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**Batch – T8 Subject - DBMS**

**ASSIGNMENT N0 – 2A**

**Title: Design and develop SQL DDL statements which demonstrate the use of SQL objects such as table, view, index, sequence, synonym, different constraints.**

**----------------------------------------------------------------**

**Create the university database having following specifications.**

**1. Department table (dept\_no, dept\_name, building\_name). Apply unique constraint on the name field**.

mysql> create database flayer;

Query OK, 1 row affected (0.00 sec)

mysql> use flayer;

Database changed

mysql> create table department(dept\_no int, dept\_name varchar(20), building\_name varchar(20), unique(dept\_name));

Query OK, 0 rows affected (0.25 sec)

mysql> desc department;

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

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

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

| dept\_no | int(11) | YES | | NULL | |

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

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

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

3 rows in set (0.00 sec)

**2. Intructor Table(ins\_id, ins\_name, dpt\_no, salary, mob\_no). Apply NOT NULL constraint on name field.**

mysql> create table instructor( ins\_id int, ins\_name varchar(20) NOT NULL, dpt\_no int, salary int, mob\_no int, primary key(ins\_id));

Query OK, 0 rows affected (0.20 sec)

mysql> desc instructor;

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

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

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

| ins\_id | int(11) | NO | PRI | NULL | |

| ins\_name | varchar(20) | NO | | NULL | |

| dpt\_no | int(11) | YES | | NULL | |

| salary | int(11) | YES | | NULL | |

| mob\_no | int(11) | YES | | NULL | |

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

5 rows in set (0.00 sec)

**3. Course table(course\_id, title, dpt\_no, credits). Apply primary key on course id field.**

mysql> create table course( course\_id int , title varchar(10), dpt\_no int, credits int, primary key(course\_id));

Query OK, 0 rows affected (0.22 sec)

mysql> desc course;

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

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

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

| course\_id | int(11) | NO | PRI | NULL | |

| title | varchar(10) | YES | | NULL | |

| dpt\_no | int(11) | YES | | NULL | |

| credits | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

**4. Teachers table(teacher\_id, course\_id, semester, year). Apply foreign key on course\_id field.**

mysql> create table teachers(teacher\_id int, course\_id int,semester int,

year year, foreign key(teacher\_id) references instructor(ins\_id), foreign key(course\_id) references course(course\_id));

Query OK, 0 rows affected (0.26 sec)

mysql> desc teachers;

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

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

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

| teacher\_id | int(11) | YES | MUL | NULL | |

| course\_id | int(11) | YES | MUL | NULL | |

| semester | int(11) | YES | | NULL | |

| year | year(4) | YES | | NULL | |

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

4 rows in set (0.00 sec)

**Queries:**

**1. Add primary key in department table.**

mysql> alter table department add primary key(dept\_no);

Query OK, 0 rows affected (0.34 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

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

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

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

| dept\_no | int(11) | NO | PRI | NULL | |

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

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

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

3 rows in set (0.00 sec)

**2. Add foreign key in instructor table.**

mysql> alter table instructor add CONSTRAINT fk\_inst foreign key(dpt\_no) references department(dept\_no);

Query OK, 0 rows affected (0.47 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc instructor;

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

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

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

| ins\_id | int(11) | NO | PRI | NULL | |

| ins\_name | varchar(20) | NO | | NULL | |

| dpt\_no | int(11) | YES | MUL | NULL | |

| salary | int(11) | YES | | NULL | |

| mob\_no | int(11) | YES | | NULL | |

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

5 rows in set (0.00 sec)

**3. Modify the table department by adding a column budget.**

mysql> alter table department add budget int;

Query OK, 0 rows affected (0.35 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

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

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

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

| dept\_no | int(11) | NO | PRI | NULL | |

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

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

| budget | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

**4. Create unique index on mobile\_no of instructor table.**

mysql> create UNIQUE INDEX ins\_index on instructor(mob\_no);

Query OK, 0 rows affected (0.16 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> show index from instructor;

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

| Table |Non\_unique|Key\_name | Seq\_in\_index| Column\_name | Collation |

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

|instructor| 0 | PRIMARY | 1 | ins\_id | A |

|instructor| 0 |ins\_index| 1 | mob\_no | A |

|instructor| 1 | dpt\_no | 1 | dpt\_no | A |

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

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

|Cardinality |Sub\_part |Packed | Null |Index\_type|Comment|Index\_comment |

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

| 0 | NULL | NULL | | BTREE | | |

| 0 | NULL | NULL | YES | BTREE | | |

| 0 | NULL | NULL | YES | BTREE | | |

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

3 rows in set (0.00 sec)

**5. Create a view of instructor relation except salary field.**

mysql> create view ins\_view as

-> select ins\_id, ins\_name, dpt\_no, mob\_no

-> from instructor;

Query OK, 0 rows affected (0.04 sec)

**6. Insert record into instructor table using newly created view name.**

mysql> insert into ins\_view values(001, "ZZZ", 1, 991),(002,"YYY", 3, 992),(003, "XXX", "1", 993);

Query OK, 3 rows affected (0.04 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select \* from ins\_view;

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

| ins\_id | ins\_name | dpt\_no | mob\_no |

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

| 1 | ZZZ | 1 | 991 |

| 2 | YYY | 3 | 992 |

| 3 | XXX | 1 | 993 |

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

3 rows in set (0.00 sec)

**7. Update the dpt\_no of particular instructor using update view.**

mysql> update ins\_view

-> set dpt\_no = 2

-> where ins\_id = 2;

Query OK, 1 row affected (0.04 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select \* from ins\_view;

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

| ins\_id | ins\_name | dpt\_no | mob\_no |

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

| 1 | ZZZ | 1 | 991 |

| 2 | YYY | 2 | 992 |

| 3 | XXX | 1 | 993 |

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

3 rows in set (0.00 sec)

**8. Delete record of particular instructor from instructor table using newly created view name.**

mysql> delete from ins\_view where ins\_id = 3;

Query OK, 1 row affected (0.04 sec)

mysql> select \* from ins\_view;

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

| ins\_id | ins\_name | dpt\_no | mob\_no |

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

| 1 | ZZZ | 1 | 991 |

| 2 | YYY | 2 | 992 |

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

2 rows in set (0.00 sec)

**9. Delete the last view.**

mysql> drop view ins\_view;

Query OK, 0 rows affected (0.00 sec)

**10. Remove the budget from department table.**

mysql> alter table department drop budget;

Query OK, 0 rows affected (0.50 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

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

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

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

| dept\_no | int(11) | NO | PRI | NULL | |

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

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

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

3 rows in set (0.00 sec)

**11. Increase the size of the title field of course relation.**

mysql> alter table course modify title varchar(20);

Query OK, 0 rows affected (0.07 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc course;

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

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

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

| course\_id | int(11) | NO | PRI | NULL | |

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

| dpt\_no | int(11) | YES | | NULL | |

| credits | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

**12. Delete the index from the instructor table.**

mysql> drop index ins\_index on instructor;

Query OK, 0 rows affected (0.13 sec)

Records: 0 Duplicates: 0 Warnings: 0

**13. Rename the course table to another table name.**

mysql> alter table course rename to course\_table;

Query OK, 0 rows affected (0.08 sec)

**14. Create a view by showing a instructor name and title of course they teach.**

mysql> create view crs\_view as select ins\_name, title from instructor,course\_table where instructor.dpt\_no = course\_table.dpt\_no;

Query OK, 0 rows affected (0.03 sec)

mysql> select \* from crs\_view;

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

| ins\_name | title |

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

| YYY | ABC |

| AAA | XYC |

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

2 rows in set (0.00 sec)

**15. Delete the primary key from the department table.**

mysql> alter table instructor drop foreign key fk\_inst;

Query OK, 0 rows affected (0.09 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> alter table department drop primary key;

Query OK, 0 rows affected (0.46 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc department;

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

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

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

| dept\_no | int(11) | NO | | NULL | |

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

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

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

3 rows in set (0.00 sec)

**16. Create a sequence(or use the AUTO\_INCREMENT attributes) on course\_id starting with 51.**

mysql> alter table course\_table modify course\_id int NOT NULL AUTO\_INCREMENT;

Query OK, 2 rows affected (0.53 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> desc course\_table;

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

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

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

| course\_id | int(11) | NO | PRI | NULL | auto\_increment |

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

| dpt\_no | int(11) | YES | | NULL | |

| credits | int(11) | YES | | NULL | |

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

4 rows in set (0.00 sec)

mysql> alter table course\_table AUTO\_INCREMENT = 51;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> insert into course\_table(title, dpt\_no, credits) values('ABC', 2, 4);

Query OK, 1 row affected (0.06 sec)

mysql> insert into course\_table(title, dpt\_no, credits) values('ABB', 1, 4);

Query OK, 1 row affected (0.03 sec)

mysql> select \* from course\_table;

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

| course\_id | title | dpt\_no | credits |

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

| 1 | ABC | 2 | 5 |

| 2 | XYC | 3 | 4 |

| 51 | ABC | 2 | 4 |

| 52 | ABB | 1 | 4 |

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

4 rows in set (0.00 sec)

**17. Create database and show all databases.**

mysql> create database flayer;

mysql> show databases;

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

| Database |

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

| information\_schema |

| Employee |

| emp |

| employee |

| flayer |

| mysql |

| practical1 |

| student |

| sys |

| university |

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

10 rows in set (0.00 sec)

**18. Create table and show all table.**

mysql> show tables;

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

| Tables\_in\_flayer |

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

| course |

| department |

| instructor |

| teachers |

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

4 rows in set (0.00 sec)

**19. Delete all records with truncate command.**

mysql> truncate table course\_table;

Query OK, 0 rows affected (0.14 sec)

mysql> truncate table department;

Query OK, 0 rows affected (0.10 sec)

mysql> truncate table instructor;

Query OK, 0 rows affected (0.11 sec)

mysql> truncate table persons;

Query OK, 0 rows affected (0.04 sec)

mysql> truncate table teahers;

Query OK, 0 rows affected (0.10 sec)

**20. Delete teacher table.**

mysql> drop table teachers;

Query OK, 0 rows affected (0.21 sec)

mysql> show tables;

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

| Tables\_in\_flayer |

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

| course\_table |

| crs\_view |

| department |

| instructor |

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

4 rows in set (0.00 sec)