**Problem 1**

Find the number of Male (M) and Female (F) employees in the database and order the counts in descending order.

SELECT gender, COUNT(\*) AS total\_count

FROM employees

GROUP BY gender

ORDER BY total\_count DESC;

**Problem 2**

Find the average salary by employee title, round to 2 decimal places and order by descending order.

SELECT title, ROUND(AVG(salary), 2) as avg\_salary

FROM titles t JOIN salaries s ON s.emp\_no = t.emp\_no

GROUP BY title

ORDER BY avg\_salary DESC;

**Problem 3**

Find all the employees that have worked in at least 2 departments. Show their first name, last\_name and the number of departments they work in. Display all results in ascending order.

SELECT CONCAT(e.first\_name, ' ' , e.last\_name) AS name, COUNT(\*) AS number\_of\_departments

FROM employees e JOIN dept\_emp d ON e.emp\_no = d.emp\_no

GROUP BY d.emp\_no

HAVING COUNT(\*) > 1

ORDER BY name ASC;

**Problem 4**

Display the first name, last name, and salary of the highest payed employee.

SELECT CONCAT(employees.first\_name, ' ', employees.last\_name) AS employee\_name, salaries.salary

FROM employees JOIN salaries ON employees.emp\_no = salaries.emp\_no

WHERE salaries.salary = (SELECT MAX(salaries.salary) FROM salaries);

**Problem 5**

Display the first name, last name, and salary of the **second** highest payed employee.

SELECT CONCAT(employees.first\_name, ' ', employees.last\_name) AS employee\_name, salaries.salary

FROM employees JOIN salaries ON employees.emp\_no = salaries.emp\_no

WHERE salaries.salary < (SELECT MAX(salaries.salary) FROM salaries)

ORDER BY salaries.salary DESC

LIMIT 1;

**Problem 6**

Display the month and total hires for the month with the most hires.

SELECT DATE\_FORMAT(hire\_date, '%M') AS month, COUNT(\*) AS total\_hires

FROM employees

GROUP BY month

ORDER BY total\_hires DESC

LIMIT 1;

**Problem 7**

Display each department and the age of the youngest employee at hire date.

SELECT dept.dept\_name,

MIN(TIMESTAMPDIFF(YEAR, e.birth\_date, e.hire\_date)) AS age\_hire\_date

FROM employees e

JOIN dept\_emp d\_emp ON e.emp\_no = d\_emp.emp\_no

JOIN departments dept ON d\_emp.dept\_no = dept.dept\_no

GROUP BY dept.dept\_name

**Problem 8**

Find all the employees that do not contain vowels in their first name and display the department they work in.

SELECT e.first\_name, dep.dept\_name

FROM employees e JOIN dept\_emp de ON e.emp\_no = de.emp\_no

JOIN departments dep ON de.dept\_no = dep.dept\_no

WHERE e.first\_name NOT LIKE '%a%'

AND e.first\_name NOT LIKE '%e%'

AND e.first\_name NOT LIKE '%i%'

AND e.first\_name NOT LIKE '%o%'

AND e.first\_name NOT LIKE '%u%'