5. MySql – Table

Contents

5. MySql – Table

1. Table

- ✓ We can create table in mysql.
- ✓ The purpose of creating table to store the data.
- ✓ Table having group of rows and columns.
- ✓ Below is the employees table.

2. Table Example

- ✓ Below is the employees table.

Number	Name	Salary
101	Ranjan	10000
102	Akshay	20000
103	Daniel	30000
104	Veeru	40000

3. Create a table

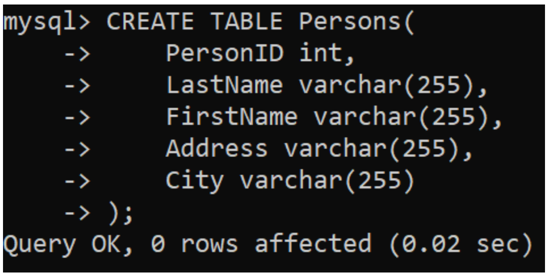
- ✓ We can create a table by using create table command
- ✓ While creating table we need to specify the name of the table.
- ✓ The table name should be unique in a database.
- ✓ We can use IF NOT EXISTS command (optional) while creating table.
- ✓ This command checks if the table exists in the database or not, if table exists then MySQL ignore to create new table.

Login Login with valid credentials

Query To create table in danialdb1 database.

```
mysql> create table Persons(
        PersonID int,
        LastName varchar(255),
        FirstName varchar(255),
        Address varchar(255),
        City varchar(255)
);
```

Output



```
mysql> CREATE TABLE Persons(
    ->     PersonID int,
    ->     LastName varchar(255),
    ->     FirstName varchar(255),
    ->     Address varchar(255),
    ->     City varchar(255)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

Explanation

- ✓ The PersonID column is of type int.
- ✓ The LastName, FirstName, Address, and City columns are varchar type and the maximum length for these fields is 255 characters.
- ✓ Currently **Persons** table is **empty** table

4. Show tables

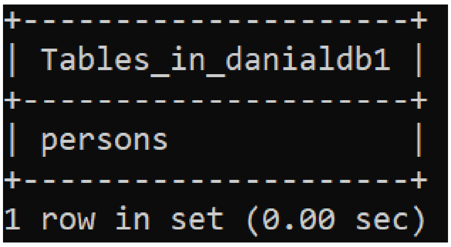
- ✓ We can check created tables in database by using show tables command.

Login Login with valid credentials

Query To display the tables in danialdb1 database.

```
mysql> show tables;
```

Output



```
+---------------------+
| Tables_in_danialdb1 |
+---------------------+
| persons             |
+---------------------+
1 row in set (0.00 sec)
```

5. Drop table

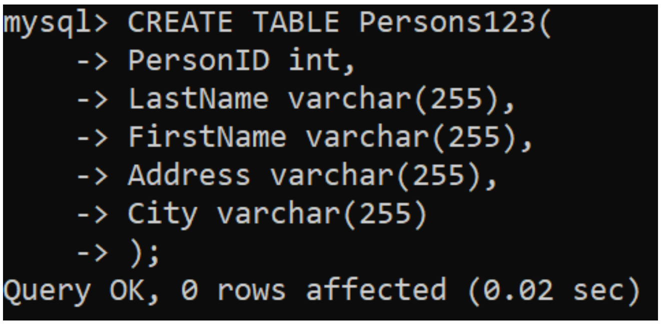
- ✓ We can drop/delete a table by using drop table command.
- ✓ Once we deleted the table then, that table is not available in database.
- ✓ Let’s create a dummy table like Persons123 and will drop the same.

Login Login with valid credentials

Query To create table in danialdb1 database.

```
mysql> create table Persons123(
        PersonID int,
        LastName varchar(255),
        FirstName varchar(255),
        Address varchar(255),
        City varchar(255)
);
```

Output



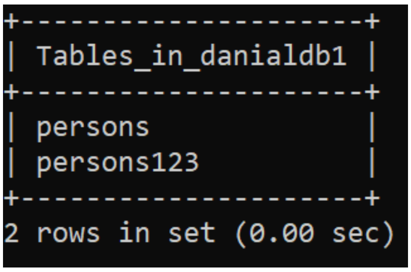
```
mysql> CREATE TABLE Persons123(
    -> PersonID int,
    -> LastName varchar(255),
    -> FirstName varchar(255),
    -> Address varchar(255),
    -> City varchar(255)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

Login Login with valid credentials

Query Display all tables in danialdb1 database.

mysql> show tables;

Output



```
+--------------------+
| Tables_in_danialdb1 |
+--------------------+
| persons            |
| persons123         |
+--------------------+
2 rows in set (0.00 sec)
```

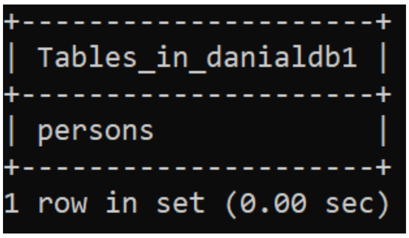
Login Login with valid credentials

Query To drop Persons123 table from danialdb1 database.

mysql> drop table Persons123;
Query OK, 0 rows affected (0.01 sec)

mysql> show tables;

Output



```
+---------------------+
| Tables_in_danialdb1 |
+---------------------+
| persons             |
+---------------------+
1 row in set (0.00 sec)
```

6. Rename the table

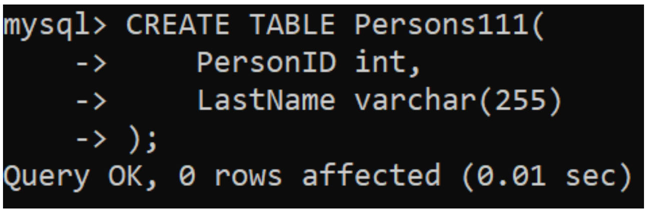
- ✓ We can rename the existing table by using rename or alter commands.
- ✓ Let’s create a dummy table like Persons111 and will rename the same.

Login Login with valid credentials

Query To create Persons111 table in danialdb1 database.

```
mysql> create table Persons111(
        PersonID int,
        LastName varchar(255)
);
```

Output



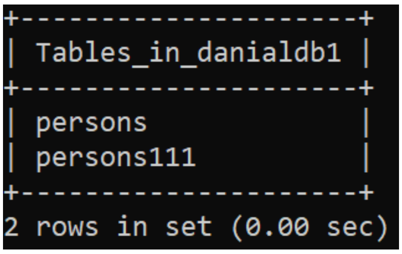
```
mysql> CREATE TABLE Persons111(
    ->      PersonID int,
    ->      LastName varchar(255)
    -> );
Query OK, 0 rows affected (0.01 sec)
```

Login Login with valid credentials

Query Display all tables in danialdb1 database.

```
mysql> show tables;
```

Output



```
+---------------------+
| Tables_in_danialdb1 |
+---------------------+
| persons             |
| persons111          |
+---------------------+
2 rows in set (0.00 sec)
```

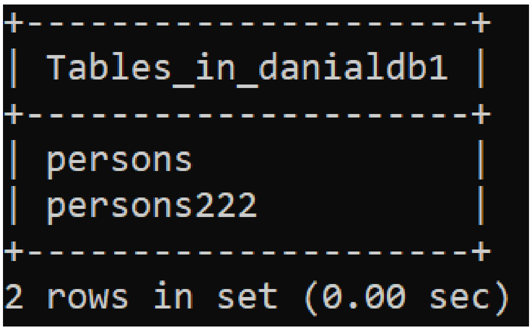
Login Login with valid credentials

Query Rename table and display all tables in danialdb1 database.

```
mysql> rename table Persons111 to Persons222;
Query OK, 0 rows affected (0.01 sec)

mysql> show tables;
```

Output



```
+---------------------+
| Tables_in_danialdb1 |
+---------------------+
| persons             |
| persons222          |
+---------------------+
2 rows in set (0.00 sec)
```

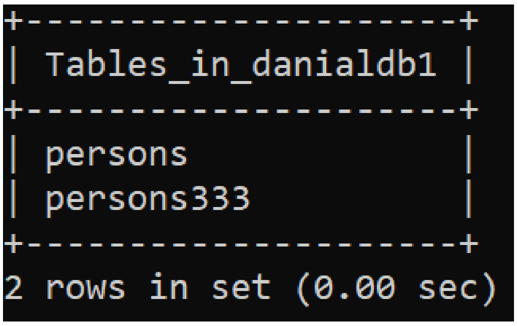
Login Login with valid credentials

Query Alter table and display all tables in danialdb1 database.

```
mysql> alter table Persons222 rename Persons333;
Query OK, 0 rows affected (0.01 sec)

mysql> show tables;
```

Output



```
+--------------------+
| Tables_in_danialdb1 |
+--------------------+
| persons            |
| persons333         |
+--------------------+
2 rows in set (0.00 sec)
```

7. Insert data into table

- ✓ Once we created the table then we can insert data into the table.
    - ○ We can insert data into table by specifying column names and values.
    - ○ Without specifying column names also we can insert the data into a table. We ensure that the **order of** the values and columns should be same.

Login Login with valid credentials

Query To insert data into Persons table in danialdb1 database.

```
mysql> insert into Persons(PersonID, LastName, FirstName,
Address, City) values(101, 'Danial', 'K', 'Near to Data Science Area',
'Hyderabad');

Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Persons(PersonID, LastName, FirstName,
Address, City) values(102, 'Nireekshan', 'D', 'Near to AI Theatre',
'Bangalore');

Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Persons values(103, 'Ranjan', 'M', 'Near to
Python Theatre', 'Hyderabad');

Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Persons values(104, 'Prasad', 'K', 'Near to
Python Road', 'Hyderabad');

Query OK, 1 row affected (0.00 sec)
```

Output

Successfully data inserted into Persons table.

8. Select the table

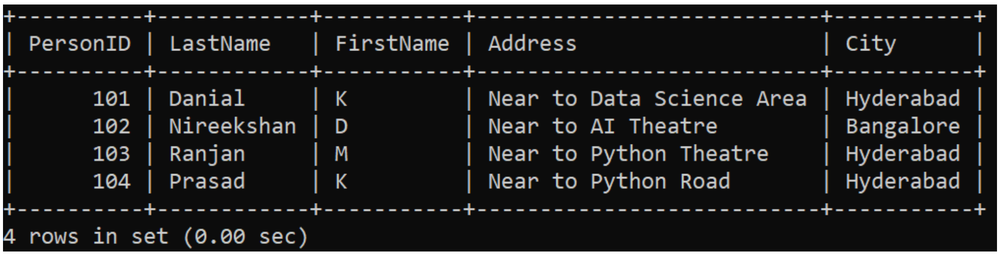
- ✓ We can see the data in a table by using select command.
- ✓ While using select command, table name and column names should be match otherwise we will get an error.

Login Login with valid credentials

Query To select the data from Persons table in danialdb1 database.

```
mysql> select * from Persons;
```

Output



```
+----------+------------+-----------+---------------------------+-----------+
| PersonID | LastName   | FirstName | Address                   | City      |
+----------+------------+-----------+---------------------------+-----------+
|      101 | Danial     | K         | Near to Data Science Area | Hyderabad |
|      102 | Nireekshan | D         | Near to AI Theatre        | Bangalore |
|      103 | Ranjan     | M         | Near to Python Theatre    | Hyderabad |
|      104 | Prasad     | K         | Near to Python Road       | Hyderabad |
+----------+------------+-----------+---------------------------+-----------+
4 rows in set (0.00 sec)
```

Login Login with valid credentials

Query Ensure that table name should exists

```
mysql> select * from Persons444;
```

Output

```
ERROR 1146 (42S02): Table 'danialdb1.persons444' doesn't exist
```

8.1. Select few columns from the table

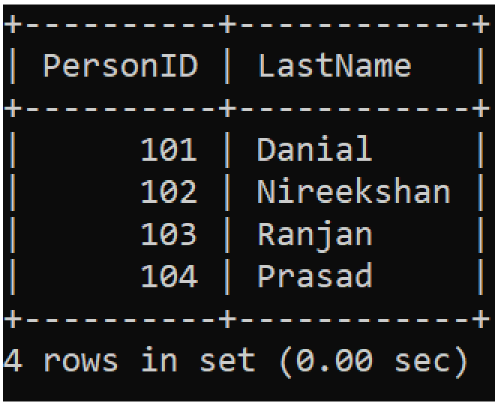
- ✓ We can see the data in a table by using select command.

Login Login with valid credentials

Query To select few columns from Persons table in danialdb1 database.

mysql> select PersonID, LastName from Persons;

Output



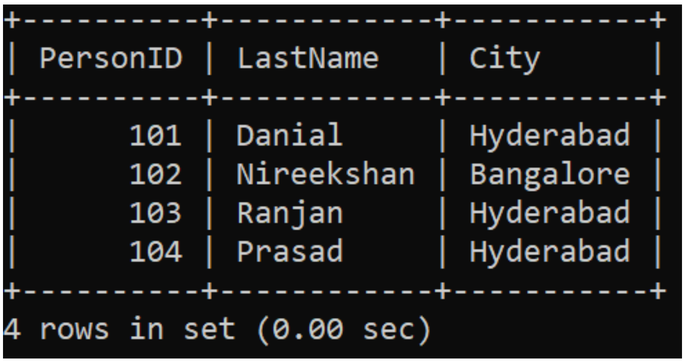
```
+----------+------------+
| PersonID | LastName   |
+----------+------------+
|      101 | Danial     |
|      102 | Nireekshan |
|      103 | Ranjan     |
|      104 | Prasad     |
+----------+------------+
4 rows in set (0.00 sec)
```

Login Login with valid credentials

Query To select few columns from Persons table in danialdb1 database.

mysql> select PersonID, LastName, City from Persons;

Output



```
+----------+------------+-----------+
| PersonID | LastName   | City      |
+----------+------------+-----------+
|      101 | Danial     | Hyderabad |
|      102 | Nireekshan | Bangalore |
|      103 | Ranjan     | Hyderabad |
|      104 | Prasad     | Hyderabad |
+----------+------------+-----------+
4 rows in set (0.00 sec)
```

Login Login with valid credentials

Query Ensure that column name should exists in table

mysql> select PersonID, LastName, City111 from Persons;

Output

ERROR 1054 (42S22): Unknown column 'city111' in 'field list'

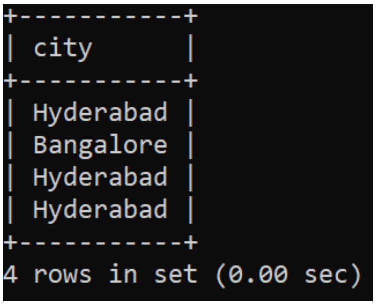
9. Select Distinct

- ✓ By default select statement will returns all values including duplicates.
- ✓ If we wanted to display unique values then we can use select distinct statement.

Login Login with valid credentials
Query To select city column values from Persons table

mysql> select city from Persons;

Output

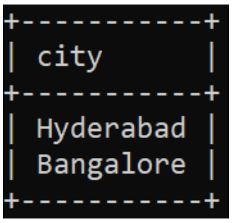


```
+-----------+
| city      |
+-----------+
| Hyderabad |
| Bangalore |
| Hyderabad |
| Hyderabad |
+-----------+
4 rows in set (0.00 sec)
```

Login Login with valid credentials
Query To select distinct values from city column in Persons table

mysql> select distinct city from persons;

Output



```
+-----------+
| city      |
+-----------+
| Hyderabad |
| Bangalore |
+-----------+
```

10. Alter table

- ✓ Once we created the table then we can apply do modifications based on requirement on existing table.
- ✓ We can add, delete, or modify columns in an existing table.
- ✓ We can add and drop various constraints on an existing table.

10.1. Add column in table

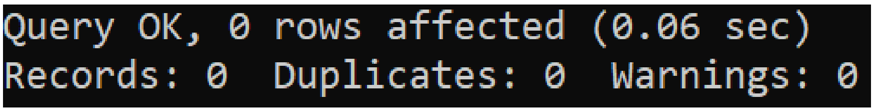
- ✓ We can add column to existing table.

Login Login with valid credentials

Query Add email column to Persons table

mysql> alter table persons
        -> add email varchar(255);

Output



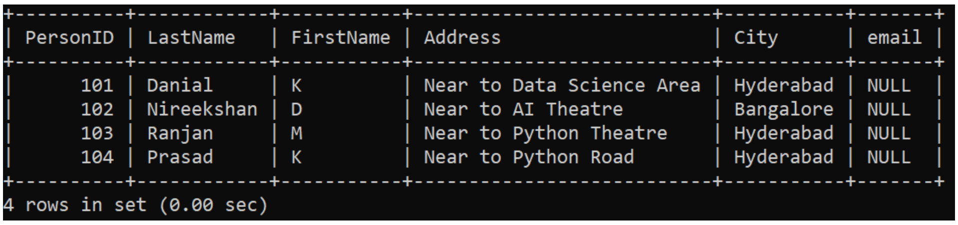
```
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Login Login with valid credentials

Query Display the persons table

mysql> select * from persons;

Output



```
+----------+------------+-----------+--------------------------+-----------+-------+
| PersonID | LastName   | FirstName | Address                  | City      | email |
+----------+------------+-----------+--------------------------+-----------+-------+
|      101 | Danial     | K         | Near to Data Science Area | Hyderabad | NULL  |
|      102 | Nireekshan | D         | Near to AI Theatre       | Bangalore | NULL  |
|      103 | Ranjan     | M         | Near to Python Theatre   | Hyderabad | NULL  |
|      104 | Prasad     | K         | Near to Python Road      | Hyderabad | NULL  |
+----------+------------+-----------+--------------------------+-----------+-------+
4 rows in set (0.00 sec)
```

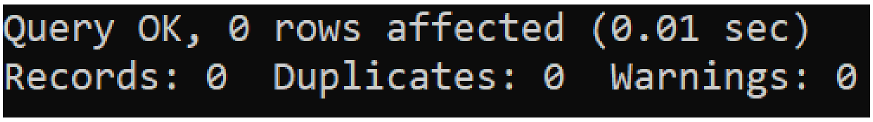
10.2. Drop column from table

✓ Based on requirement we can drop column from table.

Login Login with valid credentials
Query Drop email column from Persons table

```
mysql> alter table persons
    -> drop column email;
```

Output

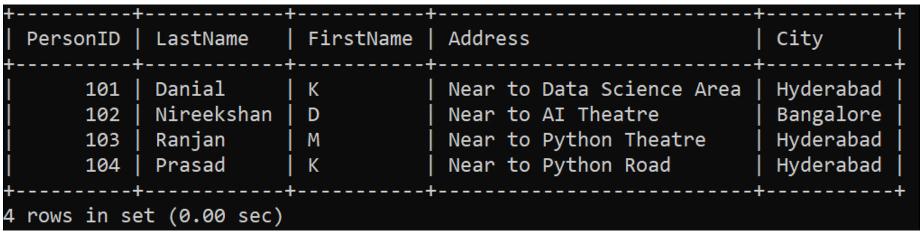


```
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Login Login with valid credentials
Query Display persons table.

```
mysql> select * from persons;
```

Output



```
+----------+------------+-----------+-------------------------+-----------+
| PersonID | LastName   | FirstName | Address                 | City      |
+----------+------------+-----------+-------------------------+-----------+
|      101 | Danial     | K         | Near to Data Science Area | Hyderabad |
|      102 | Nireekshan | D         | Near to AI Theatre      | Bangalore |
|      103 | Ranjan     | M         | Near to Python Theatre  | Hyderabad |
|      104 | Prasad     | K         | Near to Python Road     | Hyderabad |
+----------+------------+-----------+-------------------------+-----------+
4 rows in set (0.00 sec)
```

10.3. Modify column name in table

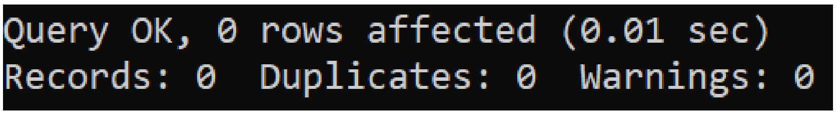
- ✓ We can modify column name in existing table.

Login Login with valid credentials

Query Modify city column to location in persons table

```
mysql> alter table persons
    -> rename column city to location;
```

Output



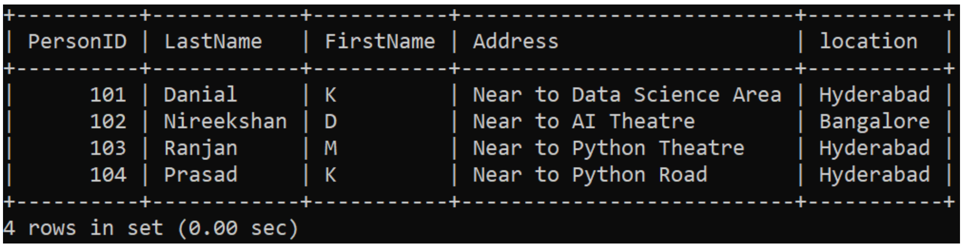
```
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Login Login with valid credentials

Query Display persons table.

```
mysql> select * from persons;
```

Output



```
+----------+------------+-----------+--------------------------+-----------+
| PersonID | LastName   | FirstName | Address                  | location  |
+----------+------------+-----------+--------------------------+-----------+
|      101 | Danial     | K         | Near to Data Science Area | Hyderabad |
|      102 | Nireekshan | D         | Near to AI Theatre       | Bangalore |
|      103 | Ranjan     | M         | Near to Python Theatre   | Hyderabad |
|      104 | Prasad     | K         | Near to Python Road      | Hyderabad |
+----------+------------+-----------+--------------------------+-----------+
4 rows in set (0.00 sec)
```