Solution of Scenario Advnc Questions

SCENARIO 1 — Department Cost Evaluation

Logic extracted by student

- Calculate **average salary per department**
- Calculate **overall company average salary**
- Compare both

```
SELECT
  d.dept_name,
  AVG(e.salary) AS dept_avg_salary
FROM employees e
JOIN departments d
  ON e.dept_id = d.dept_id
GROUP BY d.dept_name
HAVING AVG(e.salary) >
    (SELECT AVG(salary) FROM employees);
```

SCENARIO 2 — Long-Term Employee Risk Analysis

Logic

- Employee tenure > 5 years
- Salary < department average salary

```
SELECT
  emp_name,
  dept_id,
  salary,
  hire_date
FROM employees e
WHERE salary <
```

```
    (SELECT AVG(salary)
     FROM employees
     WHERE dept_id = e.dept_id)
AND hire_date <= DATE_SUB(CURDATE(), INTERVAL 5 YEAR);
```

SCENARIO 3 — Leadership Effectiveness Review

Logic

- Managers = employees referenced as manager_id
- Average team salary
- Compare with company average

```
SELECT
  m.emp_name AS manager_name,
  AVG(e.salary) AS team_avg_salary
FROM employees e
JOIN employees m
  ON e.manager_id = m.emp_id
GROUP BY m.emp_name
HAVING AVG(e.salary) >
    (SELECT AVG(salary) FROM employees);
```

SCENARIO 4 — High-Value Customer Identification

Logic

- Total spending per customer
- Compare with average spending per customer

```
SELECT
  c.customer_name,
  SUM(o.order_amount) AS total_spent
FROM customers c
```

```
JOIN orders o
   ON c.customer_id = o.customer_id
GROUP BY c.customer_name
HAVING SUM(o.order_amount) >
     (
      SELECT AVG(total_amount)
      FROM (
         SELECT SUM(order_amount) AS total_amount
         FROM orders
         GROUP BY customer_id
       ) t
     );
```

SCENARIO 5 — Customer Engagement Gap

Logic

Customers with **no matching orders**

```
SELECT
   c.customer_id,
   c.customer_name,
   c.city
FROM customers c
LEFT JOIN orders o
   ON c.customer_id = o.customer_id
WHERE o.order_id IS NULL;
```