How to Work With Relational Database

If we want to work with relational database we have the some types of command given by Relational Database Management Tools.

DDL (Data Definition Language): DDL changes the structure of the table like creating a table, deleting a table, altering a table, etc. All the command of DDL are auto-committed that means it permanently save all the changes in the database.

DML (Data Manipulation Language): DML commands are used to modify the database. It is responsible for all form of changes in the database. The command of DML is not auto-committed that means it can't permanently save all the changes in the database. They can be rollback.DML normally used for inserting data in database table, deleting data from database table, view or select data from database table, update data in database table etc.

DCL (Data Control Language): DCL commands are used to grant and take back authority from any database user.

Here are some commands that come under DCL:

Grant

Revoke

TCL (Transaction Control Language): TCL commands can only use with DML commands like INSERT, DELETE and UPDATE only.

These operations are automatically committed in the database that's why they cannot be used while creating tables or dropping them.

Here are some commands that come under TCL:

COMMIT

ROLLBACK

SAVEPOINT

Data Definition Language

It is used for create, drop, alter, select or fetch data from database table.

How to Create Table in MYSQL

If we want to create the table using mysql we have the create command.

Syntax: create table tablename(columnname datatype(size));

Example

```
mysql> use demodb;
Database changed
mysql> create table employee(empcode int(5),name varchar(100),email varchar(200),address varchar(200));
Query OK, 0 rows affected, 1 warning (0.03 sec)
```

How to See the Table Structure

If we want to see the table structure we have the desc command

Desc stands for describe and it is used for describe the table structure means column name its data type its size etc.

Syntax: desc tablename;

Example

```
mysql> desc employee;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| empcode | int(5)       | YES  |     | NULL    |       |
| name    | varchar(100) | YES  |     | NULL    |       |
| email   | varchar(200) | YES  |     | NULL    |       |
| address | varchar(200) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

How to modify or alter the table structure

If we want to alter or modify the table structure we have the alter command and using alter command we can perform following task with table.

1) Add the new column in database table.
2) Modify the column data type, size or rename the column
3) Drop the table column in database table.

How to Add the New Column in Database Table

If we want to add the new column in database table we have the command

Syntax: alter table tablename add column columnname columndefination;

Example

Suppose we have the already present table name as employee given below.

```
mysql> desc employee;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| empcode | int(5)       | YES  |     | NULL    |       |
| name    | varchar(100) | YES  |     | NULL    |       |
| email   | varchar(200) | YES  |     | NULL    |       |
| address | varchar(200) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

In this table we have the already four column name as empcode, name email and address and we want to add the new column in database table qualification of employee so your command look like as.

```
mysql> alter table employee add column qual varchar(200);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

After adding new column in your database table your table look like as

```
mysql> desc employee;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| empcode | int(5)       | YES  |     | NULL    |       |
| name    | varchar(100) | YES  |     | NULL    |       |
| email   | varchar(200) | YES  |     | NULL    |       |
| address | varchar(200) | YES  |     | NULL    |       |
| qual    | varchar(200) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
5 rows in set (0.01 sec)
```

How to Modify the Table column Definition

If we want to modify the column definition means change the column size or change data type of column etc we have the following command.

Syntax: alter table tablename modify column columnname datatype(size);

Example

Before updating we have the table given below

```
mysql> desc employee;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| empcode | int(5)       | YES  |     | NULL    |       |
| name    | varchar(100) | YES  |     | NULL    |       |
| email   | varchar(200) | YES  |     | NULL    |       |
| address | varchar(200) | YES  |     | NULL    |       |
| qual    | varchar(200) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
5 rows in set (0.01 sec)

mysql>
```

In above table we have the column name as address with 200 size we want to increase the address size from 200 to 2000 character so your query look like as .

```
mysql> alter table employee modify column address varchar(2000);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

After modify the address column your table structure look like as

```
mysql> desc employee;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| empcode | int(5)       | YES  |     | NULL    |       |
| name    | varchar(100) | YES  |     | NULL    |       |
| email   | varchar(200) | YES  |     | NULL    |       |
| address | varchar(2000)| YES  |     | NULL    |       |
| qual    | varchar(200) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

Here we modify the column size 2000

How to Drop the column from database table

If we want to drop the column from database table we have the following command.

Syntax: alter table tablename drop column columnname;

Example

We have one table given below

```
mysql> desc employee;
+---------+---------------+------+-----+---------+-------+
| Field   | Type          | Null | Key | Default | Extra |
+---------+---------------+------+-----+---------+-------+
| empcode | int(5)        | YES  |     | NULL    |       |
| name    | varchar(100)  | YES  |     | NULL    |       |
| email   | varchar(200)  | YES  |     | NULL    |       |
| address | varchar(2000) | YES  |     | NULL    |       |
| qual    | varchar(200)  | YES  |     | NULL    |       |
+---------+---------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

From above table we want to drop the column name is qual

So your command should like as

```
mysql> alter table employee drop column qual;
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

After dropping table column your table structure look like as

```
mysql> desc employee;
+---------+---------------+------+-----+---------+-------+
| Field   | Type          | Null | Key | Default | Extra |
+---------+---------------+------+-----+---------+-------+
| empcode | int(5)        | YES  |     | NULL    |       |
| name    | varchar(100)  | YES  |     | NULL    |       |
| email   | varchar(200)  | YES  |     | NULL    |       |
| address | varchar(2000) | YES  |     | NULL    |       |
+---------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

How to drop the table

If we want to drop the table in MYSQL we have the following command

Syntax: drop table tablename;

Example

We have the table given below.

```
mysql> desc employee;
+---------+---------------+------+-----+---------+-------+
| Field   | Type          | Null | Key | Default | Extra |
+---------+---------------+------+-----+---------+-------+
| empcode | int(5)        | YES  |     | NULL    |       |
| name    | varchar(100)  | YES  |     | NULL    |       |
| email   | varchar(200)  | YES  |     | NULL    |       |
| address | varchar(2000) | YES  |     | NULL    |       |
+---------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

We want to delete the table name as employee

```
mysql> drop table employee;
Query OK, 0 rows affected (0.06 sec)
```

After dropping table or deleting table if we try to describe the table then we get the following type of message.

```
mysql> desc employee;
ERROR 1146 (42S02): Table 'demodb.employee' doesn't exist
```

Why we get this type of error?

Because we delete the table name as employee and so it is not present in MYSQL and we try to describe it so mysql generate the error to us table demodb.employee is doesnot exist here demodb is database name and employee is table name from demodb database.

DML Command

DML stands for data manipulation language and it is used for perform the following operation with database table.

1) insert record in database table.
2) delete record from database table.
3) update record from database table.
4) select or view record from database table.