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ENROLLMENT NO: 2020CSB010

SECTION: GX

SUBJECT: DBMS Lab

ASSIGNMENT NO. – 7

(A).Creation of Tables:

Creating depts table:

Query:

create table depts(

deptcode char(3) primary key,

deptname char(30) not null);

```
mysql> desc depts;
+----------+----------+------+-----+---------+-------+
| Field    | Type     | Null | Key | Default | Extra |
+----------+----------+------+-----+---------+-------+
| deptcode | char(3)  | NO   | PRI | NULL    |       |
| deptname | char(30) | NO   |     | NULL    |       |
+----------+----------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

depts table after insertion of values:

```
mysql> select * from depts;
+----------+----------------------+
| deptcode | deptname             |
+----------+----------------------+
| D1       | CSE                  |
| D2       | Mechanical Engineering |
+----------+----------------------+
2 rows in set (0.00 sec)
```

Creating students table:

Query:

create table students(

rollno number(8) primary key,

name char(30),

bdate date check(bdate < '01-JAN-97'),

deptcode char(3) references depts(deptcode)

on delete cascade,

hostel number check(hostel<10),

parent_inc number(8,1));

```
mysql> desc students;
+------------+----------+------+-----+---------+-------+
| Field      | Type     | Null | Key | Default | Extra |
+------------+----------+------+-----+---------+-------+
| rollno     | int(8)   | NO   | PRI | NULL    |       |
| name       | char(30) | YES  |     | NULL    |       |
| bdate      | date     | YES  |     | NULL    |       |
| deptcode   | char(3)  | YES  |     | NULL    |       |
| hostel     | int(11)  | YES  |     | NULL    |       |
| parent_inc | int(8)   | YES  |     | NULL    |       |
+------------+----------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

students table after insertion of values:

```
mysql> select * from  students;
+--------+--------+------------+----------+--------+------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc |
+--------+--------+------------+----------+--------+------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |      10000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |      20000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |      25000 |
|     14 | MANISH | 1996-10-04 | D2       |      5 |      22000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |      27000 |
|     17 | NOBITA | 1994-09-23 | D2       |      7 |      17000 |
+--------+--------+------------+----------+--------+------------+
6 rows in set (0.00 sec)
```

Creating faculty table:

Query:

create table faculty(

fac_code char(8) primary key,

fac_name char(30) not null,

fac_dept char(3) references depts(deptcode));

```
mysql> desc faculty;
+----------+----------+------+-----+---------+-------+
| Field    | Type     | Null | Key | Default | Extra |
+----------+----------+------+-----+---------+-------+
| fac_code | char(8)  | NO   | PRI | NULL    |       |
| fac_name | char(30) | NO   |     | NULL    |       |
| fac_dept | char(3)  | YES  |     | NULL    |       |
+----------+----------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

faculty table after insertion of values:

```
mysql> select * from faculty;
+-----------+------------+----------+
| fac_code | fac_name   | fac_dept |
+-----------+------------+----------+
| F1        | MANORANJAN | D1       |
| F2        | PANKAJ     | D2       |
| F3        | PRABHAT    | D1       |
| F4        | ARUN       | D2       |
| F5        | KORAK      | D1       |
+-----------+------------+----------+
5 rows in set (0.00 sec)
```

Creating crs_offrd table:

Query:

create table crs_offrd(

crs_code char(5) primary key,

crs_name char(35) not null,

crs_credits number(2,1),

crs_fac_cd char(8) references faculty(fac_code));

```
mysql> desc crs_offrd;
+-------------+----------+------+-----+---------+-------+
| Field       | Type     | Null | Key | Default | Extra |
+-------------+----------+------+-----+---------+-------+
| crs_code    | char(5)  | NO   | PRI | NULL    |       |
| crs_name    | char(35) | NO   |     | NULL    |       |
| crs_credits | int(2)   | YES  |     | NULL    |       |
| crs_fac_cd  | char(8)  | YES  |     | NULL    |       |
+-------------+----------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

crs_offrd table after insertion of values:

```
mysql> select * from crs_offrd;
+----------+---------------+-------------+------------+
| crs_code | crs_name      | crs_credits | crs_fac_cd |
+----------+---------------+-------------+------------+
| C1       | DBMS          |           4 | F1         |
| C2       | ALGORITHMS    |           5 | F3         |
| C3       | GRAPHS        |           6 | F5         |
| C4       | THERMODYNAMICS|           4 | F2         |
| C5       | HEAT_THEORY   |           4 | F4         |
+----------+---------------+-------------+------------+
5 rows in set (0.00 sec)
```

Creating crs_regd table:

Query:

create table crs_regd(

crs_rollno number(8) references students(rollno),

crs_cd char(5) references crs_offrd(crs_code),

marks number(5,2),

primary key(crs_rollno,crs_cd));

```
mysql> desc crs_regd;
+------------+----------+------+-----+---------+-------+
| Field      | Type     | Null | Key | Default | Extra |
+------------+----------+------+-----+---------+-------+
| crs_rollno | int(8)   | NO   | PRI | NULL    |       |
| crs_cd     | char(5)  | NO   | PRI | NULL    |       |
| marks      | int(5)   | YES  |     | NULL    |       |
+------------+----------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

crs_regd table after insertion of values:

```
mysql> select * from crs_regd;
+-------------+--------+-------+
| crs_rollno  | crs_cd | marks |
+-------------+--------+-------+
|          11 | C1     |    96 |
|          12 | C4     |    82 |
|          13 | C2     |    94 |
|          14 | C3     |    91 |
|          15 | C3     |    87 |
+-------------+--------+-------+
5 rows in set (0.00 sec)
```

(B). Queries and their Solutions:

Task – 1

1.Create a view of all students in dept CSE.

```
mysql> create view CSE_DEPT as
    -> select * from students where deptcode ='D1';
Query OK, 0 rows affected (0.00 sec)

mysql> select * from CSE_DEPT;
+--------+--------+------------+----------+--------+------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc |
+--------+--------+------------+----------+--------+------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |      10000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |      20000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |      25000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |      27000 |
+--------+--------+------------+----------+--------+------------+
4 rows in set (0.00 sec)
```

2.Create a view named as cse_stud for 'CSE' dept students having attributes rollno, name, hostel.

```
mysql> create view cse_stud
    -> as select rollno, name, hostel from students
    -> where deptcode='D1';
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> select * from cse_stud;
+--------+--------+--------+
| rollno | name   | hostel |
+--------+--------+--------+
|     11 | GOURAV |      5 |
|     12 | VIKASH |      6 |
|     13 | ROHAN  |      7 |
|     15 | RISHAV |      6 |
+--------+--------+--------+
4 rows in set (0.00 sec)
```

3. Insert a new student of CSE. Analyse the result.

```
mysql> insert into CSE_DEPT values(16,'YOGESH','1995-08-19','D1',5,12000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from CSE_DEPT;
+--------+--------+------------+----------+--------+------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc |
+--------+--------+------------+----------+--------+------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |      10000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |      20000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |      25000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |      27000 |
|     16 | YOGESH | 1995-08-19 | D1       |      5 |      12000 |
+--------+--------+------------+----------+--------+------------+
5 rows in set (0.00 sec)
```

```
mysql> select * from students;
+--------+--------+------------+----------+--------+-------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc  |
+--------+--------+------------+----------+--------+-------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |       10000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |       20000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |       25000 |
|     14 | MANISH | 1996-10-04 | D2       |      5 |       22000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |       27000 |
|     16 | YOGESH | 1995-08-19 | D1       |      5 |       12000 |
|     17 | NOBITA | 1994-09-23 | D2       |      7 |       17000 |
+--------+--------+------------+----------+--------+-------------+
7 rows in set (0.00 sec)
```

```
mysql> SELECT * from cse_stud;
+--------+--------+--------+
| rollno | name   | hostel |
+--------+--------+--------+
|     11 | GOURAV |      5 |
|     12 | VIKASH |      6 |
|     13 | ROHAN  |      7 |
|     15 | RISHAV |      6 |
|     16 | YOGESH |      5 |
+--------+--------+--------+
5 rows in set (0.00 sec)
```

Remarks : We can insert the new student in CSE using view CSE_DEPT.

4. Increment parental income by Rs. 5000 (HRA).

```
mysql> UPDATE CSE_DEPT SET parent_inc =parent_inc+5000;
Query OK, 5 rows affected (0.00 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from CSE_DEPT;
+--------+--------+------------+----------+--------+------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc |
+--------+--------+------------+----------+--------+------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |      15000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |      25000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |      30000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |      32000 |
|     16 | YOGESH | 1995-08-19 | D1       |      5 |      17000 |
+--------+--------+------------+----------+--------+------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM students;
+--------+--------+------------+----------+--------+------------+
| rollno | name   | bdate      | deptcode | hostel | parent_inc |
+--------+--------+------------+----------+--------+------------+
|     11 | GOURAV | 1996-02-02 | D1       |      5 |      15000 |
|     12 | VIKASH | 1995-08-06 | D1       |      6 |      25000 |
|     13 | ROHAN  | 1994-09-05 | D1       |      7 |      30000 |
|     14 | MANISH | 1996-10-04 | D2       |      5 |      22000 |
|     15 | RISHAV | 1995-05-11 | D1       |      6 |      32000 |
|     16 | YOGESH | 1995-08-19 | D1       |      5 |      17000 |
|     17 | NOBITA | 1994-09-23 | D2       |      7 |      17000 |
+--------+--------+------------+----------+--------+------------+
7 rows in set (0.00 sec)
```

```
mysql> select * from cse_stud;
+--------+---------+--------+
| rollno | name    | hostel |
+--------+---------+--------+
|     11 | GOURAV  |      5 |
|     12 | VIKASH  |      6 |
|     13 | ROHAN   |      7 |
|     15 | RISHAV  |      6 |
|     16 | YOGESH  |      5 |
+--------+---------+--------+
5 rows in set (0.00 sec)
```

5. Delete the view.

```
mysql> drop view cse_stud;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from cse_stud;
ERROR 1146 (42S02): Table 'gourav.cse_stud' doesn't exist
```

Task 2

Create another view of all students in dept Mechanical Engineering (department Name). The view will contain attributes namely Roll-No, Name, Department Name, Age.

```
mysql> create view mech_stud as
    -> select rollno as "Roll_No", name as Name,
    -> depts.deptname as "Department_Name",TIMESTAMPDIFF(YEAR,bdate,CURDATE()) AS Age
    -> from students,depts where depts.deptcode= students.deptcode
    -> and depts.deptcode="D2";
Query OK, 0 rows affected (0.00 sec)

mysql> select * from mech_stud;
+---------+--------+------------------------+------+
| Roll_No | Name   | Department_Name        | Age  |
+---------+--------+------------------------+------+
|      14 | MANISH | Mechanical Engineering |   26 |
|      17 | NOBITA | Mechanical Engineering |   28 |
+---------+--------+------------------------+------+
2 rows in set (0.00 sec)
```

1.Insert a new student of Mechanical Engineering Department.

```
mysql> insert into mech_stud (Roll_No,Name,Department_Name,Age)
    -> values (18,'VISHAL','Mechanical Engineering',29);
ERROR 1348 (HY000): Column 'Age' is not updatable
```

Remarks: Here we cannot insert into mech_stud view as Age Column is not updatable.

2.Delete a student (for a given Name) of the same department

```
mysql> delete from mech_stud where Name='MANISH';
ERROR 1395 (HY000): Can not delete from join view 'gourav.mech_stud'
```

Remarks: Here we cannot delete from mech_stud view as delete from join view is not possible.

3 Shift a student (for a given Name) from Mechanical to Computer Science.

```
mysql> update mech_stud set Department_Name ='CSE' where Name = "NOBITA";
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from mech_stud;
+---------+--------+-----------------+------+
| Roll_No | Name   | Department_Name | Age  |
+---------+--------+-----------------+------+
|      14 | MANISH | CSE             |   26 |
|      17 | NOBITA | CSE             |   28 |
+---------+--------+-----------------+------+
2 rows in set (0.00 sec)
```