Assignment – 5 (LIMIT, IS NULL, IS NOT NULL, LIKE, NOT LIKE, AS aliases and ORDER BY)

1. Write SQL command to perform the following:

a) Create a table called my_class(pk_roll_no, first_name, last_name, address, marks(out of 500),age ,division(according to marks like first, second, distinction, third, pass, fail)

```
MariaDB [dbms_practice]> INSERT INTO my_class (pk_roll_no, first_name, last_name, address, marks, age, division) VALUES
    -> (1, 'John', 'Doe', '123 Elm Street', 480, 18, 'distinction'),
    -> (2, 'Jane', 'Smith', '456 Oak Avenue', 400, 19, 'first'),
    -> (3, 'Alice', 'Johnson', '789 Pine Road', 320, 20, 'second'),
    -> (4, 'Bob', 'Williams', '101 Maple Lane', 275, 22, 'third'),
    -> (5, 'Charlie', 'Brown', '202 Birch Boulevard', 150, 21, 'fail'),
    -> (6, 'Emily', 'Davis', '303 Cedar Court', 355, 23, 'first'),
    -> (7, 'Daniel', 'Miller', '404 Spruce Street', 410, 18, 'first'),
    -> (8, 'Sophia', 'Wilson', '505 Aspen Avenue', 465, 19, 'distinction'),
    -> (9, 'Michael', 'Anderson', '606 Hickory Hollow', 345, 20, 'second'),
    -> (10, 'Olivia', 'Thomas', '707 Chestnut Circle', 220, 21, 'third'),
    -> (11, 'James', 'Taylor', '808 Poplar Place', 180, 22, 'fail'),
    -> (12, 'Isabella', 'Moore', '909 Walnut Way', 380, 20, 'first'),
    -> (13, 'Benjamin', 'Martin', '1010 Fir Path', 430, 19, 'first'),
    -> (14, 'Mia', 'Lee', '1111 Redwood Route', 500, 23, 'distinction'),
    -> (15, 'Lucas', 'White', '1212 Cypress Cove', 295, 21, 'third');
Query OK, 15 rows affected (0.015 sec)
Records: 15  Duplicates: 0  Warnings: 0
```

Constraints applied:

o You must give first name

o Age must be greater than 17.

o Division should be given as fail if not provided by the user.

```
MariaDB [dbms_practice]> CREATE TABLE my_class (
    ->     pk_roll_no INT PRIMARY KEY,
    ->     first_name VARCHAR(50) NOT NULL,
    ->     last_name VARCHAR(50),
    ->     address VARCHAR(100),
    ->     marks INT CHECK (marks BETWEEN 0 AND 500),
    ->     age INT CHECK (age > 17),
    ->     division VARCHAR(20) DEFAULT 'fail'
    -> );
Query OK, 0 rows affected (0.019 sec)
```

b) Select the first five classmates. (LIMIT)

```
+------------+------------+-----------+--------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address            | marks | age  | division    |
+------------+------------+-----------+--------------------+-------+------+-------------+
|          1 | John       | Doe       | 123 Elm Street     |   480 |   18 | distinction |
|          2 | Jane       | Smith     | 456 Oak Avenue     |   400 |   19 | first       |
|          3 | Alice      | Johnson   | 789 Pine Road      |   320 |   20 | second      |
|          4 | Bob        | Williams  | 101 Maple Lane     |   275 |   22 | third       |
|          5 | Charlie    | Brown     | 202 Birch Boulevard |   150 |   21 | fail        |
+------------+------------+-----------+--------------------+-------+------+-------------+
5 rows in set (0.001 sec)
```

c) Select the classmates whose first name starts with ‘R’.

```
MariaDB [dbms_practice]> select * from my_class where first_name like 'R%';
Empty set (0.082 sec)
```

d) Select the classmates whose first name contains ‘a’ in their name.

```
MariaDB [dbms_practice]> select * from my_class where first_name like '%a%';
+------------+------------+-----------+--------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address            | marks | age  | division    |
+------------+------------+-----------+--------------------+-------+------+-------------+
|          2 | Jane       | Smith     | 456 Oak Avenue     |   400 |   19 | first       |
|          3 | Alice      | Johnson   | 789 Pine Road      |   320 |   20 | second      |
|          5 | Charlie    | Brown     | 202 Birch Boulevard |   150 |   21 | fail        |
|          7 | Daniel     | Miller    | 404 Spruce Street  |   410 |   18 | first       |
|          8 | Sophia     | Wilson    | 505 Aspen Avenue   |   465 |   19 | distinction |
|          9 | Michael    | Anderson  | 606 Hickory Hollow |   345 |   20 | second      |
|         10 | Olivia     | Thomas    | 707 Chestnut Circle |   220 |   21 | third       |
|         11 | James      | Taylor    | 808 Poplar Place   |   180 |   22 | fail        |
|         12 | Isabella   | Moore     | 909 Walnut Way     |   380 |   20 | first       |
|         13 | Benjamin   | Martin    | 1010 Fir Path      |   430 |   19 | first       |
|         14 | Mia        | Lee       | 1111 Redwood Route |   500 |   23 | distinction |
|         15 | Lucas      | White     | 1212 Cypress Cove  |   295 |   21 | third       |
+------------+------------+-----------+--------------------+-------+------+-------------+
12 rows in set (0.001 sec)
```

e) Select the classmates whose last name contains ‘s’ as the second last character.

```
MariaDB [dbms_practice]> select *from my_class where last_name like '%s_';
Empty set (0.001 sec)
```

f) Select the classmates whose last name is not known yet. (IS NULL)

```
MariaDB [dbms_practice]> select *from my_class where last_name IS NULL;
Empty set (0.081 sec)
```

g) Select all the classmates who address is known. (IS NOT NULL)

```
MariaDB [dbms_practice]> select *from my_class where address IS NOT NULL;
+------------+------------+-----------+---------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address             | marks | age  | division    |
+------------+------------+-----------+---------------------+-------+------+-------------+
|          1 | John       | Doe       | 123 Elm Street      |   480 |   18 | distinction |
|          2 | Jane       | Smith     | 456 Oak Avenue      |   400 |   19 | first       |
|          3 | Alice      | Johnson   | 789 Pine Road       |   320 |   20 | second      |
|          4 | Bob        | Williams  | 101 Maple Lane      |   275 |   22 | third       |
|          5 | Charlie    | Brown     | 202 Birch Boulevard |   150 |   21 | fail        |
|          6 | Emily      | Davis     | 303 Cedar Court     |   355 |   23 | first       |
|          7 | Daniel     | Miller    | 404 Spruce Street   |   410 |   18 | first       |
|          8 | Sophia     | Wilson    | 505 Aspen Avenue    |   465 |   19 | distinction |
|          9 | Michael    | Anderson  | 606 Hickory Hollow  |   345 |   20 | second      |
|         10 | Olivia     | Thomas    | 707 Chestnut Circle |   220 |   21 | third       |
|         11 | James      | Taylor    | 808 Poplar Place    |   180 |   22 | fail        |
|         12 | Isabella   | Moore     | 909 Walnut Way      |   380 |   20 | first       |
|         13 | Benjamin   | Martin    | 1010 Fir Path       |   430 |   19 | first       |
|         14 | Mia        | Lee       | 1111 Redwood Route  |   500 |   23 | distinction |
|         15 | Lucas      | White     | 1212 Cypress Cove   |   295 |   21 | third       |
+------------+------------+-----------+---------------------+-------+------+-------------+
15 rows in set (0.001 sec)
```

h) Select the students whose age is between 20 and 30 and lives in ‘Ghorahi’,

‘Rolpa’,’Dang’ ,’Tulsipur’.

```
MariaDB [dbms_practice]> select *from my_class where age between 20 and 30 and address in ('ghorahi','rolpa','dang','
sipur');
Empty set (0.083 sec)
```

i) Select all the students whose name does not end with ‘a’.

```
MariaDB [dbms_practice]> select *from my_class where first_name not like '%a';
+------------+------------+-----------+---------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address             | marks | age  | division    |
+------------+------------+-----------+---------------------+-------+------+-------------+
|          1 | John       | Doe       | 123 Elm Street      |   480 |   18 | distinction |
|          2 | Jane       | Smith     | 456 Oak Avenue      |   400 |   19 | first       |
|          3 | Alice      | Johnson   | 789 Pine Road       |   320 |   20 | second      |
|          4 | Bob        | Williams  | 101 Maple Lane      |   275 |   22 | third       |
|          5 | Charlie    | Brown     | 202 Birch Boulevard |   150 |   21 | fail        |
|          6 | Emily      | Davis     | 303 Cedar Court     |   355 |   23 | first       |
|          7 | Daniel     | Miller    | 404 Spruce Street   |   410 |   18 | first       |
|          9 | Michael    | Anderson  | 606 Hickory Hollow  |   345 |   20 | second      |
|         11 | James      | Taylor    | 808 Poplar Place    |   180 |   22 | fail        |
|         13 | Benjamin   | Martin    | 1010 Fir Path       |   430 |   19 | first       |
|         15 | Lucas      | White     | 1212 Cypress Cove   |   295 |   21 | third       |
+------------+------------+-----------+---------------------+-------+------+-------------+
11 rows in set (0.001 sec)
```

j) Select all the students whose name starts with ‘a’ but does not end with ‘a’.

```
MariaDB [dbms_practice]> select *from my_class where first_name like 'a%' and first_name not like '%a';
+------------+------------+-----------+---------------+-------+------+----------+
| pk_roll_no | first_name | last_name | address       | marks | age  | division |
+------------+------------+-----------+---------------+-------+------+----------+
|          3 | Alice      | Johnson   | 789 Pine Road |   320 |   20 | second   |
+------------+------------+-----------+---------------+-------+------+----------+
1 row in set (0.001 sec)
```

k) Select the classmates and sort them in ascending order by their name.

```
MariaDB [dbms_practice]> select *from my_class order by first_name asc;
+------------+------------+-----------+--------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address            | marks | age  | division    |
+------------+------------+-----------+--------------------+-------+------+-------------+
|          3 | Alice      | Johnson   | 789 Pine Road      |   320 |   20 | second      |
|         13 | Benjamin   | Martin    | 1010 Fir Path      |   430 |   19 | first       |
|          4 | Bob        | Williams  | 101 Maple Lane     |   275 |   22 | third       |
|          5 | Charlie    | Brown     | 202 Birch Boulevard|   150 |   21 | fail        |
|          7 | Daniel     | Miller    | 404 Spruce Street  |   410 |   18 | first       |
|          6 | Emily      | Davis     | 303 Cedar Court    |   355 |   23 | first       |
|         12 | Isabella   | Moore     | 909 Walnut Way     |   380 |   20 | first       |
|         11 | James      | Taylor    | 808 Poplar Place   |   180 |   22 | fail        |
|          2 | Jane       | Smith     | 456 Oak Avenue     |   400 |   19 | first       |
|          1 | John       | Doe       | 123 Elm Street     |   480 |   18 | distinction |
|         15 | Lucas      | White     | 1212 Cypress Cove  |   295 |   21 | third       |
|         14 | Mia        | Lee       | 1111 Redwood Route |   500 |   23 | distinction |
|          9 | Michael    | Anderson  | 606 Hickory Hollow |   345 |   20 | second      |
|         10 | Olivia     | Thomas    | 707 Chestnut Circle|   220 |   21 | third       |
|          8 | Sophia     | Wilson    | 505 Aspen Avenue   |   465 |   19 | distinction |
+------------+------------+-----------+--------------------+-------+------+-------------+
15 rows in set (0.083 sec)
```

l) Select the classmates and sort them as highest scorer to lowest scorer.

```
MariaDB [dbms_practice]> select *from my_class order by marks desc;
+------------+------------+-----------+--------------------+-------+------+-------------+
| pk_roll_no | first_name | last_name | address            | marks | age  | division    |
+------------+------------+-----------+--------------------+-------+------+-------------+
|         14 | Mia        | Lee       | 1111 Redwood Route |   500 |   23 | distinction |
|          1 | John       | Doe       | 123 Elm Street     |   480 |   18 | distinction |
|          8 | Sophia     | Wilson    | 505 Aspen Avenue   |   465 |   19 | distinction |
|         13 | Benjamin   | Martin    | 1010 Fir Path      |   430 |   19 | first       |
|          7 | Daniel     | Miller    | 404 Spruce Street  |   410 |   18 | first       |
|          2 | Jane       | Smith     | 456 Oak Avenue     |   400 |   19 | first       |
|         12 | Isabella   | Moore     | 909 Walnut Way     |   380 |   20 | first       |
|          6 | Emily      | Davis     | 303 Cedar Court    |   355 |   23 | first       |
|          9 | Michael    | Anderson  | 606 Hickory Hollow |   345 |   20 | second      |
|          3 | Alice      | Johnson   | 789 Pine Road      |   320 |   20 | second      |
|         15 | Lucas      | White     | 1212 Cypress Cove  |   295 |   21 | third       |
|          4 | Bob        | Williams  | 101 Maple Lane     |   275 |   22 | third       |
|         10 | Olivia     | Thomas    | 707 Chestnut Circle|   220 |   21 | third       |
|         11 | James      | Taylor    | 808 Poplar Place   |   180 |   22 | fail        |
|          5 | Charlie    | Brown     | 202 Birch Boulevard|   150 |   21 | fail        |
+------------+------------+-----------+--------------------+-------+------+-------------+
15 rows in set (0.001 sec)
```

m) Select the classmates who have exactly five characters in their first name.

```
MariaDB [dbms_practice]> select *from my_class where char_length(first_name)=5;
+------------+------------+-----------+--------------------+-------+------+-----------+
| pk_roll_no | first_name | last_name | address            | marks | age  | division  |
+------------+------------+-----------+--------------------+-------+------+-----------+
|          3 | Alice      | Johnson   | 789 Pine Road      |   320 |   20 | second    |
|          6 | Emily      | Davis     | 303 Cedar Court    |   355 |   23 | first     |
|         11 | James      | Taylor    | 808 Poplar Place   |   180 |   22 | fail      |
|         15 | Lucas      | White     | 1212 Cypress Cove  |   295 |   21 | third     |
+------------+------------+-----------+--------------------+-------+------+-----------+
4 rows in set (0.081 sec)
```

n) Select all the classmates who has scored the marks in two digits only.

```
MariaDB [dbms_practice]> select *from my_class where marks between 10 and 99;
Empty set (0.001 sec)
```

o) Teacher wants to know if they increase each of the students marks by 5, how much their marks will reach to. Write SQL query which will select student id, first name, marks and new marks which will contains the improved marks.

```
MariaDB [dbms_practice]> select pk_roll_no, first_name, marks,(marks +5) as new_marks from my_class;
+------------+------------+-------+-----------+
| pk_roll_no | first_name | marks | new_marks |
+------------+------------+-------+-----------+
|          1 | John       |   480 |       485 |
|          2 | Jane       |   400 |       405 |
|          3 | Alice      |   320 |       325 |
|          4 | Bob        |   275 |       280 |
|          5 | Charlie    |   150 |       155 |
|          6 | Emily      |   355 |       360 |
|          7 | Daniel     |   410 |       415 |
|          8 | Sophia     |   465 |       470 |
|          9 | Michael    |   345 |       350 |
|         10 | Olivia     |   220 |       225 |
|         11 | James      |   180 |       185 |
|         12 | Isabella   |   380 |       385 |
|         13 | Benjamin   |   430 |       435 |
|         14 | Mia        |   500 |       505 |
|         15 | Lucas      |   295 |       300 |
+------------+------------+-------+-----------+
15 rows in set (0.082 sec)
```

p) College administration wants to know the different locations students come from (Note: They don't want to see the duplicate locations).

```
MariaDB [dbms_practice]> select distinct address from my_class;
+----------------------+
| address              |
+----------------------+
| 123 Elm Street       |
| 456 Oak Avenue       |
| 789 Pine Road        |
| 101 Maple Lane       |
| 202 Birch Boulevard  |
| 303 Cedar Court      |
| 404 Spruce Street    |
| 505 Aspen Avenue     |
| 606 Hickory Hollow   |
| 707 Chestnut Circle  |
| 808 Poplar Place     |
| 909 Walnut Way       |
| 1010 Fir Path        |
| 1111 Redwood Route   |
| 1212 Cypress Cove    |
+----------------------+
15 rows in set (0.079 sec)
```