Entity Overview:

1. **Product**

   o Attributes: ProductID (PK), Name, Category, Weight, Flavor, Durability, Size, Color, CareInstructions, ManufacturerID (FK)

   o Relationships:

     ▪ Belongs to one Manufacturer

     ▪ Associated with one or more Animals

     ▪ Linked to one or more Transactions and Shipments

2. **Manufacturer**

   o Attributes: ManufacturerID (PK), Name

   o Relationships:

     ▪ Has one or more Products

3. **Animal**

   o Attributes: AnimalID (PK), Species

   o Relationships:

     ▪ Associated with one or more Products

4. **Customer**

   o Attributes: CustomerID (PK), Name, Email

   o Relationships:

     ▪ Makes one or more Transactions

5. **Transaction**

   o Attributes: TransactionID (PK), Date, CustomerID (FK)

   o Relationships:

     ▪ Linked to one or more Products

     ▪ Belongs to one Customer

6. **Location**

   o Attributes: LocationID (PK), Name, ZipCode

   o Relationships:

     ▪ Involved in one or more Shipments

7. **Shipment**

   o Attributes: ShipmentID (PK), OriginID (FK), DestinationID (FK)

   o Relationships:

      ▪ Linked to one or more Products

      ▪ Associated with two Locations (origin and destination)

8. **ProductTransaction** (Associative Entity)

   o Attributes: ProductTransactionID (PK), TransactionID (FK), ProductID (FK), Quantity

   o Relationships:

      ▪ Connects Products and Transactions

9. **ProductShipment** (Associative Entity)

   o Attributes: ProductShipmentID (PK), ShipmentID (FK), ProductID (FK), Quantity

   o Relationships:

      ▪ Connects Products and Shipments

10. **ProductAnimal** (Associative Entity)

   o Attributes: ProductAnimalID (PK), ProductID (FK), AnimalID (FK)

   o Relationships:

      ▪ Connects Products and Animals

Diagram Structure

- **Many-to-Many Relationships:** Implemented through associative entities like ProductTransaction, ProductShipment, and ProductAnimal.

- **Normalization:** The structure is normalized to avoid redundancy, with separate entities for manufacturers, animals, products, customers, transactions, and locations.