GROUP: B

NAME: Yedukrishna Nambiar

ROLL NO: 35045

BATCH: C

CLASS: TE(IT)-A

**STATEMENT:** 1.Design any database with at least 3 entities and relationships between them. Apply DCL and DDL commands. Draw suitable ER/EER diagram for the system.

**DDL COMMANDS**

**Create Database:**

mysql> create database university35045;

Query OK, 1 row affected (0.21 sec)

mysql> use university35045;

Database changed

**Create Tables (with proper constraints) and Describe Tables:**

mysql> create table department(dept\_name varchar(10) primary key, building int, budget int);

Query OK, 0 rows affected (1.05 sec)

mysql> desc department;

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

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

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

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

| building | int | YES | | NULL | |

| budget | int | YES | | NULL | |

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

3 rows in set (0.05 sec)

**Alter Table:**

mysql> alter table department modify dept\_name varchar(20);

Query OK, 0 rows affected (0.17 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

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

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

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

| dept\_name | varchar(20) | NO | PRI | NULL | |

| building | int | YES | | NULL | |

| budget | int | YES | | NULL | |

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

3 rows in set (0.00 sec)

mysql> create table classroom(building int, room\_number int, capacity int, primary key(building,room\_number));

Query OK, 0 rows affected (0.76 sec)

mysql> desc classroom;

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

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

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

| building | int | NO | PRI | NULL | |

| room\_number | int | NO | PRI | NULL | |

| capacity | int | YES | | NULL | |

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

3 rows in set (0.01 sec)

mysql> create table course(course\_id varchar(20) primary key, title varchar(20), dept\_name varchar(20),credits int, foreign key(dept\_name) references department(dept\_name));

Query OK, 0 rows affected (1.21 sec)

mysql> desc course;

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

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

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

| course\_id | varchar(20) | NO | PRI | NULL | |

| title | varchar(20) | YES | | NULL | |

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

| credits | int | YES | | NULL | |

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

4 rows in set (0.03 sec)

mysql> create table instructor(inst\_id varchar(20) primary key, name varchar(20), dept\_name varchar(20), salary int, foreign key(dept\_name) references department(dept\_name));

Query OK, 0 rows affected (0.53 sec)

mysql> desc instructor;

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

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

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

| inst\_id | varchar(20) | NO | PRI | NULL | |

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

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

| salary | int | YES | | NULL | |

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

4 rows in set (0.00 sec)

mysql> create table time\_slot(time\_slot\_id varchar(20) primary key, day varchar(20), start\_time varchar(20), end\_time varchar(20));

Query OK, 0 rows affected (0.78 sec)

mysql> desc time\_slot;

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

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

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

| time\_slot\_id | varchar(20) | NO | PRI | NULL | |

| day | varchar(20) | YES | | NULL | |

| start\_time | varchar(20) | YES | | NULL | |

| end\_time | varchar(20) | YES | | NULL | |

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

4 rows in set (0.00 sec)

mysql> create table section(course\_id varchar(20), sec\_id varchar(20), semester varchar(20), year varchar(20), building int, room\_number int, time\_slot\_id varchar(20), primary key(course\_id,sec\_id,semester,year), foreign key(building,room\_number) references classroom(building,room\_number), foreign key(time\_slot\_id) references time\_slot(time\_slot\_id));

Query OK, 0 rows affected (1.22 sec)

mysql> desc section;

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

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

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

| course\_id | varchar(20) | NO | PRI | NULL | |

| sec\_id | varchar(20) | NO | PRI | NULL | |

| semester | varchar(20) | NO | PRI | NULL | |

| year | varchar(20) | NO | PRI | NULL | |

| building | int | YES | MUL | NULL | |

| room\_number | int | YES | | NULL | |

| time\_slot\_id | varchar(20) | YES | MUL | NULL | |

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

7 rows in set (0.00 sec)

mysql> create table student(stud\_id varchar(20) primary key, name varchar(20), dept\_name varchar(20),tot\_cred int,foreign key(dept\_name) references department(dept\_name));

Query OK, 0 rows affected (1.71 sec)

mysql> desc student;

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

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

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

| stud\_id | varchar(20) | NO | PRI | NULL | |

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

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

| tot\_cred | int | YES | | NULL | |

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

4 rows in set (0.00 sec)

mysql> create table teaches(inst\_id varchar(20), course\_id varchar(20), sec\_id varchar(20), semester varchar(20), year varchar(20), primary key(inst\_id,course\_id,sec\_id,semester,year), foreign key(inst\_id) references instructor(inst\_id), foreign key(course\_id,sec\_id,semester,year) references section(course\_id,sec\_id,semester,year));

Query OK, 0 rows affected (2.28 sec)

mysql> desc teaches;

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

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

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

| inst\_id | varchar(20) | NO | PRI | NULL | |

| course\_id | varchar(20) | NO | PRI | NULL | |

| sec\_id | varchar(20) | NO | PRI | NULL | |

| semester | varchar(20) | NO | PRI | NULL | |

| year | varchar(20) | NO | PRI | NULL | |

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

5 rows in set (0.03 sec)

mysql> create table takes(stud\_id varchar(20), course\_id varchar(20), sec\_id varchar(20), semester varchar(20), year varchar(20), grade varchar(20), primary key(stud\_id,course\_id,sec\_id,semester,year), foreign key(stud\_id) references student(stud\_id), foreign key(course\_id,sec\_id,semester,year) references section(course\_id,sec\_id,semester,year));

Query OK, 0 rows affected (0.64 sec)

mysql> desc takes;

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

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

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

| stud\_id | varchar(20) | NO | PRI | NULL | |

| course\_id | varchar(20) | NO | PRI | NULL | |

| sec\_id | varchar(20) | NO | PRI | NULL | |

| semester | varchar(20) | NO | PRI | NULL | |

| year | varchar(20) | NO | PRI | NULL | |

| grade | varchar(20) | YES | | NULL | |

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

6 rows in set (0.01 sec)

mysql> create table advisor(stud\_id varchar(20) primary key,inst\_id varchar(20),foreign key(stud\_id) references student(stud\_id), foreign key(inst\_id) references instructor(inst\_id));

Query OK, 0 rows affected (0.61 sec)

mysql> desc advisor;

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

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

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

| stud\_id | varchar(20) | NO | PRI | NULL | |

| inst\_id | varchar(20) | YES | MUL | NULL | |

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

2 rows in set (0.01 sec)

**Show tables:**

mysql> show tables;

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

| Tables\_in\_university35045 |

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

| advisor |

| classroom |

| course |

| department |

| instructor |

| section |

| student |

| takes |

| teaches |

| time\_slot |

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

10 rows in set (0.00 sec)

**DCL COMMANDS**

C:\Users\user>mysql -u root -p

Enter password: \*\*\*\*

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 13

.

mysql> show databases;

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

| Database |

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

| college |

| hospital |

| information\_schema |

| mysql |

| performance\_schema |

| sys |

| university35045 |

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

7 rows in set (0.01 sec)

mysql> use college;

Database changed

mysql> show tables;

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

| Tables\_in\_college |

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

| faculty |

| phno |

| student |

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

3 rows in set (0.01 sec)

mysql> select \* from faculty;

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

| id | fname | dept |

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

| 1 | abc | a |

| 2 | abcd | b |

| 3 | abcde | a |

| 4 | cde | a |

| 5 | cdef | b |

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

5 rows in set (0.06 sec)

**Grant:**

mysql> grant insert on faculty to user1;

Query OK, 0 rows affected (0.13 sec)

mysql> grant select on faculty to user1;

Query OK, 0 rows affected (0.12 sec)

mysql> quit

Bye

C:\Users\user>mysql -u user1 -p

Enter password: \*\*\*\*\*

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 14

mysql> show databases;

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

| Database |

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

| college |

| information\_schema |

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

2 rows in set (0.00 sec)

mysql> use college;

Database changed

mysql> insert into faculty values(10,'abcvfde','ereyt');

Query OK, 1 row affected (0.14 sec)

mysql> select \* from faculty;

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

| id | fname | dept |

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

| 1 | abc | a |

| 2 | abcd | b |

| 3 | abcde | a |

| 4 | cde | a |

| 5 | cdef | b |

| 10 | abcvfde | ereyt |

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

6 rows in set (0.08 sec)

**Revoke:**

revoke insert on faculty from user1;

Query OK, 0 rows affected (0.16 sec)

**Change back to user1:**

mysql> select \* from faculty;

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

| id | fname | dept |

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

| 1 | abc | a |

| 2 | abcd | b |

| 3 | abcde | a |

| 4 | cde | a |

| 5 | cdef | b |

| 10 | abcvfde | ereyt |

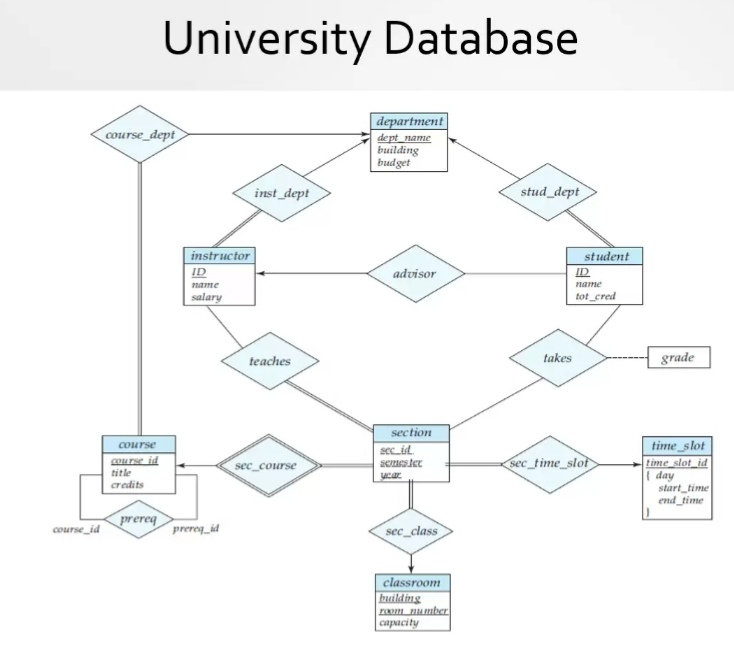
+----+---------+-------+

6 rows in set (0.00 sec)

mysql> insert into faculty values(11,'a','azx');

ERROR 1142 (42000): INSERT command denied to user 'user1'@'localhost' for table 'faculty'

**ER diagram:**

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**Conclusion:** In this way we created university database and applied DDL and DCL commands on it.