Curious_hers

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Online shopping Application

Introduction

The mini-world we've chosen is an eCommerce website, which provides clothing for men, women, and kids. This application allows users to shop fashionable clothing online. There would be different categories of products like clothes for men, women, kids. Users will be able to order the products of their preference and add desired products to their cart. This is an overview of the miniworld.

Purpose

The purpose of the database is to store details of users, keep track of their orders, payments, transactions.Beyond the user, It also stores details of suppliers for various products, delivery agents, shipping details etc.

Users

- Suppliers
- users(customers)
- Organizers
- Delivery agents

Applications

- Managers will be able to know the orders and ensure delivery of products.
- We can analyse brands' performance based on various reviews.
- Marketing teams can analyse potential users and create targeting lists for different advertisements.
- Customers will be able to keep track of previous orders, payments, review products etc.

Database Requirements

Entities

1.User (key attribute-User ID or Email ID)
   ➢ User ID   [10 digits]

- ➢ Name(First Name,Last Name) [<=20 char] *composite
- ➢ Email ID   [<=30 char]
- ➢ Phone no   [<=12 digits] *multivalued
- ➢ Address(line1,line2,city,district,state,country,pincode) [<=200char]*composite
- ➢ Password   [<=8 char]
- ➢ Age[<=100]
- ➢ Gender [M/F/O]

2.Product (key attribute-Product code)
- ➢ Product code [10 digits]
- ➢ Name   [<=20 char]
- ➢ Colour [<=20 char]
- ➢ Stock   [<=10000]
- ➢ Description [<=500 char]
- ➢ Product availability [Yes/No]
- ➢ Manufacturer details(Company name,Address) *composite
  [<=200 char] -composite
- ➢ Brand name [<=15 char]
- ➢ Available Sizes(some of XS/S/M/L/XL/XXL) * multivalued
- ➢ Original Price
- ➢ Current price → derived attribute
- ➢ No of products sold out.
- ➢ discount
  - ● Sub classes-> men wear, women wear, kids wear

3.Payment   key attribute-(Transaction ID)
- ➢ Transaction ID [12-18 digits]
- ➢ Mode of payment [<=10 char]
- ➢ Status [<=10 char]
- ➢ Total price (derived attribute)

4.Supplier   key attribute-(supplier ID)
- ➢ Seller ID
- ➢ Name (First name,Last name) [<=20 char]
- ➢ Address (line1,line2,city,district,state,country,pincode)- [<=200char]*composite

5. Order key-Order ID
- ➢ Order ID
- ➢ Time stamp
- ➢ Expected date of delivery (derived attribute)
- ➢ Status [<=10 char]
- ➢ Date

6.Shipper   key-Shipper ID
- ➢ Shipper ID

➢ Company name [<= 50 char]
➢ Address (line1,line2,city,district,state,country,pincode)- [<=200char]*composite

Weak Entity:

1.Review key -(userID+product ID)
➢ Rating [1 to 5]
➢ Quality [1 to 5]
➢ Fitness [1 to 5]
➢ Length [1 to 5]
➢ Transparency [1 to 5]
➢ Text [1 to 5]

2. Cards key - (user ID+Card No)?
➢ Card type [Credit/debit]
➢ Card No [16 digits]
➢ Expiry Month [2 digits]
➢ Expiry year [4 digits]

3. Order details key-(customer ID + order ID + product code)
➢ Quantity [<=100]
➢ size [<5 char]
➢ price to be paid

Relationships

1. Relation between supplier and product (relation name:supply)
   a.Binary Relationship
   b.Related in 1:n ratio
   c.Participation of supplier is total and participation of product is total
   d.Structural constraint (1,n) for supplier and (1,1) for product

2. Relation between User and Cards (relation name: used)
   a.Binary Relationship
   b.Related in 1:n ratio
   c.Participation of the user is partial and participation of the card is total.
   d.Structural constraint (0,n) for User and (1,1) for card

3.Relation between order and payment (relation name:has)
   a.Binary relationship
   b.Related in 1:1 ratio
   c.Participation of order is total and participation of payment is total
   d.Structural constraint(1,1) for order and (1,1) for payment

4.Relation between order and shipper(relation name ships)
   a.Binary relationship
   b.Related in 1:n ratio
    c.Participation of order is total and participation of payment is total
   d.Structural constraint(1,1) for order and (1,n) for shipper

5.Relation between user,product and review
   a.Ternary relationship
   b.An user can give only one review to one product and an user can give
    review to multiple products and a product can be reviewed by multiple
    users

n>3 Relationships:
1. Relation between user,product,order,order details
   a.fourth degree relationship
   b.An order ordered by a user contains some products each having order details

Functional Requirements

Insert:

➢Insert users info when a new account is created and insert card details if they want.
➢Insert product info when new stock arrives.
➢Insert order details when the user places an order.
➢Insert reviews to products given by users.
➢Insert info of new suppliers,shippers when they make deal with them

Delete:
➢Delete an order info when a person cancels his order
➢Delete a user info when he removes his account.
➢Delete Shippers info when they cancel their deal with them.

Update:
➢Update users info when they change their details such as password,phone no etc.
➢Update stock available each time a product is sold out.
➢Update status of payment when payment is done and status of order.

Retrievals
1.selection:

➢Retrieve complete data tuples of products belonging to a particular brand or   particular category.
➢Retrieve complete data tuples of male users.
➢Retrieve complete data of orders shipped by a company.

2.Projection:
➢List out the users whose age>25.
➢Products whose price is >=2000.

3.Aggregate:
➢Total amount to be paid by user for an order.
➢Average rating of a product totally or in terms of quality,transparency etc.

4.Search:
➢List out the products whose name partially matches with text.

5.Analysis:
➢Brand which has the highest average rating of its product.
➢Total no of 5 star ratings given to a product.