**Names:** UWAMAHORO Phiona

**ID**:27125

**Date**:03/08/2025

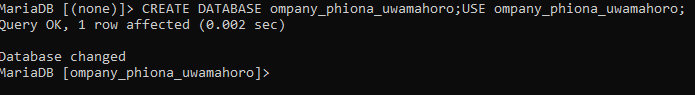
**DBMS ASSINMENT 1**

**Exercises:**

**Database Setup:**

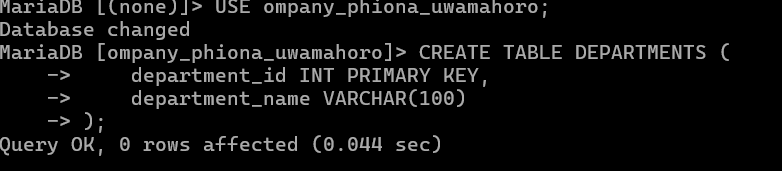
**Description**: Set up the database company\_phiona\_uwamahoro, create tables (DEPARTMENTS, EMPLOYEES, PROJECTS, EMPLOYEE\_PROJECTS), insert case study data, and add required columns for exercises 8, 22, and 23.

**Database Creation:**



**CREATION OF TABLES**

**TABLE DEPARTMENTS:**

****

**TABLE EMPLOYEES:**

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**TABLE PROJECTS:**

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**TABLE EMPLOYEE\_PROJECTS:**

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**INSERTING DATA**

**INSERT INTO DEPARTMENTS:**

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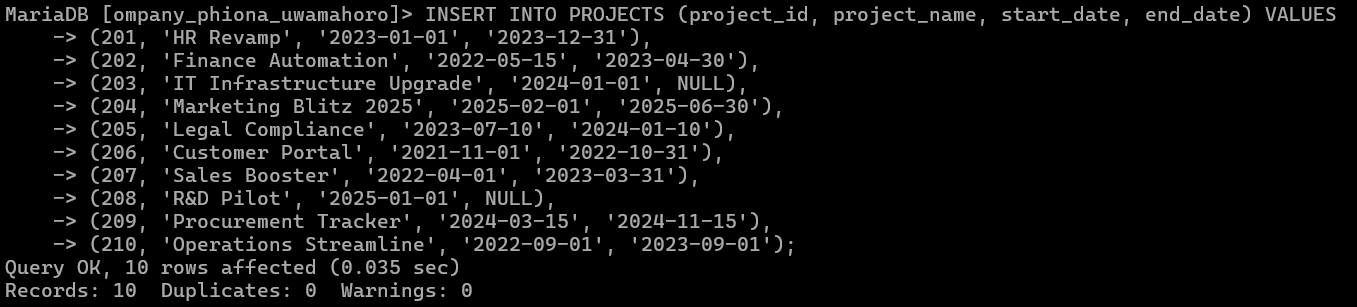
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**INSERT INTO EMPLOYEES:**

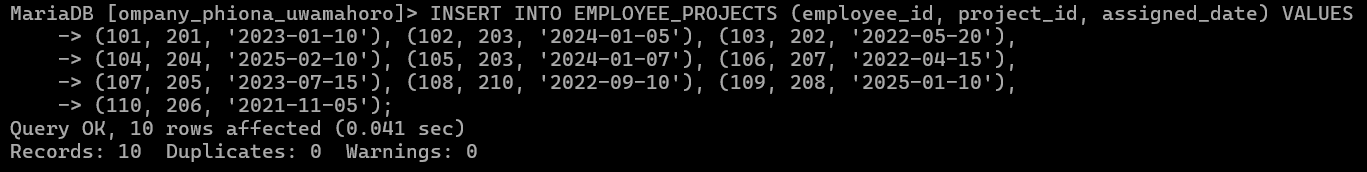
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**INSERT INTO PROJECTS:**

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**INSERT INTO EMPLOYEE\_PROJECTS:**

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**ADD REQUIRED COLUMNS**

**ALTER TABLE EMPLOYEES:**

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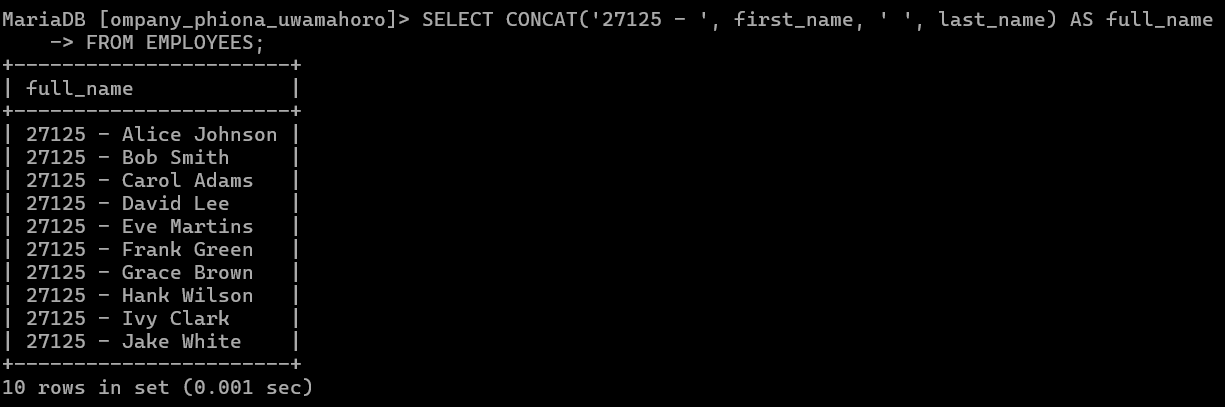
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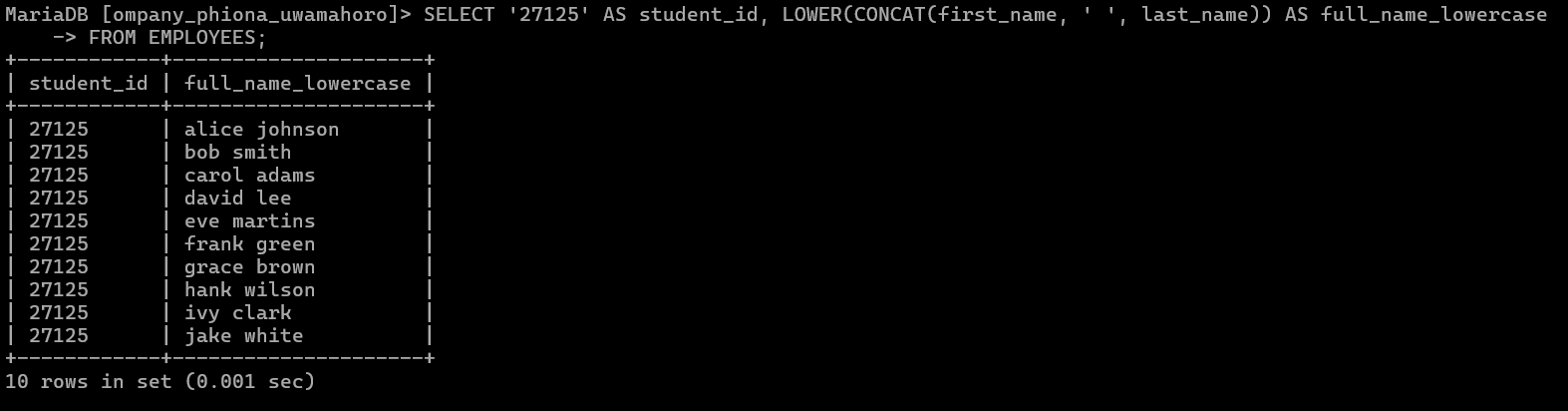
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**String Function Exercises (15)**

1. Concatenate first and last name as full\_name.



1. Convert all employee names to lowercase.



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

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

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1. Trim spaces from a padded string.

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

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

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

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1. Format project names to uppercase.

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1. Remove any dashes from project names.

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

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1. Check email length for each employee.

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

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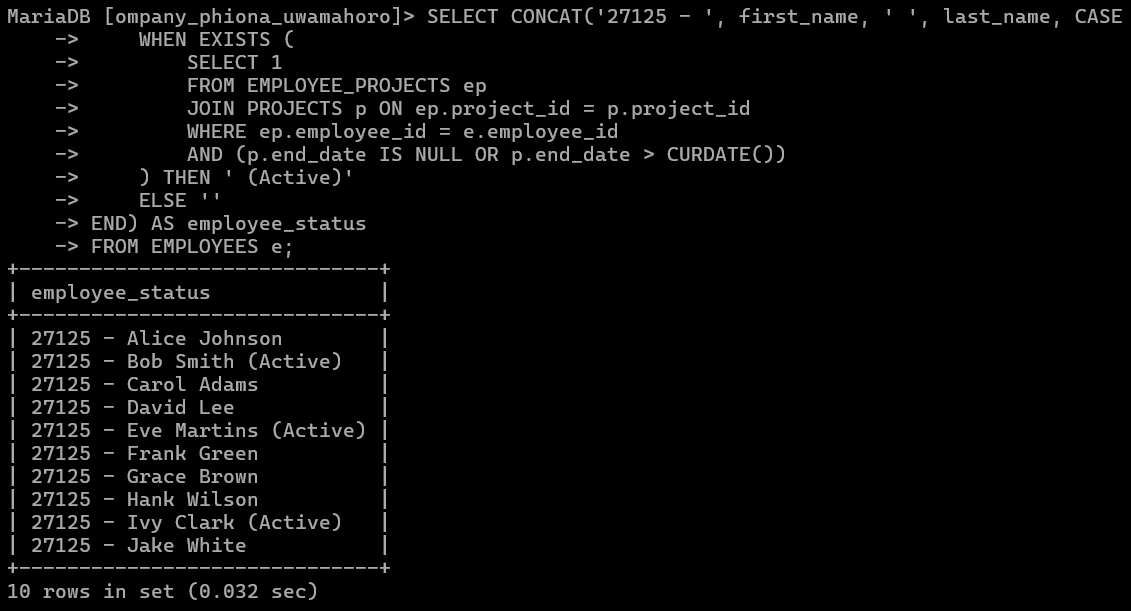
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1. Format: “LASTNAME, Firstname” using UPPER and CONCAT.

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



**Numeric Function Exercises (10)**

1. Round salary to the nearest whole number.

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1. Show only even salaries using MOD.

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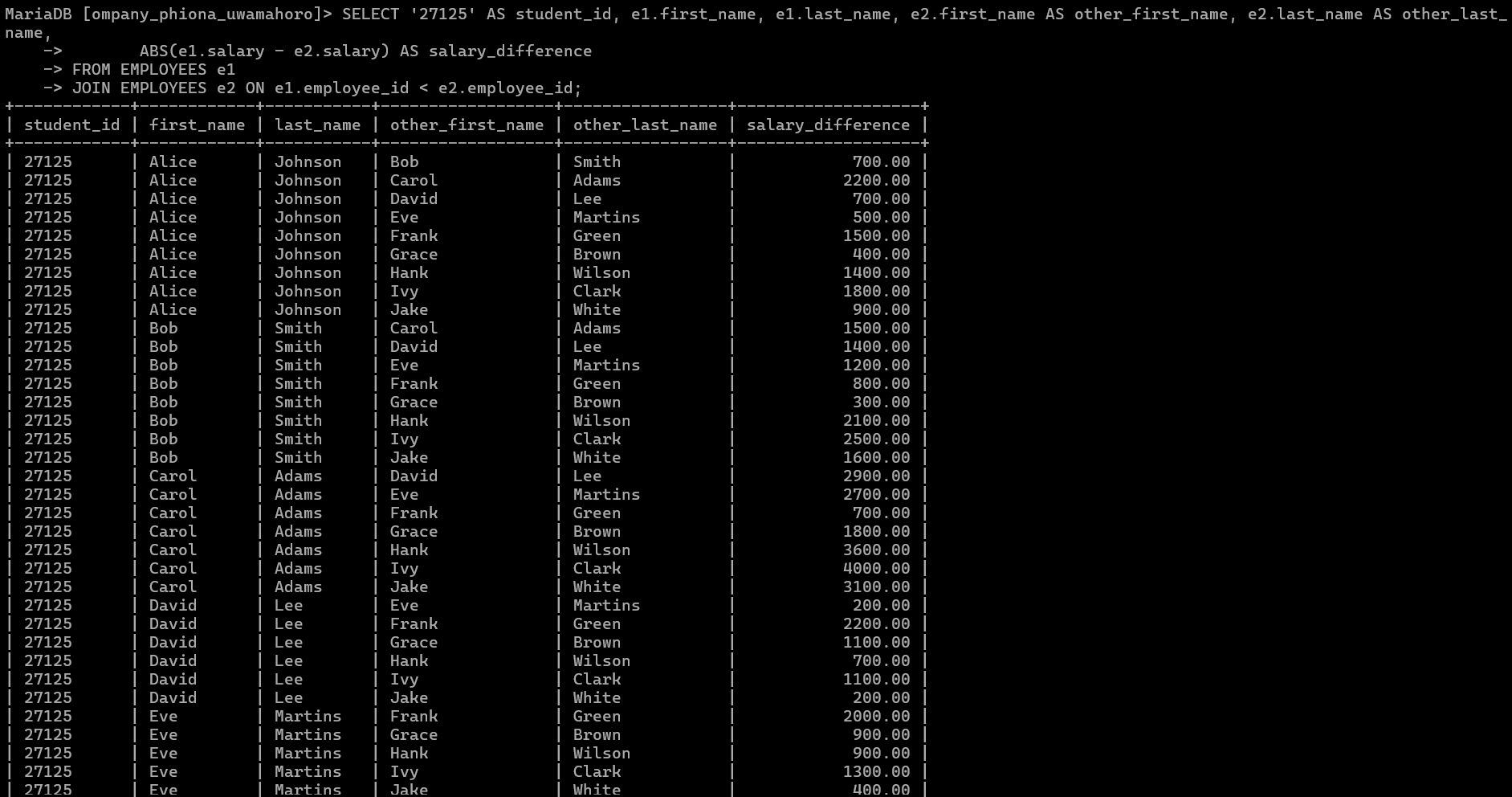
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1. Show difference between two project end/start dates using DATEDIFF.

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1. Show absolute difference in salaries between two employees.



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1. Raise salary by 10% using POWER.

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1. Generate a random number for testing IDs.

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1. Use CEIL and FLOOR on a floating salary.

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

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

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1. Count digits in salary amount.

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**Date/Time Function Exercises (10)**

1. Show today’s date using CURRENT\_DATE.

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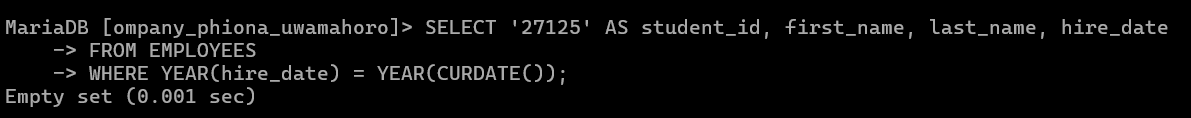
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1. Calculate how many days an employee has worked.

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1. Show employees hired in the current year.



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

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1. Extract the year, month, and day from hire\_date.

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1. Show employees hired before 2020.

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

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

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

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1. Add a CASE: if project still active (end\_date IS NULL), show ‘Ongoing’.

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**Conditional Function Exercises (15)**

1. Use CASE to label salaries.

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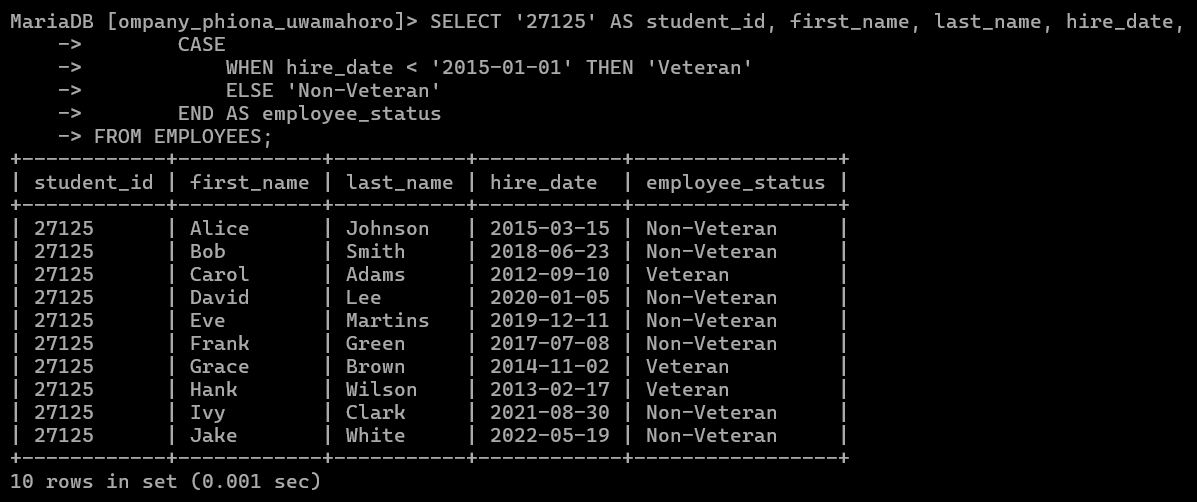
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1. Use COALESCE to show ‘No Email’ if email is NULL.

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1. CASE: If hire\_date < 2015, mark as ‘Veteran’.



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

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

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

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1. CASE: Show tax band based on salary.

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1. Use nested CASE to label project duration.

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

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1. Combine COALESCE + CONCAT for fallback names.

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

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

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

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1. Use CASE to determine salary increment range.

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

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