

HAND ME DOWNS - A Recommerce Platform

Logical Model

Group 13:

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Mapping the conceptual model to the relational model:

End-User(UserID, FirstName, LastName, DateofBirth, Gender, Address, Phno., DateofJoining, Email, Password, BillingInfo(Card No., ExpiryMonth, ExpiryYear, SecurityNumber))

Seller(SellerID, Identification_ID, Noof_productsold, *UserID*)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

Buyer(BuyerID, *UserID*)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

Product(Product_id, Product_Category, Product_Name, Product_Description, UnitPrice, Quantity, *SellerID*, *Warehouse_id*)

SellerID and Warehouse_id are foreign keys referring to entity types "Seller" and "WarehouseStorage", NULL not allowed

Cart(CartId, Total Price, *BuyerId*)

BuyerId refers to entity type "Buyer", NULL not allowed

Reviewed-by(ReviewID, DateofAssessment, AssessmentRemarks, Rating, *Employee_id*, *Product_id*)

Employee_id and Product_id are foreign keys referring to entity types "Employees" and "Product", NULL not allowed

ProductPickup(Pickup_id, Expected_pickupdate, Pickuprequest_placeddate, Actual_pickupdate, Expected_deliverydate, Actual_deliverydate, *SellerID*, *Shippingid*)

SellerID and Shippingid are the foreign key which reference to entity types "Seller" and "Shipping Information", NULL not allowed

Employees(Employee_id, Employee Name, DateofBirth, DateofJoining, Address, Phone_Number, Email)

WarehouseStorage(Warehouse_id, Warehouse_location, Dropofftime, Dropoffdate, No.ofdaysstored, SentforDelivery_time, SentforDeliveryDate)

Orders(Orderid, Order date, Expected delivery date, *BuyerID*)

BuyerID is the foreign key which references to entity type "Buyer", NULL not allowed

ShippingInformation(Shippingid, Shippertrackingno., Shipperservicename, ContactNo., Email, DeliveryTime, Deliverypartnername, *Orderid*, *Pickupid*)

Orderid and Pickupid are the foreign keys which reference to entity types "Orders" and "ProductPickup", NULL not allowed

ProductsReturn(Returnid, Buyerid, Shippingid, Return_Requestdate, ActualPickupdate, Expectedpickupdate, ExpectedDeliverydate, ActualDeliverydate)

Buyerid and Shippingid are the foreign keys which reference to entity types "Buyer" and "ShippingInformation", NULL not allowed

Normalizing the relational model:

1NF

End-User(UserID, FirstName, LastName, DateofBirth, Gender, Address, Phno., DateofJoining, Password, Card No., ExpiryMonth, ExpiryYear, SecurityNumber)

End-User-Email(Email, UserID)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

Employees-Phone(Phone_Number, Employee_id)

Employee_id is the foreign key which references to entity type "Employees", NULL not allowed

Employees-Email(EmailID, Employee_id)

Employee_id is the foreign key which references to entity type "Employees", NULL not allowed

2NF

Product(Product_id, Product_Category, Product_Name, Product_Description, UnitPrice, Quantity)

Product-Soldby-Seller(Product_id, SellerID)

Product-Stored-in(Product_id, Warehouse_id)

SellerID and Warehouse_id are foreign keys referring to entity types "Seller" and "WarehouseStorage", NULL not allowed

Reviewed-by(ReviewID, AssessmentRemarks, Rating, DateofAssessment, Product_id)

Reviewed-by(ReviewID, Employee_id)

Employee_id and Product_id are foreign keys referring to entity types "Employees" and "Product", NULL not allowed

ProductPickup(Pickup_id, Expected_pickupdate, Pickuprequest_placeddate, Actual_pickupdate, Expected_deliverydate, Actual_deliverydate)

Productpickupinfo(Pickup_id, SellerID, Shippingid)

Shippingid and SellerID are foreign keys referring to entity types "ShippingInformation" and "Seller", NULL not allowed

Orders(Orderid, Order_date, Expected_Delivery_date)

Order-BuyerInfo(Orderid, BuyerID)

BuyerID is the foreign key referring to entity type "Buyer", NULL not allowed

ShippingInformation(Shippingid, Shippertrackingno., Shipperservicename, ContactNo., Email, DeliveryTime, Deliverypartnername)

ShippingOrderPickup(Shippingid, Orderid, Pickupid)

Orderid and Pickupid are the foreign keys which reference to entity types "Orders" and "ProductPickup", NULL not allowed

ProductsReturn(Returnid, Return_Requestdate, ActualPickupdate, Expectedpickupdate, ExpectedDeliverydate, ActualDelivery date)

ShippingReturn(Returnid, Shippingid, Buyerid)

Buyerid and Shippingid are the foreign keys which reference to entity types "Buyer" and "ShippingInformation", NULL not allowed

3NF

ShippingInformation(Shippingid, Shippertrackingno.)

ShipperInfo(Shippertrackingno., Shipperservicename, ContactNo., Email, DeliveryTime, Deliverypartnername)

Final Relational Model After Normalization

1.End-User(UserID, FirstName, LastName, DateofBirth, Gender, Address, Phno., DateofJoining, Password, Card No., ExpiryMonth, ExpiryYear, SecurityNumber)

2.End-User-Email(Email, UserID)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

3.Seller(SellerID, Identification_ID, Noof_productssold,UserID)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

4.Buyer(BuyerID, UserID)

UserID is the foreign key which references to entity type "End-User", NULL not allowed

5.Employees(Employee_id, Employee Name, DateofBirth, DateofJoining, Address)

6.Employees-Phone(Phone_Number, Employee_id)

Employee_id is the foreign key which references to entity type "Employees", NULL not allowed

7.Employees-Email(EmailID, Employee_id)

Employee_id is the foreign key which references to entity type "Employees", NULL not allowed

8.Product(Product_id, Product_Category, Product_Name, Product_Description, UnitPrice, Quantity)

9.Product-Soldby-Seller(Product_id, SellerID)

SellerID is the foreign key which references to entity type "Seller", NULL not allowed

10.Product-Stored-in(Product_id, Warehouse_id)

Warehouse_id is the foreign keys referring to entity types "WarehouseStorage" NULL not allowed

11.Cart(CartId, Total Price, BuyerId) *BuyerId refers to entity type Buyer NULL not allowed*

12.ProductPickup(Pickup_id, Expected_pickupdate, Pickuprequest_placeddate, Actual_pickupdate, Expected_deliverydate, Actual_deliverydate)

13.Productpickupinfo(Pickup_id, SellerID, Shippingid)

SellerID and Shippingid references entity types Seller and ShippingInfo

14.Orders(Orderid, Order_date, Expected_Delivery_date)

15.Order-BuyerInfo(Orderid, *BuyerID*)

16.Order-BuyerInfo(Orderid,*ShippingInfo*)

17.Reviewed-for(ReviewID, AssessmentRemarks, Rating, DateofAssessment, *Product_id*)

18.Reviewed-by-(ReviewID, *Employee_id*)

Employee_id is foreign key referring to entity types "Employees" NULL not allowed

19.ShippingInformation(Shippingid, *Shippertrackingno.*)

20.ShipperInfo(Shippertrackingno., Shipperservicename, ContactNo., Email, DeliveryTime, Deliverypartnername)

21.ShippingOrderPickup(Shippingid, *Orderid*, *Pickupid*)

22.ShippingReturn(Returnis, *Shippingid*, *Buyerid*)

Orderid ,*Pickupid* and *Returnid* is the foreign key which references to entity types "Orders" and "ProductPickup"

23.ProductsReturn(Returnid, Return_Requestdate, ActualPickupdate, Expectedpickupdate, ExpectedDeliverydate, ActualDelivery date)

24.WarehouseStorage(Warehouse_id, Warehouse_location, Dropofftime, Dropoffdate, No.ofdaysstored, SentforDelivery_time, SentforDeliveryDate)