

สร้างตารางข้อมูล 2 ตารางด้วย mysqlcli

OrderID	CustomerID	OrderDate
10308	2	1996-09-18
10309	37	1996-09-19
10310	77	1996-09-20

tbl_order

CustomerID	CustomerName	ContactName	Country
1	Alfreds Futterkiste	Maria Anders	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mexico

tbl_customer

```

mysql> USE lab14;
Database changed
mysql> CREATE TABLE tbl_customer (
    ->     CustomerID INT PRIMARY KEY,
    ->     CustomerName VARCHAR(50),
    ->     Country VARCHAR(50)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> CREATE TABLE tbl_order (
    ->     OrderID INT PRIMARY KEY,
    ->     CustomerID INT,
    ->     OrderDate DATE,
    ->     FOREIGN KEY (CustomerID) REFERENCES tbl_customer(CustomerID)
    -> );
Query OK, 0 rows affected (0.07 sec)

mysql> INSERT INTO tbl_customer (CustomerID, CustomerName, ContactName, Country)
    -> VALUES
    ->     (1, 'Alfreds Futterkiste', 'Maria Anders', 'Germany'),
    ->     (2, 'Ana Trujillo Emparedados y helados', 'Ana Trujillo', 'Mexico'),
    ->     (3, 'Antonio Moreno Taquería', 'Antonio Moreno', 'Mexico');
ERROR 1054 (42S22): Unknown column 'ContactName' in 'field list'
mysql> INSERT INTO tbl_customer (CustomerID, CustomerName, Country)
    -> VALUES
    ->     (1, 'Alfreds Futterkiste', 'Germany'),
    ->     (2, 'Ana Trujillo Emparedados y helados', 'Mexico'),
    ->     (3, 'Antonio Moreno Taquería', 'Mexico');
Query OK, 3 rows affected (0.02 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO tbl_order (OrderID, CustomerID, OrderDate)
    -> VALUES
    ->     (10308, 2, '1996-09-18'),
    ->     (10309, 37, '1996-09-19'),
    ->     (10310, 77, '1996-09-20');
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`lab14`.`tbl_order`, CONSTRAINT `tbl_order_ibfk_1` FOREIGN
mysql> INSERT INTO tbl_order (OrderID, CustomerID, OrderDate)
    -> VALUES
    ->     (10308, 2, '1996-09-18'),
    ->     (10309, 1, '1996-09-19'),
    ->     (10310, 3, '1996-09-20');
Query OK, 3 rows affected (0.02 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM tbl_customer;
+-----+-----+-----+
| CustomerID | CustomerName | Country |
+-----+-----+-----+
| 1 | Alfreds Futterkiste | Germany |
| 2 | Ana Trujillo Emparedados y helados | Mexico |
| 3 | Antonio Moreno Taquería | Mexico |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM tbl_order;
+-----+-----+-----+
| OrderID | CustomerID | OrderDate |
+-----+-----+-----+
| 10308 | 2 | 1996-09-18 |
| 10309 | 1 | 1996-09-19 |
| 10310 | 3 | 1996-09-20 |
+-----+-----+-----+
3 rows in set (0.00 sec)

```

```

mysql> ALTER TABLE tbl_customer
-> ADD COLUMN ContactName VARCHAR(100);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> UPDATE tbl_customer
-> SET ContactName = 'Maria Anders'
-> WHERE CustomerID = 1;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> UPDATE tbl_customer
-> SET ContactName = 'Ana Trujillo'
-> WHERE CustomerID = 2;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> UPDATE tbl_customer
-> SET ContactName = 'Antonio Moreno'
-> WHERE CustomerID = 3;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM tbl_customer;
+-----+-----+-----+
| CustomerID | CustomerName           | Country | ContactName   |
+-----+-----+-----+
|      1 | Alfreds Futterkiste     | Germany | Maria Anders  |
|      2 | Ana Trujillo Emparedados y helados | Mexico | Ana Trujillo  |
|      3 | Antonio Moreno Taqueria    | Mexico  | Antonio Moreno |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> ALTER TABLE tbl_customer
-> DROP COLUMN ContactName;
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE tbl_customer
-> ADD COLUMN ContactName VARCHAR(100) AFTER CustomerName;
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> UPDATE tbl_customer
-> SET ContactName = 'Maria Anders'
-> WHERE CustomerID = 1;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> UPDATE tbl_customer
-> SET ContactName = 'Ana Trujillo'
-> WHERE CustomerID = 2;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> UPDATE tbl_customer
-> SET ContactName = 'Antonio Moreno'
-> WHERE CustomerID = 3;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM tbl_customer;
+-----+-----+-----+
| CustomerID | CustomerName           | ContactName | Country |
+-----+-----+-----+
|      1 | Alfreds Futterkiste     | Maria Anders | Germany |
|      2 | Ana Trujillo Emparedados y helados | Ana Trujillo | Mexico  |
|      3 | Antonio Moreno Taqueria    | Antonio Moreno | Mexico |
+-----+-----+-----+
3 rows in set (0.00 sec)

```

ตัวอย่างผลลัพธ์ที่ต้องการ

Output:

```
+-----+-----+-----+
| OrderID | CustomerID | OrderDate |
+-----+-----+-----+
| 10308 | 2 | 1996-09-18 |
| 10309 | 37 | 1996-09-19 |
| 10310 | 77 | 1996-09-20 |
+-----+-----+-----+
+-----+-----+-----+-----+
| CustomerID | CustomerName | ContactName | Country |
+-----+-----+-----+-----+
| 1 | Akfreds Fyttkerkiste | Maria Anders | Germany |
| 2 | Ana Trujillo | Han Kimjoung | Thailand |
| 3 | Kim Haerong | Cha Ounwoo | Thailand |
+-----+-----+-----+-----+
```

• HINTS

- Create table
- Insert into
- Select
- Capture คำสั่งที่ใช้ในการสร้าง เพิ่มข้อมูล และแสดงข้อมูลในแต่ละตารางลงใน Lab result

```
babyearn@babyearn:~/Desktop$ cd
babyearn@babyearn:~$ sudo mysql -u root -p
[sudo] password for babyearn:
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.39-0ubuntu0.24.04.2 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE LAB14;
Query OK, 1 row affected (0.01 sec)

mysql> USE LAB14;
Database changed
mysql> CREATE TABLE tbl_customer (
    ->     CustomerID INT PRIMARY KEY,
    ->     CustomerName VARCHAR(100),
    ->     ContactName VARCHAR(100),
    ->     Country VARCHAR(50)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE tbl_order (
    ->     OrderID INT PRIMARY KEY,
    ->     CustomerID INT,
    ->     OrderDate DATE,
    ->     FOREIGN KEY (CustomerID) REFERENCES tbl_customer(CustomerID)
    -> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> INSERT INTO tbl_customer (CustomerID, CustomerName, ContactName, Country)
-> VALUES
->      (1, 'Akfreds Fyttkerkiste', 'Maria Anders', 'Germany'),
->      (2, 'Ana Trujilo', 'Han Kimjoung', 'Thailand'),
->      (3, 'Kim Haerong', 'Cha Ounwoo', 'Thailand');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SET FOREIGN_KEY_CHECKS = 0;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> INSERT INTO tbl_order (OrderID, CustomerID, OrderDate)
-> VALUES
->      (10308, 2, '1996-09-18'),
->      (10309, 37, '1996-09-19'),
->      (10310, 77, '1996-09-20');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SET FOREIGN_KEY_CHECKS = 1;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM tbl_customer;
+-----+-----+-----+-----+
| CustomerID | CustomerName | ContactName | Country |
+-----+-----+-----+-----+
|          1 | Akfreds Fyttkerkiste | Maria Anders | Germany |
|          2 | Ana Trujilo | Han Kimjoung | Thailand |
|          3 | Kim Haerong | Cha Ounwoo | Thailand |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM tbl_order;
+-----+-----+-----+
| OrderID | CustomerID | OrderDate |
+-----+-----+-----+
|    10308 |          2 | 1996-09-18 |
|    10309 |         37 | 1996-09-19 |
|    10310 |         77 | 1996-09-20 |
+-----+-----+-----+
3 rows in set (0.01 sec)
```

SQL GROUP BY

ผลลัพธ์ที่ต้องการ

COUNT(CustomerID)	Country
1	Germany
2	Thailand

HINTS

- นับจำนวน CustomerID ที่มี Country ค่าเดียวกัน
- COUNT
- GROUP BY

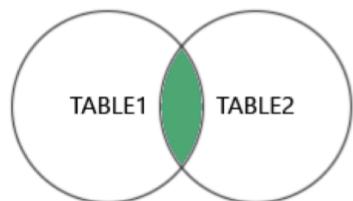
```
mysql> SELECT COUNT(CustomerID) AS 'COUNT(CustomerID)', Country
-> FROM tbl_customer
-> GROUP BY Country;
+-----+-----+
| COUNT(CustomerID) | Country |
+-----+-----+
| 1 | Germany |
| 2 | Thailand |
+-----+-----+
2 rows in set (0.00 sec)
```

Joining Tables

ผลลัพธ์ที่ต้องการ

OrderID	OrderDate	CustomerName	ContactName	Country
10308	1996-09-18	Ana Trujilo	Han Kimjoung	Thailand

INNER JOIN

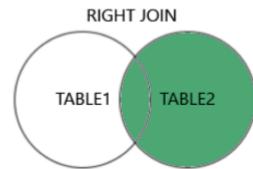
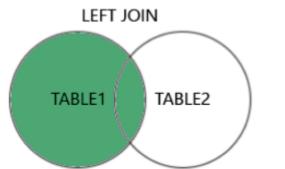


HINTS

- เรคอร์ดที่ถูกเลือกจะมีค่า “เหมือนกัน” ในหัวส่องตาราง
- จากผลลัพธ์คอลัมน์ใดในตารางหัวส่องมีค่าเท่ากัน ?

```
mysql> SELECT tbl_order.OrderID, tbl_order.OrderDate, tbl_customer.CustomerName, tbl_customer.ContactName, tbl_customer.Country
-> FROM tbl_order
-> INNER JOIN tbl_customer ON tbl_order.CustomerID = tbl_customer.CustomerID
-> WHERE tbl_order.CustomerID = 2;
+-----+-----+-----+-----+
| OrderID | OrderDate | CustomerName | ContactName | Country |
+-----+-----+-----+-----+
| 10308 | 1996-09-18 | Ana Trujilo | Han Kimjoung | Thailand |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

ทดลอง LEFT JOIN และ RIGHT JOIN



OrderID	OrderDate	CustomerName	ContactName	Country	OrderID	OrderDate	CustomerName	ContactName	Country
10308	1996-09-18	Ana Trujilo	Han Kimjoung	Thailand			Akfreds Fyttkerkiste	Maria Anders	Germany
10309	1996-09-19	NULL	NULL	NULL	10308	1996-09-18	Ana Trujilo	Han Kimjoung	Thailand
10310	1996-09-20	NULL	NULL	NULL			Kim Haerong	Cha Ounwoo	Thailand

```
mysql> SELECT tbl_order.OrderID, tbl_order.OrderDate, tbl_customer.CustomerName, tbl_customer.ContactName, tbl_customer.Country
-> FROM tbl_order
-> LEFT JOIN tbl_customer ON tbl_order.CustomerID = tbl_customer.CustomerID;
+-----+-----+-----+-----+
| OrderID | OrderDate | CustomerName | ContactName | Country |
+-----+-----+-----+-----+
| 10308 | 1996-09-18 | Ana Trujilo | Han Kimjoung | Thailand |
| 10309 | 1996-09-19 | NULL | NULL | NULL |
| 10310 | 1996-09-20 | NULL | NULL | NULL |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT tbl_order.OrderID, tbl_order.OrderDate, tbl_customer.CustomerName, tbl_customer.ContactName, tbl_customer.Country
-> FROM tbl_order
-> RIGHT JOIN tbl_customer ON tbl_order.CustomerID = tbl_customer.CustomerID;
+-----+-----+-----+-----+
| OrderID | OrderDate | CustomerName | ContactName | Country |
+-----+-----+-----+-----+
| NULL | NULL | Akfreds Fyttkerkiste | Maria Anders | Germany |
| 10308 | 1996-09-18 | Ana Trujilo | Han Kimjoung | Thailand |
| NULL | NULL | Kim Haerong | Cha Ounwoo | Thailand |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```