ASSIGNMEMNT 5

Aim: Design at least 10 SQL queries for suitable database application using sql dml statement: insert, select, update, delete, with operators, function, and set operator problem statement

1) Create Table student with schema(roll_no, name, division, branch, city, marks)

```
MariaDB [Coditas]> create table Student(
    -> roll_no int NOT NULL AUTO_INCREMENT,
    -> name varchar(233),
    -> division int,
    -> branch varchar(233),
    -> city varchar(233),
    -> marks int,
    -> primary key(roll_no));
Query OK, 0 rows affected (0.439 sec)

MariaDB [Coditas]> desc Student;
+---------+-------------+------+-----+---------+----------------+
| Field   | Type        | Null | Key | Default | Extra          |
+---------+-------------+------+-----+---------+----------------+
| roll_no | int(11)     | NO   | PRI | NULL    | auto_increment |
| name    | varchar(233)| YES  |     | NULL    |                |
| division| int(11)     | YES  |     | NULL    |                |
| branch  | varchar(233)| YES  |     | NULL    |                |
| city    | varchar(233)| YES  |     | NULL    |                |
| marks   | int(11)     | YES  |     | NULL    |                |
+---------+-------------+------+-----+---------+----------------+
6 rows in set (0.098 sec)
```

The above command will create a new table with name Student in the current database 6 column, namely roll_no is integer, name type is varchar and hold 233 character, division type is varchar and hold 233 , branch type is varchar and hold 233, city type is varchar and hold 233, marks type is integer .

2) Insert 10 records to the table students

```
MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Anuj","Second","IT","uttarakhand",78);
Query OK, 1 row affected, 1 warning (0.418 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Shailesh","First","IT","uttarakhand",81);
Query OK, 1 row affected, 1 warning (1.084 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Rejul","Third","Btech-E","Uttarpradesh",90);
Query OK, 1 row affected, 1 warning (0.564 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Akash","First","Btech-CS","Maharastra",92);
Query OK, 1 row affected, 1 warning (0.064 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Abhishek","Second","BTECH-M","MP",77);
Query OK, 1 row affected, 1 warning (0.044 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Piyush","Third","Btech-CS","Uttarakhand",52);
Query OK, 1 row affected, 1 warning (0.120 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Akhel","Fourth","Btech-CS","Bihar",33);
Query OK, 1 row affected, 1 warning (0.256 sec)

MariaDB [Coditas]> insert into Student(name,division,branch,city,marks)values("Devesh","Fourth","Btech-E","MP",23);
Query OK, 1 row affected, 1 warning (0.074 sec)
```

Insert command is used to insert new records in a table

i) insert into Student values(1,'name','branch','city',23);

3)List all the student names with their corresponding city

```
MariaDB [Coditas]> select name,city from Student;
+----------+-------------+
| name     | city        |
+----------+-------------+
| Anuj     | uttarakhand |
| Shailesh | uttarakhand |
| Rejul    | Uttarpradesh |
| Akash    | Maharastra  |
| Abhishek | MP          |
| Piyush   | Uttarakhand |
| Akhel    | Bihar       |
| Devesh   | MP          |
| Devesh   | Bhopal      |
| Ankush   | MP          |
+----------+-------------+
10 rows in set (0.001 sec)
```

In this example select sudent_name and student_city data from student

4)List all the distinct names of the students;

```
MariaDB [Coditas]> select distinct name from Student;
+----------+
| name     |
+----------+
| Anuj     |
| Shailesh |
| Rejul    |
| Akash    |
| Abhishek |
| Akhel    |
| Devesh   |
| Ankush   |
+----------+
8 rows in set (0.001 sec)
```

Distinct command return only different values in the result set

5)List all the records of the students with all attributes

```
MariaDB [Coditas]> select *from Student;
+---------+----------+----------+----------+--------------+-------+
| roll_no | name     | division | branch   | city         | marks |
+---------+----------+----------+----------+--------------+-------+
|       1 | Anuj     | Second   | IT       | uttarakhand  |    78 |
|       2 | Shailesh | First    | IT       | uttarakhand  |    81 |
|       3 | Rejul    | First    | Btech-E  | Uttarpradesh |    90 |
|       4 | Akash    | First    | Btech-CS | Maharastra   |    92 |
|       5 | Abhishek | Second   | BTECH-M  | MP           |    77 |
|       6 | Anuj     | Third    | Btech-CS | Uttarakhand  |    52 |
|       7 | Akhel    | Fourth   | Btech-CS | Bihar        |    33 |
|       8 | Devesh   | Fourth   | Btech-E  | MP           |    23 |
|       9 | Devesh   | Fourth   | Btech-E  | Bhopal       |    23 |
|      10 | Ankush   | Third    | Btech-ME | MP           |    56 |
+---------+----------+----------+----------+--------------+-------+
10 rows in set (0.001 sec)
```

In this example we fetch all record of student table

6)List all student whose marks are greater than 75

```
MariaDB [Coditas]> select *from Student where marks > 75;
+---------+----------+----------+----------+--------------+-------+
| roll_no | name     | division | branch   | city         | marks |
+---------+----------+----------+----------+--------------+-------+
|       1 | Anuj     | Second   | IT       | uttarakhand  |    78 |
|       2 | Shailesh | First    | IT       | uttarakhand  |    81 |
|       3 | Rejul    | First    | Btech-E  | Uttarpradesh |    90 |
|       4 | Akash    | First    | Btech-CS | Maharastra   |    92 |
|       5 | Abhishek | Second   | BTECH-M  | MP           |    77 |
+---------+----------+----------+----------+--------------+-------+
5 rows in set (0.023 sec)
```

In this example fetch all the student record whose marks is greater than 75

7 List all the students whose name start with the alphabet 'S'.

```
MariaDB [Coditas]> select *from Student where name like 'S%';
+---------+----------+----------+--------+-------------+-------+
| roll_no | name     | division | branch | city        | marks |
+---------+----------+----------+--------+-------------+-------+
|       2 | Shailesh | First    | IT     | uttarakhand |    81 |
+---------+----------+----------+--------+-------------+-------+
1 row in set (0.034 sec)
```

In this example fetch all record from Student table whose name start with 'S'

8 List all the student whose marks are in range of 50 to 60

```
MariaDB [Coditas]> select *from Student where marks  between 50 and  60;
+---------+--------+----------+----------+-------------+-------+
| roll_no | name   | division | branch   | city        | marks |
+---------+--------+----------+----------+-------------+-------+
|       6 | Anuj   | Third    | Btech-CS | Uttarakhand |    52 |
|      10 | Ankush | Third    | Btech-ME | MP          |    56 |
+---------+--------+----------+----------+-------------+-------+
2 rows in set (0.101 sec)
```

In this example fetch all the record of student table whose marks is between 50 to 60

9 List all the student whose branch of student to 'computer' and city is 'pune'

```
MariaDB [Coditas]> select *from Student where branch='computer' and city ='pune';
+---------+----------+----------+----------+------+-------+
| roll_no | name     | division | branch   | city | marks |
+---------+----------+----------+----------+------+-------+
|       2 | Shailesh | First    | computer | pune |    81 |
|       6 | Anuj     | Third    | computer | pune |    52 |
|       8 | Devesh   | Fourth   | computer | pune |    23 |
+---------+----------+----------+----------+------+-------+
3 rows in set (0.096 sec)
```

In this example select all the record from student table where branch is equal to 'computer' and city is 'pune'

10)Update the branch of the student to 'IT' whose roll_number is 9

```
MariaDB [Coditas]> update student set branch ='IT' where roll_no=9;
Query OK, 1 row affected (0.121 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [Coditas]>
```

In this example I Updated the branch of student to 'IT'   whose roll_number is 9

11)Delete the student record whose division is 'BE'

```
MariaDB [Coditas]> delete from student where branch='Btech-cs';
Query OK, 1 row affected (0.076 sec)

MariaDB [Coditas]> select *from Student;
+---------+----------+----------+----------+--------------+-------+
| roll_no | name     | division | branch   | city         | marks |
+---------+----------+----------+----------+--------------+-------+
|       1 | Anuj     | Second   | IT       | uttarakhand  |    78 |
|       2 | Shailesh | First    | computer | pune         |    81 |
|       3 | Rejul    | First    | Btech-E  | Uttarpradesh |    90 |
|       5 | Abhishek | Second   | BTECH-M  | MP           |    77 |
|       6 | Anuj     | Third    | computer | pune         |    52 |
|       7 | Akhel    | Fourth   | computer | Bihar        |    33 |
|       8 | Devesh   | Fourth   | computer | pune         |    23 |
|       9 | Devesh   | Fourth   | IT       | Bhopal       |    23 |
|      10 | Ankush   | Third    | Btech-ME | MP           |    56 |
+---------+----------+----------+----------+--------------+-------+
9 rows in set (0.001 sec)
```

In this Example delete student record whose branch is 'BE'

12. Create another table TE_Students with Schema(roll_no,name)

```
MariaDB [Coditas]> create table TE_Students
    -> (roll_no int,
    -> name varchar(233));
Query OK, 0 rows affected (1.230 sec)
```

New Table is created with create command

13 List all the roll number unionly in the relation student and TE_STUDENT

```
MariaDB [Coditas]> select roll_no from Student UNION ALL select roll_no from TE_Students;
+---------+
| roll_no |
+---------+
|       1 |
|       2 |
|       3 |
|       5 |
|       6 |
|       7 |
|       8 |
|       9 |
|      10 |
|       1 |
+---------+
10 rows in set (0.001 sec)
```

In this example we have to do union all between Student and TE_Student table

14 Display name of all the students belonging to relation student in Upper Case

```
MariaDB [Coditas]> select Upper(name) from Student;
+-------------+
| Upper(name) |
+-------------+
| ANUJ        |
| SHAILESH    |
| REJUL       |
| ABHISHEK    |
| ANUJ        |
| AKHEL       |
| DEVESH      |
| DEVESH      |
| ANKUSH      |
+-------------+
9 rows in set (0.021 sec)
```

In this example we have to Convert name in Upper Case

15 Display the binary and hex equivalent of marks for all the students belonging to Student relation

Binary

```
MariaDB [Coditas]> select CAST(marks as  binary(4)) from student;
+--------------------------+
| CAST(marks as  binary(4)) |
+--------------------------+
| 78                       |
| 81                       |
| 90                       |
| 77                       |
| 52                       |
| 33                       |
| 23                       |
| 23                       |
| 56                       |
+--------------------------+
9 rows in set (0.037 sec)
```

In this example we have to Convert Marks Integer to Binary

Hexa

```
MariaDB [Coditas]> select Hex(marks) from student;
+-----------+
| Hex(marks) |
+-----------+
| 4E        |
| 51        |
| 5A        |
| 4D        |
| 34        |
| 21        |
| 17        |
| 17        |
| 38        |
+-----------+
9 rows in set (0.046 sec)
```

In this example we have to Convert marks Integer to Hexa