Experiment – 4

Aim:

To implement basic DML Commands – SELECT, INSERT, UPDATE and DELETE.

Creating Tables to apply DDL Commands:

MariaDB [bank]> CREATE TABLE DEPOSIT(ACTNO VARCHAR(5), CNAME VARCHAR(20), BNAME VARCHAR(20), AMOUNT INT(8), ADATE DATE);

MariaDB [bank]> CREATE TABLE BRANCH(BNAME VARCHAR(20), CITY VARCHAR(20));

MariaDB [bank]> CREATE TABLE CUSTOMERS(CNAME VARCHAR(20), CITY VARCHAR(20));

MariaDB [bank]> CREATE TABLE BORROW(LOANNO VARCHAR(5), CNAME VARCHAR(20), BNAME VARCHAR(20), AMOUNT INT(8));

Structure of the tables after creating:

```
MariaDB [bank]> DESC DEPOSIT;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| ACTNO   | varchar(5)  | YES  |     | NULL    |       |
| CNAME   | varchar(20) | YES  |     | NULL    |       |
| BNAME   | varchar(20) | YES  |     | NULL    |       |
| AMOUNT  | int(8)      | YES  |     | NULL    |       |
| ADATE   | date        | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
5 rows in set (0.061 sec)

MariaDB [bank]> DESC BRANCH;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| BNAME | varchar(20) | YES  |     | NULL    |       |
| CITY  | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.038 sec)

MariaDB [bank]> DESC CUSTOMERS;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| CNAME | varchar(20) | YES  |     | NULL    |       |
| CITY  | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.045 sec)

MariaDB [bank]> DESC BORROW;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| LOANNO  | varchar(5)  | YES  |     | NULL    |       |
| CNAME   | varchar(20) | YES  |     | NULL    |       |
| BNAME   | varchar(20) | YES  |     | NULL    |       |
| AMOUNT  | int(8)      | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
4 rows in set (0.040 sec)
```

1. **INSERT QUERIES:**
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('101', 'SUNIL', 'AJNI', '5000', '96-01-04');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('102', 'MEHUL', 'KAROLBAGH', '8000', '95-11-17');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('103', 'MADHURI', 'CHANDNI', '3400', '96-12-17');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('104', 'PRAMOD', 'M.G.ROAD', '3400', '96-03-27');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('105', 'SANDIP', 'ANDHERI', '2000', '95-03-31');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('106', 'SHIVANI', 'VIRAR', '1000', '95-09-05');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('107', 'KRANTI', 'NEHRU PLACE', '3000', '95-07-02');
   MariaDB [bank]> INSERT INTO DEPOSIT VALUES('108', 'MINU', 'POWAI', '5000', '96-10-10');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('VRCE', 'NAGPUR');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('AJNI', 'NAGPUR');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('KAROLBAGH', 'DELHI');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('CHANDNI', 'DELHI');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('DHARAMPETH', 'NAGPUR');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('M.G.ROAD', 'BANGLORE');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('ANDHERI', 'MUMBAI');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('VIRAR', 'BOMBAY');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('NEHRU PLACE', 'DELHI');
   MariaDB [bank]> INSERT INTO BRANCH VALUES('POWAI', 'BOMBAY');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('ANIL', 'CALCUTTA');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('MEHUL', 'BARODA');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('MANDAR', 'PATNA');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('MADHURI', 'NAGPUR');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('PRAMOD', 'NAGPUR');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('SANDIP', 'SURAT');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('SHIVANI', 'BOMBAY');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('KRANTI', 'BOMBAY');
   MariaDB [bank]> INSERT INTO CUSTOMERS VALUES('NAREN', 'BOMBAY');
   MariaDB [bank]> INSERT INTO BORROW VALUES('201', 'ANIL', 'VRCE', 1000);
   MariaDB [bank]> INSERT INTO BORROW VALUES('206', 'MEHUL', 'AJNI', 5000);
   MariaDB [bank]> INSERT INTO BORROW VALUES('311', 'SUNIL', 'DHARAMPETH', 3000);
   MariaDB [bank]> INSERT INTO BORROW VALUES('321', 'MADHURI', 'ANDHERI', 2000);
   MariaDB [bank]> INSERT INTO BORROW VALUES('375', 'PRAMOD', 'VIRAR', 8000);
   MariaDB [bank]> INSERT INTO BORROW VALUES('481', 'KRANTI', 'NEHRU PLACE', 3600);

2. **SELECT QUERIES:**

   Query-1: List all data from table deposit.
   ```
   MariaDB [bank]> SELECT * FROM DEPOSIT;
   +-------+---------+-------------+--------+------------+
   | ACTNO | CNAME   | BNAME       | AMOUNT | ADATE      |
   +-------+---------+-------------+--------+------------+
   | 100   | ANIL    | VRCE        |  10000 | 1995-03-01 |
   | 101   | SUNIL   | AJNI        |   5000 | 1996-01-04 |
   | 102   | MEHUL   | KAROLBAGH   |   8000 | 1995-11-17 |
   | 103   | MADHURI | CHANDNI     |   3400 | 1996-12-17 |
   | 104   | PRAMOD  | M.G.ROAD    |   3400 | 1996-03-27 |
   | 105   | SANDIP  | ANDHERI     |   2000 | 1995-03-31 |
   | 106   | SHIVANI | VIRAR       |   1000 | 1995-09-05 |
   | 107   | KRANTI  | NEHRU PLACE |   3000 | 1995-07-02 |
   | 108   | MINU    | POWAI       |   5000 | 1996-10-10 |
   +-------+---------+-------------+--------+------------+
   ```

   Query-2: List all data from table borrow.

```
MariaDB [bank]> SELECT * FROM BORROW;
+--------+---------+-------------+--------+
| LOANNO | CNAME   | BNAME       | AMOUNT |
+--------+---------+-------------+--------+
|  201   | ANIL    | VRCE        |   1000 |
|  206   | MEHUL   | AJNI        |   5000 |
|  311   | SUNIL   | DHARAMPETH  |   3000 |
|  321   | MADHURI | ANDHERI     |   2000 |
|  375   | PRAMOD  | VIRAR       |   8000 |
|  481   | KRANTI  | NEHRU PLACE |   3600 |
+--------+---------+-------------+--------+
```

Query-3: List all data from customers.

```
MariaDB [bank]> SELECT * FROM CUSTOMERS;
+---------+----------+
| CNAME   | CITY     |
+---------+----------+
| ANIL    | CALCUTTA |
| MEHUL   | BARODA   |
| MANDAR  | PATNA    |
| MADHURI | NAGPUR   |
| PRAMOD  | NAGPUR   |
| SANDIP  | SURAT    |
| SHIVANI | BOMBAY   |
| KRANTI  | BOMBAY   |
| NAREN   | BOMBAY   |
+---------+----------+
```

Query-4: List all data from the table branch.

```
MariaDB [bank]> SELECT * FROM BRANCH;
+-------------+----------+
| BNAME       | CITY     |
+-------------+----------+
| VRCE        | NAGPUR   |
| AJNI        | NAGPUR   |
| KAROLBAGH   | DELHI    |
| CHANDNI     | DELHI    |
| DHARAMPETH  | NAGPUR   |
| M.G.ROAD    | BANGLORE |
| ANDHERI     | MUMBAI   |
| VIRAR       | BOMBAY   |
| NEHRU PLACE | DELHI    |
| POWAI       | BOMBAY   |
+-------------+----------+
```

Query-5: Give account number and amount of depositors.

```
MariaDB [bank]> SELECT ACTNO,AMOUNT FROM DEPOSIT;
+-------+--------+
| ACTNO | AMOUNT |
+-------+--------+
| 100   |  10000 |
| 101   |   5000 |
| 102   |   8000 |
| 103   |   3400 |
| 104   |   3400 |
| 105   |   2000 |
| 106   |   1000 |
| 107   |   3000 |
| 108   |   5000 |
+-------+--------+
```

Query-6: Give name and account number of depositors.

```
MariaDB [bank]> SELECT CNAME, ACTNO FROM DEPOSIT;
+---------+-------+
| CNAME   | ACTNO |
+---------+-------+
| ANIL    | 100   |
| SUNIL   | 101   |
| MEHUL   | 102   |
| MADHURI | 103   |
| PRAMOD  | 104   |
| SANDIP  | 105   |
| SHIVANI | 106   |
| KRANTI  | 107   |
| MINU    | 108   |
+---------+-------+
```

Query-7: Give names of customer.

```
MariaDB [bank]> SELECT CNAME FROM CUSTOMERS;
+---------+
| CNAME   |
+---------+
| ANIL    |
| MEHUL   |
| MANDAR  |
| MADHURI |
| PRAMOD  |
| SANDIP  |
| SHIVANI |
| KRANTI  |
| NAREN   |
+---------+
```

Query-8: Give names of branches.

```
MariaDB [bank]> SELECT BNAME FROM BRANCH;
+-------------+
| BNAME       |
+-------------+
| VRCE        |
| AJNI        |
| KAROLBAGH   |
| CHANDNI     |
| DHARAMPETH  |
| M.G.ROAD    |
| ANDHERI     |
| VIRAR       |
| NEHRU PLACE |
| POWAI       |
+-------------+
```

Query-9: Give me off borrowers.

```
MariaDB [bank]> SELECT CNAME FROM BORROW;
+---------+
| CNAME   |
+---------+
| ANIL    |
| MEHUL   |
| SUNIL   |
| MADHURI |
| PRAMOD  |
| KRANTI  |
+---------+
```

Query-10: Given names of customers living in city Nagpur.

```
MariaDB [bank]> SELECT CNAME FROM CUSTOMERS WHERE CITY='NAGPUR';
+---------+
| CNAME   |
+---------+
| MADHURI |
| PRAMOD  |
+---------+
```

3. **UPDATE QUERIES:**

Query-1: Give 10% interest to all depositors.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = AMOUNT + 0.1*AMOUNT;

```
MariaDB [bank]> SELECT CNAME, AMOUNT FROM DEPOSIT;
+---------+--------+
| CNAME   | AMOUNT |
+---------+--------+
| ANIL    |  11000 |
| SUNIL   |   5500 |
| MEHUL   |   8800 |
| MADHURI |   3740 |
| PRAMOD  |   3740 |
| SANDIP  |   2200 |
| SHIVANI |   1100 |
| KRANTI  |   3300 |
| MINU    |   5500 |
+---------+--------+
```

Query-2: Give 10% interest to all depositors having branch VRCE.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = AMOUNT + 0.1*AMOUNT WHERE BNAME = "VRCE";

```
MariaDB [bank]> SELECT BNAME, AMOUNT FROM DEPOSIT WHERE BNAME = "VRCE";
+-------+--------+
| BNAME | AMOUNT |
+-------+--------+
| VRCE  |  12100 |
+-------+--------+
```

QUERY-3: Give 10% interest to all depositors living in Nagpur.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = AMOUNT + 0.1*AMOUNT WHERE CNAME IN (SELECT CNAME FROM CUSTOMERS WHERE CITY = "NAGPUR");

```
MariaDB [bank]> SELECT * FROM DEPOSIT WHERE CNAME IN (SELECT CNAME FROM CUSTOMERS WHERE CITY = "NAGPUR");
+-------+---------+----------+--------+------------+
| ACTNO | CNAME   | BNAME    | AMOUNT | ADATE      |
+-------+---------+----------+--------+------------+
| 103   | MADHURI | CHANDNI  |   4114 | 1996-12-17 |
| 104   | PRAMOD  | M.G.ROAD |   4114 | 1996-03-27 |
+-------+---------+----------+--------+------------+
```

Query-4: Give 10% interest to all depositors living in Nagpur and having branch city Bombay.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = AMOUNT + 0.1*AMOUNT WHERE CNAME IN (SELECT D.CNAME FROM DEPOSIT D INNER JOIN CUSTOMERS C ON D.CNAME = C.CNAME INNER JOIN BRANCH B ON C.CITY = B.CITY WHERE C.CITY = "NAGPUR" AND B.CITY = "BOMBAY");

Query-5: Add rupees 100 to the deposit of Anil and assign it to Sunil.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = (SELECT AMOUNT FROM DEPOSIT WHERE CNAME = "ANIL") + 100 WHERE CNAME = "SUNIL";

```
MariaDB [bank]> SELECT CNAME,AMOUNT FROM DEPOSIT WHERE CNAME="ANIL" OR CNAME="SUNIL";
+-------+--------+
| CNAME | AMOUNT |
+-------+--------+
| ANIL  |  12100 |
| SUNIL |  12200 |
+-------+--------+
```

Query-6: Assign to the deposit of Anil the maximum deposit from VRCE branch.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = (SELECT MAX(AMOUNT) FROM DEPOSIT WHERE BNAME = "VRCE") WHERE CNAME = "ANIL";

```
MariaDB [bank]> SELECT CNAME,AMOUNT FROM DEPOSIT WHERE CNAME = "ANIL";
+-------+--------+
| CNAME | AMOUNT |
+-------+--------+
| ANIL  |  12100 |
+-------+--------+
```

Query-7: Change the living city of VRCE branch borrowers to Nagpur.

MariaDB [bank]> UPDATE CUSTOMERS SET CITY = "NAGPUR" WHERE CNAME IN (SELECT CNAME FROM BORROW WHERE BNAME = "VRCE");

```
MariaDB [bank]> SELECT * FROM CUSTOMERS WHERE CITY = "NAGPUR";
+---------+--------+
| CNAME   | CITY   |
+---------+--------+
| ANIL    | NAGPUR |
| MADHURI | NAGPUR |
| PRAMOD  | NAGPUR |
+---------+--------+
```

Query-8: Update deposit of Anil, give him maximum deposit from depositors in living city Nagpur.

MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = (SELECT MAX(D2.AMOUNT) FROM DEPOSIT D2 INNER JOIN CUSTOMERS C WHERE C.CITY = "NAGPUR") WHERE CNAME = "ANIL";

```
MariaDB [bank]> SELECT CNAME,AMOUNT FROM DEPOSIT WHERE CNAME = "ANIL";
+-------+--------+
| CNAME | AMOUNT |
+-------+--------+
| ANIL  |  12200 |
+-------+--------+
```

Query-10: Deposit the sum of the deposits of Sunil and Mehul in the account of Anil.
MariaDB [bank]> UPDATE DEPOSIT SET AMOUNT = (SELECT SUM(AMOUNT) FROM DEPOSIT WHERE CNAME IN ("SUNIL","MEHUL")) WHERE CNAME = "ANIL";

```
MariaDB [bank]> SELECT CNAME,AMOUNT FROM DEPOSIT WHERE CNAME IN ("ANIL","SUNIL","MEHUL");
+-------+--------+
| CNAME | AMOUNT |
+-------+--------+
| ANIL  |  21000 |
| SUNIL |  12200 |
| MEHUL |   8800 |
+-------+--------+
```

4. **DELETE QUERIES:**

Query-1: Delete a customer.
MariaDB [bank]> DELETE FROM CUSTOMERS WHERE CNAME = ''SANDIP'';

Query-2: Delete depositors having deposit less than 500.
MariaDB [bank]> DELETE FROM DEPOSIT WHERE AMOUNT < 500;

Query-3: Delete deposit of Anil if Mehul is not a depositor.
MariaDB [bank]> DELETE FROM DEPOSIT WHERE CNAME = ''ANIL'' AND CNAME NOT IN (SELECT CNAME FROM DEPOSIT WHERE CNAME = ''MEHUL'');

Query-4: Delete branches having average deposit less than 5000.
MariaDB [bank]> DELETE FROM BRANCH WHERE BNAME IN (SELECT BNAME FROM DEPOSIT GROUP BY BNAME HAVING AVG(AMOUNT) < 5000);

Query-5: Delete branches having maximum loan more than 5000.
MariaDB [bank]> DELETE FROM BRANCH WHERE BNAME IN (SELECT BNAME FROM BORROW GROUP BY BNAME HAVING MAX(AMOUNT) > 5000);

Query-6: Delete branches having deposit from Nagpur.
MariaDB [bank]> DELETE FROM BRANCH WHERE BNAME IN (SELECT C.BNAME FROM CUSTOMERS C INNER JOIN DEPOSIT D ON C.CNAME = D.CNAME WHERE C.CITY = ''NAGPUR'');

Query-7: Delete customers from Bombay city.
MariaDB [bank]> DELETE FROM CUSTOMERS WHERE CITY = ''BOMBAY'';

Query-8: Delete borrower having loan more than 10000.
MariaDB [bank]> DELETE FROM BORROW WHERE AMOUNT > 10000;

Query-9: Delete borrower having branch name Chandni.
MariaDB [bank]> DELETE FROM BORROW WHERE BNAME = ''CHANDNI'';

Query-10: Delete deposit of Vijay.
MariaDB [bank]> DELETE FROM DEPOSIT WHERE CNAME = ''VIJAY'';