Entities & Attributes

Cart – A specific cart for a user

- Cart # - A surrogate key that uniquely identifies a cart
- Cart Total – The total value of a cart

Product – A product sold on the website and its inventory data

- Product ID – A surrogate key that uniquely identifies a product
- Name – the name of the product
- Price – the price of the product
- In Stock – Number of this product in stock

User – A specific user

- Username – A natural key that uniquely identifies a user
- Email – The user's email
- First Name – The first name of the user
- Last Name – The last name of the user

Order – A specific order in the system

- Order Num – A surrogate key that uniquely identifies an order. Also used for tracking
- Order Total – the total price of an order
- Status – the status of an order
- DateTime – the date and time an order was created

Shipping Location – A stored shipping location for a customer

- Loc ID # - A surrogate key that uniquely identifies a stored location
- Apt / Suite # - The apartment or suite number for a shipping location
- Zip Code – the zip code for a shipping location
- State – the state of the shipping location
- Shipping Addr – the street address of the shipping location

Relationships

Has A – Cart & User

A user must be associated with a cart that they can use to track items they wish to purchase. No new attributes are created upon this connection.

Contains – Cart & Product

A cart contains products. When this association is made, a quantity of said product must be stored as a new attribute.

Contains – Product & Order

An order also contains products. When this association is made, a quantity of said product must be stored as a new attribute.

Makes – User & Order

Orders must be connected to the user who placed them. No new attributes need to be created when this association is made.

Ships To – Order & Shipping Location

An order must ship to a stored shipping location. If the location does not already exist, it will be created before this association is made. No new attributes are created because of this relationship.

Receives At – User & Shipping Location

A User should be able to associate their account with a shipping location for easier checkout. No new attributes need to be created.

Relational Schema

Tables

' represents a foreign key

User(<u>Username</u>, Password, Email, First_Name, Last_Name, Is_Admin)

Cart(<u>Cart_Number</u>, Username', Cart_Total)

- Username comes from the User table

Contains(<u>Cart_Number'</u>, <u>Product_ID'</u>, Quantity)

- Cart_Number comes from Cart
- Product_ID comes from Product

Product(<u>Product_ID</u>, Name, Price, In_Stock)

Shipping_Location(<u>Loc_ID</u>, Username', Shipping_Addr, Apt_Suite, Zip, City, State)

- Username comes from User

Product_Order(<u>Product_ID'</u>, <u>Order_Number'</u>, Quantity)

- Product_ID comes from Product
- Order_Number comes from Order

Order(<u>Order_Number</u>, Username', Loc_ID', Order_Total, Status, Order_DateTime)

- Username comes from User
- Loc_ID comes from Shipping Location