NEPAL COLLEGE OF INFORMATION TECHNOLOGY

BALKUMARI LALITPUR

(Affiliated To Pokhara University)

SUBJECT : Database Management System

LAB REPORT # 3

TITLE : Data Query Language (DQL) Commands

Submitted By :

Name : Pradip Dhungana

Roll No : 201751

Semester : 4th

Submitted To :

Name : Amit K. Shrivastava

Department of Software

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OBJECTIVE

To practice and Implement data query language commands.

LAB EXERCISE :

➔ Creating a Database named ‘lab3’ and table called ‘employee’ with following structure :

Column Name	DataType
eid	int
ename	varchar(20)
job	Varchar(20)
country	varchar(25)
city	varhchar(25)
salary	int

= create database lab3;

= use lab3;

= create table employee(eid INT NOT NULL,ename VARCHAR(20) NOT NULL,job VARCHAR(20),country VARCHAR(25),city VARCHAR(25),salary INT NOT NULL);

OUTPUT :

```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| employee           |
| information_schema |
| insurance          |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
6 rows in set (0.013 sec)

MariaDB [(none)]> create database lab3;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| employee           |
| information_schema |
| insurance          |
| lab3               |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
7 rows in set (0.001 sec)

MariaDB [(none)]> use lab3;
Database changed
MariaDB [lab3]> create table employee(eid INT NOT NULL,ename VARCHAR(20) NOT NULL,job VARCHAR(20),country VARCHAR(25),
city VARCHAR(25),salary INT NOT NULL);
Query OK, 0 rows affected (0.016 sec)
```

➔ Inserting values into ‘employee’ table :

= INSERT into employee VALUES(1,'Pradip','Manager','Nepal','Pokhara',20000),
(2,'John','Programmer','Germany','Munich',5000),(3,'Bishnu','Doctor','Germany','Berlin',2500),
(4,'Prabin','Banker','Germany','Hamburg',3400),(5,'Ujjwal','Analyst','Nepal','Makawanpur',1300),
(6,'Harry','Engineer','Nepal','Dhampus',200),(7,'Sabin','Army','India','Delhi',2000),
(8,'Ron','Manager','UK','Manchester',20000),(9,'Binod','Lecturer','India','Bihar',240),
(10,'Madhav','Pilot','Finland','London',20000);

OUTPUT :

```
MariaDB [lab3]> INSERT into employee VALUES(1,'Pradip','Manager','Nepal','Pokhara',20000),(2,'John','Programmer','Germany','Munich',5000),(3,'Bishnu','Doctor','Germany','Berlin',2500),(4,'Pra
bin','Banker','Germany','Hamburg',3400),(5,'Ujjwal','Analyst','Nepal','Makawanpur',1300),(6,'Harry','Engineer','Nepal','Dhampus',200),(7,'Sabin','Army','India','Delhi',2000),(8,'Ron','Manager
','UK','Manchester',20000),(9,'Binod','Lecturer','India','Bihar',240),(10,'Madhav','Pilot','Finland','London',20000);
Query OK, 10 rows affected (0.012 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

1) Select all information from employee table.

= SELECT * FROM employee;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee;
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|   1 | Pradip | Manager    | Nepal   | Pokhara    |  20000 |
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin     |   2500 |
|   4 | Prabin | Banker     | Germany | Hamburg    |   3400 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   6 | Harry  | Engineer   | Nepal   | Dhampus    |    200 |
|   7 | Sabin  | Army       | India   | Delhi      |   2000 |
|   8 | Ron    | Manager    | UK      | Manchester |  20000 |
|   9 | Binod  | Lecturer   | India   | Bihar      |    240 |
|  10 | Madhav | Pilot      | Finland | London     |  20000 |
+-----+--------+------------+---------+------------+--------+
10 rows in set (0.001 sec)
```

2) Select employee name and job from employee table.

= SELECT ename,job FROM employee;

OUTPUT :

```
MariaDB [lab3]> SELECT ename,job FROM employee;
+--------+------------+
| ename  | job        |
+--------+------------+
| Pradip | Manager    |
| John   | Programmer |
| Bishnu | Doctor     |
| Prabin | Banker     |
| Ujjwal | Analyst    |
| Harry  | Engineer   |
| Sabin  | Army       |
| Ron    | Manager    |
| Binod  | Lecturer   |
| Madhav | Pilot      |
+--------+------------+
10 rows in set (0.000 sec)
```

3) Display all information from employee with country ‘Germany’ and salary greater than 2000.

= SELECT * FROM employee WHERE country = ‘Germany’ AND salary>2000;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE country = 'Germany' AND salary>2000;
+-----+--------+------------+---------+---------+--------+
| eid | ename  | job        | country | city    | salary |
+-----+--------+------------+---------+---------+--------+
|   2 | John   | Programmer | Germany | Munich  |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin  |   2500 |
|   4 | Prabin | Banker     | Germany | Hamburg |   3400 |
+-----+--------+------------+---------+---------+--------+
3 rows in set (0.001 sec)
```

4) Display name,country,job and salary of employee with either job is ‘programmer’ or ‘manager’.

= SELECT ename,country,job,salary FROM employee WHERE job IN(‘Programmer’,’Manager’);

OUTPUT :

```
MariaDB [lab3]> SELECT ename,country,job,salary FROM employee WHERE job IN('Programmer','Manager');
+--------+---------+------------+--------+
| ename  | country | job        | salary |
+--------+---------+------------+--------+
| Pradip | Nepal   | Manager    |  20000 |
| John   | Germany | Programmer |   5000 |
| Ron    | UK      | Manager    |  20000 |
+--------+---------+------------+--------+
```

5) Display all information from employee with country ‘Germany’ and city either ‘Munich’ or ‘berlin’.

= SELECT * FROM employee WHERE country = ‘Germany’ AND city IN(‘Munich’,’Berlin’);

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE country = 'Germany' AND city IN('Munich','Berlin');
+-----+--------+------------+---------+--------+--------+
| eid | ename  | job        | country | city   | salary |
+-----+--------+------------+---------+--------+--------+
|   2 | John   | Programmer | Germany | Munich |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin |   2500 |
+-----+--------+------------+---------+--------+--------+
```

6) Display all information form employee sorted in descending order.

= SELECT * FROM employee ORDER BY eid DESC;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee ORDER BY eid DESC;
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|  10 | Madhav | Pilot      | Finland | London     |  20000 |
|   9 | Binod  | Lecturer   | India   | Bihar      |    240 |
|   8 | Ron    | Manager    | UK      | Manchester |  20000 |
|   7 | Sabin  | Army       | India   | Delhi      |   2000 |
|   6 | Harry  | Engineer   | Nepal   | Dhampus    |    200 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   4 | Prabin | Banker     | Germany | Hamburg    |   3400 |
|   3 | Bishnu | Doctor     | Germany | Berlin     |   2500 |
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   1 | Pradip | Manager    | Nepal   | Pokhara    |  20000 |
+-----+--------+------------+---------+------------+--------+
10 rows in set (0.001 sec)
```

7) Select all employees with name starting with letter ‘j’.

= SELECT * FROM employee WHERE ename LIKE ‘j%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE ename LIKE 'j%';
+-----+-------+------------+---------+--------+--------+
| eid | ename | job        | country | city   | salary |
+-----+-------+------------+---------+--------+--------+
|   2 | John  | Programmer | Germany | Munich |   5000 |
+-----+-------+------------+---------+--------+--------+
1 row in set (0.001 sec)
```

8) Select all employees with country ending with letter ‘y’.

= SELECT * FROM employee WHERE country LIKE ‘%y’;

OUTPUT:

```
MariaDB [lab3]> SELECT * FROM employee WHERE country LIKE '%y';
+-----+--------+------------+---------+---------+--------+
| eid | ename  | job        | country | city    | salary |
+-----+--------+------------+---------+---------+--------+
|   2 | John   | Programmer | Germany | Munich  |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin  |   2500 |
|   4 | Prabin | Banker     | Germany | Hamburg |   3400 |
+-----+--------+------------+---------+---------+--------+
```

9) Select all employees with country containing pattern ‘e’.

= SELECT * FROM employee WHERE country LIKE ‘%e%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE country LIKE '%e%';
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|   1 | Pradip | Manager    | Nepal   | Pokhara    |  20000 |
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin     |   2500 |
|   4 | Prabin | Banker     | Germany | Hamburg    |   3400 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   6 | Harry  | Engineer   | Nepal   | Dhampus    |    200 |
+-----+--------+------------+---------+------------+--------+
6 rows in set (0.001 sec)
```

10) Select all employees with country not containing pattern ‘land’.

= SELECT * FROM employee WHERE country NOT LIKE ‘%land%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE country NOT LIKE '%land%';
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|   1 | Pradip | Manager    | Nepal   | Pokhara    |  20000 |
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin     |   2500 |
|   4 | Prabin | Banker     | Germany | Hamburg    |   3400 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   6 | Harry  | Engineer   | Nepal   | Dhampus    |    200 |
|   7 | Sabin  | Army       | India   | Delhi      |   2000 |
|   8 | Ron    | Manager    | UK      | Manchester |  20000 |
|   9 | Binod  | Lecturer   | India   | Bihar      |    240 |
+-----+--------+------------+---------+------------+--------+
9 rows in set (0.000 sec)
```

11) Select all employees with city starting with any character followed by “erlin”.

= SELECT * FROM employee WHERE city LIKE ‘%erlin’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city LIKE '%erlin';
+-----+--------+--------+---------+--------+--------+
| eid | ename  | job    | country | city   | salary |
+-----+--------+--------+---------+--------+--------+
|   3 | Bishnu | Doctor | Germany | Berlin |   2500 |
+-----+--------+--------+---------+--------+--------+
1 row in set (0.001 sec)
```

12) Select all employees with a city starting with ‘l’, followed by any character, followed by ‘n’, followed by any character, followed by ‘on‘.

= SELECT * FROM employee WHERE city LIKE ‘l_n_on’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city LIKE 'l_n_on';
+-----+--------+-------+---------+--------+--------+
| eid | ename  | job   | country | city   | salary |
+-----+--------+-------+---------+--------+--------+
|  10 | Madhav | Pilot | Finland | London |  20000 |
+-----+--------+-------+---------+--------+--------+
1 row in set (0.001 sec)
```

13) Select all employees with a city starting with ‘b’,’m’ or ‘d’.

= SELECT * FROM employee WHERE city LIKE ‘b%’ OR city LIKE ‘m%’ OR city LIKE ‘d%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city LIKE 'b%' OR city LIKE 'm%' OR city LIKE 'd%';
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   3 | Bishnu | Doctor     | Germany | Berlin     |   2500 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   6 | Harry  | Engineer   | Nepal   | Dhampus    |    200 |
|   7 | Sabin  | Army       | India   | Delhi      |   2000 |
|   8 | Ron    | Manager    | UK      | Manchester |  20000 |
|   9 | Binod  | Lecturer   | India   | Bihar      |    240 |
+-----+--------+------------+---------+------------+--------+
7 rows in set (0.000 sec)
```

14) Select all employees with a city starting with ‘a’,’b’ or ‘c’.

= SELECT * FROM employee WHERE city LIKE ‘a%’ OR city LIKE ‘b%’ OR city LIKE ‘c%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city LIKE 'a%' OR city LIKE 'b%' OR city LIKE 'c%';
+-----+--------+----------+---------+--------+--------+
| eid | ename  | job      | country | city   | salary |
+-----+--------+----------+---------+--------+--------+
|   3 | Bishnu | Doctor   | Germany | Berlin |   2500 |
|   9 | Binod  | Lecturer | India   | Bihar  |    240 |
+-----+--------+----------+---------+--------+--------+
2 rows in set (0.001 sec)
```

15) Select all employees with a city not starting with ‘b’,’m’ or ‘d’.

= SELECT * FROM employee WHERE city NOT LIKE ‘b%’ AND city NOT LIKE ‘m%’ AND city NOT LIKE ‘d%’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city NOT LIKE 'b%' AND city NOT LIKE 'm%' AND city NOT LIKE 'd%';
+-----+--------+---------+---------+---------+--------+
| eid | ename  | job     | country | city    | salary |
+-----+--------+---------+---------+---------+--------+
|   1 | Pradip | Manager | Nepal   | Pokhara |  20000 |
|   4 | Prabin | Banker  | Germany | Hamburg |   3400 |
|  10 | Madhav | Pilot   | Finland | London  |  20000 |
+-----+--------+---------+---------+---------+--------+
3 rows in set (0.000 sec)
```

16) Select all employees with a city of ‘Delhi’ or ‘Manchester’ use IN operator.

= SELECT * FROM employee WHERE city IN(‘Delhi’,’Manchester’);

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city IN('Delhi','Manchester');
+-----+-------+---------+---------+------------+--------+
| eid | ename | job     | country | city       | salary |
+-----+-------+---------+---------+------------+--------+
|   7 | Sabin | Army    | India   | Delhi      |   2000 |
|   8 | Ron   | Manager | UK      | Manchester |  20000 |
+-----+-------+---------+---------+------------+--------+
2 rows in set (0.001 sec)
```

17) Select all employees with salary BETWEEN 20000 and 35000.

= SELECT * FROM employee WHERE salary BETWEEN 20000 and 35000;

OUTPUT :

```
MariaDB [lab3]>  SELECT * FROM employee WHERE salary BETWEEN 20000 and 35000;
+-----+--------+---------+---------+------------+--------+
| eid | ename  | job     | country | city       | salary |
+-----+--------+---------+---------+------------+--------+
|   1 | Pradip | Manager | Nepal   | Pokhara    |  20000 |
|   8 | Ron    | Manager | UK      | Manchester |  20000 |
|  10 | Madhav | Pilot   | Finland | London     |  20000 |
+-----+--------+---------+---------+------------+--------+
3 rows in set (0.000 sec)
```

18) Select all employees with salary BETWEEN 10000 and 40000, but employees with a ID of 1,2, or 3 should not be displayed.

= SELECT * FROM employee WHERE salary BETWEEN 10000 and 40000 AND eid NOT IN(1,2,3);

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE salary BETWEEN 10000 and 40000 AND eid NOT IN(1,2,3);
+-----+--------+---------+---------+------------+--------+
| eid | ename  | job     | country | city       | salary |
+-----+--------+---------+---------+------------+--------+
|   8 | Ron    | Manager | UK      | Manchester |  20000 |
|  10 | Madhav | Pilot   | Finland | London     |  20000 |
+-----+--------+---------+---------+------------+--------+
2 rows in set (0.001 sec)
```

19) Select all employees with city beginning with any of the letter BETWEEN ‘b’ and ‘m’.

= SELECT * FROM employee WHERE city BETWEEN ‘b’ and ‘m’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city BETWEEN 'b' and 'm';
+-----+--------+----------+---------+---------+--------+
| eid | ename  | job      | country | city    | salary |
+-----+--------+----------+---------+---------+--------+
|   3 | Bishnu | Doctor   | Germany | Berlin  |   2500 |
|   4 | Prabin | Banker   | Germany | Hamburg |   3400 |
|   6 | Harry  | Engineer | Nepal   | Dhampus |    200 |
|   7 | Sabin  | Army     | India   | Delhi   |   2000 |
|   9 | Binod  | Lecturer | India   | Bihar   |    240 |
|  10 | Madhav | Pilot    | Finland | London  |  20000 |
+-----+--------+----------+---------+---------+--------+
6 rows in set (0.001 sec)
```

20) Select all employees with city beginning with any of the letter NOT BETWEEN ‘b’ and ‘m’.

= SELECT * FROM employee WHERE city NOT BETWEEN ‘b’ and ‘m’;

OUTPUT :

```
MariaDB [lab3]> SELECT * FROM employee WHERE city NOT BETWEEN 'b' and 'm';
+-----+--------+------------+---------+------------+--------+
| eid | ename  | job        | country | city       | salary |
+-----+--------+------------+---------+------------+--------+
|   1 | Pradip | Manager    | Nepal   | Pokhara    |  20000 |
|   2 | John   | Programmer | Germany | Munich     |   5000 |
|   5 | Ujjwal | Analyst    | Nepal   | Makawanpur |   1300 |
|   8 | Ron    | Manager    | UK      | Manchester |  20000 |
+-----+--------+------------+---------+------------+--------+
4 rows in set (0.001 sec)
```