**Explanation of Constraints**

**PRIMARY KEY:**

* **Purpose:** Ensures each row in a table is uniquely identifiable.
* Tables using it:  
  categories("categoryID")  
  customers("customerID")  
  employees("employeeID")  
  products("productID")  
  orders("orderID")  
  shippers("shipperID")

Using because each table needs a unique identifier for data integrity.

#### **UNIQUE**:

* **Purpose**: Enforces **uniqueness** of a column’s value across rows.
* Tables using it:  
  categories("categoryName")

Using it because it Prevents duplicate category names.

#### **COMPOSITE PRIMARY KEY**

* **Purpose: Combines two columns to uniquely identify a row.**
* Tables using it:  
   order\_details("orderID", "productID")

Using it because the same “orderID” and same “productID” appeared in many orders, but the combination should be unique.

#### FOREIGN KEY

* Purpose: Ensures referential integrity between tables by linking one table to another.
* Tables using it:

orders("customerID") → customers("customerID")

orders("employeeID") → employees("employeeID")

orders("shipperID") → shippers("shipperID")

order\_details("productID") → products("productID")

order\_details("orderID") → orders("orderID")

Using it because it enforces relationships between tables, ensuring that orders reference valid customers, employees, shippers, products, and associated order details. This maintains data consistency and prevents orphaned records.

**ER Diagram**

