Java Programming
(MCA 372)
CAC – 1

Submitted by:

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Domain: E-commerce Website : Stickersbaba.com

Entities/Classes:
1. Admin – The administrator or owner of the website
2. Users/Customers – The customer who will come and purchase the products
3. Categories – A class or group of products (Electronics, Clothing)
4. Products – Different types of products on a website (Earphones, mobiles)
5. Seller – The one who is selling the products of the marketplace
6. Orders – The orders received on the website
7. Deliveries – orders that are supposed to be delivered to the customer
8. Transaction reports – details of tax invoices, GST.
9. Payment – reports of cash, non-cash payments, credits and personal transaction.
10. Customer details – personal details of the customer (address, name etc.)

Attributes:

1. Admin

- username (string): the username of the admin
- password (string): the password of the admin, stored in encrypted form for security reasons
- email (string): the email address of the admin
- role (string): the role of the admin, e.g. "super admin" or "moderator"
- date created (date): the date the admin account was created
- date modified (date): the date the admin account was last modified
- status (string): the status of the admin account, e.g. "active" or "disabled"
- contact number (string): the phone number of the admin
- last login (date): the date the admin last logged in
- permissions (list of strings): the permissions assigned to the admin account, e.g. "add product", "delete user", etc.

2. Users/Customers

- name (string): the name of the user/customer
- email (string): the email address of the user/customer
- password (string): the password of the user/customer, stored in encrypted form for security reasons
- billing address (string): the billing address of the user/customer
- shipping address (string): the shipping address of the user/customer
- date created (date): the date the user/customer account was created
- date modified (date): the date the user/customer account was last modified
- status (string): the status of the user/customer account, e.g. "active" or "disabled"

- contact number (string): the phone number of the user/customer
- orders (list of Order objects): the list of orders placed by the user/customer

3. **Categories**

- name (string): the name of the category, e.g. "Electronics" or "Clothing"
- description (string): a description of the category
- parent category (Category object): the parent category of the category, if any
- date created (date): the date the category was created
- date modified (date): the date the category was last modified
- status (string): the status of the category, e.g. "active" or "disabled"
- products (list of Product objects): the list of products in the category

• category ID (integer): a unique identifier for the category, assigned by the system

- is_visible (Boolean): indicates whether the category is visible to customers on the website.
- popularity score (float): a score that indicates how popular the category is, based on the number of times it has been viewed or clicked by customers.

4. **Products**

- name (string): the name of the product, e.g. "Earphones" or "Mobiles"
- description (string): a description of the product
- price (decimal): the price of the product
- stock (integer): the current stock of the product
- category (Category object): the category to which the product belongs
- seller (Seller object): the seller of the product
- date created (date): the date the product was created
- date modified (date): the date the product was last modified
- status (string): the status of the product, e.g. "active" or "disabled"
- image (string): the URL of the product image

5. **Seller**

- name (string): the name of the seller
- email (string): the email address of the seller
- password (string): the password of the seller, stored in encrypted form for security reasons
- billing address (string): the billing address of the seller
- shipping address (string): the shipping address of the seller
- date created (date): the date the seller account was created
- date modified (date): the date the seller account was last modified

- status (string): the status of the seller account, e.g. "active" or "disabled"
- contact number (string): the phone number of the seller
- products (list of Product objects): the list of products sold by the seller

6. **Orders** :

- order number (string): a unique identifier for the order
- customer (User/Customer object): the user/customer who placed the order
- products (list of Product objects): the list of products ordered in the order
- total price (decimal): the total price of the order
- date created (date): the date the order was created
- date modified (date): the date the order was last modified
- status (string): the status of the order, e.g. "pending", "shipped", etc.
- payment (Payment object): the payment details for the order
- delivery (Delivery object): the delivery details for the order

7. **Deliveries :**

- delivery number (string): a unique identifier for the delivery
- order (Order object): the order to which the delivery belongs
- shipping address (string): the shipping address for the delivery
- delivery date (date): the date the delivery is scheduled for
- delivery status (string): the status of the delivery, e.g. "in transit", "delivered", etc.
- delivery person (string): the name of the delivery person assigned to the delivery
- delivery person contact (string): the contact number of the delivery person
- delivery notes (string): any notes related to the delivery, e.g. "leave at doorstep"
- E-way Bill no (string) : A number given to orders if order values is greater than 50k.
- Delivered to - (string) (name to whom the product is delivered it will reflect in the main portal of customer)
- Delivery comments (string)– (Customer comments at the time of delivery)

8. **Transaction reports :**

- transaction ID (string): a unique identifier for the transaction
- total transaction (Int) : total number of transactions done in day
- transaction amount (Int) : amount of transaction done by the user
- order (Order object): the order for which the transaction was made
- payment (Payment object): the payment details for the transaction
- date created (date): the date the transaction was created
- transaction type (string): the type of the transaction, e.g. "credit card", "COD", etc.

- transaction amount (decimal): the amount of the transaction
- transaction status (string): the status of the transaction, e.g. "successful", "failed", etc.
- transaction notes (string): any notes related to the transaction
- B2B transactions(Int) : business 2 business transactions
- B2C transactions(Int) business 2 customer transactions

9. **Payments** :

- payment ID (string): a unique identifier for the payment
- transaction (Transaction object): the transaction for which the payment is made
- payment type (string): the type of the payment, e.g. "credit card", "debit card", etc.
- payment amount (decimal): the amount of the payment
- payment status (string): the status of the payment, e.g. "successful", "failed", etc.
- payment date (date): the date the payment was made
- payment notes (string): any notes related to the payment
- Cash payments (integer): the total amount of payments made in cash
- Non-cash payments (integer): the total amount of payments made by non-cash methods, such as credit card or digital wallet
- GST % (decimal): the applicable GST (Goods and Services Tax) percentage, which could vary depending on the location or type of product being sold
- Payment status (string): the status of the payment, e.g. "paid", "pending", "failed", etc.
- Payment receipt (integer): the unique identifier of the payment receipt, which can be used to track the payment and verify its authenticity.

10. **Customer details :**

- Customer ID (integer): a unique identifier assigned to each customer by the system
- Customer name (string): the name of the customer
- Customer email (string): the email address of the customer
- Customer number (integer): the phone number of the customer
- Customer orders (list of Order objects): the list of orders placed by the customer
- Customer transactions (list of Transaction objects): the list of transactions made by the customer
- Customer order success rate (float): the success rate of the customer's orders, calculated as the ratio of successful orders to total orders
- Customer address (string): the address of the customer
- Customer ratings (integer): the average rating given by other customers to this customer, based on their behavior or reviews
- Order tracking (string): a link or code that the customer can use to track the status of their orders.

Entities that satisfy the IS_A and HAS_A relationship in the domain of an ecommerce website (stickersbaba.com) are:

- IS_A: Product, HAS_A: Brand - A product on an ecommerce website is a type of item that a customer can purchase. Each product is associated with a brand, which is a characteristic of the product.

- IS_A: Customer, HAS_A: Order - A customer is a person who places an order on an ecommerce website. An order is a record of the products that the customer has chosen to purchase.

- IS_A: Cart, HAS_A: Item - A cart is a virtual container that customers use to keep track of the items they want to purchase on an ecommerce website. Each item in the cart is a product that the customer has chosen.

- IS_A: Payment, HAS_A: Method - Payment is a process of transferring money from the customer to the seller. A payment method is a way in which the customer can make the payment.

- IS_A: Seller, HAS_A: Product - A seller is a person or entity who sells products on an ecommerce website. Each product on the website is associated with one or more sellers who offer it for sale.
- IS_A: Order, HAS_A: Product - An order on an ecommerce website is typically made up of one or more products that the customer has selected for purchase.

- IS_A: Payment, HAS_A: Payment Method - A payment on an ecommerce website requires a payment method, such as a credit card or PayPal account.

- IS_A: Wishlist, HAS_A: Product - A wishlist on an ecommerce website allows customers to save products they are interested in purchasing for future reference.

- IS_A: Coupon, HAS_A: Discount - A coupon on an ecommerce website typically offers a discount on a product or order.

- IS_A: Review, HAS_A: Product - Reviews on an ecommerce website are typically associated with a specific product, and provide feedback and ratings from other customers who have purchased and used the product.

Class Diagram:

Admin

admin_id: int
admin_name: String
admin_password: String
admin_email: String
admin_phone: int
admin_education: String
admin_age: int
admin_height: int
admin_experience: String
admin_maritial_status : String

Connected to:

User

user_id: int
user_title: String
user_name: String
user_password: String
user_email: String
user_phone: int
user_alt_phone: int
user_city: String
user_pincode: String
user_state: String

Connected to:

Connected to:

Product

id : int
name : String
sku : String
retailPrice : double
costPrice : double
weight : double
brand : String
category : Category
variants : List<String>
customAttributes : List<String>
seoFields : Map<String, String>
seller : Seller

Category

id : int
name : String
description : String
imageUrl : String
sku : String
maxPrice : double
minPrice : double
brands : String
variants : List<String>
ratings : int
marketingClaims : List<String>

Connected to:

Seller

id : int
name : String
ratings : int
sales : int
address : String
experience : double
successRate : double
growth : double
categories : List<Category>
products : List<Product>

Connected to:

Order

id : int
number : int
amount : double
status : String
category : String
seller : Seller
invoiceNo : int
customer : Customer
delivery : Delivery

Connected to:

Delivery

orderNumber : int   Connected to:
customerName : String
customerPincode : int
customerAddress : String
amount : double
shipmentId : int
eWayBillNo : int
status : String
deliveredTo : String
comments : String

Connected to:

Customer

id : int
name : String
email : String
number : int
orders : List<Order>
transactions : List<Transaction>
address : String
ratings : int
orderSuccessRate : double

Connected to:

Transaction

id : string   Connected to:
count : int
amount : int
order : Order_obj
payment : Payment_obj
date : date
type : string
amount : decimal
status : string
notes : string
B2B : int
B2C : int

Connected to:

Payments

id : string
transaction : transaction_obj
type : string
amount : decimal
status : string
date : date
notes : string
cash_payment : int
non_cash : int
GST% : decimal
status : string
receipt : int