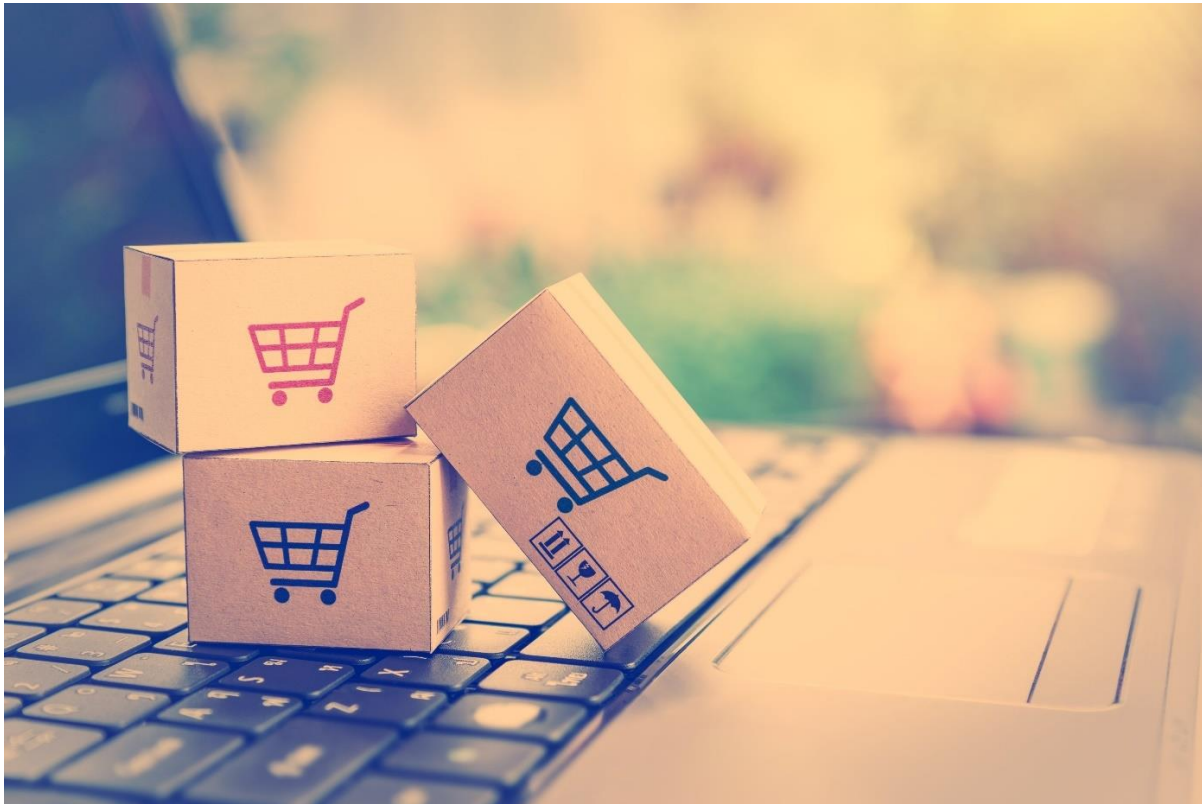


ECOMMERCE AND INVENTORY MANAGEMENT

❖ DATABASE PURPOSE:

The primary goal of the database is to store, track, and analyze the data generated by online shoppers and sellers in order to identify new market trends, customer bases that can lead to increased profit, market share, and corporate value. Further, the useful insights gained from the stored data can aid in strategic business decisions, making the business model far more long-term sustainable and profitable.

This database will be accessed by the administrative staff ,database admin and other relevant people responsible for analyzing the data stored in it.



❖ BUSINESS PROBLEMS ADDRESSED:

- The design will allow the organization to understand and report on Business trends.
- Inventory management is taken care of by tracking of the In-Stock status to fulfill the customer requirements and minimizing inventory holding cost.
- Allow the Revenue Department to analyze and track the Sales to earn required Business profits.
- Customer Loyalty and Customer Service experience is maintained by leveraging customers with Memberships/Subscriptions/Discounts.
- Security of rightly delivery of product is imposed by keeping a track of Supplier's profile and timely feedback consideration.

- Product return and refund policies are taken care of to provide satisfactory customer experience.
- Customer's order details are tracked for timely delivery of products to build Customer Relationship.
- Allows the Business owners to implement various Marketing and advertising policies based on the analyses of products purchased.

❖ **BUSINESS RULES:**

- Each customer can have multiple addresses.
- Each customer can place multiple orders.
- Each customer can have single payment mode.
- Each customer will have single membership.
- Each seller can have only one address and it can be updated.
- Each seller can list multiple products.
- Each seller will have multiple disbursements.
- Each seller can have one bank account for payment disbursement.
- Each product can receive multiple reviews/feedbacks.
- Each order can contain multiple products.
- Each product can have multiple orders.
- Each product will be in only one category.
- Each category can have multiple products.
- A product will have a single promotion/discount.
- A product can be listed in only one category.
- Each order can have only one order status.
- Each seller should have at least one product.
- Each Customer is able to manage the shoppingcart (Add products,remove products and change quantity)

❖ **DESIGN DECISIONS:**

Entity Name	Why entity Included	How entity is related to other Entities
Customer	The most important parameter to place an order is to create a user profile to login the account. Customer data will include all the personal details like FirstName,LastName,EmailID,password(for secure transaction and order processing),Contact details. Customer data is also required to analyze the spending pattern for each one for later marketing use to increase the end sales.	Customer entity is directly related to Orders, Memberships having many to one relationship. The CustomerAddress entity which is an associative entity is related to Address with many to one relationship.
Address	This entity holds all the details of the customer location or the Billing/Delivery address to where the order will be	This entity is linked to Customer with one to many relationship through an

	delivered. AddressID being the primary key distinguishes every customer location,	associative entity which is the customer address. As one customer can have different home and billing address.
Seller	All the details related to the suppliers will be recorded by this entity. The primary attributes are Seller ID(Primary key),Organization Name,Email and contact number,	Seller feedbacks can also be accessed by based on the products they have for sale. So it is linked to Feedback and Product entity with one to many relationship. As one seller can have many reviews for different product.
SellerAddress	This entity maintains and keeps a record of Seller/supplier location which denotes from where the products are shipped.	It shares one to one relationship with the Seller entity.
Membership	Membership entity,like promotions drives the marketing strategy to attract more customers and maintain the customer relationship. It has a unique MembershipID for each customer which is the primary key plus different plantype and plan expiry date.	It is linked to the Customer entity with many to one relationship defined various different membership plans subscribed by an individual customer.
Product	Product entity being the core helps to update and hold information regarding all the available products for sale/purchase. It is important to track the product details to make business decisions of increasing sales based of the Products purchased. This includes the Product_ID as the primary key following Product descriptions,Quantity(To keep a track of In/Out of Stocks Items),Ranking attributes.	Every Product falls under a Different category so this entity is then extended to ProductCategory entity. The Product entity is linked to seller through an associative entity SellerProduct to record all the products available for selling.
ProductTax	ProductTax is a weak entity and it hold the tax amount for a particular product. This helps the organization to generate the total revenue.	It is linked to Product with one to one relationship as only one tax amount is imposed on an individual product.
ProductCategory	In this entity, ProductCategoryID is to identity the category uniquely. This can help the customers to browse for the wished items easily.	ProductCategory enity has a Category name for e.g user can browse based on the different categories like Electronics,Colthing,Beauty & PersonalCare,Apps& Games etc.

Payment	Tracking and managing transactions are important jobs a database can do for an ecommerce system. It includes a unique paymentID(primary key) having customerID and OrderID as foreign keys. It holds the total billing amount,status of payment, paymentmode	One order can have only one payment so payment and order entity are linked with one to one relationship.
Order	Order is the main transactional piece that allows users to interact with the products.This entity records all the actual orders that are transferred from the shopping cart to the payment stage having a unique OrderID(Primary key) for every transaction.	The main attributes of Order are Quantity,Order amount,Order date. It has a one to one relationship defined with the payment entity as 1 order can only have one payment.
OrderStatus	To track the status of Order for each product to achieve timely delivery.	Here OrderID and customerID are the foreign keys and Status attribute is the key factor to keep a track of delivered products and linked to Order entity with one to one relationship as there can be just one status for one order
Promotions	Promotions entity is closely linked to Membership Entity to allow the business owners to implement Marketing strategies as promotional discounts can help boost the Sales.	Only one promotion will be applicable on a product. This implies the one to one relationship of Prootion with the product entity.
Feedback	Feedback entity accomplishes Customer Satisfaction and manages customer service experience in order to make business profits. Here feedback ID will uniquely differentiate the product wise reviews from customer. Also Seller feedbacks are recorded	Having attributes as Seller id, product id ,ranking and comment.
Disbursement	This entity manages the Seller payments having an unqiues DisbursementID as our primary key.	Here One Seller can have multiple payments to be processed so it has non identifying one to many relationship. The disbursement amount,Bankand Date are the attributes here.
Exchange	This entity gives the customer the flexibility to acquire only the good quality items as per their satisfaction. The role of	This shares one to many relationship with order. As one order will have different

	this entity is to be able to trade of with unsatisfied delivery.	items and multiple items can be exchanged.
Cancellation	The cancellation entity provides the customers to recorrect their order placed.	Cancellation entity has one main attribute which is the Reason field.
Stock	Stocks hold all the stock details to keep a track of in and out of stock order. Stock entity is closely related to Product with one to one relationship having a Unique InventoryID as primary key. It lists all the items that are available for sale.	It shares one to one relationship with the Product entity. It has attributes CategoryName and the Quantity available.