of items from the warehouse will have a unique identifier which will help the business identify the exact date and time when the event occurred along with other necessary information like warehouse name. Attributes of Transaction table are Transaction Id, Store Id, Warehouse Id, Transaction Date, Item Id, Quantity.

Relationships:

1. Store is linked to Transaction Table with Store ID
2. Warehouse is linked to Transaction Table with Warehouse ID
3. Warehouse is linked to Staff with Warehouse ID
4. Warehouse is linked to Shipment with Warehouse ID
5. Supplier is linked to Shipment with Supplier ID
6. Order is linked to Warehouse with Warehouse ID
7. Order is linked to Supplier with Supplier ID
8. Item is linked to Order with Order ID
9. Shipment Facilitator is Linked to Shipment table with Facilitator ID

Transactions of the system:

1. Get Information about specific Employee Working in warehouse.
2. Update the details of Shipment Facilitator.
3. Delete a Shipment Facilitator from the list of Shipment Facilitators to the business.
4. Add a new warehouse to the owned by the supermarket.
5. Delete a warehouse owned by the supermarket.
6. Add a new staff member to the Inventory Management System.
7. Delete a staff member from the Inventory Management System.
8. Update the inventory of a particular item in Inventory Management System.
9. Add a new supplier to the list of suppliers to the business.
10. Delete a supplier from the list of suppliers to the business.

ER Diagram: Inventory Management System

