Database model documentation

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1. Model details

Model name:

IMS Physical

Version:

2.4

Database engine:

MySQL

Description:

Simple Inventory Management System database model

2. Tables

2.1. Table Product

Description:

standard product attributes

2.1.1. Columns

Column name	Type	Properties	Description
productID	int	PK	unique product ID number
productSKU	varchar(100)		internal product code (stock keeping unit)
productUPC	varchar(100)		external product code (universal product code)
productName	varchar(100)		product name
productDescription	varchar(1000)		detailed product description
productCategory	varchar(100)		product category (denormalized for simplicity)
reorderQuantity	int		for units not available for single unit order

2.2. Table Provider

Description:

provider of products

2.2.1. Columns

Column name	Type	Properties	Description
providerID	int	PK	unique ID
providerName	varchar(100)		name of provider
providerAddress	varchar(200)		address of provider (denormalized for simplicity)

2.3. Table Order

2.3.1. Columns

Column name	Type	Properties	Description
orderID	int	PK	unique ID
orderDate	date		date of order
Provider_providerID	int		unique ID

2.4. Table Order_Detail

Description:

detailed view of an order

2.4.1. Columns

Column name	Type	Properties	Description
orderDetailID	int	PK	unique ID
orderQuantity	int		number of products in order
estimatedDate	date		estimated arrival date
arrivalDate	date		actual arrival date
Order_orderID	int		unique ID
Product_productID	int		unique product ID number
Warehouse_sourceWarehouseID	int		unique ID
Warehouse_destinationWarehouseID	int		

2.5. Table Transfer

Description:

warehouse transfer entity.

2.5.1. Columns

Column name	Type	Properties	Description
transferID	int	PK	unique ID
transferQuantity	int		number of products transferred
sendDate	date		date products were sent out
receiveDate	date		date products were received

Product_productID	int		unique product ID number
Warehouse_sourceWarehouseID	int		unique ID
Warehouse_destinationWarehouseID	int		

2.6. Table Customer

2.6.1. Columns

Column name	Type	Properties	Description
customerID	int	PK	unique ID
customerName	varchar(100)		name of customer
customerAddress	varchar(200)		address of customer (denormalized for simplicity)

2.7. Table Delivery

2.7.1. Columns

Column name	Type	Properties	Description
deliveryID	int	PK	unique ID
saleDate	int		date of sale to customer
Customer_customerID	int		unique ID

2.8. Table Delivery_Detail

Description:

detailed view of delivery

2.8.1. Columns

Column name	Type	Properties	Description
deliveryDetailID	int	PK	unique ID
deliveryQuantity	int		number of products delivered
estimatedDate	date		estimated arrival date
arrivalDate	date		actual arrival date
Delivery_deliveryID	int		unique ID

Product_productID	int		unique product ID number
Warehouse_sourceWarehouseID	int		unique ID
Warehouse_destinationWarehouseID	int		

2.9. Table Inventory

Description:

relational entity between product and warehouse

2.9.1. Columns

Column name	Type	Properties	Description
inventoryID	int	PK	unique ID
quantityAvailable	int		quantity on-hand
minStockQuantity	int		minimum number of units required to ensure no shortages at warehouse
maxStockQuantity	int		maximum number of units required to ensure no shortages at warehouse
reorderPoint	int		when the number of product units reaches this point, a purchase order must be generated.
Warehouse_sourceWarehouseID	int		unique ID
Warehouse_destinationWarehouseID	int		
Product_productID	int		unique product ID number

2.10. Table Warehouse

Description:

physical storage area within a 'Location"

2.10.1. Columns

Column name	Type	Properties	Description

sourceWarehouseID	int	PK	unique ID
destinationWarehouseID	int	PK	
warehouseName	varchar(100)		name of warehouse
Location_locationID	int		unique location ID

2.11. Table Location

Description:

inventory locations

2.11.1. Columns

Column name	Type	Properties	Description
locationID	int	PK	unique location ID
locationName	varchar(100)		name of location
locationAddress	varchar(200)		full address of location (denormalized for simplicity)

3. References

3.1. Reference Order_Provider

Provider	0..*	Order
providerID	<->	Provider_providerID

3.2. Reference OrderDetail_Order

Order	1..*	Order_Detail
orderID	<->	Order_orderID

3.3. Reference Delivery_Customer

Customer	0..*	Delivery
customerID	<->	Customer_customerID

3.4. Reference DeliveryDetail_Delivery

Delivery	1..*	Delivery_Detail
deliveryID	<->	Delivery_deliveryID

3.5. Reference Warehouse_Location

Location	0..*	Warehouse
locationID	<->	Location_locationID

3.6. Reference OrderDetail_Product

Product	0..*	Order_Detail
productID	<->	Product_productID

3.7. Reference Transfer_Product

Product	0..*	Transfer
productID	<->	Product_productID

3.8. Reference OrderDetail_Warehouse

Warehouse	0..*	Order_Detail
sourceWarehouseID	<->	Warehouse_sourceWarehouseID
destinationWarehouseID	<->	Warehouse_destinationWarehouseID

3.9. Reference Inventory_Warehouse

Warehouse	0..*	Inventory
sourceWarehouseID	<->	Warehouse_sourceWarehouseID
destinationWarehouseID	<->	Warehouse_destinationWarehouseID

3.10. Reference Inventory_Product

Product	0..*	Inventory
productID	<->	Product_productID

3.11. Reference Transfer_sourceWarehouse

Warehouse	0..*	Transfer
sourceWarehouseID	<->	Warehouse_sourceWarehouseID
destinationWarehouseID	<->	Warehouse_destinationWarehouseID

3.12. Reference Transfer_destinationWarehouse

Warehouse	0..*	Transfer
sourceWarehouseID	<->	Warehouse_sourceWarehouseID
destinationWarehouseID	<->	Warehouse_destinationWarehouseID

3.13. Reference DeliveryDetail_Product

Product	0..*	Delivery_Detail
productID	<->	Product_productID

3.14. Reference DeliveryDetail_Warehouse

Warehouse	0..*	Delivery_Detail
sourceWarehouseID	<->	Warehouse_sourceWarehouseID
destinationWarehouseID	<->	Warehouse_destinationWarehouseID