Lesson 02 Demo 03

Creating and Managing Related Table

Objective: To create related tables in a MySQL database and establish a relationship between them

Tools Required: Visual Studio Code and MySQL

Prerequisites: None

Steps to be followed:

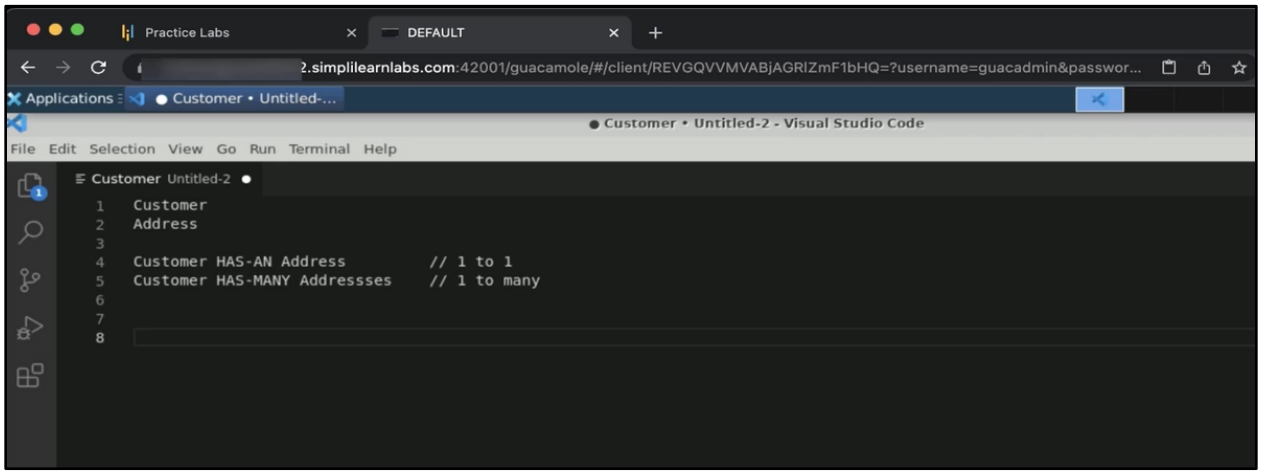
1. Work with related tables

Step 1: Work with related tables

1.1 Open Visual Studio Code and define two objects: **Customer** and **Address**. Specify that a Customer has an address, and a Customer can have multiple addresses:

Customer
Address

Customer HAS-AN Address //1 to 1
Customer HAS-MANY Address //1 to many



1.2 Create a table in Visual studio code with name **Customer** with the column's **cid**, **name**, **phone**, and **email** :

```
Create table customer(
        cid int PRIMARY KEY AUTO_INCREMENT,
         name varchar(256),
         phone varchar(20),
         email varchar(256)
);
```

```
7
8   create table customer(
9       cid int PRIMARY KEY AUTO_INCREMENT,
10      name varchar(256),
11      phone varchar(20),
12      email varchar(256)
13  );
```

1.3 Open a terminal window and access MySQL by typing **sudo mysql**

```
gmail@ip-172-31-17-157: ~
File  Edit  View  Search  Terminal  Help
erishantgmail@ip-172-31-17-157:~$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.27-0ubuntu0.20.04.1 (Ubuntu)

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owners.

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

1.4 Now, enter **show databases;** to view the available databases

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| estore             |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)

mysql>
```

1.5 Execute the following command to select the **estore** database and to see the existing tables in the **estore** database:

use estore;

show tables;

```
mysql> use estore;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+------------------+
| Tables_in_estore |
+------------------+
| Product          |
| User             |
+------------------+
2 rows in set (0.00 sec)
```

1.6 Copy the code from Visual Studio Code and paste it into the terminal window. Then, enter **show tables;** to verify that the **Customer** table has been created.

```
mysql> create table Customer(
    ->     cid int PRIMARY KEY AUTO_INCREMENT,
    ->     name varchar(256),
    ->     phone varchar(20),
    ->     email varchar(256)
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> show tables;
+------------------+
| Tables_in_estore |
+------------------+
| Customer         |
| Product          |
| User             |
+------------------+
3 rows in set (0.00 sec)
```

1.7 Enter **describe Customer;** to view the structure of the **Customer** table

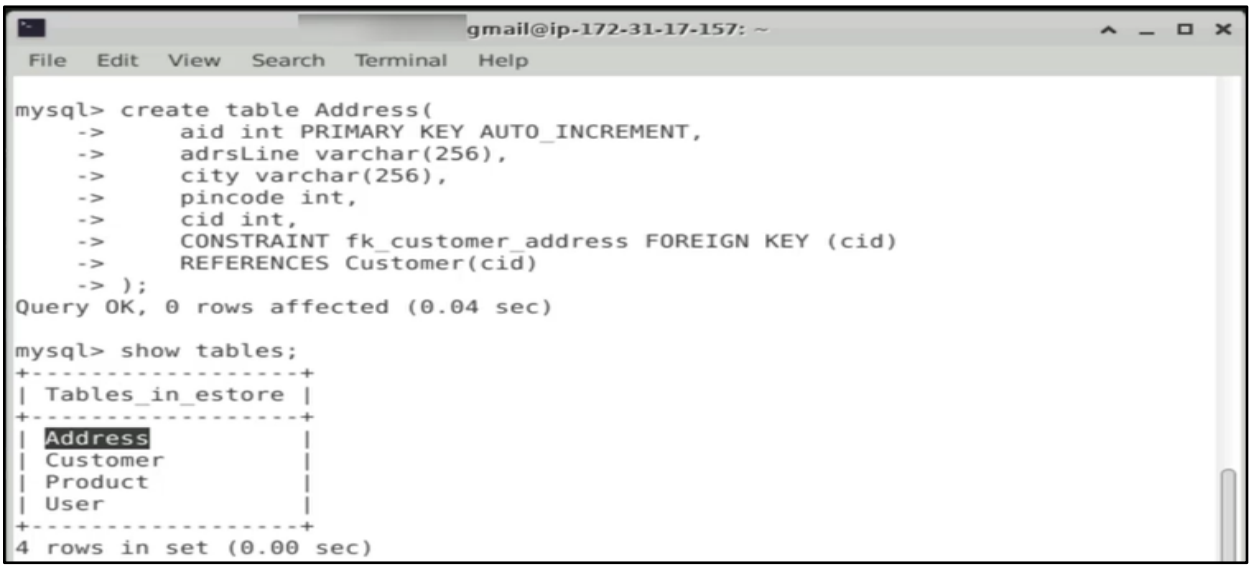
```
mysql> describe Customer;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| cid   | int          | NO   | PRI | NULL    | auto_increment |
| name  | varchar(256) | YES  |     | NULL    |                |
| phone | varchar(20)  | YES  |     | NULL    |                |
| email | varchar(256) | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

1.8 Switch back to Visual Studio Code and create a table named Address with the columns aid, adrsLine, city, pincode, and cid. Create a foreign key constraint fk_customer_address that references the Customer table using the cid column.

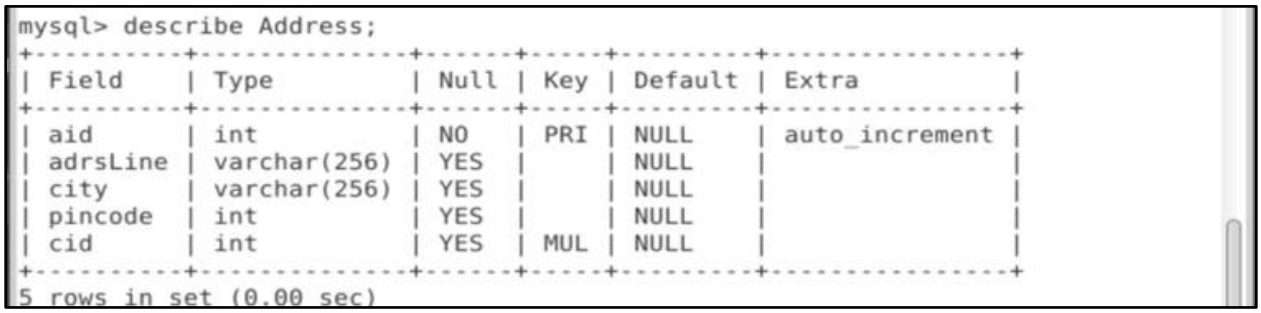
```
Create table Address(
    aid int PRIMARY KEY AUTO_INCREMENT,
    adrsLine varchar(256),
    city varchar(256),
    pincode int,
    cid int,
    CONSTRAINT fk_customer_address FOREIGN KEY (cid)
    REFERENCES Customer(cid)
    );
```

```
15  create table Address(
16      aid int PRIMARY KEY AUTO_INCREMENT,
17      adrsLine varchar(256),
18      city varchar(256),
19      pincode int,
20      cid int,
21      CONSTRAINT fk_customer_address FOREIGN KEY (cid)
22      REFERENCES Customer(cid)
23  );
```

1.9 Copy the code from the Visual studio code and Paste the code into the terminal window. Then, enter **show tables;** to verify that the **Address** table has been created.

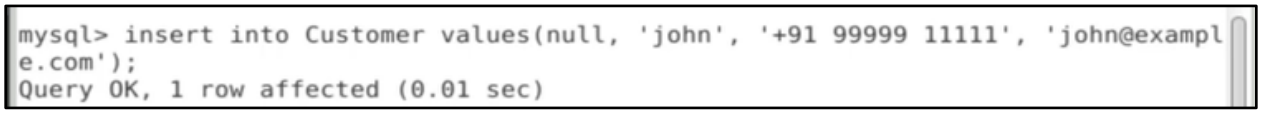


1.10 Enter **describe Address;** to view the structure of the **Address** table



1.11 To add a new customer, execute:

insert into Customer values (null, 'john', '+91 9999911111', 'john@example.com');



1.12 To view the data in the **Customer** table, execute:

select * from Customer;

```
mysql> select * from Customer;
+-----+------+-----------------+------------------+
| cid | name | phone           | email            |
+-----+------+-----------------+------------------+
|   1 | john | +91 99999 11111 | john@example.com |
+-----+------+-----------------+------------------+
1 row in set (0.00 sec)
```

1.12 To add data to the **Address** table, enter:

insert into Address values (null, '2144 Redwood Shores', 'Bangalore', 520001, 1);

```
mysql> insert into Address values(null, '2144 Redwood Shores', 'Bangalore', 5200
01
Query OK, 1 row affected (0.01 sec)
```

1.13 Execute the following command to retrieve data from the **Address** table:

select * from Address;

```
mysql> select * from Address;
+-----+---------------------+-----------+---------+------+
| aid | adrsLine            | city      | pincode | cid  |
+-----+---------------------+-----------+---------+------+
|   1 | 2144 Redwood Shores | Bangalore |  520001 |    1 |
+-----+---------------------+-----------+---------+------+
1 row in set (0.00 sec)
```

1.14 To add another address, enter:

insert into Address values (null, '52 B Country Homes', 'Ludhiana', 141001, 1);

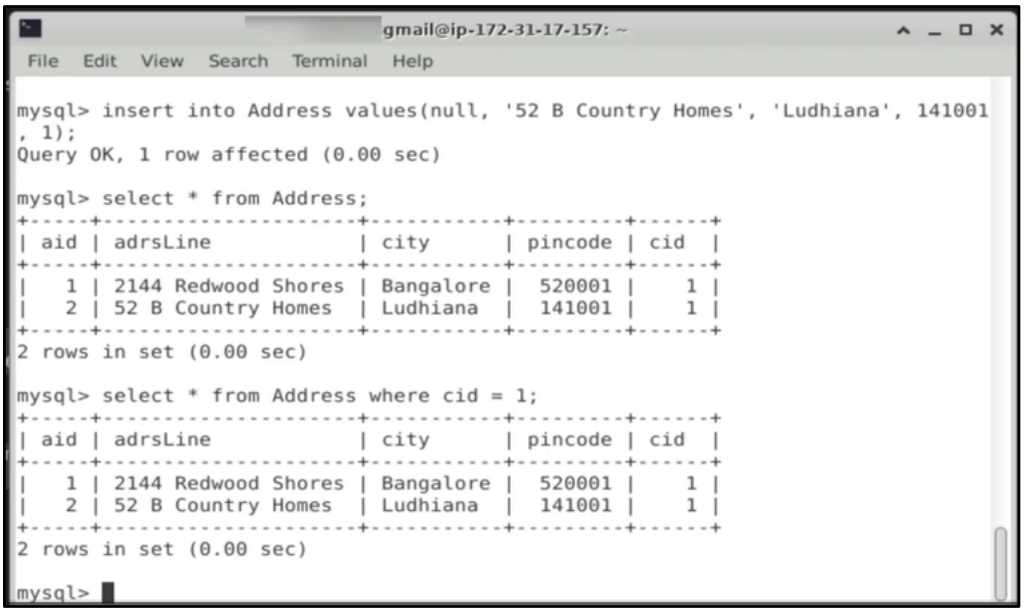
```
gmail@ip-172-31-17-157: ~
File  Edit  View  Search  Terminal  Help

mysql> insert into Address values(null, '52 B Country Homes', 'Ludhiana', 141001
, 1);
Query OK, 1 row affected (0.00 sec)
```

1.15 Execute the following command to view all addresses, and to see addresses associated with customer ID **1**:

select * from Address;

select * from Address where cid = 1;



1.16 Execute the following command to drop the **Customer** table:

drop table Customer;

By following these steps you have successfully created related tables in a MySQL database and established a relationship between them.