employee[employee_id, name, job_title, level_sk, dept_sk, manager_id, location_sk, salary, start_date, term_date]
label[level_sk, level_name]
department[dept_sk, dept_name]
location [location_sk, city, state, country]

1. SELECT the employee in each department with the highest salary in the US, include employee name, department name, and salary in output.

```
SELECT e.name, d.dept_name, e.salary
FROM employee e
LEFT JOIN department d
ON e. dept_sk = d.dept_sk
LEFT JOIN location l
ON e.location_sk = l.location_sk
WHERE l.country = 'US'
GROUP BY d.dept_name
ORDER BY e.salary DESC;
```

2. 同上top 5

```
SELECT e.name, d.dept_name, e.salary, DENSE_RANK(e.salary) OVER (PARTITION BY d.dept_name ORDER BY e.salary DESC)
FROM employee e, department d
LEFT JOIN location l
ON l.location_sk = e.location_sk
WHERE l.country = 'US' AND DENSE_RANK(e.salary) <= 5;
```

3. Create a table in database with information from all tables for department of BizOPS.

```
SELECT *
FROM employee e
LEFT JOIN label l ON e.level_sk = l.level_sk
LEFT JOIN department d ON e.dept_sk = d.dept_sk
LEFT JOIN location lo ON e.location_sk = lo.locatioin_sk
WHERE d.dept_name = 'BizOPS';
```

4. Pull a list of managers and their direct reports in the output.

```
SELECT m.name AS 'managers' d.name AS 'directReports'
FROM employee m
JOIN employee d
ON m.manager_id = d.employee_id;
```

5. Find the number of employees that started at the company each quarter.

```
SELECT COUNT(employee_id)
FROM employee
GROUP BY QUARTER(start_date);
```

```
SELECT SUM(
CASE
WHEN 1 <= MONTH(start_date) < 4 THEN 1 ELSE 0) AS q1…
```

6. Find the average tenure of all employee by level. If an employee is still at the company. term-date is null, use today's date to calculate tenure.

```
SELECT AVG(DATEDIFF(start_date, term_date)),
CASE
WHEN term_date IS NULL THEN term_date = CURRENT_DATE()
ELSE term_date = term_date
END
FROM employees
GROUP BY level_sk;
```

```
SELECT level_sk, AVG(DATEDIFF(COALESCE(term_date, current_date()), start_date)) AS
avg_tunure
FROM Employee
GROUP BY level_sk;
```