SIMPLE E-COMMERCE SYSTEM

PURPOSE:

The purpose of this data model is to represent a simple e-commerce system that allows customers to go through and purchase products. In this model it includes various entities such as products, categories, customers, and orders.And there are many relationships between the entities. There are various real world examples of e-commerce systems like amazon , flipkart etc.

ENTITIES:

1. **PRODUCTS:** This entity represents the products available for purchase in the e-commerce system. The attributes of this entity include product ID, name, description, price, image, and inventory quantity.
2. **CATEGORIES:** This entity represents the categories that the products can belong to. Each product can belong to multiple categories, and each category can have multiple products. The attributes of this entity include category ID and name.
3. **CUSTOMERS:** This entity represents the customers of the e-commerce system. The attributes of this entity include customer ID, name, email address, phone number, and shipping address.
4. **ORDERS:** This entity represents the orders placed by customers in the e-commerce system. Each order can have multiple products, and each product can appear in

multiple orders. The attributes of this entity include order ID, order date, total price, and order status.

RELATIONSHIPS:

- {Products ,Category} - **Many-to-Many** Relationship
- {Customer , Order } - **One-to-Many** relationship
- {Order , Product } - **Many-to-Many** relationship

PRIMARY KEYS:

- Products - Product_id
- Category - Category_id
- Customer - Customer_id
- Order - Order_id

FOREIGN KEYS:

- When there are Many to Many Relationships then there will be an intersection table which contains a primary as a composite key of (pk1, pk2) , pk1 represents primary key of table1 and pk2 represents primary key of table2. And this will happen between **{Products ,Category}** , **{Order , Product }.**
- And when there is a one to many relationship the one's side primary key migrates to the many's side .And this case will happen between **{Customer , Order }**.

ASSUMPTIONS :

The Assumptions in this data model are that :-

- Each product can belong to atleast one category
- Each Order must have atleast one product
- Each Customer can have atleast one order

ER DIAGRAM