20MCA134 ADVANCED DBMS LAB

LAB CYCLE 1

Experiment No: 1

Familiarization of DDL Commands

AIM: Data Definition Language (DDL) - These SQL commands are used for creating, modifying,and dropping the structure of database objects. The commands are CREATE, ALTER,DROP, RENAME, and TRUNCATE.

1). A. Consider the database for a college. Write SQL commands to implement the

following:

1. Create a database:

ans: CREATE DATABASE college;

2. Select the current database

ans: USE college;

3. Create the following tables:

a) Student (roll\_no integer, name varchar, dob date, address text,

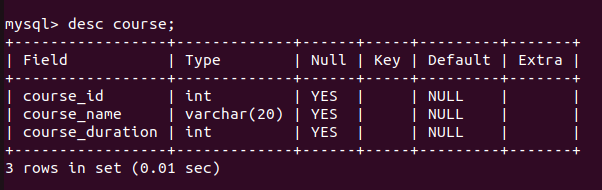
phone\_no varchar, blood\_grp varchar)

ans: create table student(roll\_no int,name varchar(20),dob date,address text(255),ph\_novarchar(10),blood\_grp varchar(50));

b) Course (Course\_id integer, Course\_name varchar, course\_duration

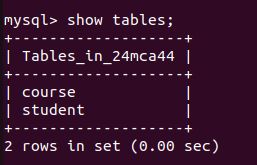
integer)

ans: create table course(course\_id int,course\_name varchar(20),course\_duration int);



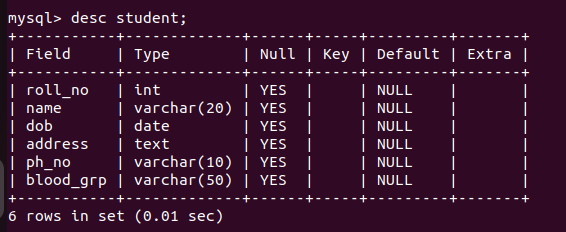
4. List all tables in the current database.

Ans: show databases;



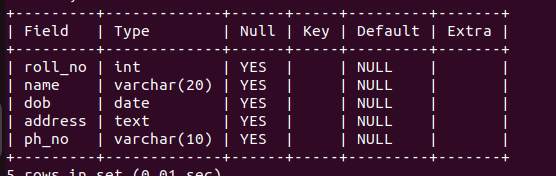
5. Display the structure of the Student table.

Ans: DESC student;



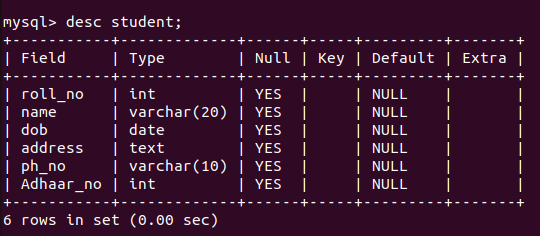
6. Drop the column blood\_grp from Student table.

Ans: ALTER TABLE student DROP blood\_grp;



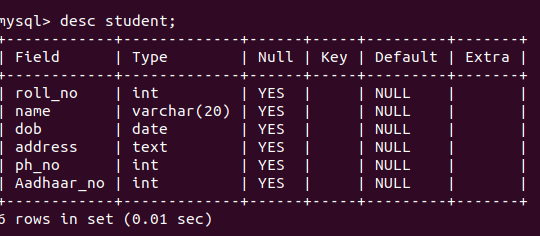
7. Add a new column Adar\_no with domain number to the table Student

ans: ALTER TABLE student ADD Adhaar\_no int(12);



8. Change the datatype of phone\_no from varchar to int

ans: ALTER TABLE student MODIFY ph\_no int(10);



B. Consider the database for an organization. Write SQL commands to implement the

following:

1. Create a database

ans: CREATE DATABASE college;

2. Select the current database

ans: USE college;

3. Create the following tables:

a) Employee (emp\_no varchar, emp\_name varchar, dob date, address

text, mobile\_no integer, dept\_no varchar, salary integer)

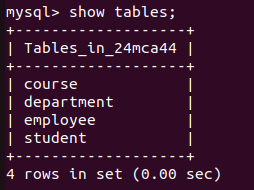
ans: create table employee(emp\_no varchar(10),emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varchar(50),salary int(20));

b) Department (dept\_no varchar, dept\_name varchar, location varchar)

ans: create table department (dept\_no varchar(10), dept\_name varchar(20), location varchar(20));

4. List all tables in the current database.

ans: show tables;



5. Display the structure of the Employee table and Department table.

6. Add a new column ‘Designation’ to the table Employee.

7. Drop the column ‘location’ from Department table.

mysql> show databases

-> ;

+--------------------+

| Database |

+--------------------+

| 24mca44 |

| information\_schema |

| performance\_schema |

+--------------------+

3 rows in set (0.00 sec)

mysql> use 24mca44

Database changed

mysql> show tables

-> ;

Empty set (0.01 sec)

mysql> create table student(roll\_no int,name varchar(20),dob date,address text(255),ph\_no varchar(10),blood\_grp varchar(50));

Query OK, 0 rows affected (0.40 sec)

mysql> desc student;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| blood\_grp | varchar(50) | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

6 rows in set (0.01 sec)

mysql> create table course(course\_id int,course\_name varchar(20),course\_duration int);

Query OK, 0 rows affected (0.26 sec)

mysql> desc course;

+-----------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+-------------+------+-----+---------+-------+

| course\_id | int | YES | | NULL | |

| course\_name | varchar(20) | YES | | NULL | |

| course\_duration | int | YES | | NULL | |

+-----------------+-------------+------+-----+---------+-------+

3 rows in set (0.01 sec)

mysql> show tables;

+-------------------+

| Tables\_in\_24mca44 |

+-------------------+

| course |

| student |

+-------------------+

2 rows in set (0.00 sec)

mysql> ALTER TABLE student DROP COLOUMN blood\_grp;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;blood\_grp&apos; at line 1

mysql> ALTER TABLE student DROP COLOMN blood\_grp;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;blood\_grp&apos; at line 1

mysql> ALTER TABLE student DROP blood\_grp;

Query OK, 0 rows affected (0.18 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student

-> ;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.01 sec)

mysql> ALTER TABLE student ADD Adhaar\_no int(12);

Query OK, 0 rows affected, 1 warning (0.21 sec)

Records: 0 Duplicates: 0 Warnings: 1

mysql> desc student;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| Adhaar\_no | int | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

mysql> ALTER TABLE student ADD Adhaar\_no number(12);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;number(12)&apos; at line 1

mysql> desc student;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| Adhaar\_no | int | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

mysql> ALTER TABLE student DROP Adhaar\_no;

Query OK, 0 rows affected (0.25 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

mysql> ALTER TABLE student ADD Aadhaar\_no int(50);

Query OK, 0 rows affected, 1 warning (0.20 sec)

Records: 0 Duplicates: 0 Warnings: 1

mysql> desc student;

+------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| Aadhaar\_no | int | YES | | NULL | |

+------------+-------------+------+-----+---------+-------+

6 rows in set (0.01 sec)

mysql> ALTER TABLE student RENAME ph\_no int(10);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;int(10)&apos; at line 1

mysql> ALTER TABLE student MODIFY ph\_no int(10);

Query OK, 0 rows affected, 1 warning (0.76 sec)

Records: 0 Duplicates: 0 Warnings: 1

mysql> desc student;

+------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+-------------+------+-----+---------+-------+

| roll\_no | int | YES | | NULL | |

| name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | int | YES | | NULL | |

| Aadhaar\_no | int | YES | | NULL | |

+------------+-------------+------+-----+---------+-------+

6 rows in set (0.01 sec)

mysql> create table employee(emp\_no varchar,emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varchar(50),salary int(20));

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;,emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varch&apos; at line 1

mysql> create table employee(emp\_no varchar,emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varchar(50),salary int(20));

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;,emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varch&apos; at line 1

mysql> create table employee(emp\_no varchar(10),emp\_name varchar(20),dob date,address text(255),ph\_no varchar(10),dept\_no varchar(50),salary int(20));

Query OK, 0 rows affected, 1 warning (0.34 sec)

mysql> desc employee;

+----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+-------------+------+-----+---------+-------+

| emp\_no | varchar(10) | YES | | NULL | |

| emp\_name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| dept\_no | varchar(50) | YES | | NULL | |

| salary | int | YES | | NULL | |

+----------+-------------+------+-----+---------+-------+

7 rows in set (0.01 sec)

mysql> create table department (dept\_no varchar(10), dept\_name varchar(20), location varchar(20));\

Query OK, 0 rows affected (0.31 sec)

mysql> desc department;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| dept\_no | varchar(10) | YES | | NULL | |

| dept\_name | varchar(20) | YES | | NULL | |

| location | varchar(20) | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

3 rows in set (0.01 sec)

mysql> show tables;

+-------------------+

| Tables\_in\_24mca44 |

+-------------------+

| course |

| department |

| employee |

| student |

+-------------------+

4 rows in set (0.00 sec)

mysql> ALTER TABLE employee ADD designation varchar(20);

Query OK, 0 rows affected (0.40 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc employee;

+-------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+-------------+------+-----+---------+-------+

| emp\_no | varchar(10) | YES | | NULL | |

| emp\_name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| dept\_no | varchar(50) | YES | | NULL | |

| salary | int | YES | | NULL | |

| designation | varchar(20) | YES | | NULL | |

+-------------+-------------+------+-----+---------+-------+

8 rows in set (0.01 sec)

mysql> ALTER TABLE department DROP location;

Query OK, 0 rows affected (0.18 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| dept\_no | varchar(10) | YES | | NULL | |

| dept\_name | varchar(20) | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

2 rows in set (0.01 sec)

mysql> CREATE TABLE persons(pers\_id int PRIMARY KEY,name varchar(20) NOT NULL,Aadhar NUMBER NOT NULL UNIQUE,age int CHECK>18);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;NUMBER NOT NULL UNIQUE,age int CHECK>18)&apos; at line 1

mysql> CREATE TABLE persons(pers\_id int PRIMARY KEY,name varchar(20) NOT NULL,Aadhar INT(200) NOT NULL UNIQUE,age int CHECK>18);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;>18)&apos; at line 1

mysql> CREATE TABLE persons(pers\_id int PRIMARY KEY,name varchar(20) NOT NULL,Aadhar INT(200) NOT NULL UNIQUE,age int CHECK(age>18));

Query OK, 0 rows affected, 1 warning (0.40 sec)

mysql> desc persons;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| pers\_id | int | NO | PRI | NULL | |

| name | varchar(20) | NO | | NULL | |

| Aadhar | int | NO | UNI | NULL | |

| age | int | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

4 rows in set (0.00 sec)

mysql> CREATE TABLE orders(order\_id int PRIMARY KEY,order\_no INT(10) NOT NULL,FOREIGN KEY(pers\_id) REFERENCES persons(pers\_id));

ERROR 1072 (42000): Key column &apos;pers\_id&apos; doesn&apos;t exist in table

mysql> CREATE TABLE orders(order\_id int PRIMARY KEY,order\_no INT(10) NOT NULL,pers\_id NOT NULL,FOREIGN KEY(pers\_id) REFERENCES persons(pers\_id));

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;NOT NULL,FOREIGN KEY(pers\_id) REFERENCES persons(pers\_id))&apos; at line 1

mysql> CREATE TABLE orders(order\_id int PRIMARY KEY,order\_no INT(10) NOT NULL,pers\_id INT NOT NULL,FOREIGN KEY(pers\_id) REFERENCES persons(pers\_id));

Query OK, 0 rows affected, 1 warning (0.58 sec)

mysql> desc orders;

+----------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+------+------+-----+---------+-------+

| order\_id | int | NO | PRI | NULL | |

| order\_no | int | NO | | NULL | |

| pers\_id | int | NO | MUL | NULL | |

+----------+------+------+-----+---------+-------+

3 rows in set (0.01 sec)

mysql> ALTER TABLE employee MODIFY emp\_no PRIMARY KEY;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;PRIMARY KEY&apos; at line 1

mysql> ALTER TABLE employee MODIFY emp\_no varchar(10) PRIMARY KEY;

Query OK, 0 rows affected (0.75 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc epmloyee;

ERROR 1146 (42S02): Table &apos;24mca44.epmloyee&apos; doesn&apos;t exist

mysql> desc employee;

+-------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+-------------+------+-----+---------+-------+

| emp\_no | varchar(10) | NO | PRI | NULL | |

| emp\_name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| dept\_no | varchar(50) | YES | | NULL | |

| salary | int | YES | | NULL | |

| designation | varchar(20) | YES | | NULL | |

+-------------+-------------+------+-----+---------+-------+

8 rows in set (0.00 sec)

mysql> ALTER TABLE department MODIFY dept\_no varchar(10) PRIMARY KEY;

Query OK, 0 rows affected (0.69 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| dept\_no | varchar(10) | NO | PRI | NULL | |

| dept\_name | varchar(20) | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

2 rows in set (0.00 sec)

mysql> ALTER TABLE employee MODIFY dept\_no varchar(10) FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE employee MODIFY dept\_no varchar(10),FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE employee MODIFY FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE employee MODIFY dept\_no varchar(10),FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE orders DROP order\_id;

Query OK, 0 rows affected (1.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc orders;

+----------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+------+------+-----+---------+-------+

| order\_no | int | NO | | NULL | |

| pers\_id | int | NO | MUL | NULL | |

+----------+------+------+-----+---------+-------+

2 rows in set (0.00 sec)

mysql> ALTER TABLE employee MODIFY COLUMN dept\_no varchar(10),FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE employee MODIFY COLUMN dept\_no varchar(10) FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;FOREIGN KEY(dept\_no) REFERENCES department(dept\_no)&apos; at line 1

mysql> ALTER TABLE employee ADD CONSTRAINT FK\_dept\_no FOREIGN KEY(dept\_no) REFERENCES department(dept\_id);

ERROR 3734 (HY000): Failed to add the foreign key constraint. Missing column &apos;dept\_id&apos; for constraint &apos;FK\_dept\_no&apos; in the referenced table &apos;department&apos;

mysql> ALTER TABLE employee ADD CONSTRAINT FK\_dept\_no FOREIGN KEY(dept\_no) REFERENCES department(dept\_no);

Query OK, 0 rows affected (0.96 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc employee;

+-------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+-------------+------+-----+---------+-------+

| emp\_no | varchar(10) | NO | PRI | NULL | |

| emp\_name | varchar(20) | YES | | NULL | |

| dob | date | YES | | NULL | |

| address | text | YES | | NULL | |

| ph\_no | varchar(10) | YES | | NULL | |

| dept\_no | varchar(50) | YES | MUL | NULL | |

| salary | int | YES | | NULL | |

| designation | varchar(20) | YES | | NULL | |

+-------------+-------------+------+-----+---------+-------+

8 rows in set (0.01 sec)

mysql> Department (dept\_no varchar, dept\_name varchar, location varchar)DROP orders;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;Department (dept\_no varchar, dept\_name varchar, location varchar)DROP orders&apos; at line 1

mysql> DROP orders;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near &apos;orders&apos; at line 1

mysql> DROP TABLE orders;

Query OK, 0 rows affected (0.24 sec)

mysql> CREATE TABLE orders(order\_id int PRIMARY KEY,order\_no INT(10) NOT NULL,pers\_id INT NOT NULL,FOREIGN KEY(pers\_id) REFERENCES persons(pers\_id));

Query OK, 0 rows affected, 1 warning (0.37 sec)

mysql> desc orders;

+----------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+------+------+-----+---------+-------+

| order\_id | int | NO | PRI | NULL | |

| order\_no | int | NO | | NULL | |

| pers\_id | int | NO | MUL | NULL | |

+----------+------+------+-----+---------+-------+

3 rows in set (0.01 sec)

mysql> ALTER TABLE orders DROP PRIMARY KEY;

Query OK, 0 rows affected (1.18 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc orders;

+----------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+------+------+-----+---------+-------+

| order\_id | int | NO | | NULL | |

| order\_no | int | NO | | NULL | |

| pers\_id | int | NO | MUL | NULL | |

+----------+------+------+-----+---------+-------+

3 rows in set (0.01 sec)