Assignment – 7 (String Functions, Aggregate Functions)

Write SQL queries for the following:

employee_details (id, first_name, last_name, dob, address, email, post, salary)

(id int

dob date

address text

salary decimal)

```
MariaDB [dbms_practice]> create table employee_details(
    -> id int primary key auto_increment,
    -> first_name varchar(30),
    -> last_name varchar(30),
    -> dob date,
    -> address text,
    -> email varchar(30),
    -> post varchar(30),
    -> salary decimal(8,2)
    -> );
Query OK, 0 rows affected (0.012 sec)
```

```
+----+------------+-----------+------------+--------------------------------+--------------------------+------------+----------+
| id | first_name | last_name | dob        | address                        | email                    | post       | salary   |
+----+------------+-----------+------------+--------------------------------+--------------------------+------------+----------+
|  1 | John       | Doe       | 1985-01-15 | 123 Elm Street, Springfield    | john.doe@example.com     | Engineer   | 75000.00 |
|  2 | Jane       | Smith     | 1990-05-22 | 456 Oak Avenue, Springfield    | jane.smith@example.com   | Manager    | 85000.00 |
|  3 | Alice      | Johnson   | 1987-03-09 | 789 Pine Road, Springfield     | alice.johnson@example.com| Analyst    | 70000.00 |
|  4 | Bob        | Brown     | 1992-11-30 | 101 Maple Drive, Springfield   | bob.brown@example.com    | Engineer   | 72000.00 |
|  5 | Carol      | Davis     | 1984-07-25 | 202 Birch Street, Springfield  | carol.davis@example.com  | Director   | 95000.00 |
|  6 | David      | Miller    | 1986-08-19 | 303 Cedar Lane, Springfield    | david.miller@example.com | Consultant | 80000.00 |
|  7 | Eva        | Wilson    | 1989-12-01 | 404 Walnut Blvd, Springfield   | eva.wilson@example.com   | Engineer   | 74000.00 |
|  8 | Frank      | Moore     | 1991-04-14 | 505 Cherry Hill, Springfield   | frank.moore@example.com  | Manager    | 88000.00 |
|  9 | Grace      | Taylor    | 1988-06-10 | 606 Ash Court, Springfield     | grace.taylor@example.com | Analyst    | 69000.00 |
| 10 | Hank       | Anderson  | 1993-09-23 | 707 Pine Circle, Springfield   | hank.anderson@example.com| Consultant | 81000.00 |
| 11 | Ivy        | Thomas    | 1983-02-17 | 808 Willow Street, Springfield | ivy.thomas@example.com   | Director   | 97000.00 |
| 12 | Jack       | Jackson   | 1987-10-05 | 909 Spruce Drive, Springfield  | jack.jackson@example.com | Engineer   | 76000.00 |
| 13 | Kathy      | White     | 1994-11-20 | 1010 Fir Avenue, Springfield   | kathy.white@example.com  | Manager    | 87000.00 |
| 14 | Larry      | Harris    | 1982-05-13 | 1111 Redwood Road, Springfield | larry.harris@example.com | Analyst    | 68000.00 |
| 15 | Megan      | Martin    | 1990-03-08 | 1212 Poplar Street, Springfield| megan.martin@example.com | Consultant | 79000.00 |
+----+------------+-----------+------------+--------------------------------+--------------------------+------------+----------+
15 rows in set (0.001 sec)
```

String Functions:

1. Select the first three characters of the first_name column from the employee_details table.

```
MariaDB [dbms_practice]> select substring(first_name,1,3) AS first_three_chars from employee_details;
+-------------------+
| first_three_chars |
+-------------------+
| Joh               |
| Jan               |
| Ali               |
| Bob               |
| Car               |
| Dav               |
| Eva               |
| Fra               |
| Gra               |
| Han               |
| Ivy               |
| Jac               |
| Kat               |
| Lar               |
| Meg               |
+-------------------+
15 rows in set (0.001 sec)
```

2. Find the length of the address column in the employee_details table.

```
MariaDB [dbms_practice]> select id,address,length(address) AS address_length from employee_details;
+----+---------------------------------+----------------+
| id | address                         | address_length |
+----+---------------------------------+----------------+
|  1 | 123 Elm Street, Springfield     |             27 |
|  2 | 456 Oak Avenue, Springfield     |             27 |
|  3 | 789 Pine Road, Springfield      |             26 |
|  4 | 101 Maple Drive, Springfield    |             28 |
|  5 | 202 Birch Street, Springfield   |             29 |
|  6 | 303 Cedar Lane, Springfield     |             27 |
|  7 | 404 Walnut Blvd, Springfield    |             28 |
|  8 | 505 Cherry Hill, Springfield    |             28 |
|  9 | 606 Ash Court, Springfield      |             26 |
| 10 | 707 Pine Circle, Springfield    |             28 |
| 11 | 808 Willow Street, Springfield  |             30 |
| 12 | 909 Spruce Drive, Springfield   |             29 |
| 13 | 1010 Fir Avenue, Springfield    |             28 |
| 14 | 1111 Redwood Road, Springfield  |             30 |
| 15 | 1212 Poplar Street, Springfield |             31 |
+----+---------------------------------+----------------+
15 rows in set (0.000 sec)
```

3. Convert all email addresses in the employee_details table to uppercase.

```
MariaDB [dbms_practice]> select id,UPPER(email) AS uppercase_email from employee_details;
+----+---------------------------+
| id | uppercase_email           |
+----+---------------------------+
|  1 | JOHN.DOE@EXAMPLE.COM      |
|  2 | JANE.SMITH@EXAMPLE.COM    |
|  3 | ALICE.JOHNSON@EXAMPLE.COM |
|  4 | BOB.BROWN@EXAMPLE.COM     |
|  5 | CAROL.DAVIS@EXAMPLE.COM   |
|  6 | DAVID.MILLER@EXAMPLE.COM  |
|  7 | EVA.WILSON@EXAMPLE.COM    |
|  8 | FRANK.MOORE@EXAMPLE.COM   |
|  9 | GRACE.TAYLOR@EXAMPLE.COM  |
| 10 | HANK.ANDERSON@EXAMPLE.COM |
| 11 | IVY.THOMAS@EXAMPLE.COM    |
| 12 | JACK.JACKSON@EXAMPLE.COM  |
| 13 | KATHY.WHITE@EXAMPLE.COM   |
| 14 | LARRY.HARRIS@EXAMPLE.COM  |
| 15 | MEGAN.MARTIN@EXAMPLE.COM  |
+----+---------------------------+
15 rows in set (0.001 sec)
```

4. Replace the occurrences of "Engineer" with "Eng." in the post column from the employee_details table.

```
MariaDB [dbms_practice]> select REPLACE(post,'Engineer','Eng.') AS modified_post from employee_details;
+---------------+
| modified_post |
+---------------+
| Eng.          |
| Manager       |
| Analyst       |
| Eng.          |
| Director      |
| Consultant    |
| Eng.          |
| Manager       |
| Analyst       |
| Consultant    |
| Director      |
| Eng.          |
| Manager       |
| Analyst       |
| Consultant    |
+---------------+
15 rows in set (0.000 sec)
```

5. Convert all last_name values in the employee_details table to lowercase.

```
MariaDB [dbms_practice]> select id,LOWER(last_name) AS lowercase_last_name
    -> FROM employee_details;
+----+----------------------+
| id | lowercase_last_name |
+----+----------------------+
|  1 | doe                  |
|  2 | smith                |
|  3 | johnson              |
|  4 | brown                |
|  5 | davis                |
|  6 | miller               |
|  7 | wilson               |
|  8 | moore                |
|  9 | taylor               |
| 10 | anderson             |
| 11 | thomas               |
| 12 | jackson              |
| 13 | white                |
| 14 | harris               |
| 15 | martin               |
+----+----------------------+
15 rows in set (0.000 sec)
```

6. Find the length of each first_name in the employee_details table.

```
MariaDB [dbms_practice]> select id,length(first_name) AS first_name_length from employee_details;
+----+-------------------+
| id | first_name_length |
+----+-------------------+
|  1 |                 4 |
|  2 |                 4 |
|  3 |                 5 |
|  4 |                 3 |
|  5 |                 5 |
|  6 |                 5 |
|  7 |                 3 |
|  8 |                 5 |
|  9 |                 5 |
| 10 |                 4 |
| 11 |                 3 |
| 12 |                 4 |
| 13 |                 5 |
| 14 |                 5 |
| 15 |                 5 |
+----+-------------------+
15 rows in set (0.000 sec)
```

7. Concatenate the first_name and last_name columns with a space in between from the employee_details table.

```
MariaDB [dbms_practice]> select id,CONCAT(first_name,' ', last_name) AS full_name
    -> from employee_details;
+----+---------------+
| id | full_name     |
+----+---------------+
|  1 | John Doe      |
|  2 | Jane Smith    |
|  3 | Alice Johnson |
|  4 | Bob Brown     |
|  5 | Carol Davis   |
|  6 | David Miller  |
|  7 | Eva Wilson    |
|  8 | Frank Moore   |
|  9 | Grace Taylor  |
| 10 | Hank Anderson |
| 11 | Ivy Thomas    |
| 12 | Jack Jackson  |
| 13 | Kathy White   |
| 14 | Larry Harris  |
| 15 | Megan Martin  |
+----+---------------+
15 rows in set (0.000 sec)
```

8. Convert the address column to uppercase and display the first 10 characters of this uppercase text from the employee_details table.

```
MariaDB [dbms_practice]> select id,LEFT(UPPER(address),10) AS address_uppercase_first_10_chars
    -> from employee_details;
+----+----------------------------------+
| id | address_uppercase_first_10_chars |
+----+----------------------------------+
|  1 | 123 ELM ST                       |
|  2 | 456 OAK AV                       |
|  3 | 789 PINE R                       |
|  4 | 101 MAPLE                        |
|  5 | 202 BIRCH                        |
|  6 | 303 CEDAR                        |
|  7 | 404 WALNUT                       |
|  8 | 505 CHERRY                       |
|  9 | 606 ASH CO                       |
| 10 | 707 PINE C                       |
| 11 | 808 WILLOW                       |
| 12 | 909 SPRUCE                       |
| 13 | 1010 FIR A                       |
| 14 | 1111 REDWO                       |
| 15 | 1212 POPLA                       |
+----+----------------------------------+
15 rows in set (0.007 sec)
```

Aggregate Functions:

9. Find the total number of employees in the employee_details table.

```
MariaDB [dbms_practice]> SELECT count(*) AS total_employees FROM employee_details;
+-----------------+
| total_employees |
+-----------------+
|              15 |
+-----------------+
1 row in set (0.000 sec)
```

10. Calculate the average salary of employees in the employee_details table.

```
MariaDB [dbms_practice]> select id,AVG(salary) AS average_salary from employee_details;
+------+----------------+
| id   | average_salary |
+------+----------------+
|    1 |   79733.333333 |
+------+----------------+
1 row in set (0.006 sec)
```

11. Find the highest and lowest salary among employees in the employee_details table.

```
MariaDB [dbms_practice]> SELECT MAX(salary) AS highest_salary, MIN(salary) AS lowest_salary
    -> FROM employee_details;
+----------------+---------------+
| highest_salary | lowest_salary |
+----------------+---------------+
|       97000.00 |      68000.00 |
+----------------+---------------+
1 row in set (0.004 sec)
```

12. Calculate the total salary expense (sum of all salary values) for all employees in the employee_details table.

```
MariaDB [dbms_practice]> SELECT SUM(salary) AS total_salary_expense
    -> FROM employee_details;
+----------------------+
| total_salary_expense |
+----------------------+
|           1196000.00 |
+----------------------+
1 row in set (0.000 sec)
```

13. Count the number of distinct job titles (post) in the employee_details table.

```
MariaDB [dbms_practice]> SELECT COUNT(DISTINCT post) AS distinct_job_titles
    -> FROM employee_details;
+--------------------+
| distinct_job_titles |
+--------------------+
|                  5 |
+--------------------+
1 row in set (0.000 sec)
```