PRACTICAL 2

Microsoft Windows [Version 10.0.19044.2965]
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C:\Users\hp>mysql -u root -p
Enter password: ********
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 26
Server version: 8.0.31 MySQL Community Server - GPL

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owners.

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

Show databases

mysql> show databases;
+--------------------+
| Database |
+--------------------+
| college |
| information_schema |
| jscoe |
| jspm |
| mysql |
| performance_schema |
| student |
| sys |
+--------------------+
8 rows in set (0.10 sec)

Create database

mysql> create database DBMS;
Query OK, 1 row affected (0.03 sec)

Use database

mysql> use DBMS;

Database changed

Create table

mysql> create table student(Rno int, sname varchar(20), DOB date, SGPA float(3,1));
Query OK, 0 rows affected, 1 warning (0.09 sec)

Show tables

mysql> show tables;
```
+----------------+
| Tables_in_dbms |
+----------------+
| student        |
+----------------+
1 row in set (0.01 sec)
```

Describe table

mysql> desc student;
```
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  |     | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
| SGPA  | float(3,1)  | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

Alter table: add column

mysql> alter table student add address varchar(50);
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

Describe table

mysql> desc student;
```
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| Rno     | int         | YES  |     | NULL    |       |
| sname   | varchar(20) | YES  |     | NULL    |       |
```

```
| DOB     | date        | YES |     | NULL    |       |
| SGPA    | float(3,1)  | YES |     | NULL    |       |
| address | varchar(50) | YES |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

Alter table: add column after specific column

```
mysql> alter table student add email varchar(50) after sname;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Describe table

```
mysql> desc student;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| Rno     | int         | YES |     | NULL    |       |
| sname   | varchar(20) | YES |     | NULL    |       |
| email   | varchar(50) | YES |     | NULL    |       |
| DOB     | date        | YES |     | NULL    |       |
| SGPA    | float(3,1)  | YES |     | NULL    |       |
| address | varchar(50) | YES |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

Alter table: add column on first number

```
mysql> alter table student add bloodgrp char(5) first;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Describe table

```
mysql> desc student;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| bloodgrp | char(5)     | YES |     | NULL    |       |
| Rno      | int         | YES |     | NULL    |       |
| sname    | varchar(20) | YES |     | NULL    |       |
| email    | varchar(50) | YES |     | NULL    |       |
| DOB      | date        | YES |     | NULL    |       |
```

```
| SGPA    | float(3,1) | YES |   | NULL    |     |
| address | varchar(50)| YES |   | NULL    |     |
+----------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

Alter table:modify size of datatype

```
mysql> alter table student modify address varchar(60);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Describe table

```
mysql> desc student;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| bloodgrp | char(5)     | YES |   | NULL    |     |
| Rno      | int         | YES |   | NULL    |     |
| sname    | varchar(20) | YES |   | NULL    |     |
| email    | varchar(50) | YES |   | NULL    |     |
| DOB      | date        | YES |   | NULL    |     |
| SGPA     | float(3,1)  | YES |   | NULL    |     |
| address  | varchar(60) | YES |   | NULL    |     |
+----------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

Alter table:modify datatype of column

```
mysql>  alter table student modify bloodgrp varchar(5);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Alter table:drop column

```
mysql>  alter table student drop column bloodgrp;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Describe table

```
mysql> desc student;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
```

```
+---------+-------------+------+-----+---------+-------+
| Rno     | int         | YES  |     | NULL    |       |
| sname   | varchar(20) | YES  |     | NULL    |       |
| email   | varchar(50) | YES  |     | NULL    |       |
| DOB     | date        | YES  |     | NULL    |       |
| SGPA    | float(3,1)  | YES  |     | NULL    |       |
| address | varchar(60) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

Show tables

```
mysql> show tables;
+----------------+
| Tables_in_dbms |
+----------------+
| student        |
+----------------+
1 row in set (0.01 sec)
```

Alter table:rename

```
mysql> alter table student rename to students;
Query OK, 0 rows affected (0.01 sec)
```

Show tables

```
mysql> show tables;
+----------------+
| Tables_in_dbms |
+----------------+
| students       |
+----------------+
1 row in set (0.00 sec)
```

Alter table: change column name

```
mysql> alter table students change Rno Rollno int;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

———

mysql> select * from students;
Empty set (0.00 sec)

mysql> insert into students values (1,'abc','abc@gmail.com','2001-03-31',8.3,'pune');
Query OK, 1 row affected (0.01 sec)

```
mysql> select * from students;
+--------+-------+---------------+------------+------+---------+
| Rollno | sname | email         | DOB        | SGPA | address |
+--------+-------+---------------+------------+------+---------+
|      1 | abc   | abc@gmail.com | 2001-03-31 |  8.3 | pune    |
+--------+-------+---------------+------------+------+---------+
1 row in set (0.00 sec)
```

mysql> insert into students values (2,'ab','ab@gmail.com','2002-03-31',8.13,'nashik'),
(3,'a','a@gmail.com','2003-03-31',9.3,'nagpur');
Query OK, 2 rows affected (0.01 sec)
Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from students;
+--------+-------+---------------+------------+------+---------+
| Rollno | sname | email         | DOB        | SGPA | address |
+--------+-------+---------------+------------+------+---------+
|      1 | abc   | abc@gmail.com | 2001-03-31 |  8.3 | pune    |
|      2 | ab    | ab@gmail.com  | 2002-03-31 |  8.1 | nashik  |
|      3 | a     | a@gmail.com   | 2003-03-31 |  9.3 | nagpur  |
+--------+-------+---------------+------------+------+---------+
3 rows in set (0.00 sec)
```

mysql> truncate table students;
Query OK, 0 rows affected (0.02 sec)

mysql> select * from students;
Empty set (0.00 sec)

Describe table

mysql> desc students;
```
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| Rollno  | int         | YES  |     | NULL    |       |
| sname   | varchar(20) | YES  |     | NULL    |       |
| email   | varchar(50) | YES  |     | NULL    |       |
| DOB     | date        | YES  |     | NULL    |       |
| SGPA    | float(3,1)  | YES  |     | NULL    |       |
| address | varchar(60) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
```
6 rows in set (0.00 sec)

_____

Drop table: will delete entire table including structure and values

mysql> insert into students values (2,'ab','ab@gmail.com','2002-03-31',8.13,'nashik'),
(3,'a','a@gmail.com','2003-03-31',9.3,'nagpur');
Query OK, 2 rows affected (0.05 sec)
Records: 2 Duplicates: 0 Warnings: 0

Describe table

mysql> select * from students;
```
+--------+-------+--------------+------------+------+---------+
| Rollno | sname | email        | DOB        | SGPA | address |
+--------+-------+--------------+------------+------+---------+
|      2 | ab    | ab@gmail.com | 2002-03-31 |  8.1 | nashik  |
|      3 | a     | a@gmail.com  | 2003-03-31 |  9.3 | nagpur  |
+--------+-------+--------------+------------+------+---------+
```
2 rows in set (0.00 sec)

mysql> drop table students;
Query OK, 0 rows affected (0.05 sec)

Describe table

mysql> select * from students;
ERROR 1146 (42S02): Table 'dbms.students' doesn't exist

_____

Constraints
UNIQUE KEY

mysql> create table student1(Rno int, sname varchar(20), DOB date);
Query OK, 0 rows affected (0.01 sec)

mysql> desc student1;
```
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  |     | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
```
3 rows in set (0.00 sec)

mysql> create table student2(Rno int unique key, sname varchar(20), DOB date);
Query OK, 0 rows affected (0.06 sec)

mysql> desc student2;
```
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  | UNI | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
```
3 rows in set (0.00 sec)

Insert student1 values

mysql> insert into student1 values(1,'a','2003-12-31');
Query OK, 1 row affected (0.01 sec)

mysql> insert into student1 values(1,'b','2004-12-31');
Query OK, 1 row affected (0.01 sec)

mysql> select * from student1;
```
+------+-------+------------+
| Rno  | sname | DOB        |
```

```
+------+-------+------------+
|   1 | a     | 2003-12-31 |
|   1 | b     | 2004-12-31 |
+------+-------+------------+
```
2 rows in set (0.00 sec)

Insert student2 values

mysql> insert into student2 values(1,'b','2002-12-31');
Query OK, 1 row affected (0.05 sec)

mysql> insert into student2 values(1,'a','2004-12-31');
ERROR 1062 (23000): Duplicate entry '1' for key 'student2.Rno'

Delete rows:

mysql> delete from student1;
Query OK, 4 rows affected (0.05 sec)

mysql> select * from student1;
Empty set (0.00 sec)

Add constraint:

mysql> alter table student1 add constraint u1 unique key(Rno); // u1 is constraint name: after table creation it is mandatory to give constraint name but at the time of table creation it is not mandatory.

Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

Describe table

mysql> desc student1;
```
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  | UNI | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
```
3 rows in set (0.00 sec)

Describe table

```
mysql> desc student1;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  | UNI | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

Drop constraint using index

```
mysql> alter table student1 drop index u1;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Describe table

```
mysql> desc student1;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  |     | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

—--

```
mysql> select * from student1;
Empty set (0.00 sec)

mysql> insert into student1 (Rno) value(1),(2);
Query OK, 2 rows affected (0.05 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> select * from student1;
+------+-------+------+
| Rno  | sname | DOB  |
+------+-------+------+
|    1 | NULL  | NULL |
```

```
|    2 | NULL  | NULL |
+------+-------+------+
2 rows in set (0.00 sec)
```

INDEX

```
mysql> use dbms;
Database changed
mysql> desc student1;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  | MUL | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> create index r2 on student1(Rno);
Query OK, 0 rows affected, 1 warning (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 1

mysql> desc student1;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Rno   | int         | YES  | MUL | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
| DOB   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> show index from student1;
+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+
| Table    | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment | Visible | Expression |
+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+
| student1 |          1 | r1       |            1 | Rno         | A         |           2 |     NULL |   NULL | YES  | BTREE      |         |               | YES     | NULL       |
| student1 |          1 | r2       |            1 | Rno         | A         |           2 |     NULL |   NULL | YES  | BTREE      |         |               | YES     | NULL       |
```

```
+----------+-----------+----------+-------------+------------+----------+------------+----------+--------+------+-
-----------+---------+--------------+---------+-----------+
```
2 rows in set (0.06 sec)

———

VIEW

mysql> create view v1 as select rno,sname from student1;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from v1;
```
+------+-------+
| rno  | sname |
+------+-------+
|    1 | NULL  |
|    2 | NULL  |
+------+-------+
```
2 rows in set (0.04 sec)

mysql> drop view v1;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from v1;
ERROR 1146 (42S02): Table 'dbms.v1' doesn't exist

———

SEQUENCE

mysql> CREATE TABLE Persons (
    ->   Personid int NOT NULL AUTO_INCREMENT,
    ->   LastName varchar(255) NOT NULL,
    ->   FirstName varchar(255),
    ->   Age int,
    ->   PRIMARY KEY (Personid)
    ->);
Query OK, 0 rows affected (0.02 sec)

mysql> select * from persons;
Empty set (0.00 sec)

mysql> ALTER TABLE Persons AUTO_INCREMENT=100;
Query OK, 0 rows affected (0.01 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Persons (FirstName,LastName)
    -> VALUES ('Lars','Monsen');
Query OK, 1 row affected (0.01 sec)

mysql> select * from persons;
+----------+----------+-----------+------+
| Personid | LastName | FirstName | Age |
+----------+----------+-----------+------+
| 100 | Monsen | Lars | NULL |
+----------+----------+-----------+------+
1 row in set (0.00 sec)

mysql> INSERT INTO Persons (FirstName,LastName)
    -> VALUES ('as','Moen');
Query OK, 1 row affected (0.01 sec)

mysql> select * from persons;
+----------+----------+-----------+------+
| Personid | LastName | FirstName | Age |
+----------+----------+-----------+------+
| 100 | Monsen | Lars | NULL |
| 101 | Moen | as | NULL |
+----------+----------+-----------+------+
2 rows in set (0.00 sec)