

Business Scenario: E-Commerce System

An e-commerce company needs a database to manage customers, products, and orders. A customer can place multiple orders, but each order belongs to only one customer. Each order contains multiple products, and a product can appear in multiple orders.

Entities and Attributes:

1. Customer:
 - Attributes: CustomerID (Primary Key), Name, Email, Phone.
2. Order:
 - Attributes: OrderID (Primary Key), OrderDate, CustomerID (Foreign Key).
3. Product:
 - Attributes: ProductID (Primary Key), ProductName, Price, Stock.
4. OrderProduct (junction table for many-to-many relationship):
 - Attributes: OrderID (Foreign Key), ProductID (Foreign Key), Quantity.

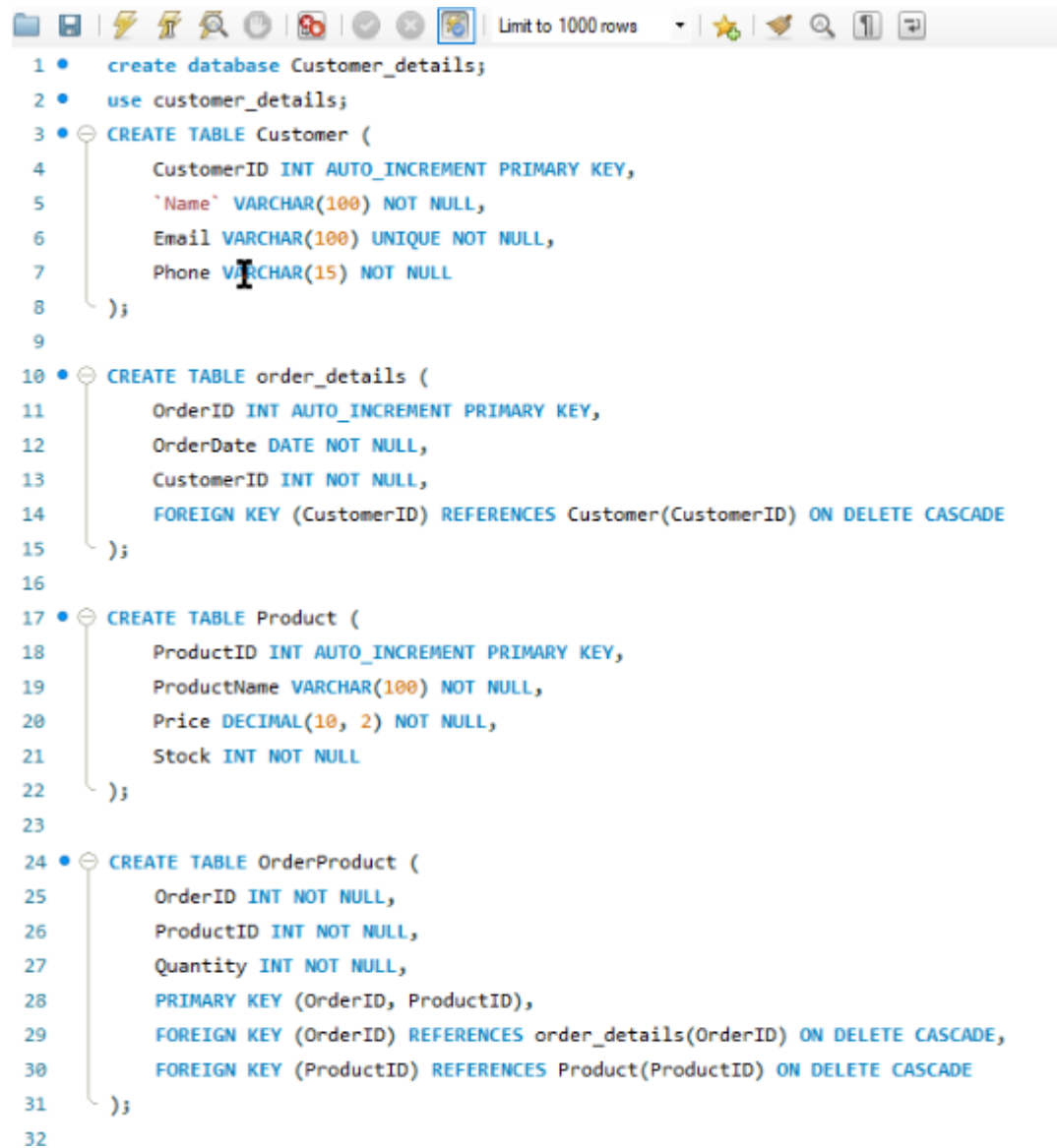
Relationships:

- A Customer places one or more Orders (1:N).
- An Order contains one or more Products through OrderProduct (N:M).
- A Product can belong to multiple Orders through OrderProduct (N:M).

ER Diagram Details:

- **Entities:** Customer, Order, Product, OrderProduct.
- **Relationships:**
 - Customer to Order: 1:N
 - Order to Product: N:M (via OrderProduct)

This is a Screen shot of Queries executed in MySQL in Cloud system:



The screenshot shows a MySQL Cloud IDE interface. At the top, there is a toolbar with various icons for file operations, execution, and search. Below the toolbar, the SQL editor displays a series of queries numbered 1 through 32. The queries are as follows:

```
1 • create database Customer_details;
2 • use customer_details;
3 • CREATE TABLE Customer (
4     CustomerID INT AUTO_INCREMENT PRIMARY KEY,
5     'Name' VARCHAR(100) NOT NULL,
6     Email VARCHAR(100) UNIQUE NOT NULL,
7     Phone VARCHAR(15) NOT NULL
8 );
9
10 • CREATE TABLE order_details (
11     OrderID INT AUTO_INCREMENT PRIMARY KEY,
12     OrderDate DATE NOT NULL,
13     CustomerID INT NOT NULL,
14     FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID) ON DELETE CASCADE
15 );
16
17 • CREATE TABLE Product (
18     ProductID INT AUTO_INCREMENT PRIMARY KEY,
19     ProductName VARCHAR(100) NOT NULL,
20     Price DECIMAL(10, 2) NOT NULL,
21     Stock INT NOT NULL
22 );
23
24 • CREATE TABLE OrderProduct (
25     OrderID INT NOT NULL,
26     ProductID INT NOT NULL,
27     Quantity INT NOT NULL,
28     PRIMARY KEY (OrderID, ProductID),
29     FOREIGN KEY (OrderID) REFERENCES order_details(OrderID) ON DELETE CASCADE,
30     FOREIGN KEY (ProductID) REFERENCES Product(ProductID) ON DELETE CASCADE
31 );
32
```

This is a Screen shot of EER Diagram in mySql in Cloud system:

