DBMS ASSIGNMENT

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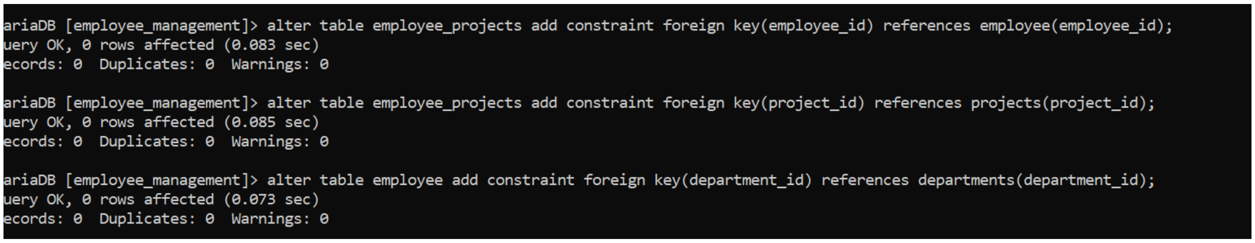
COURSE: DBMS

UNIVERSITY: AUCA

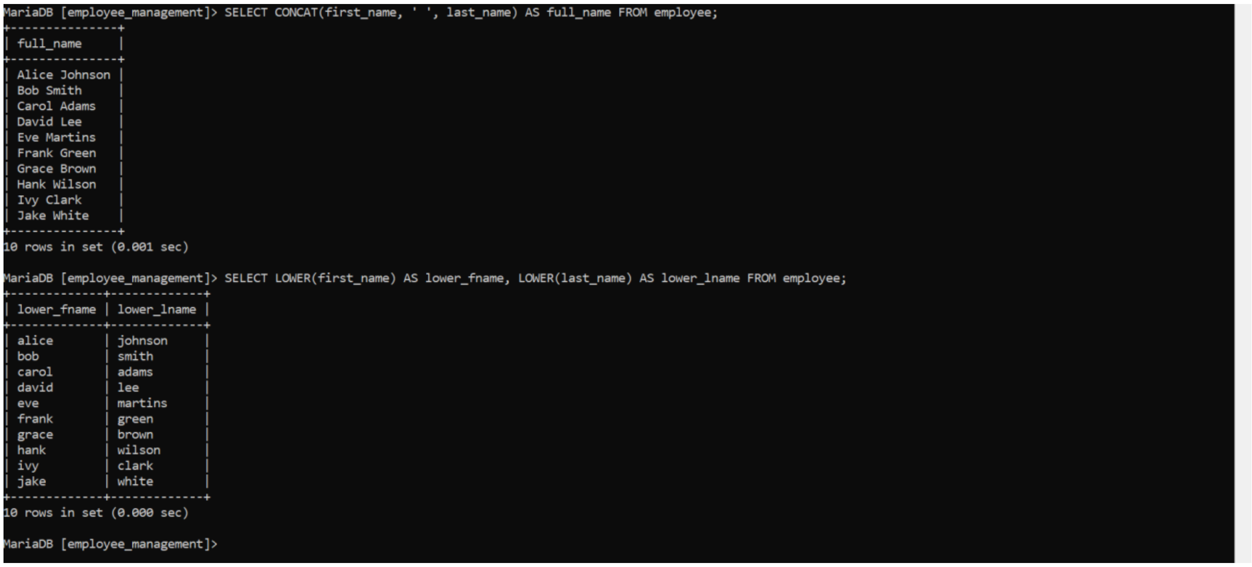
8/2/2025



```
ariaDB [employee_management]> alter table employee_projects add constraint foreign key(employee_id) references employee(employee_id);
uery OK, 0 rows affected (0.083 sec)
ecords: 0  Duplicates: 0  Warnings: 0

ariaDB [employee_management]> alter table employee_projects add constraint foreign key(project_id) references projects(project_id);
uery OK, 0 rows affected (0.085 sec)
ecords: 0  Duplicates: 0  Warnings: 0

ariaDB [employee_management]> alter table employee add constraint foreign key(department_id) references departments(department_id);
uery OK, 0 rows affected (0.073 sec)
ecords: 0  Duplicates: 0  Warnings: 0
```

1. Concatenate first and last name as full_name.

2. Convert all employee names to lowercase.

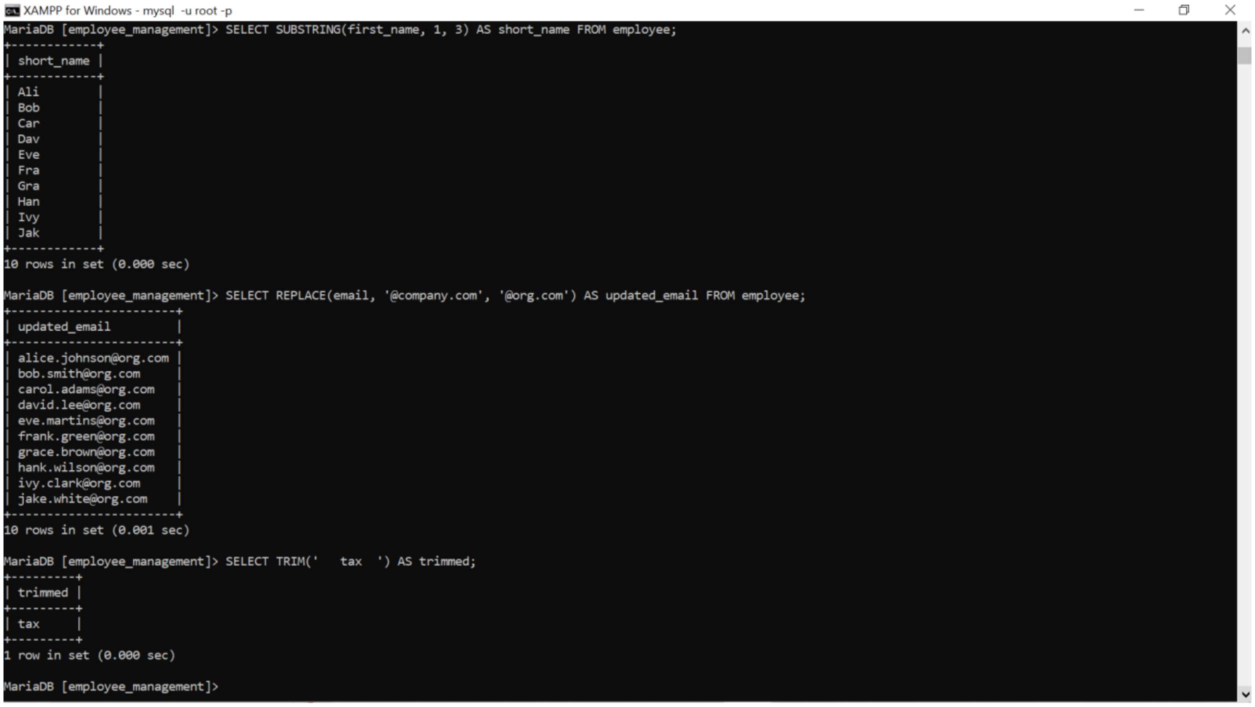


```
MariaDB [employee_management]> SELECT CONCAT(first_name, ' ', last_name) AS full_name FROM employee;
+---------------+
| full_name     |
+---------------+
| Alice Johnson |
| Bob Smith     |
| Carol Adams   |
| David Lee     |
| Eve Martins   |
| Frank Green   |
| Grace Brown   |
| Hank Wilson   |
| Ivy Clark     |
| Jake White    |
+---------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT LOWER(first_name) AS lower_fname, LOWER(last_name) AS lower_lname FROM employee;
+-------------+-------------+
| lower_fname | lower_lname |
+-------------+-------------+
| alice       | johnson     |
| bob         | smith       |
| carol       | adams       |
| david       | lee         |
| eve         | martins     |
| frank       | green       |
| grace       | brown       |
| hank        | wilson      |
| ivy         | clark       |
| jake        | white       |
+-------------+-------------+
10 rows in set (0.000 sec)

MariaDB [employee_management]>
```

3. Extract first 3 letters of the employee's first name.

4. Replace '@company.com' in email with '@org.com'.

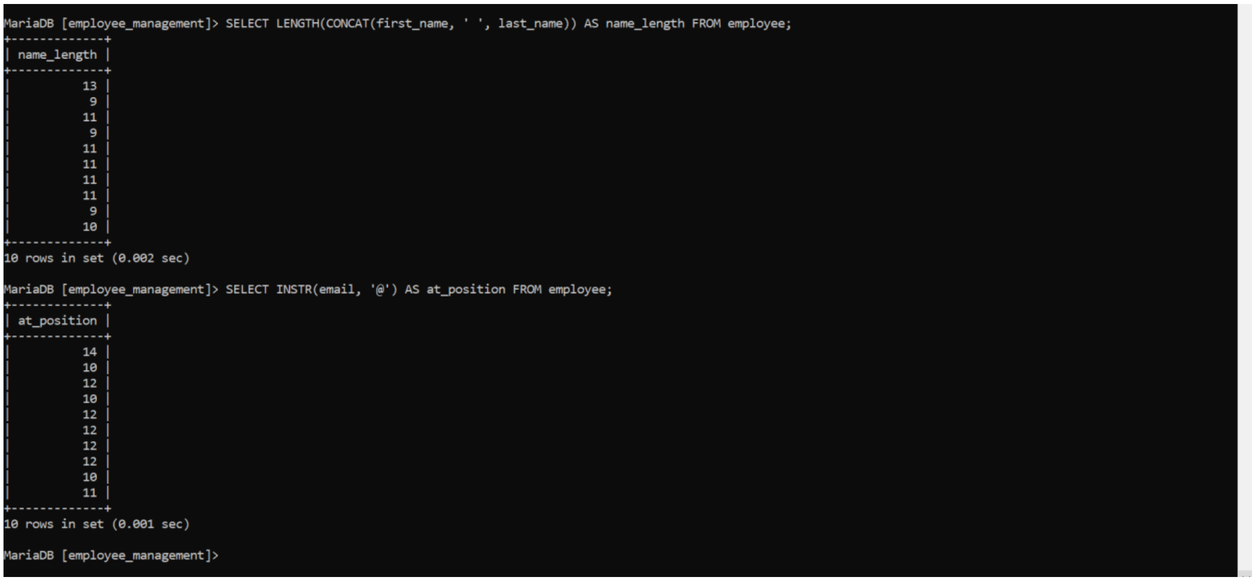
5. Trim spaces from a padded string.



```
MariaDB [employee_management]> SELECT SUBSTRING(first_name, 1, 3) AS short_name FROM employee;
+------------+
| short_name |
+------------+
| Ali        |
| Bob        |
| Car        |
| Dav        |
| Eve        |
| Fra        |
| Gra        |
| Han        |
| Ivy        |
| Jak        |
+------------+
10 rows in set (0.000 sec)

MariaDB [employee_management]> SELECT REPLACE(email, '@company.com', '@org.com') AS updated_email FROM employee;
+----------------------+
| updated_email        |
+----------------------+
| alice.johnson@org.com |
| bob.smith@org.com    |
| carol.adams@org.com  |
| david.lee@org.com    |
| eve.martins@org.com  |
| frank.green@org.com  |
| grace.brown@org.com  |
| hank.wilson@org.com  |
| ivy.clark@org.com    |
| jake.white@org.com   |
+----------------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT TRIM('   tax  ') AS trimmed;
+---------+
| trimmed |
+---------+
| tax     |
+---------+
1 row in set (0.000 sec)

MariaDB [employee_management]>
```

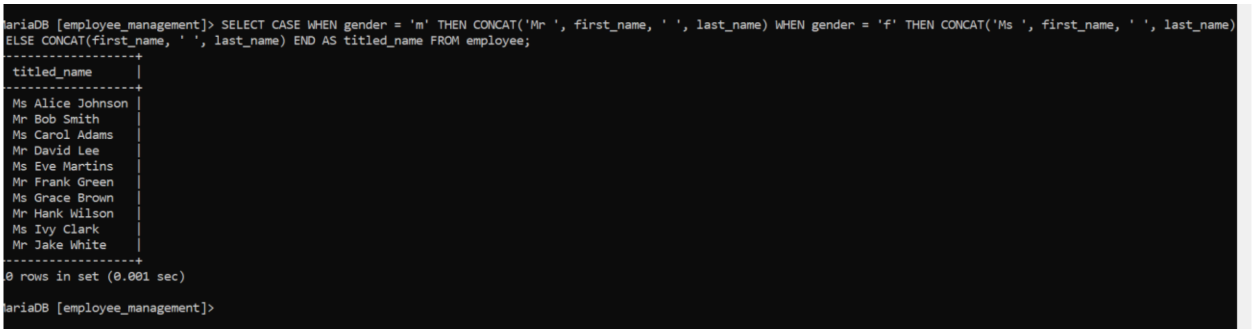
6. Count characters in an employee’s full name.

7. Find position of '@' in email using INSTR()/CHARINDEX().



```
MariaDB [employee_management]> SELECT LENGTH(CONCAT(first_name, ' ', last_name)) AS name_length FROM employee;
+-------------+
| name_length |
+-------------+
|          13 |
|           9 |
|          11 |
|           9 |
|          11 |
|          11 |
|          11 |
|          11 |
|           9 |
|          10 |
+-------------+
10 rows in set (0.002 sec)

MariaDB [employee_management]> SELECT INSTR(email, '@') AS at_position FROM employee;
+-------------+
| at_position |
+-------------+
|          14 |
|          10 |
|          12 |
|          10 |
|          12 |
|          12 |
|          12 |
|          12 |
|          10 |
|          11 |
+-------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

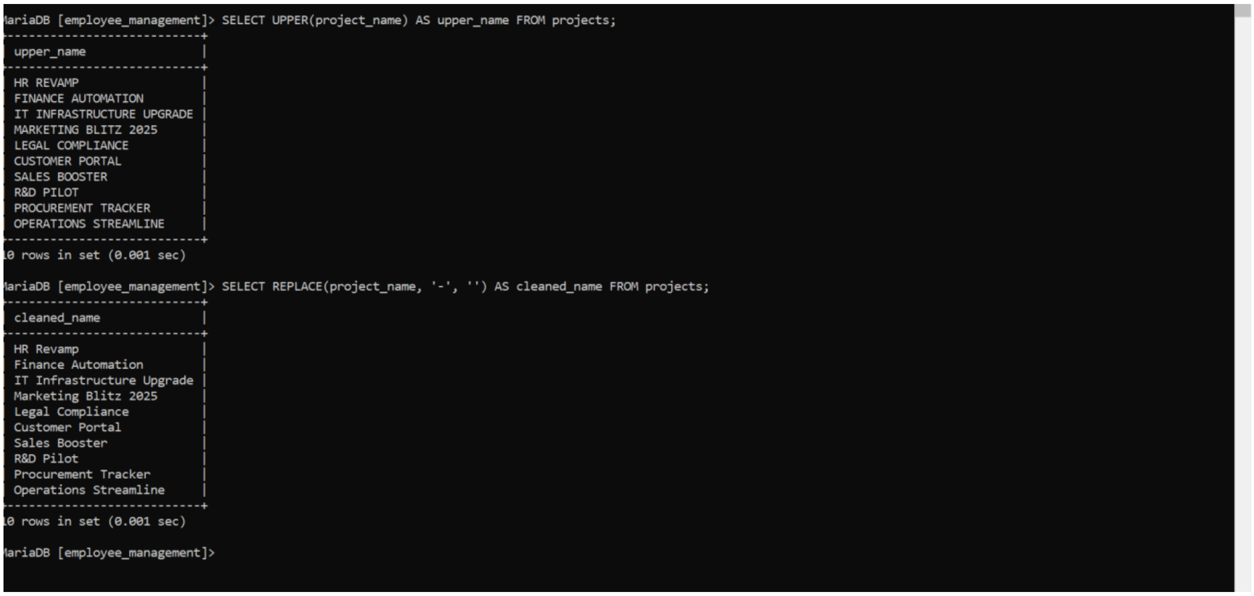
8. Add ‘Mr.’ or ‘Ms.’ before names based on gender (assume gender exists).



```
ariaDB [employee_management]> SELECT CASE WHEN gender = 'm' THEN CONCAT('Mr ', first_name, ' ', last_name) WHEN gender = 'f' THEN CONCAT('Ms ', first_name, ' ', last_name)
 ELSE CONCAT(first_name, ' ', last_name) END AS titled_name FROM employee;
------------------+
 titled_name      |
------------------+
 Ms Alice Johnson |
 Mr Bob Smith     |
 Ms Carol Adams   |
 Mr David Lee     |
 Ms Eve Martins   |
 Mr Frank Green   |
 Ms Grace Brown   |
 Mr Hank Wilson   |
 Ms Ivy Clark     |
 Mr Jake White    |
------------------+
0 rows in set (0.001 sec)

ariaDB [employee_management]>
```

9. Format project names to uppercase.

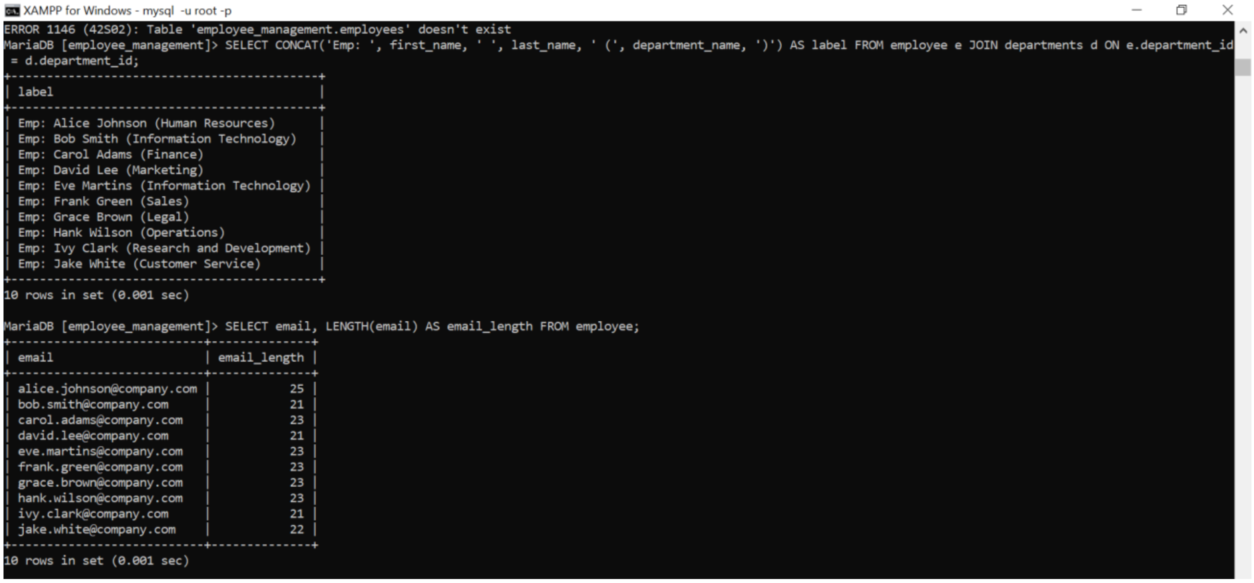
10. Remove any dashes from project names.



```
ariaDB [employee_management]> SELECT UPPER(project_name) AS upper_name FROM projects;
--------------------------+
 upper_name               |
--------------------------+
 HR REVAMP                |
 FINANCE AUTOMATION       |
 IT INFRASTRUCTURE UPGRADE |
 MARKETING BLITZ 2025     |
 LEGAL COMPLIANCE         |
 CUSTOMER PORTAL          |
 SALES BOOSTER            |
 R&D PILOT                |
 PROCUREMENT TRACKER      |
 OPERATIONS STREAMLINE    |
--------------------------+
0 rows in set (0.001 sec)

ariaDB [employee_management]> SELECT REPLACE(project_name, '-', '') AS cleaned_name FROM projects;
--------------------------+
 cleaned_name             |
--------------------------+
 HR Revamp                |
 Finance Automation       |
 IT Infrastructure Upgrade |
 Marketing Blitz 2025     |
 Legal Compliance         |
 Customer Portal          |
 Sales Booster            |
 R&D Pilot                |
 Procurement Tracker      |
 Operations Streamline    |
--------------------------+
0 rows in set (0.001 sec)

ariaDB [employee_management]>
```

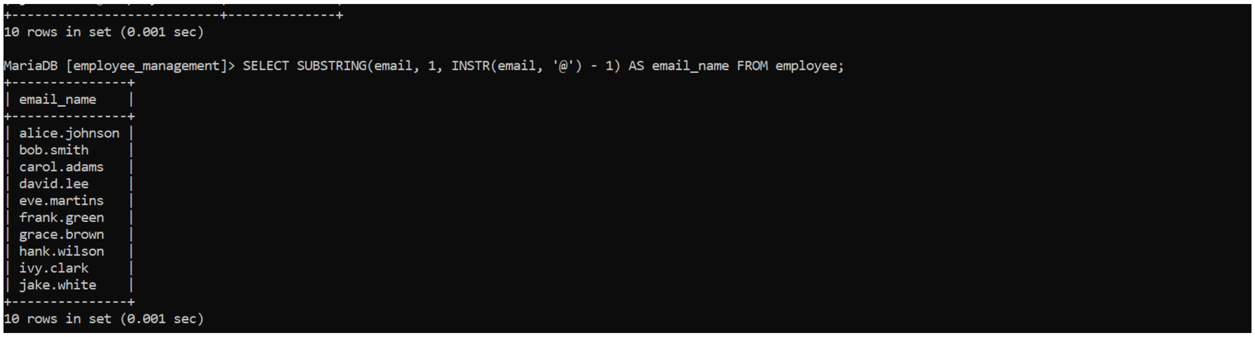
11. Create a label like “Emp: John Doe (HR)”.

12. Check email length for each employee.



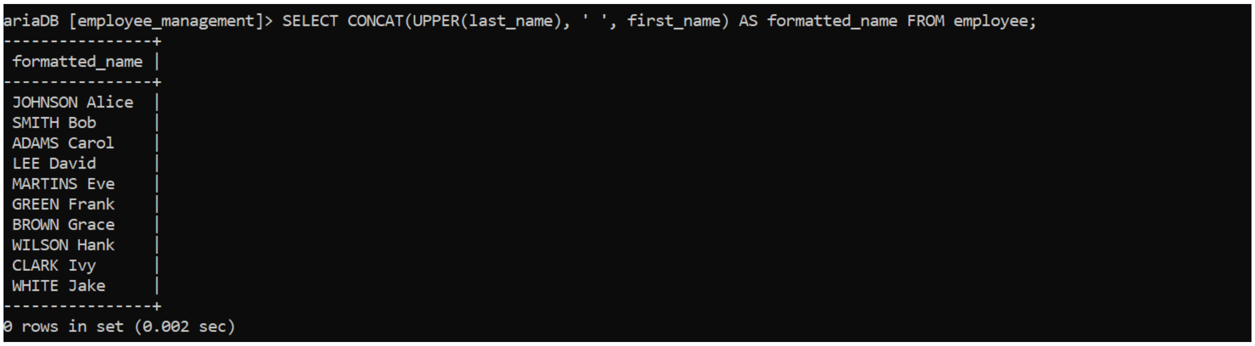
```
ERROR 1146 (42S02): Table 'employee_management.employees' doesn't exist
MariaDB [employee_management]> SELECT CONCAT('Emp: ', first_name, ' ', last_name, ' (', department_name, ')') AS label FROM employee e JOIN departments d ON e.department_id
 = d.department_id;
+-----------------------------------------+
| label                                   |
+-----------------------------------------+
| Emp: Alice Johnson (Human Resources)    |
| Emp: Bob Smith (Information Technology) |
| Emp: Carol Adams (Finance)              |
| Emp: David Lee (Marketing)              |
| Emp: Eve Martins (Information Technology) |
| Emp: Frank Green (Sales)                |
| Emp: Grace Brown (Legal)                |
| Emp: Hank Wilson (Operations)           |
| Emp: Ivy Clark (Research and Development) |
| Emp: Jake White (Customer Service)      |
+-----------------------------------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT email, LENGTH(email) AS email_length FROM employee;
+---------------------------+--------------+
| email                     | email_length |
+---------------------------+--------------+
| alice.johnson@company.com |           25 |
| bob.smith@company.com     |           21 |
| carol.adams@company.com   |           23 |
| david.lee@company.com     |           21 |
| eve.martins@company.com   |           23 |
| frank.green@company.com   |           23 |
| grace.brown@company.com   |           23 |
| hank.wilson@company.com   |           23 |
| ivy.clark@company.com     |           21 |
| jake.white@company.com    |           22 |
+---------------------------+--------------+
10 rows in set (0.001 sec)
```

13. Extract last name only from email (before @).



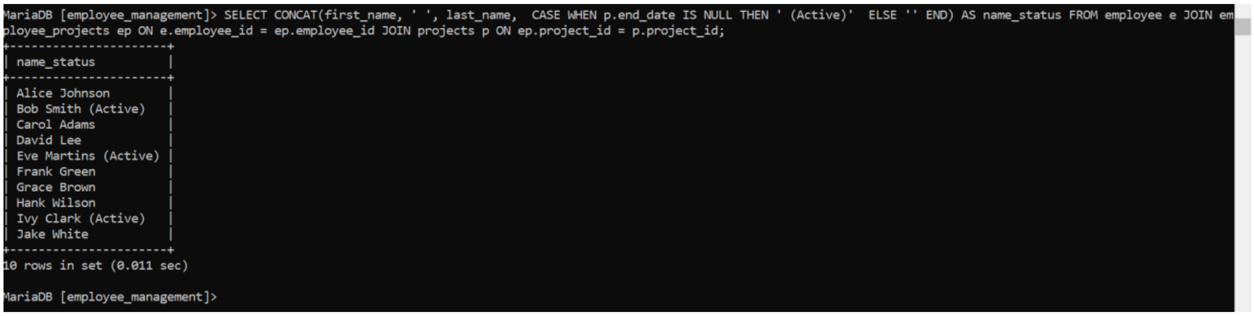
```
+---------------------------+--------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT SUBSTRING(email, 1, INSTR(email, '@') - 1) AS email_name FROM employee;
+---------------+
| email_name    |
+---------------+
| alice.johnson |
| bob.smith     |
| carol.adams   |
| david.lee     |
| eve.martins   |
| frank.green   |
| grace.brown   |
| hank.wilson   |
| ivy.clark     |
| jake.white    |
+---------------+
10 rows in set (0.001 sec)
```

14. Format: “LASTNAME, Firstname” using UPPER and CONCAT.



```
ariaDB [employee_management]> SELECT CONCAT(UPPER(last_name), ' ', first_name) AS formatted_name FROM employee;
---------------+
 formatted_name |
---------------+
 JOHNSON Alice  |
 SMITH Bob      |
 ADAMS Carol    |
 LEE David      |
 MARTINS Eve    |
 GREEN Frank    |
 BROWN Grace    |
 WILSON Hank    |
 CLARK Ivy      |
 WHITE Jake     |
---------------+
0 rows in set (0.002 sec)
```

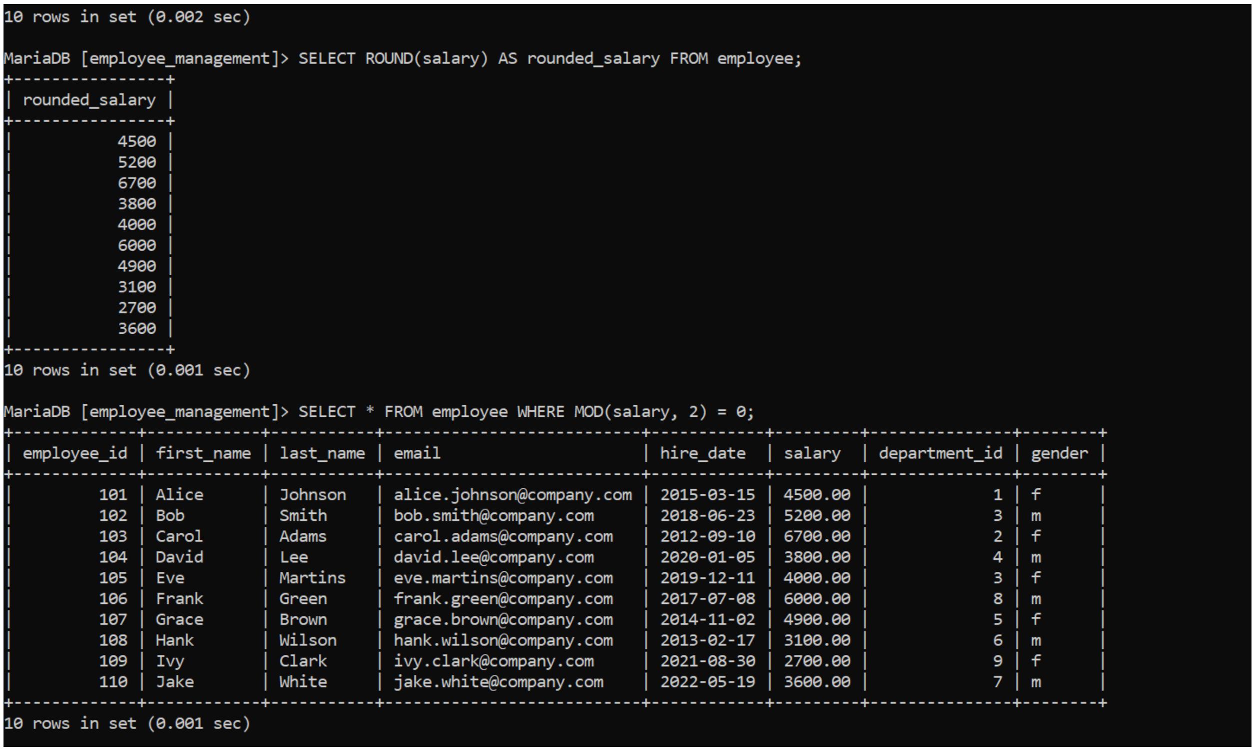
15. Add “(Active)” next to employee names who have current projects.



```
MariaDB [employee_management]> SELECT CONCAT(first_name, ' ', last_name,  CASE WHEN p.end_date IS NULL THEN ' (Active)'  ELSE '' END) AS name_status FROM employee e JOIN em
ployee_projects ep ON e.employee_id = ep.employee_id JOIN projects p ON ep.project_id = p.project_id;
+---------------------+
| name_status         |
+---------------------+
| Alice Johnson       |
| Bob Smith (Active)  |
| Carol Adams         |
| David Lee           |
| Eve Martins (Active) |
| Frank Green         |
| Grace Brown         |
| Hank Wilson         |
| Ivy Clark (Active)  |
| Jake White          |
+---------------------+
10 rows in set (0.011 sec)

MariaDB [employee_management]>
```

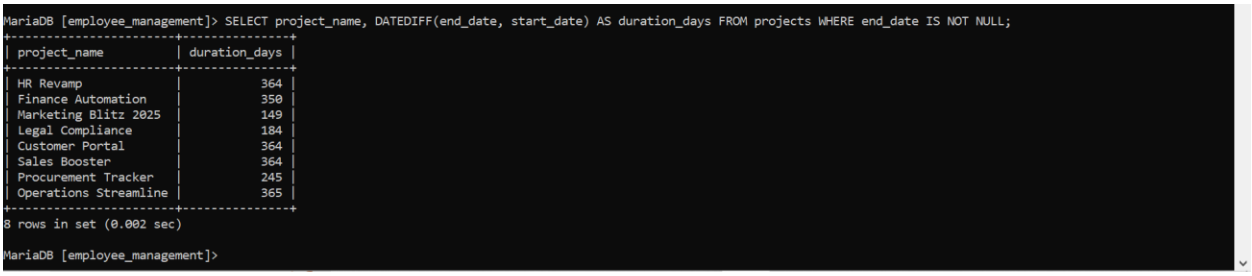
16. Round salary to the nearest whole number.

17. Show only even salaries using MOD.



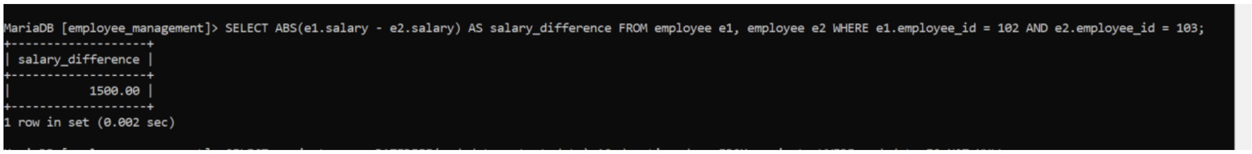
```
10 rows in set (0.002 sec)

MariaDB [employee_management]> SELECT ROUND(salary) AS rounded_salary FROM employee;
+----------------+
| rounded_salary |
+----------------+
|           4500 |
|           5200 |
|           6700 |
|           3800 |
|           4000 |
|           6000 |
|           4900 |
|           3100 |
|           2700 |
|           3600 |
+----------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT * FROM employee WHERE MOD(salary, 2) = 0;
+-------------+------------+-----------+---------------------------+------------+---------+---------------+--------+
| employee_id | first_name | last_name | email                     | hire_date  | salary  | department_id | gender |
+-------------+------------+-----------+---------------------------+------------+---------+---------------+--------+
|         101 | Alice      | Johnson   | alice.johnson@company.com | 2015-03-15 | 4500.00 |             1 | f      |
|         102 | Bob        | Smith     | bob.smith@company.com     | 2018-06-23 | 5200.00 |             3 | m      |
|         103 | Carol      | Adams     | carol.adams@company.com   | 2012-09-10 | 6700.00 |             2 | f      |
|         104 | David      | Lee       | david.lee@company.com     | 2020-01-05 | 3800.00 |             4 | m      |
|         105 | Eve        | Martins   | eve.martins@company.com   | 2019-12-11 | 4000.00 |             3 | f      |
|         106 | Frank      | Green     | frank.green@company.com   | 2017-07-08 | 6000.00 |             8 | m      |
|         107 | Grace      | Brown     | grace.brown@company.com   | 2014-11-02 | 4900.00 |             5 | f      |
|         108 | Hank       | Wilson    | hank.wilson@company.com   | 2013-02-17 | 3100.00 |             6 | m      |
|         109 | Ivy        | Clark     | ivy.clark@company.com     | 2021-08-30 | 2700.00 |             9 | f      |
|         110 | Jake       | White     | jake.white@company.com    | 2022-05-19 | 3600.00 |             7 | m      |
+-------------+------------+-----------+---------------------------+------------+---------+---------------+--------+
10 rows in set (0.001 sec)
```

18. Show difference between two project end/start dates using DATEDIFF.



```
MariaDB [employee_management]> SELECT project_name, DATEDIFF(end_date, start_date) AS duration_days FROM projects WHERE end_date IS NOT NULL;
+-----------------------+---------------+
| project_name          | duration_days |
+-----------------------+---------------+
| HR Revamp             |           364 |
| Finance Automation    |           350 |
| Marketing Blitz 2025  |           149 |
| Legal Compliance      |           184 |
| Customer Portal       |           364 |
| Sales Booster         |           364 |
| Procurement Tracker   |           245 |
| Operations Streamline |           365 |
+-----------------------+---------------+
8 rows in set (0.002 sec)

MariaDB [employee_management]>
```

19. Show absolute difference in salaries between two employees.

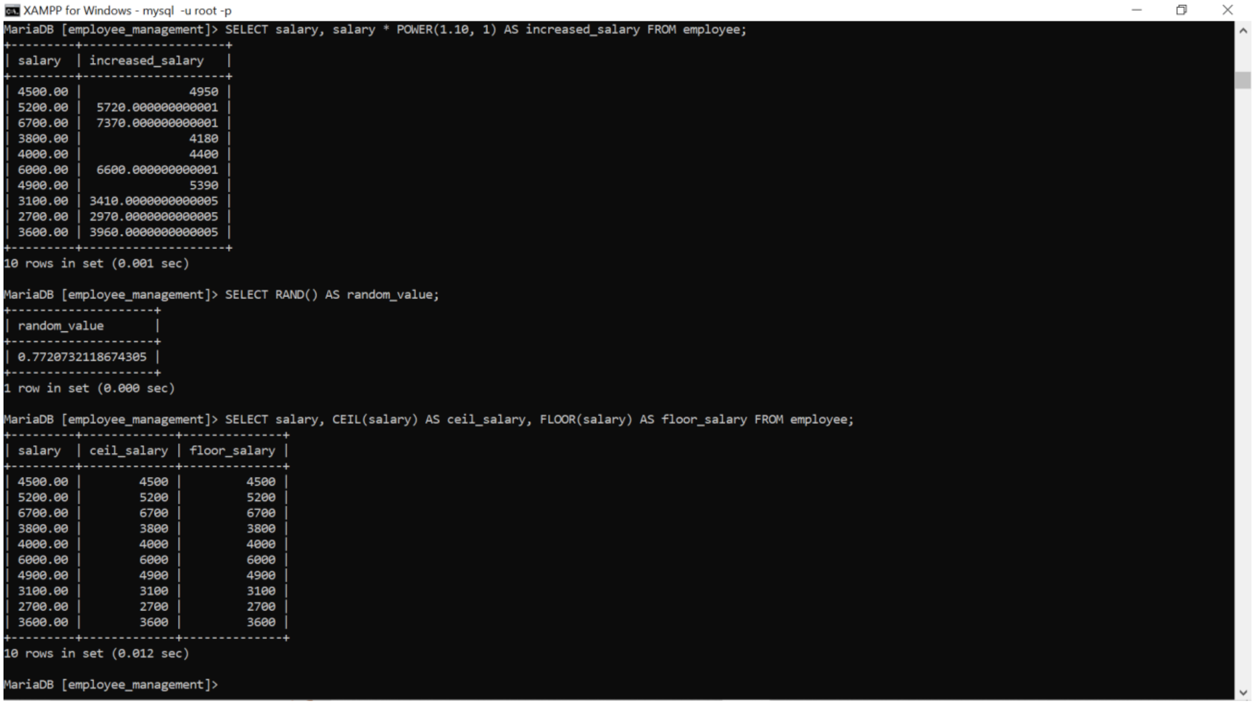


```
MariaDB [employee_management]> SELECT ABS(e1.salary - e2.salary) AS salary_difference FROM employee e1, employee e2 WHERE e1.employee_id = 102 AND e2.employee_id = 103;
+-------------------+
| salary_difference |
+-------------------+
|           1500.00 |
+-------------------+
1 row in set (0.002 sec)
```

20. Raise salary by 10% using POWER.

21. Generate a random number for testing IDs.

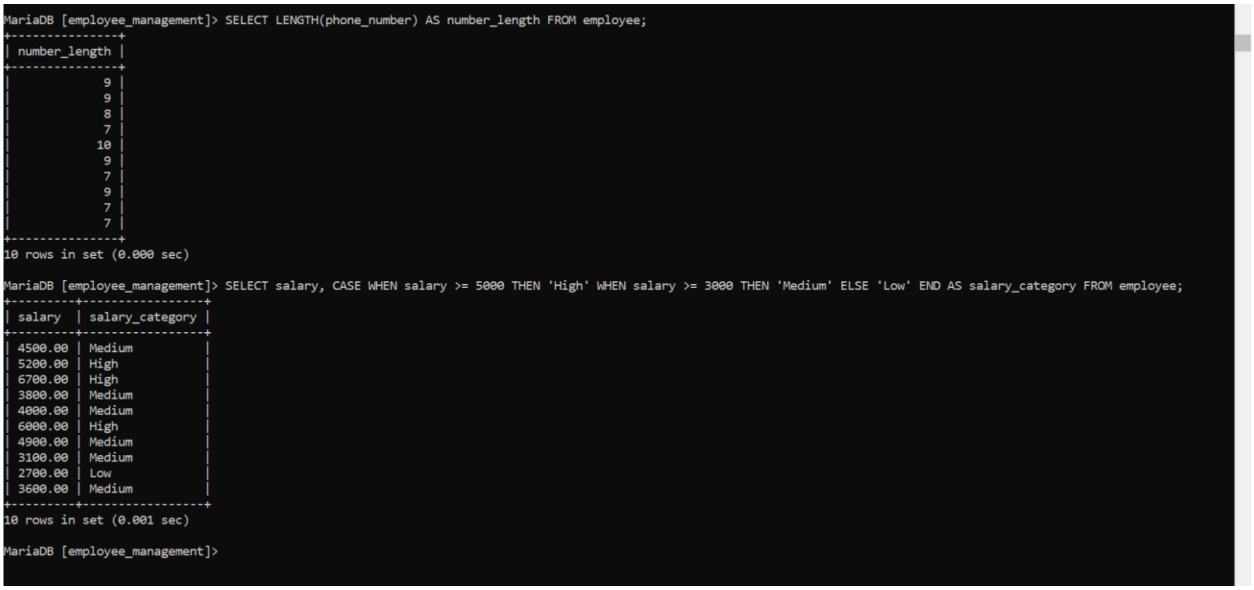
22. Use CEIL and FLOOR on a floating salary.



```
MariaDB [employee_management]> SELECT salary, salary * POWER(1.10, 1) AS increased_salary FROM employee;
+---------+--------------------+
| salary  | increased_salary   |
+---------+--------------------+
| 4500.00 |               4950 |
| 5200.00 |  5720.000000000001 |
| 6700.00 |  7370.000000000001 |
| 3800.00 |               4180 |
| 4000.00 |               4400 |
| 6000.00 |  6600.000000000001 |
| 4900.00 |               5390 |
| 3100.00 | 3410.0000000000005 |
| 2700.00 | 2970.0000000000005 |
| 3600.00 | 3960.0000000000005 |
+---------+--------------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT RAND() AS random_value;
+--------------------+
| random_value       |
+--------------------+
| 0.7720732118674305 |
+--------------------+
1 row in set (0.000 sec)

MariaDB [employee_management]> SELECT salary, CEIL(salary) AS ceil_salary, FLOOR(salary) AS floor_salary FROM employee;
+---------+-------------+--------------+
| salary  | ceil_salary | floor_salary |
+---------+-------------+--------------+
| 4500.00 |        4500 |         4500 |
| 5200.00 |        5200 |         5200 |
| 6700.00 |        6700 |         6700 |
| 3800.00 |        3800 |         3800 |
| 4000.00 |        4000 |         4000 |
| 6000.00 |        6000 |         6000 |
| 4900.00 |        4900 |         4900 |
| 3100.00 |        3100 |         3100 |
| 2700.00 |        2700 |         2700 |
| 3600.00 |        3600 |         3600 |
+---------+-------------+--------------+
10 rows in set (0.012 sec)

MariaDB [employee_management]>
```

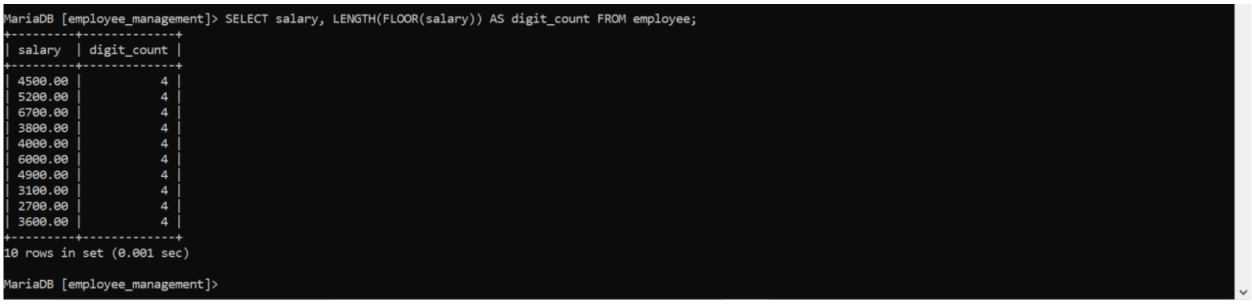
23. Use LENGTH() on phone numbers (assume column exists).

24. Categorize salary: High/Medium/Low using CASE.



```
MariaDB [employee_management]> SELECT LENGTH(phone_number) AS number_length FROM employee;
+---------------+
| number_length |
+---------------+
|             9 |
|             9 |
|             8 |
|             7 |
|            10 |
|             9 |
|             7 |
|             9 |
|             7 |
|             7 |
+---------------+
10 rows in set (0.000 sec)

MariaDB [employee_management]> SELECT salary, CASE WHEN salary >= 5000 THEN 'High' WHEN salary >= 3000 THEN 'Medium' ELSE 'Low' END AS salary_category FROM employee;
+---------+-----------------+
| salary  | salary_category |
+---------+-----------------+
| 4500.00 | Medium          |
| 5200.00 | High            |
| 6700.00 | High            |
| 3800.00 | Medium          |
| 4000.00 | Medium          |
| 6000.00 | High            |
| 4900.00 | Medium          |
| 3100.00 | Medium          |
| 2700.00 | Low             |
| 3600.00 | Medium          |
+---------+-----------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

25. Count digits in salary amount.

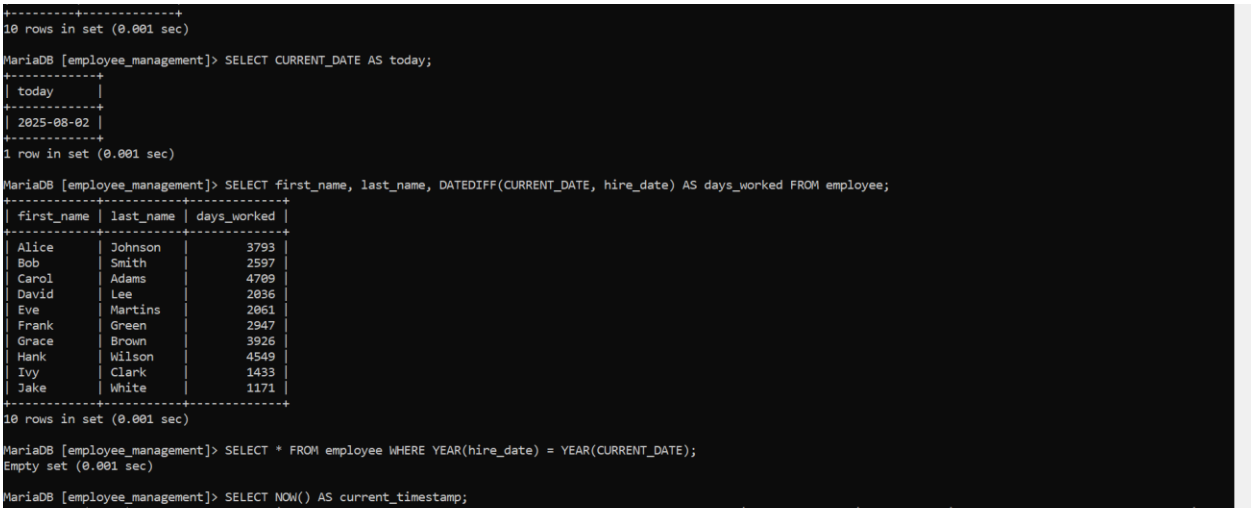


```
MariaDB [employee_management]> SELECT salary, LENGTH(FLOOR(salary)) AS digit_count FROM employee;
+---------+-------------+
| salary  | digit_count |
+---------+-------------+
| 4500.00 |           4 |
| 5200.00 |           4 |
| 6700.00 |           4 |
| 3800.00 |           4 |
| 4000.00 |           4 |
| 6000.00 |           4 |
| 4900.00 |           4 |
| 3100.00 |           4 |
| 2700.00 |           4 |
| 3600.00 |           4 |
+---------+-------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

26. Show today’s date using CURRENT_DATE.

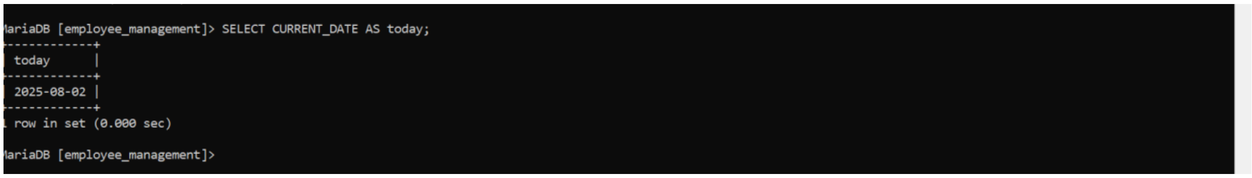
27. Calculate how many days an employee has worked.

28. Show employees hired in the current year.



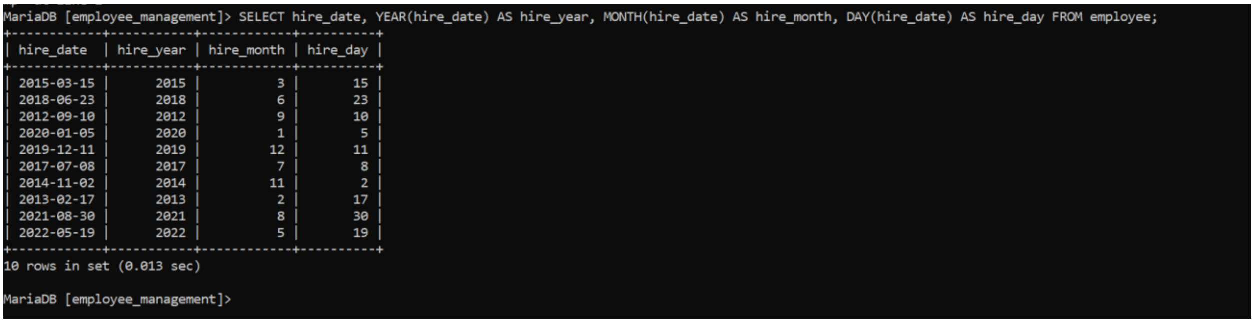
```
+-----------+-------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT CURRENT_DATE AS today;
+------------+
| today      |
+------------+
| 2025-08-02 |
+------------+
1 row in set (0.001 sec)

MariaDB [employee_management]> SELECT first_name, last_name, DATEDIFF(CURRENT_DATE, hire_date) AS days_worked FROM employee;
+------------+-----------+-------------+
| first_name | last_name | days_worked |
+------------+-----------+-------------+
| Alice      | Johnson   |        3793 |
| Bob        | Smith     |        2597 |
| Carol      | Adams     |        4709 |
| David      | Lee       |        2036 |
| Eve        | Martins   |        2061 |
| Frank      | Green     |        2947 |
| Grace      | Brown     |        3926 |
| Hank       | Wilson    |        4549 |
| Ivy        | Clark     |        1433 |
| Jake       | White     |        1171 |
+------------+-----------+-------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT * FROM employee WHERE YEAR(hire_date) = YEAR(CURRENT_DATE);
Empty set (0.001 sec)

MariaDB [employee_management]> SELECT NOW() AS current_timestamp;
```

29. Display current date and time using NOW().



```
MariaDB [employee_management]> SELECT CURRENT_DATE AS today;
+------------+
| today      |
+------------+
| 2025-08-02 |
+------------+
1 row in set (0.000 sec)

MariaDB [employee_management]>
```

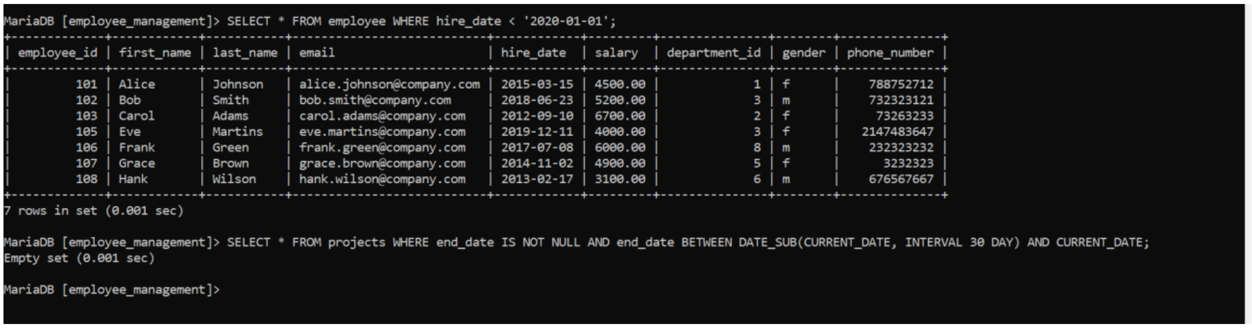
30. Extract the year, month, and day from hire_date.



```
MariaDB [employee_management]> SELECT hire_date, YEAR(hire_date) AS hire_year, MONTH(hire_date) AS hire_month, DAY(hire_date) AS hire_day FROM employee;
+------------+-----------+------------+----------+
| hire_date  | hire_year | hire_month | hire_day |
+------------+-----------+------------+----------+
| 2015-03-15 |      2015 |          3 |       15 |
| 2018-06-23 |      2018 |          6 |       23 |
| 2012-09-10 |      2012 |          9 |       10 |
| 2020-01-05 |      2020 |          1 |        5 |
| 2019-12-11 |      2019 |         12 |       11 |
| 2017-07-08 |      2017 |          7 |        8 |
| 2014-11-02 |      2014 |         11 |        2 |
| 2013-02-17 |      2013 |          2 |       17 |
| 2021-08-30 |      2021 |          8 |       30 |
| 2022-05-19 |      2022 |          5 |       19 |
+------------+-----------+------------+----------+
10 rows in set (0.013 sec)

MariaDB [employee_management]>
```

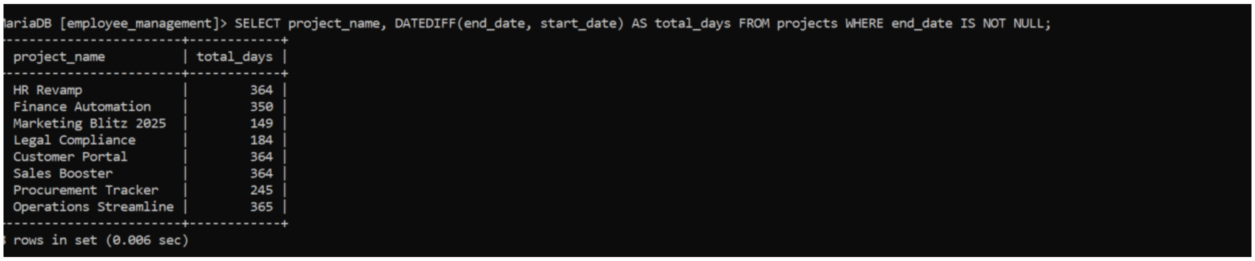
31. Show employees hired before 2020.

32. List projects that ended in the last 30 days.



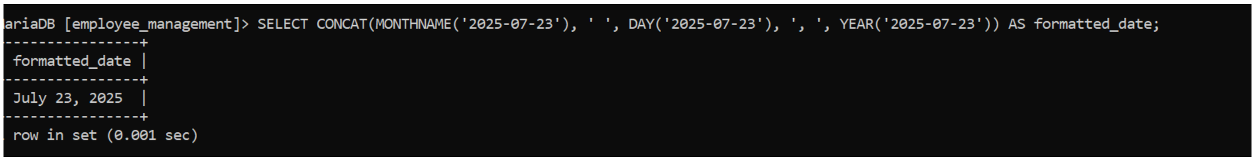
```
MariaDB [employee_management]> SELECT * FROM employee WHERE hire_date < '2020-01-01';
+-------------+------------+-----------+--------------------------+------------+---------+---------------+--------+--------------+
| employee_id | first_name | last_name | email                    | hire_date  | salary  | department_id | gender | phone_number |
+-------------+------------+-----------+--------------------------+------------+---------+---------------+--------+--------------+
|         101 | Alice      | Johnson   | alice.johnson@company.com | 2015-03-15 | 4500.00 |             1 | f      |    788752712 |
|         102 | Bob        | Smith     | bob.smith@company.com    | 2018-06-23 | 5200.00 |             3 | m      |    732323121 |
|         103 | Carol      | Adams     | carol.adams@company.com  | 2012-09-10 | 6700.00 |             2 | f      |     73263233 |
|         105 | Eve        | Martins   | eve.martins@company.com  | 2019-12-11 | 4000.00 |             3 | f      |   2147483647 |
|         106 | Frank      | Green     | frank.green@company.com  | 2017-07-08 | 6000.00 |             8 | m      |    232323232 |
|         107 | Grace      | Brown     | grace.brown@company.com  | 2014-11-02 | 4900.00 |             5 | f      |      3232323 |
|         108 | Hank       | Wilson    | hank.wilson@company.com  | 2013-02-17 | 3100.00 |             6 | m      |    676567667 |
+-------------+------------+-----------+--------------------------+------------+---------+---------------+--------+--------------+
7 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT * FROM projects WHERE end_date IS NOT NULL AND end_date BETWEEN DATE_SUB(CURRENT_DATE, INTERVAL 30 DAY) AND CURRENT_DATE;
Empty set (0.001 sec)

MariaDB [employee_management]>
```

33. Calculate total days between project start and end dates.



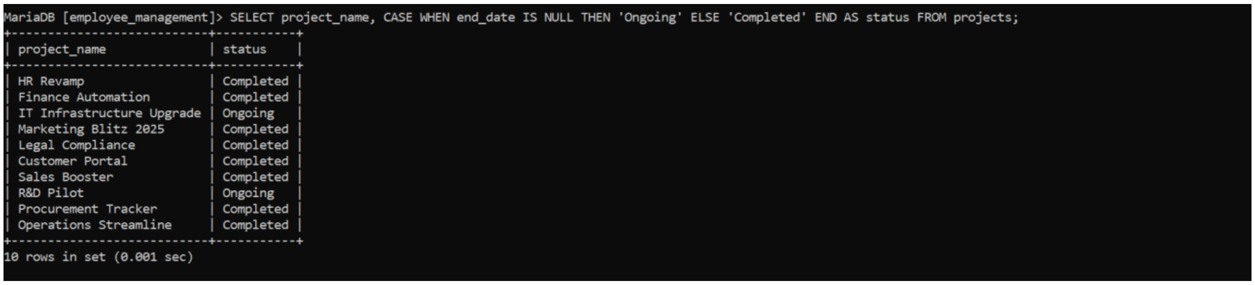
```
ariaDB [employee_management]> SELECT project_name, DATEDIFF(end_date, start_date) AS total_days FROM projects WHERE end_date IS NOT NULL;
-----------------------+------------+
 project_name          | total_days |
-----------------------+------------+
 HR Revamp             |        364 |
 Finance Automation    |        350 |
 Marketing Blitz 2025  |        149 |
 Legal Compliance      |        184 |
 Customer Portal       |        364 |
 Sales Booster         |        364 |
 Procurement Tracker   |        245 |
 Operations Streamline |        365 |
-----------------------+------------+
 rows in set (0.006 sec)
```

34. Format date: ‘2025-07-23’ to ‘July 23, 2025’ (use CONCAT).



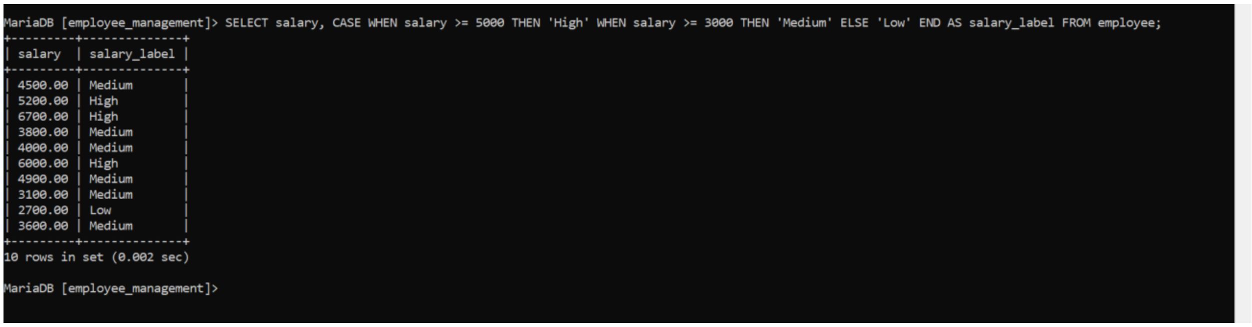
```
ariaDB [employee_management]> SELECT CONCAT(MONTHNAME('2025-07-23'), ' ', DAY('2025-07-23'), ', ', YEAR('2025-07-23')) AS formatted_date;
----------------+
 formatted_date |
----------------+
 July 23, 2025  |
----------------+
 row in set (0.001 sec)
```

35. Add a CASE: if project still active (end_date IS NULL), show ‘Ongoing’.



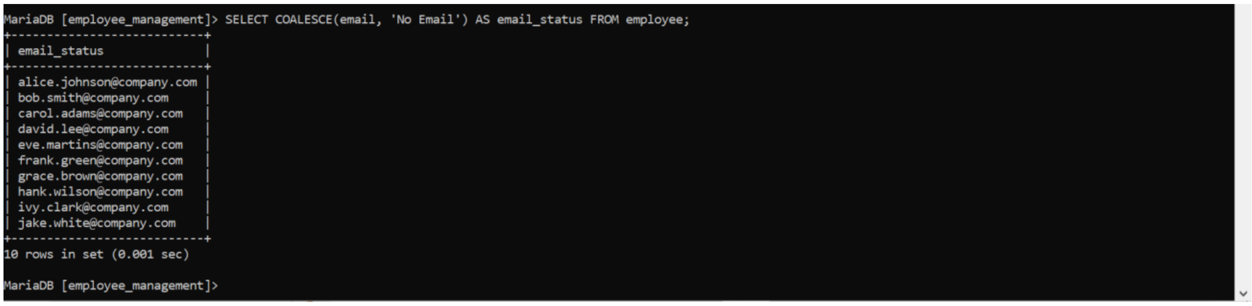
```
MariaDB [employee_management]> SELECT project_name, CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE 'Completed' END AS status FROM projects;
+---------------------------+-----------+
| project_name              | status    |
+---------------------------+-----------+
| HR Revamp                 | Completed |
| Finance Automation        | Completed |
| IT Infrastructure Upgrade | Ongoing   |
| Marketing Blitz 2025      | Completed |
| Legal Compliance          | Completed |
| Customer Portal           | Completed |
| Sales Booster             | Completed |
| R&D Pilot                 | Ongoing   |
| Procurement Tracker       | Completed |
| Operations Streamline     | Completed |
+---------------------------+-----------+
10 rows in set (0.001 sec)
```

36. Use CASE to label salaries.



```
MariaDB [employee_management]> SELECT salary, CASE WHEN salary >= 5000 THEN 'High' WHEN salary >= 3000 THEN 'Medium' ELSE 'Low' END AS salary_label FROM employee;
+---------+--------------+
| salary  | salary_label |
+---------+--------------+
| 4500.00 | Medium       |
| 5200.00 | High         |
| 6700.00 | High         |
| 3800.00 | Medium       |
| 4000.00 | Medium       |
| 6000.00 | High         |
| 4900.00 | Medium       |
| 3100.00 | Medium       |
| 2700.00 | Low          |
| 3600.00 | Medium       |
+---------+--------------+
10 rows in set (0.002 sec)

MariaDB [employee_management]>
```

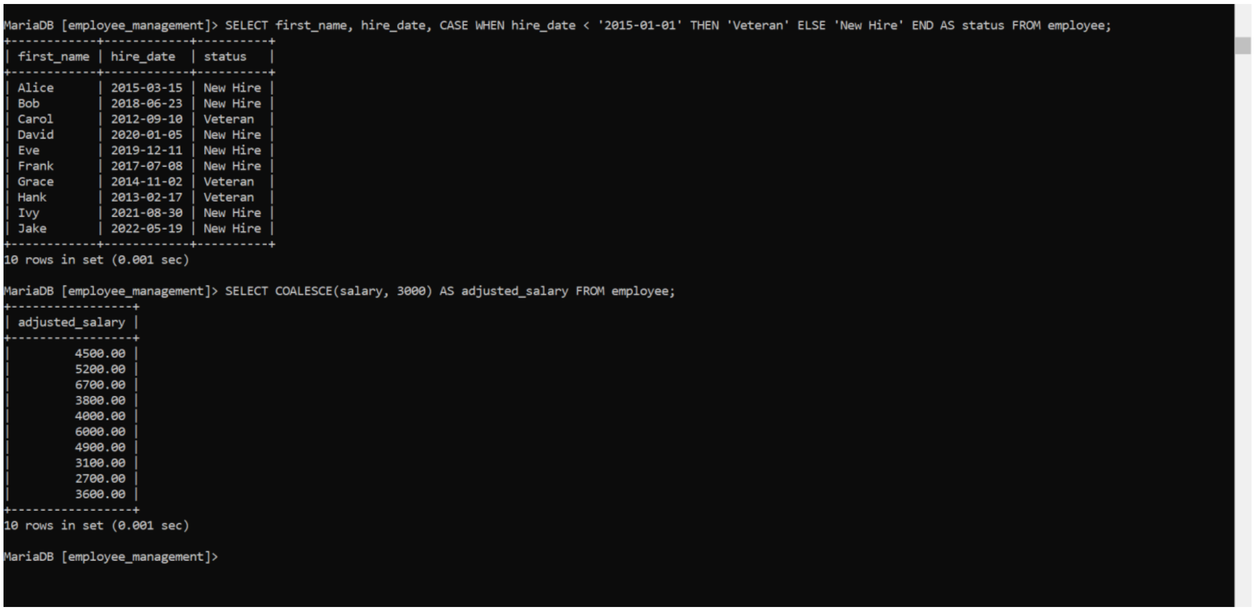
37. Use COALESCE to show ‘No Email’ if email is NULL.



```
MariaDB [employee_management]> SELECT COALESCE(email, 'No Email') AS email_status FROM employee;
+--------------------------+
| email_status             |
+--------------------------+
| alice.johnson@company.com |
| bob.smith@company.com     |
| carol.adams@company.com   |
| david.lee@company.com     |
| eve.martins@company.com   |
| frank.green@company.com   |
| grace.brown@company.com   |
| hank.wilson@company.com   |
| ivy.clark@company.com     |
| jake.white@company.com    |
+--------------------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

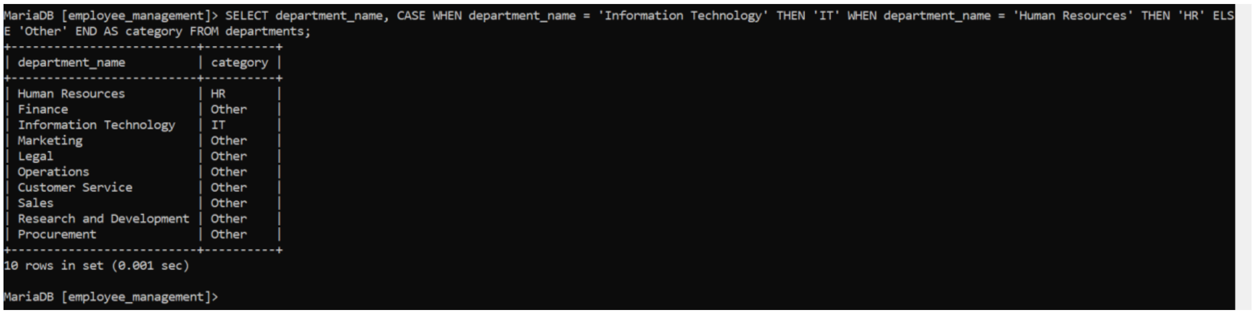
38. CASE: If hire_date < 2015, mark as ‘Veteran’.

39. If salary is NULL, default it to 3000 using COALESCE.



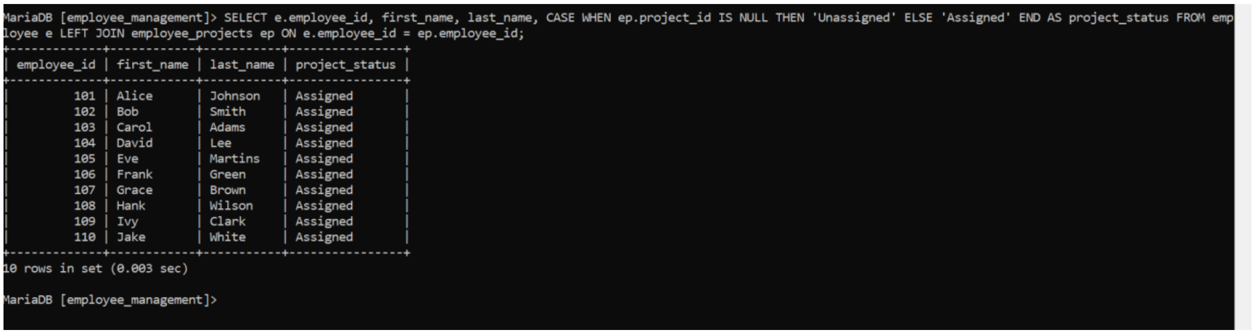
```
MariaDB [employee_management]> SELECT first_name, hire_date, CASE WHEN hire_date < '2015-01-01' THEN 'Veteran' ELSE 'New Hire' END AS status FROM employee;
+------------+------------+----------+
| first_name | hire_date  | status   |
+------------+------------+----------+
| Alice      | 2015-03-15 | New Hire |
| Bob        | 2018-06-23 | New Hire |
| Carol      | 2012-09-10 | Veteran  |
| David      | 2020-01-05 | New Hire |
| Eve        | 2019-12-11 | New Hire |
| Frank      | 2017-07-08 | New Hire |
| Grace      | 2014-11-02 | Veteran  |
| Hank       | 2013-02-17 | Veteran  |
| Ivy        | 2021-08-30 | New Hire |
| Jake       | 2022-05-19 | New Hire |
+------------+------------+----------+
10 rows in set (0.001 sec)

MariaDB [employee_management]> SELECT COALESCE(salary, 3000) AS adjusted_salary FROM employee;
+-----------------+
| adjusted_salary |
+-----------------+
|         4500.00 |
|         5200.00 |
|         6700.00 |
|         3800.00 |
|         4000.00 |
|         6000.00 |
|         4900.00 |
|         3100.00 |
|         2700.00 |
|         3600.00 |
+-----------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

40. CASE: Categorize departments (IT, HR, Other).



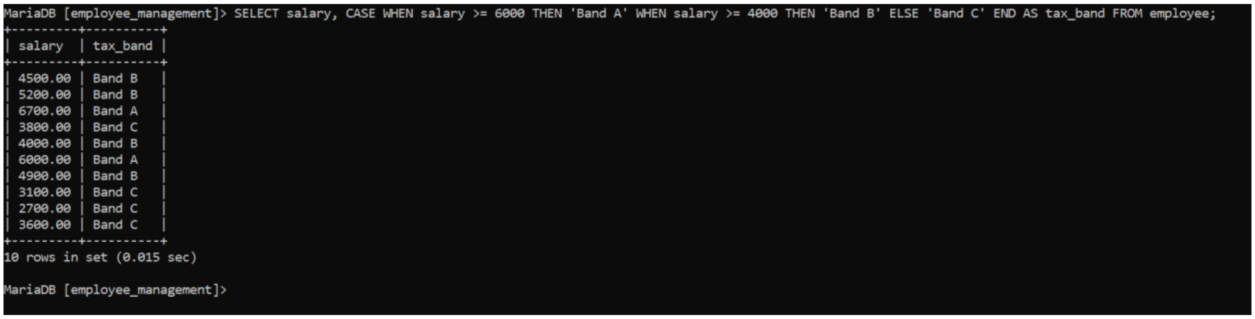
```
MariaDB [employee_management]> SELECT department_name, CASE WHEN department_name = 'Information Technology' THEN 'IT' WHEN department_name = 'Human Resources' THEN 'HR' ELS
E 'Other' END AS category FROM departments;
+------------------------+----------+
| department_name        | category |
+------------------------+----------+
| Human Resources        | HR       |
| Finance                | Other    |
| Information Technology | IT       |
| Marketing              | Other    |
| Legal                  | Other    |
| Operations             | Other    |
| Customer Service       | Other    |
| Sales                  | Other    |
| Research and Development | Other  |
| Procurement            | Other    |
+------------------------+----------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

41. CASE: If employee has no project, mark as ‘Unassigned’.



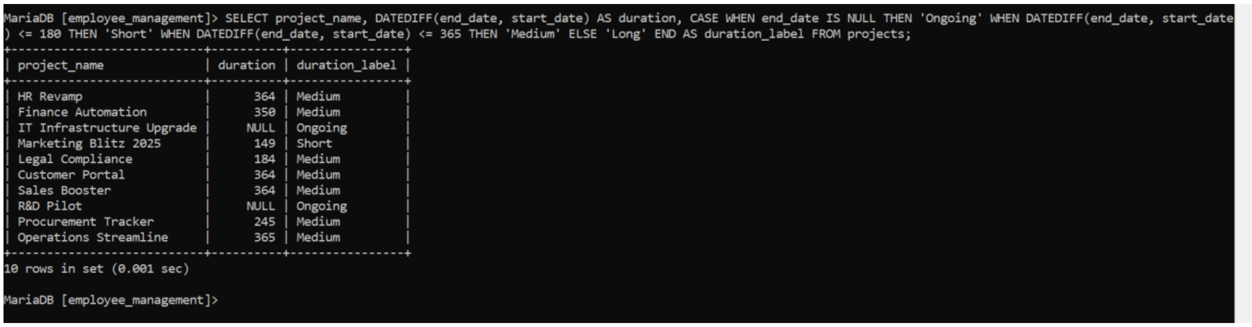
```
MariaDB [employee_management]> SELECT e.employee_id, first_name, last_name, CASE WHEN ep.project_id IS NULL THEN 'Unassigned' ELSE 'Assigned' END AS project_status FROM emp
loyee e LEFT JOIN employee_projects ep ON e.employee_id = ep.employee_id;
+-------------+------------+-----------+----------------+
| employee_id | first_name | last_name | project_status |
+-------------+------------+-----------+----------------+
|         101 | Alice      | Johnson   | Assigned       |
|         102 | Bob        | Smith     | Assigned       |
|         103 | Carol      | Adams     | Assigned       |
|         104 | David      | Lee       | Assigned       |
|         105 | Eve        | Martins   | Assigned       |
|         106 | Frank      | Green     | Assigned       |
|         107 | Grace      | Brown     | Assigned       |
|         108 | Hank       | Wilson    | Assigned       |
|         109 | Ivy        | Clark     | Assigned       |
|         110 | Jake       | White     | Assigned       |
+-------------+------------+-----------+----------------+
10 rows in set (0.003 sec)

MariaDB [employee_management]>
```

42. CASE: Show tax band based on salary.



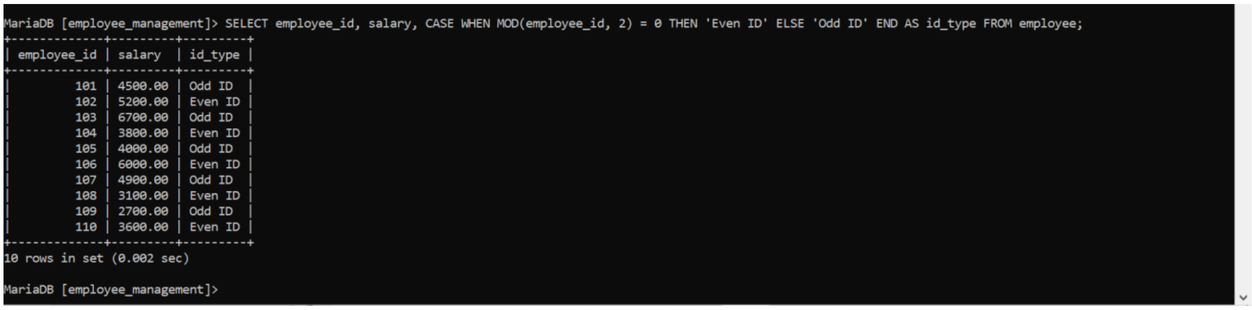
```
MariaDB [employee_management]> SELECT salary, CASE WHEN salary >= 6000 THEN 'Band A' WHEN salary >= 4000 THEN 'Band B' ELSE 'Band C' END AS tax_band FROM employee;
+---------+----------+
| salary  | tax_band |
+---------+----------+
| 4500.00 | Band B   |
| 5200.00 | Band B   |
| 6700.00 | Band A   |
| 3800.00 | Band C   |
| 4000.00 | Band B   |
| 6000.00 | Band A   |
| 4900.00 | Band B   |
| 3100.00 | Band C   |
| 2700.00 | Band C   |
| 3600.00 | Band C   |
+---------+----------+
10 rows in set (0.015 sec)

MariaDB [employee_management]>
```

43. Use nested CASE to label project duration.



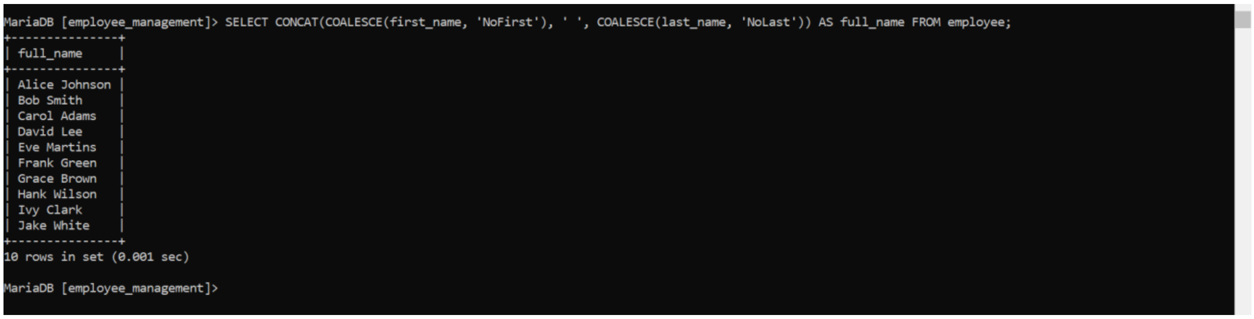
```
MariaDB [employee_management]> SELECT project_name, DATEDIFF(end_date, start_date) AS duration, CASE WHEN end_date IS NULL THEN 'Ongoing' WHEN DATEDIFF(end_date, start_date
) <= 180 THEN 'Short' WHEN DATEDIFF(end_date, start_date) <= 365 THEN 'Medium' ELSE 'Long' END AS duration_label FROM projects;
+---------------------------+----------+----------------+
| project_name              | duration | duration_label |
+---------------------------+----------+----------------+
| HR Revamp                 |      364 | Medium         |
| Finance Automation        |      350 | Medium         |
| IT Infrastructure Upgrade |     NULL | Ongoing        |
| Marketing Blitz 2025      |      149 | Short          |
| Legal Compliance          |      184 | Medium         |
| Customer Portal           |      364 | Medium         |
| Sales Booster             |      364 | Medium         |
| R&D Pilot                 |     NULL | Ongoing        |
| Procurement Tracker       |      245 | Medium         |
| Operations Streamline     |      365 | Medium         |
+---------------------------+----------+----------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

44. Use CASE with MOD to show even/odd salary IDs.



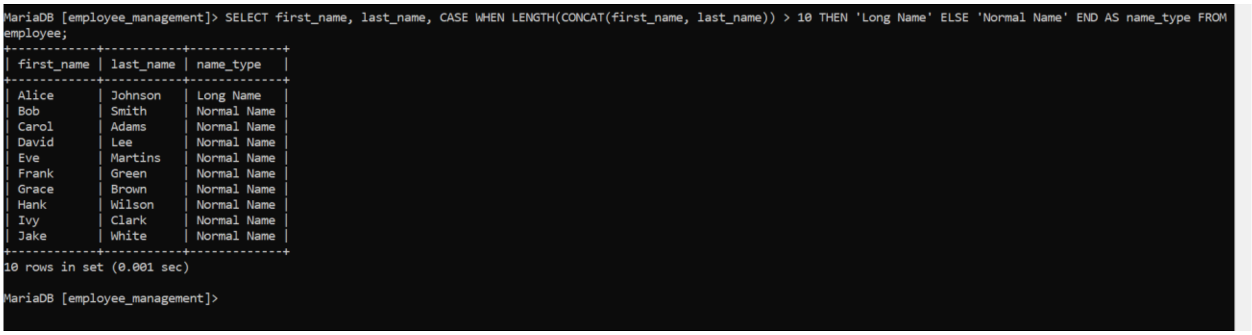
```
MariaDB [employee_management]> SELECT employee_id, salary, CASE WHEN MOD(employee_id, 2) = 0 THEN 'Even ID' ELSE 'Odd ID' END AS id_type FROM employee;
+-------------+---------+---------+
| employee_id | salary  | id_type |
+-------------+---------+---------+
|         101 | 4500.00 | Odd ID  |
|         102 | 5200.00 | Even ID |
|         103 | 6700.00 | Odd ID  |
|         104 | 3800.00 | Even ID |
|         105 | 4000.00 | Odd ID  |
|         106 | 6000.00 | Even ID |
|         107 | 4900.00 | Odd ID  |
|         108 | 3100.00 | Even ID |
|         109 | 2700.00 | Odd ID  |
|         110 | 3600.00 | Even ID |
+-------------+---------+---------+
10 rows in set (0.002 sec)

MariaDB [employee_management]>
```

45. Combine COALESCE + CONCAT for fallback names.



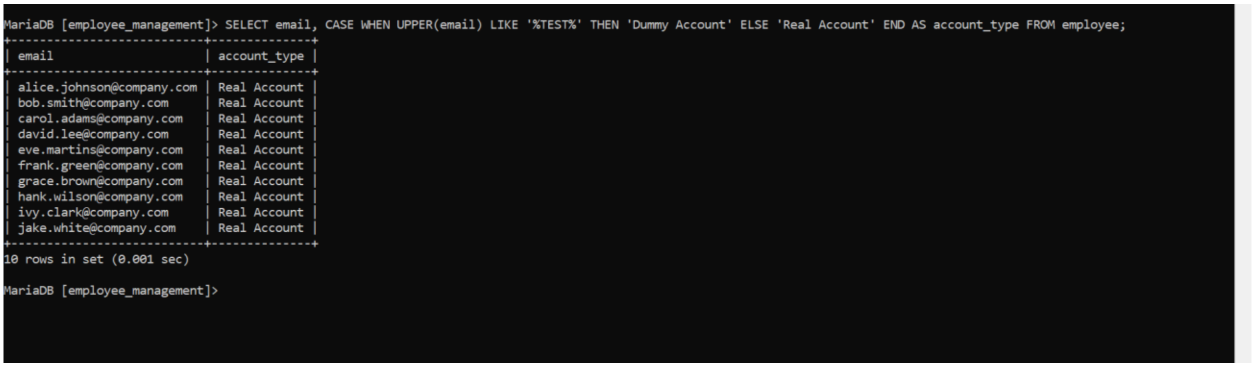
```
MariaDB [employee_management]> SELECT CONCAT(COALESCE(first_name, 'NoFirst'), ' ', COALESCE(last_name, 'NoLast')) AS full_name FROM employee;
+---------------+
| full_name     |
+---------------+
| Alice Johnson |
| Bob Smith     |
| Carol Adams   |
| David Lee     |
| Eve Martins   |
| Frank Green   |
| Grace Brown   |
| Hank Wilson   |
| Ivy Clark     |
| Jake White    |
+---------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

46. CASE with LENGTH(): if name length > 10, label “Long Name”.



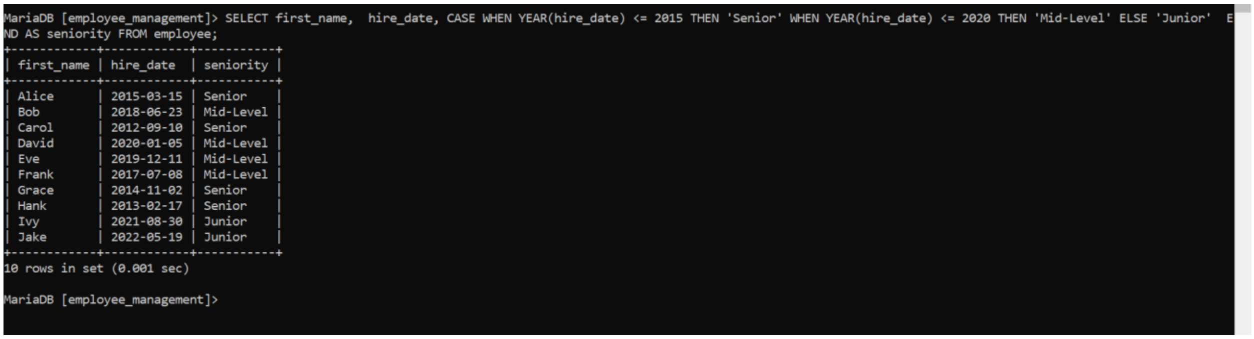
```
MariaDB [employee_management]> SELECT first_name, last_name, CASE WHEN LENGTH(CONCAT(first_name, last_name)) > 10 THEN 'Long Name' ELSE 'Normal Name' END AS name_type FROM
employee;
+------------+-----------+-------------+
| first_name | last_name | name_type   |
+------------+-----------+-------------+
| Alice      | Johnson   | Long Name   |
| Bob        | Smith     | Normal Name |
| Carol      | Adams     | Normal Name |
| David      | Lee       | Normal Name |
| Eve        | Martins   | Normal Name |
| Frank      | Green     | Normal Name |
| Grace      | Brown     | Normal Name |
| Hank       | Wilson    | Normal Name |
| Ivy        | Clark     | Normal Name |
| Jake       | White     | Normal Name |
+------------+-----------+-------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

47. CASE + UPPER(): if email has ‘TEST’, mark as dummy account.



```
MariaDB [employee_management]> SELECT email, CASE WHEN UPPER(email) LIKE '%TEST%' THEN 'Dummy Account' ELSE 'Real Account' END AS account_type FROM employee;
+---------------------------+--------------+
| email                     | account_type |
+---------------------------+--------------+
| alice.johnson@company.com | Real Account |
| bob.smith@company.com     | Real Account |
| carol.adams@company.com   | Real Account |
| david.lee@company.com     | Real Account |
| eve.martins@company.com   | Real Account |
| frank.green@company.com   | Real Account |
| grace.brown@company.com   | Real Account |
| hank.wilson@company.com   | Real Account |
| ivy.clark@company.com     | Real Account |
| jake.white@company.com    | Real Account |
+---------------------------+--------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

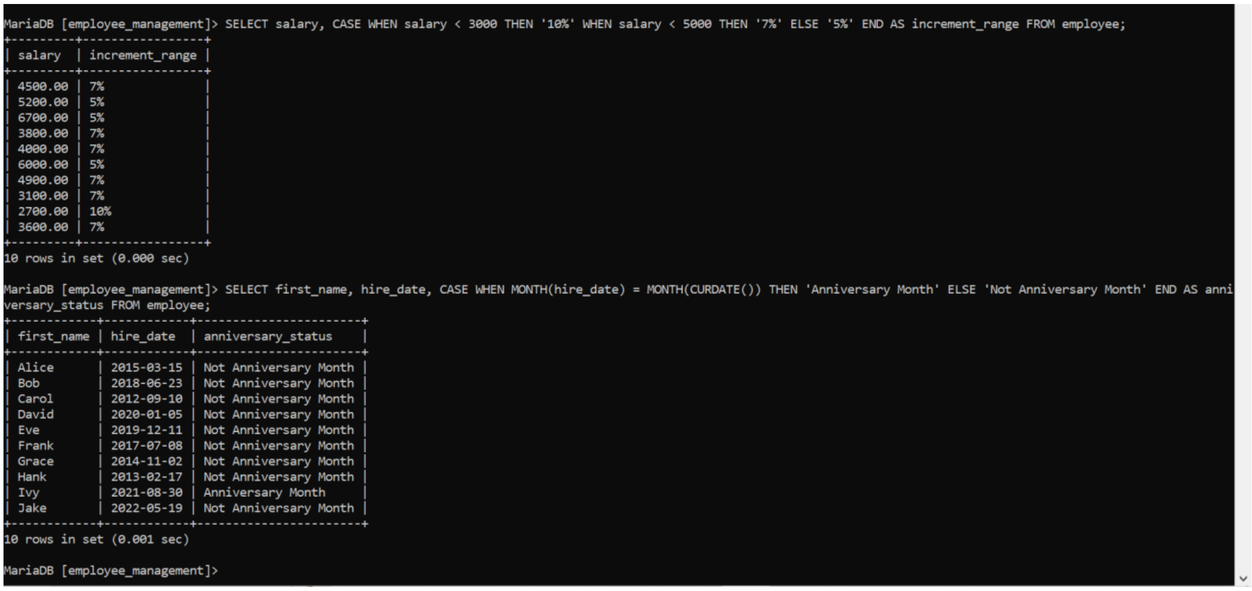
48. CASE: Show seniority based on hire year (e.g., Junior/Senior).



```
MariaDB [employee_management]> SELECT first_name,  hire_date, CASE WHEN YEAR(hire_date) <= 2015 THEN 'Senior' WHEN YEAR(hire_date) <= 2020 THEN 'Mid-Level' ELSE 'Junior'  E
ND AS seniority FROM employee;
+------------+------------+-----------+
| first_name | hire_date  | seniority |
+------------+------------+-----------+
| Alice      | 2015-03-15 | Senior    |
| Bob        | 2018-06-23 | Mid-Level |
| Carol      | 2012-09-10 | Senior    |
| David      | 2020-01-05 | Mid-Level |
| Eve        | 2019-12-11 | Mid-Level |
| Frank      | 2017-07-08 | Mid-Level |
| Grace      | 2014-11-02 | Senior    |
| Hank       | 2013-02-17 | Senior    |
| Ivy        | 2021-08-30 | Junior    |
| Jake       | 2022-05-19 | Junior    |
+------------+------------+-----------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```

49. Use CASE to determine salary increment range.

50. Use CASE with CURDATE() to determine anniversary month.



```
MariaDB [employee_management]> SELECT salary, CASE WHEN salary < 3000 THEN '10%' WHEN salary < 5000 THEN '7%' ELSE '5%' END AS increment_range FROM employee;
+---------+-----------------+
| salary  | increment_range |
+---------+-----------------+
| 4500.00 | 7%              |
| 5200.00 | 5%              |
| 6700.00 | 5%              |
| 3800.00 | 7%              |
| 4000.00 | 7%              |
| 6000.00 | 5%              |
| 4900.00 | 7%              |
| 3100.00 | 7%              |
| 2700.00 | 10%             |
| 3600.00 | 7%              |
+---------+-----------------+
10 rows in set (0.000 sec)

MariaDB [employee_management]> SELECT first_name, hire_date, CASE WHEN MONTH(hire_date) = MONTH(CURDATE()) THEN 'Anniversary Month' ELSE 'Not Anniversary Month' END AS anni
versary_status FROM employee;
+------------+------------+-----------------------+
| first_name | hire_date  | anniversary_status    |
+------------+------------+-----------------------+
| Alice      | 2015-03-15 | Not Anniversary Month |
| Bob        | 2018-06-23 | Not Anniversary Month |
| Carol      | 2012-09-10 | Not Anniversary Month |
| David      | 2020-01-05 | Not Anniversary Month |
| Eve        | 2019-12-11 | Not Anniversary Month |
| Frank      | 2017-07-08 | Not Anniversary Month |
| Grace      | 2014-11-02 | Not Anniversary Month |
| Hank       | 2013-02-17 | Not Anniversary Month |
| Ivy        | 2021-08-30 | Anniversary Month     |
| Jake       | 2022-05-19 | Not Anniversary Month |
+------------+------------+-----------------------+
10 rows in set (0.001 sec)

MariaDB [employee_management]>
```