

NAME : SHISHU

REG 2020CA089

Assignment 2

DDL & DML Commands (Basics)

1. Exercise 1 (practice on SQL commands)

a. Practice all the following DDL commands

1. Creating a table

```
ariaDB [mnnitclasswork]> create table tbl1(roll int(3),name varchar(30),age int  
3),city varchar(30));  
Query OK, 0 rows affected (0.033 sec)  
  
ariaDB [mnnitclasswork]> desc tbl1;  
+-----+-----+-----+-----+-----+  
Field | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+  
roll  | int(3)    | YES  |     | NULL    |       |  
name  | varchar(30)| YES  |     | NULL    |       |  
age   | int(3)    | YES  |     | NULL    |       |  
city  | varchar(30)| YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+  
rows in set (0.026 sec)
```

2. Altering a table

```
MariaDB [mnnitclasswork]> desc tbl1;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roll  | int(3)    | YES  |     | NULL    |       |
| name  | varchar(30) | YES  |     | NULL    |       |
| age   | int(3)    | YES  |     | NULL    |       |
| city  | varchar(30) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.026 sec)

MariaDB [mnnitclasswork]> alter table tbl1 add District varchar(50) after age;
Query OK, 0 rows affected (0.022 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [mnnitclasswork]> desc tbl1;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roll  | int(3)    | YES  |     | NULL    |       |
| name  | varchar(30) | YES  |     | NULL    |       |
| age   | int(3)    | YES  |     | NULL    |       |
| District | varchar(50) | YES  |     | NULL    |       |
| city  | varchar(30) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.012 sec)
```

3. Drop a table

```
MariaDB [mnnitclasswork]> DROP TABLE TBL1;
Query OK, 0 rows affected (0.009 sec)
```

```
MariaDB [mnnitclasswork]> SHOW TABLES
    -> ;
Empty set (0.001 sec)
```

4. Truncating a table

```

MariaDB [mnnitclasswork]> select * from tbl1;
+-----+-----+-----+-----+
| roll | name   | age   | District | state  |
+-----+-----+-----+-----+
|    1 | shishu |    20 | patna    | bihar  |
|    2 | rahul  |    21 | patna    | bihar  |
+-----+-----+-----+-----+
2 rows in set (0.000 sec)

MariaDB [mnnitclasswork]> TRUNCATE TBL1;
Query OK, 0 rows affected (0.036 sec)

MariaDB [mnnitclasswork]> select * from tbl1;
Empty set (0.000 sec)

MariaDB [mnnitclasswork]>

```

5. Rename

```

MariaDB [mnnitclasswork]> ALTER TABLE `tbl1` CHANGE `city` `state` VARCHAR(30);
Query OK, 0 rows affected (0.016 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [mnnitclasswork]> desc tbl1;
+-----+-----+-----+-----+
| Field      | Type       | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| roll       | int(3)    | YES  |     | NULL    |        |
| name       | varchar(30) | YES  |     | NULL    |        |
| age        | int(3)    | YES  |     | NULL    |        |
| District   | varchar(50) | YES  |     | NULL    |        |
| state      | varchar(30) | YES  |     | NULL    |        |
+-----+-----+-----+-----+
5 rows in set (0.013 sec)

```

b. Practice all the following DML commands

1. Inserting Rows into table

```

MariaDB [mnnitclasswork]> insert into mnnit (roll,fname, lname) values(2,'raina','sharma');
Query OK, 1 row affected (0.003 sec)

MariaDB [mnnitclasswork]> select * from mnnit
      -> ;
+-----+-----+
| roll | fname | lname |
+-----+-----+
|    1 | shishu | sharma |
|    2 | raina  | sharma |
+-----+-----+

```

2. Deleting Rows from table

```
MariaDB [mnnitclasswork]> delete from mnnit where roll=2;
Query OK, 1 row affected (0.002 sec)
```

```
MariaDB [mnnitclasswork]> select * from mnnit;
+-----+-----+
| roll | fname | lname |
+-----+-----+
|    1 | shishu | sharma |
+-----+
1 row in set (0.000 sec)
```

3. Updating data in a table

```
MariaDB [mnnitclasswork]> select * from mnnit;
+-----+-----+
| roll | fname | lname |
+-----+-----+
|    1 | shishu | sharma |
+-----+
1 row in set (0.000 sec)

MariaDB [mnnitclasswork]> update mnnit set fname="raja" where roll=1;
Query OK, 1 row affected (0.030 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [mnnitclasswork]> select * from mnnit;
+-----+-----+
| roll | fname | lname |
+-----+-----+
|    1 | raja   | sharma |
+-----+
1 row in set (0.000 sec)
```

4. Defining constraints

```

MariaDB [mnnitclasswork]> desc mnnit;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roll  | int(5)    | NO   | PRI | NULL    |       |
| fname | varchar(30)| NO   |     | NULL    |       |
| lname | varchar(30)| NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.013 sec)

MariaDB [mnnitclasswork]> alter table mnnit drop primary key;
Query OK, 1 row affected (0.052 sec)
Records: 1  Duplicates: 0  Warnings: 0

MariaDB [mnnitclasswork]> desc mnnit;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roll  | int(5)    | NO   |     | NULL    |       |
| fname | varchar(30)| NO   |     | NULL    |       |
| lname | varchar(30)| NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.013 sec)

MariaDB [mnnitclasswork]>

```

2. Assignment on DDL and DML commands

A. Suppose that a faculty wants to keep records about the students, the desired records should maintain

this information about each student: (Roll No, Full name, CGPA, Age, and Gender)

```

MariaDB [mnnitclasswork]> desc student
-> ;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roll  | int(3)    | NO   |     | NULL    |       |
| name  | varchar(30)| NO   |     | NULL    |       |
| age   | int(2)    | NO   |     | NULL    |       |
| gender | varchar(30)| NO   |     | NULL    |       |
| cgpa  | float     | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.012 sec)

```

```

MariaDB [mnnitclasswork]> INSERT IGNORE INTO `student` (`roll`, `name`, `age`, `gender`, `cgpa`) VALUES ('1', 'shishu', '20', 'male', '9.3'), ('2', 'raina shamra', '22', 'female', '8.5'), ('3', 'rahul kumar', '23', 'male', '5.6'), ('4', 'raju kumar', '19', 'male', '7.2'), ('5', 'madhuri kumari', '30', 'female', '9.6');
Query OK, 5 rows affected (0.004 sec)
Records: 5 Duplicates: 0 Warnings: 0

MariaDB [mnnitclasswork]> select * from student;
+-----+-----+-----+-----+
| roll | name      | age  | gender | cgpa |
+-----+-----+-----+-----+
| 1   | shishu    | 20   | male   | 9.3  |
| 2   | raina shamra | 22   | female | 8.5  |
| 3   | rahul kumar | 23   | male   | 5.6  |
| 4   | raju kumar  | 19   | male   | 7.2  |
| 5   | madhuri kumari | 30   | female | 9.6  |
+-----+-----+-----+-----+
5 rows in set (0.000 sec)

```

a. Create the appropriate Table.

b. Write SQL Queries to answer the following problems:

- List the names of all female students.

```

MariaDB [mnnitclasswork]> select * from student where gender="female";
+-----+-----+-----+-----+
| roll | name      | age  | gender | cgpa |
+-----+-----+-----+-----+
| 2   | raina shamra | 22   | female | 8.5  |
| 5   | madhuri kumari | 30   | female | 9.6  |
+-----+-----+-----+-----+
2 rows in set (0.000 sec)

```

- What is the age of the youngest male student?

```

MariaDB [mnnitclasswork]> select min(age) as youngest_Male_Student from student where gender="male";
+-----+
| youngest_Male_Student |
+-----+
|           19          |
+-----+
1 row in set (0.001 sec)

```

- List the name and the CGPA for all students who got above 6.5 CGPA ordered by their CGPAs then their names.

```

MariaDB [mnnitclasswork]> select * from student where cgpa > 6.5 order by name;
+-----+-----+-----+-----+
| roll | name      | age  | gender | cgpa |
+-----+-----+-----+-----+
| 5   | madhuri kumari | 30   | female | 9.6  |
| 2   | raina shamra  | 22   | female | 8.5  |
| 4   | raju kumar    | 19   | male   | 7.2  |
| 1   | shishu        | 20   | male   | 9.3  |
+-----+-----+-----+-----+
4 rows in set (0.000 sec)

```

- What is the Topper name?

```

MariaDB [mnnitclasswork]> select cgpa,name from student order by cgpa desc limit 1;
+-----+-----+
| cgpa | name      |
+-----+-----+
| 9.6  | madhuri kumari |
+-----+
1 row in set (0.000 sec)

MariaDB [mnnitclasswork]> select max(cgpa),name from student;
+-----+-----+
| max(cgpa) | name    |
+-----+-----+
| 9.6       | shishu   |
+-----+
1 row in set (0.000 sec)

```

3. A super market manager likes to keep records about all the items in his store these records should hold

the following information about each item (the item identifier item_id, the item name, the item price,

expiration date of the item, quantity in hand)

a. Create the appropriate table.

```

MariaDB [mnnitclasswork]> desc supermarket;
+-----+-----+-----+-----+-----+
| Field      | Type     | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| item_id    | int(5)   | NO   |   | NULL    |       |
| nm          | varchar(30) | NO   |   | NULL    |       |
| price       | int(5)   | NO   |   | NULL    |       |
| expiry_DT  | date     | NO   |   | NULL    |       |
| quantity    | int(5)   | NO   |   | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.010 sec)

```

b. Write sql queries to answer the following problems:

- List the names and prices for all items that have a quantity in hand >20.

```

MariaDB [mnnitclasswork]> select * from supermarket;
+-----+-----+-----+-----+
| item_id | nm      | price | expiry_DT | quantity |
+-----+-----+-----+-----+
|      1 | colgate |    50 | 2021-12-23 |     100 |
|      2 | biscuit |    10 | 2022-12-20 |     500 |
|      3 | rice    |   100 | 2021-08-20 |     500 |
|      4 | copy    |    20 | 2022-09-23 |    111 |
|      5 | Degree  | 9999 | 2025-09-24 |      65 |
|      6 | shop    |    50 | 2021-12-23 |      10 |
+-----+-----+-----+-----+
6 rows in set (0.000 sec)

MariaDB [mnnitclasswork]> select * from supermarket where quantity > 20;
+-----+-----+-----+-----+
| item_id | nm      | price | expiry_DT | quantity |
+-----+-----+-----+-----+
|      1 | colgate |    50 | 2021-12-23 |     100 |
|      2 | biscuit |    10 | 2022-12-20 |     500 |
|      3 | rice    |   100 | 2021-08-20 |     500 |
|      4 | copy    |    20 | 2022-09-23 |    111 |
|      5 | Degree  | 9999 | 2025-09-24 |      65 |
+-----+-----+-----+-----+
5 rows in set (0.000 sec)

MariaDB [mnnitclasswork]>
```

- List the names of expired items.

```

MariaDB [mnnitclasswork]> select * from supermarket where expiry_DT < "2021-12-09";
+-----+-----+-----+-----+
| item_id | nm      | price | expiry_DT | quantity |
+-----+-----+-----+-----+
|      3 | rice    |   100 | 2021-08-20 |     500 |
+-----+-----+-----+-----+
1 row in set (0.001 sec)
```

- name the second most expensive item.

```

MariaDB [mnnitclasswork]> select * from supermarket order by price;
+-----+-----+-----+-----+
| item_id | nm      | price | expiry_DT | quantity |
+-----+-----+-----+-----+
|     2   | biscuit |    10 | 2022-12-20 |     500 |
|     4   | copy    |    20 | 2022-09-23 |     111 |
|     1   | colgate |    50 | 2021-12-23 |     100 |
|     6   | shop    |    50 | 2021-12-23 |      10 |
|     3   | rice    |   100 | 2021-08-20 |     500 |
|     5   | Degree  | 9999 | 2025-09-24 |      65 |
+-----+-----+-----+-----+
6 rows in set (0.000 sec)

MariaDB [mnnitclasswork]> select * from (select * from supermarket order by price asc limit 2) as tbl order by price desc limit 1;
+-----+-----+-----+-----+
| item_id | nm      | price | expiry_DT | quantity |
+-----+-----+-----+-----+
|     4   | copy    |    20 | 2022-09-23 |     111 |
+-----+-----+-----+-----+
1 row in set (0.000 sec)

MariaDB [mnnitclasswork]>
```

Alter the table structure to make sure that no negative value can be assigned to the price field

```

MariaDB [mnnitclasswork]> alter table supermarket modify column price int unsigned not null;
Query OK, 6 rows affected (0.064 sec)
Records: 6  Duplicates: 0  Warnings: 0

MariaDB [mnnitclasswork]> desc supermarket;
+-----+-----+-----+-----+-----+-----+
| Field      | Type           | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| item_id    | int(5)         | NO   |   | NULL    |       |
| nm          | varchar(30)    | NO   |   | NULL    |       |
| price       | int(10) unsigned | NO   |   | NULL    |       |
| expiry_DT  | date           | NO   |   | NULL    |       |
| quantity    | int(5)         | NO   |   | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.019 sec)

MariaDB [mnnitclasswork]>
```