Safertek SQLBackend

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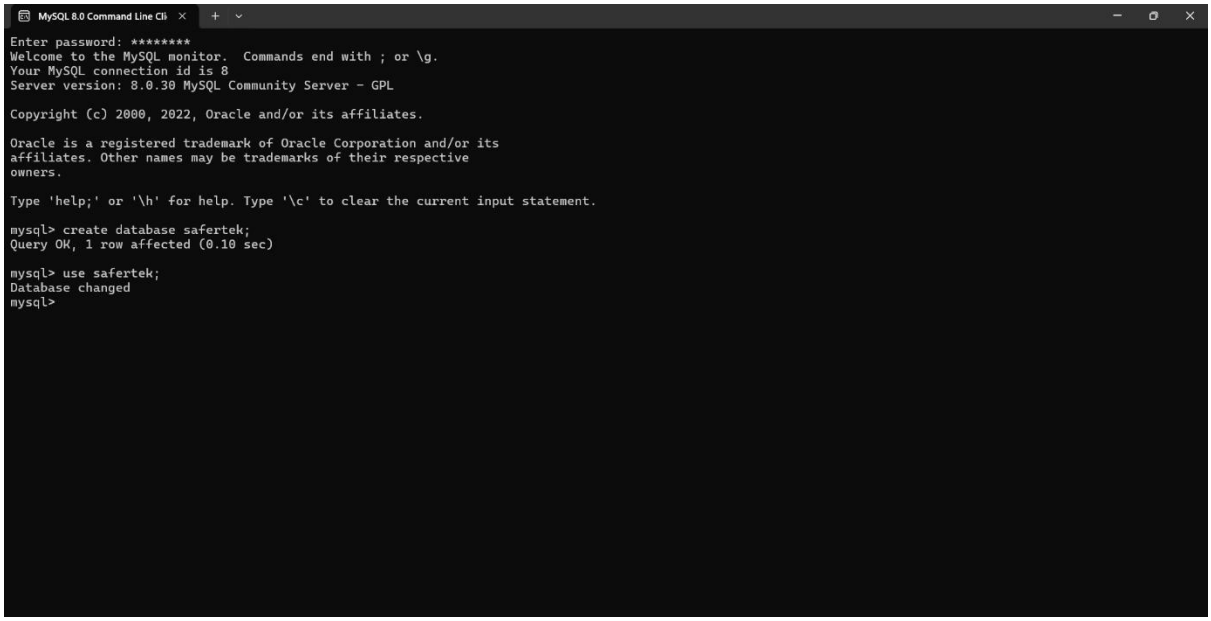
1. CREATE DATABASE safertek; USE safertek;

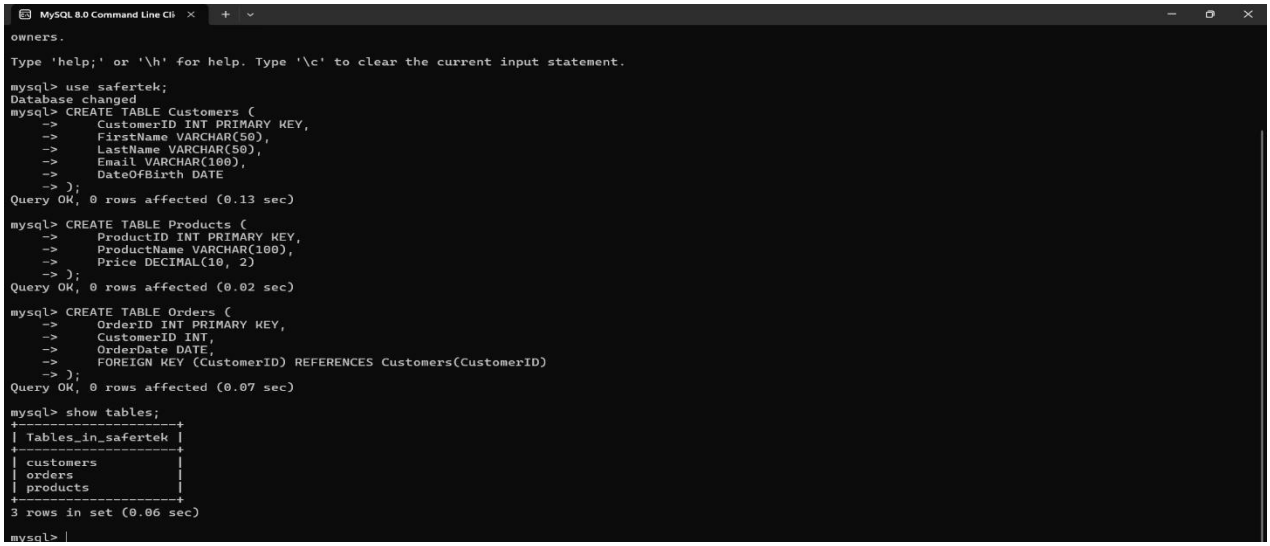


2. CREATE TABLE Customers (CustomerID INT PRIMARY KEY, FirstName VARCHAR(50), LastName VARCHAR(50), Email VARCHAR(100), DateOfBirth DATE);

   CREATE TABLE Products (ProductID INT PRIMARY KEY, ProductName VARCHAR(100), Price DECIMAL(10, 2));

   CREATE TABLE Orders (OrderID INT PRIMARY KEY, CustomerID INT, OrderDate DATE, FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID));

   CREATE TABLE OrderItems (OrderItemID INT PRIMARY KEY, OrderID INT, ProductID INT, Quantity INT, FOREIGN KEY (OrderID) REFERENCES Orders(OrderID), FOREIGN KEY (ProductID) REFERENCES Products(ProductID));

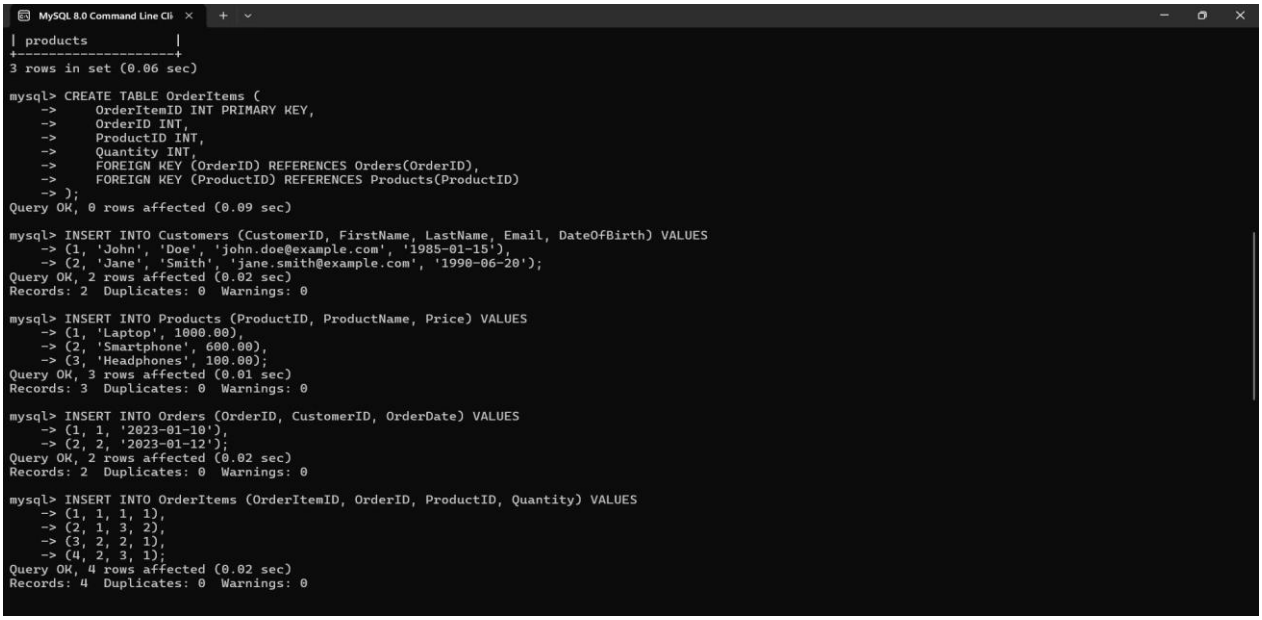


3. INSERT INTO Customers (CustomerID, FirstName, LastName, Email, DateOfBirth) VALUES (1, 'John', 'Doe', 'john.doe@example.com', '1985-01-15'), (2, 'Jane', 'Smith', 'jane.smith@example.com', '1990-06-20');

   INSERT INTO Products (ProductID, ProductName, Price) VALUES (1, 'Laptop', 1000.00), (2, 'Smartphone', 600.00), (3, 'Headphones', 100.00);

   INSERT INTO Orders (OrderID, CustomerID, OrderDate) VALUES (1, 1, '2023-01-10'), (2, 2, '2023-01-12');

   INSERT INTO OrderItems (OrderItemID, OrderID, ProductID, Quantity) VALUES (1, 1, 1, 1), (2, 1, 3, 2), (3, 2, 2, 1), (4, 2, 3, 1);



4. **To list all customers from the Customers table:**

Query: SELECT * FROM Customers;

```
MySQL 8.0 Command Line Cli

mysql> select * from Customers;
+------------+-----------+----------+-------------------------+-------------+
| CustomerID | FirstName | LastName | Email                   | DateOfBirth |
+------------+-----------+----------+-------------------------+-------------+
|          1 | John      | Doe      | john.doe@example.com    | 1985-01-15  |
|          2 | Jane      | Smith    | jane.smith@example.com  | 1990-06-20  |
+------------+-----------+----------+-------------------------+-------------+
2 rows in set (0.01 sec)

mysql> select * from Products;
+-----------+-------------+---------+
| ProductID | ProductName | Price   |
+-----------+-------------+---------+
|         1 | Laptop      | 1000.00 |
|         2 | Smartphone  |  600.00 |
|         3 | Headphones  |  100.00 |
+-----------+-------------+---------+
3 rows in set (0.01 sec)

mysql> select * from Orders;
+---------+------------+-------------+
| OrderID | CustomerID | OrderDate   |
+---------+------------+-------------+
|       1 |          1 | 2023-01-10 |
|       2 |          2 | 2023-01-12 |
+---------+------------+-------------+
2 rows in set (0.00 sec)

mysql> select * from OrderItems;
+-------------+---------+-----------+----------+
| OrderItemID | OrderID | ProductID | Quantity |
+-------------+---------+-----------+----------+
|           1 |       1 |         1 |        1 |
|           2 |       1 |         3 |        2 |
|           3 |       2 |         2 |        1 |
|           4 |       2 |         3 |        1 |
+-------------+---------+-----------+----------+
4 rows in set (0.00 sec)

mysql>
```

5. **To find all orders placed in January 2023:**

Query: SELECT * FROM Orders WHERE OrderDate >= '2023-01-01' AND OrderDate <= '2023-01-31';

```
mysql> SELECT * FROM Orders WHERE OrderDate >= '2023-01-01' AND OrderDate <= '2023-01-31';
+---------+------------+-------------+
| OrderID | CustomerID | OrderDate   |
+---------+------------+-------------+
|       1 |          1 | 2023-01-10 |
|       2 |          2 | 2023-01-12 |
+---------+------------+-------------+
2 rows in set (0.01 sec)

mysql>
```

6. **To get the details of each order, including the customer's name and email.**

Query: SELECT O.OrderID, O.OrderDate, C.FirstName, C.LastName, C.Email FROM Orders O JOIN Customers C ON O.CustomerID = C.CustomerID;

```
mysql> SELECT O.OrderID, O.OrderDate, C.FirstName, C.LastName, C.Email
    -> FROM Orders O JOIN Customers C ON O.CustomerID = C.CustomerID;
+---------+-------------+-----------+----------+-------------------------+
| OrderID | OrderDate   | FirstName | LastName | Email                   |
+---------+-------------+-----------+----------+-------------------------+
|       1 | 2023-01-10 | John      | Doe      | john.doe@example.com    |
|       2 | 2023-01-12 | Jane      | Smith    | jane.smith@example.com  |
+---------+-------------+-----------+----------+-------------------------+
2 rows in set (0.02 sec)

mysql>
```

7. **To list the products purchased in a specific order (e.g., OrderID = 1).**

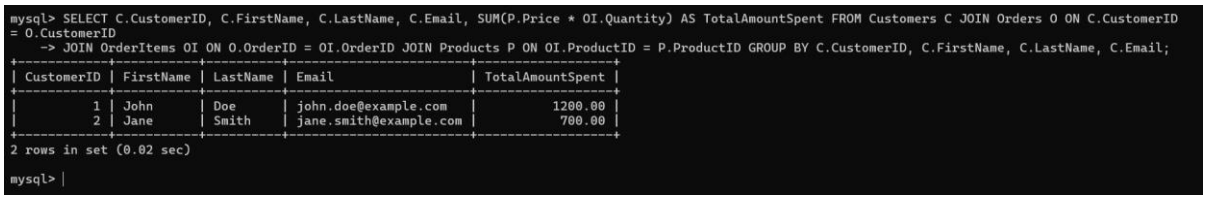
Query: SELECT P.ProductName, O.Quantity FROM OrderItems O JOIN Products P ON O.ProductID = P.ProductID WHERE O.OrderID = 1;

```
mysql> SELECT P.ProductName, O.Quantity FROM OrderItems O
    -> JOIN Products P ON O.ProductID = P.ProductID WHERE O.OrderID = 1;
+-------------+----------+
| ProductName | Quantity |
+-------------+----------+
| Laptop      |        1 |
| Headphones  |        2 |
+-------------+----------+
2 rows in set (0.01 sec)

mysql>
```

8. **To calculate the total amount spent by each customer.**

Query: SELECT C.CustomerID, C.FirstName, C.LastName, C.Email, SUM(P.Price * OI.Quantity) AS TotalAmountSpent FROM Customers C JOIN Orders O ON C.CustomerID = O.CustomerID JOIN OrderItems OI ON O.OrderID = OI.OrderID JOIN Products P ON OI.ProductID = P.ProductID GROUP BY C.CustomerID, C.FirstName, C.LastName, C.Email;

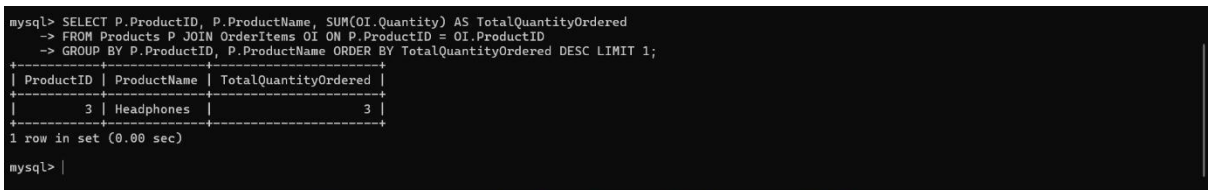


```
mysql> SELECT C.CustomerID, C.FirstName, C.LastName, C.Email, SUM(P.Price * OI.Quantity) AS TotalAmountSpent FROM Customers C JOIN Orders O ON C.CustomerID
= O.CustomerID
    -> JOIN OrderItems OI ON O.OrderID = OI.OrderID JOIN Products P ON OI.ProductID = P.ProductID GROUP BY C.CustomerID, C.FirstName, C.LastName, C.Email;
+------------+-----------+----------+-----------------------+------------------+
| CustomerID | FirstName | LastName | Email                 | TotalAmountSpent |
+------------+-----------+----------+-----------------------+------------------+
|          1 | John      | Doe      | john.doe@example.com  |          1200.00 |
|          2 | Jane      | Smith    | jane.smith@example.com |           700.00 |
+------------+-----------+----------+-----------------------+------------------+
2 rows in set (0.02 sec)

mysql>
```

9. **To find the most popular product (the one that has been ordered the most).**

Query: SELECT P.ProductID, P.ProductName, SUM(OI.Quantity) AS TotalQuantityOrdered FROM Products P JOIN OrderItems OI ON P.ProductID = OI.ProductID GROUP BY P.ProductID, P.ProductName ORDER BY TotalQuantityOrdered DESC LIMIT 1;

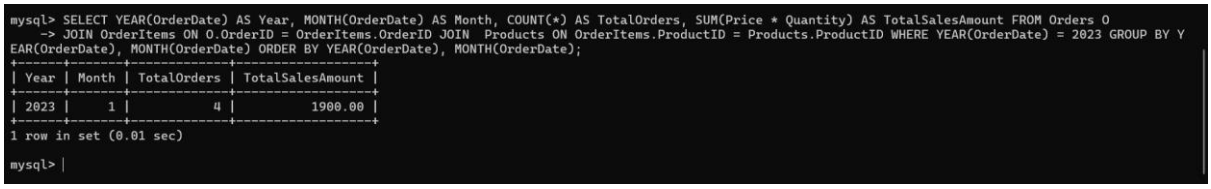


```
mysql> SELECT P.ProductID, P.ProductName, SUM(OI.Quantity) AS TotalQuantityOrdered
    -> FROM Products P JOIN OrderItems OI ON P.ProductID = OI.ProductID
    -> GROUP BY P.ProductID, P.ProductName ORDER BY TotalQuantityOrdered DESC LIMIT 1;
+------------+-------------+----------------------+
| ProductID | ProductName | TotalQuantityOrdered |
+------------+-------------+----------------------+
|          3 | Headphones  |                    3 |
+------------+-------------+----------------------+
1 row in set (0.00 sec)

mysql>
```

10. **To get the total number of orders and the total sales amount for each month in 2023.**

Query: SELECT YEAR(OrderDate) AS Year, MONTH(OrderDate) AS Month, COUNT(*) AS TotalOrders, SUM(Price * Quantity) AS TotalSalesAmount FROM Orders O JOIN OrderItems ON O.OrderID = OrderItems.OrderID JOIN Products ON OrderItems.ProductID = Products.ProductID WHERE YEAR(OrderDate) = 2023 GROUP BY YEAR(OrderDate), MONTH(OrderDate) ORDER BY YEAR(OrderDate), MONTH(OrderDate);



```
mysql> SELECT YEAR(OrderDate) AS Year, MONTH(OrderDate) AS Month, COUNT(*) AS TotalOrders, SUM(Price * Quantity) AS TotalSalesAmount FROM Orders O
    -> JOIN OrderItems ON O.OrderID = OrderItems.OrderID JOIN  Products ON OrderItems.ProductID = Products.ProductID WHERE YEAR(OrderDate) = 2023 GROUP BY Y
EAR(OrderDate), MONTH(OrderDate) ORDER BY YEAR(OrderDate), MONTH(OrderDate);
+------+-------+-------------+------------------+
| Year | Month | TotalOrders | TotalSalesAmount |
+------+-------+-------------+------------------+
| 2023 |     1 |           4 |          1900.00 |
+------+-------+-------------+------------------+
1 row in set (0.01 sec)

mysql>
```

11. **To find customers who have spent more than $1000.**

Query: SELECT C.CustomerID, C.FirstName, C.LastName, C.Email, SUM(P.Price * OI.Quantity) AS TotalSpent FROM Customers C JOIN Orders O ON C.CustomerID = O.CustomerID JOIN OrderItems OI ON O.OrderID = OI.OrderID JOIN Products P ON OI.ProductID = P.ProductID GROUP BY C.CustomerID, C.FirstName, C.LastName, C.Email HAVING TotalSpent > 1000;

```
mysql> SELECT C.CustomerID, C.FirstName, C.LastName, C.Email, SUM(P.Price * OI.Quantity) AS TotalSpent FROM Customers C JOIN Orders O ON C.CustomerID = O.Cu
stomerID JOIN OrderItems OI ON O.OrderID = OI.OrderID JOIN Products P ON OI.ProductID = P.ProductID
    -> GROUP BY C.CustomerID, C.FirstName, C.LastName, C.Email HAVING TotalSpent > 1000;
+------------+-----------+----------+---------------------+------------+
| CustomerID | FirstName | LastName | Email               | TotalSpent |
+------------+-----------+----------+---------------------+------------+
|          1 | John      | Doe      | john.doe@example.com |    1200.00 |
+------------+-----------+----------+---------------------+------------+
1 row in set (0.01 sec)

mysql>
```