Government College of Engineering, Jalgaon
(An Autonomous Institute of Government of Maharashtra)

Name : **Semester :** V **PRN :**
Class : T. Y. B.Tech Computer **Academic Year :** 2024-25 **Subject :** CO307U DBMS Lab
Course Teacher : Mr. Vinit Kakde
Date of Performance : **Date of Completion :**

Practical no. 3

Aim: Create department table with the following structure

Name	Type
Deptno	INTERGER
Deptname	Varchar(10)
Location	Varchar(10)

Aim :

Theory:

Database Management System is a software or technology used to manage data from a database. Some popular databases are MySQL, Oracle, MongoDB, etc. DBMS provides many operations e.g. creating a database, Storing in the database, updating an existing database, delete from the database. DBMS is a system that enables you to store, modify, and retrieve data in an organized way. It also provides security to the database.

CONCEPT AND PURPOSE OF THE DATABASE

A database is a repository of data, stored as a table made up of masses of data that have some connection to each other.

The database is organized in that it uses records and fields so that the data is easier to use – whether it's to analyze, add, delete or otherwise manipulate it. Additionally, a database is structured so it is clear how the data points within it relate to one another. The structure of the data allows it to be accessible as needed by users and computer programs.

A database schema is a blueprint of how the data will look in a database, the type of database structure, if you will. It doesn't house the data but describes the shape of the data and how it relates to other tables.

Queries and outputs:

Create table Syntax:

CREATE TABLE table_name (column1 datatype , column2 datatype , column3 datatype , ...);

Query:

create table department(deptno int, deptname varchar(10), location varchar(10));

```
mysql> use mysql
Database changed
mysql> create table department(deptno int, deptname varchar(10), location varchar(10));
Query OK, 0 rows affected (2.38 sec)

mysql> desc department;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| deptno   | int         | YES  |     | NULL    |       |
| deptname | varchar(10) | YES  |     | NULL    |       |
| location | varchar(10) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.07 sec)
```

1. Add column designation to the department table Syntax:
   a. Alter table table_name add(column_name type); Query:
   b. alter table department add(designation varchar(10));

```
mysql> desc department;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| deptno      | int         | YES  |     | NULL    |       |
| deptname    | varchar(10) | YES  |     | NULL    |       |
| location    | varchar(10) | YES  |     | NULL    |       |
| designation | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

1. Insert values into the table
   Syntax:
   insert into table_name values
   (value1,value2, ... ,valueN);
   Query:
   insert into department values(9,'accounting','hyderabad','manager'); insert into department values(10,'research','chennai','professor');
   insert into department values(11,'sales','banglore','salesman');
   insert into department values(12,'operations','mumbai','operator');

```
mysql> select * from department;
+--------+------------+-----------+-------------+
| deptno | deptname   | location  | designation |
+--------+------------+-----------+-------------+
|      9 | accounting | hyderabad | manager     |
|     10 | research   | chennai   | professor   |
|     11 | sales      | banglore  | salesman    |
|     12 | operations | mumbai    | operator    |
+--------+------------+-----------+-------------+
4 rows in set (0.00 sec)
```

2. List the records of dept table grouped by deptno
   Syntax:
   select column1 from table_name group by column1;
   Query:
   select deptno,deptname, from department group by deptno, deptname;

```
+--------+------------+
| deptno | deptname   |
+--------+------------+
|      9 | accounting |
|     10 | research   |
|     11 | sales      |
|     12 | operations |
+--------+------------+
4 rows in set (0.02 sec)
```

3. Update the record where deptno is 9
   Syntax:
   update table_name set column1=value1,column2=value2,..... columnN=valueN;
   Query:
   update department set designation =’accountant’ where deptno=9;

```
mysql> select * from department;
+--------+------------+-----------+-------------+
| deptno | deptname   | location  | designation |
+--------+------------+-----------+-------------+
|      9 | accounting | hyderabad | acountant   |
|     10 | research   | chennai   | professor   |
|     11 | sales      | banglore  | salesman    |
|     12 | operations | mumbai    | operator    |
+--------+------------+-----------+-------------+
4 rows in set (0.00 sec)
```

4. Delete any column data from the table
   Syntax:
   alter table_name drop column(column_Name);
   Query:
   alter table department drop column designation;

```
mysql> select * from department;
+--------+------------+-----------+
| deptno | deptname   | location  |
+--------+------------+-----------+
|      9 | accounting | hyderabad |
|     10 | research   | chennai   |
|     11 | sales      | banglore  |
|     12 | operations | mumbai    |
+--------+------------+-----------+
4 rows in set (0.00 sec)
```

5. Insert any three records in the employee table and use rollback. Check the result.

Syntax:

insert into table_name (column1,column2,...columnN)
values (value1,value2,…….,valueN);

Query:
Start transaction;
Insert into department values where deptno=9; Rollback;

```
+--------+------------+-----------+
| deptno | deptname   | location  |
+--------+------------+-----------+
|      9 | accounting | hyderabad |
|     10 | research   | chennai   |
|     11 | sales      | banglore  |
|     12 | operations | mumbai    |
+--------+------------+-----------+
4 rows in set (0.00 sec)

mysql> start transaction;
Query OK, 0 rows affected (0.10 sec)

mysql> delete from department where deptno=9;
Query OK, 1 row affected (0.11 sec)

mysql> select * from department;
+--------+------------+----------+
| deptno | deptname   | location |
+--------+------------+----------+
|     10 | research   | chennai  |
|     11 | sales      | banglore |
|     12 | operations | mumbai   |
+--------+------------+----------+
3 rows in set (0.00 sec)
```

```
mysql> rollback;
Query OK, 0 rows affected (0.19 sec)

mysql> select * from department;
+--------+------------+-----------+
| deptno | deptname   | location  |
+--------+------------+-----------+
|      9 | accounting | hyderabad |
|     10 | research   | chennai   |
|     11 | sales      | banglore  |
|     12 | operations | mumbai    |
+--------+------------+-----------+
4 rows in set (0.00 sec)
```

Conclusion:

In this practical we performed different queries on table department. We first created dept named table then altered its name, column and at the last we deleted the table1.

Questions:

1) **Why ALTER TABLE command is used ?**
   ALTER TABLE is used to add,delete/drop or modify columns in the exsisting table.It is also used to add and drop various constraints on the exsisting table.

2) **Why DROP COLUMN command is used ?**
   DROP COLUMN is used to drop columns in a table i.e deleting unwanted columns from the table

3) **Why MODIFY COLUMN command is used ?**
   MODIFY COLUMN is used to modify the existing columns In a table.Multiple columns can also be modified at once.

4) **Why ADD command is used ?**
   ADD is used to add columns into the existing table.With the use of ADD,we do not require to create a whole database again in case of adding additional information.

5) **Why RENAME command is used ?**
   The RENAME command is used to change the name of an existing database object like table,column to a new name.

Name & Sign of Course Teacher
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