Simple Ecommerce System

Purpose:

The purpose of this data model is to represent a simple e-commerce system that allows customers to browse and purchase products. The model includes entities such as products, categories, customers, and orders, along with their attributes and relationships.

Entities:

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.

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.

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.

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 can belong to multiple categories, and each category can have multiple products. This is a many-to-many relationship, which is represented by a junction table that connects the products and categories entities.

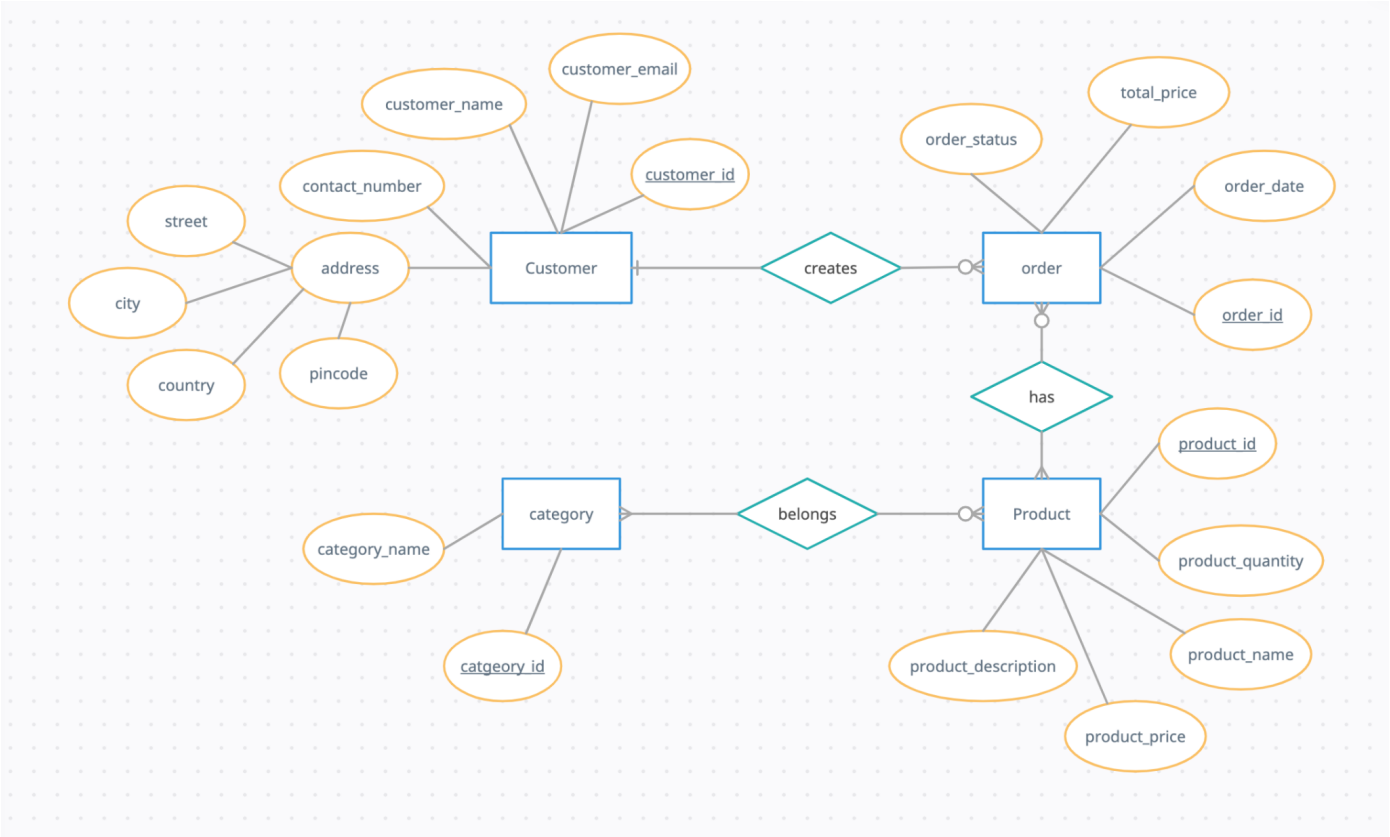
- Each customer can place multiple orders, but each order can only belong to one customer. This is a one-to-many relationship, which is represented by a foreign key in the orders entity that references the customer entity.

- Each order can contain multiple products, and each product can appear in multiple orders. This is a many-to-many relationship, which is represented by a junction table that connects the orders and products entities.

Primary Keys:

Product ID is the primary key for the products entity.
Category ID is the primary key for the categories entity.
Customer ID is the primary key for the customers entity.
Order ID is the primary key for the orders entity.

ER Diagram:



Assumptions/Constraints:

The e-commerce system only sells physical products and does not deal with digital products.
Customers can only purchase products that are currently in stock.
Each order can have only one status at a time, such as "pending", "shipped", or "delivered".
The prices of the products do not change over time, and the prices