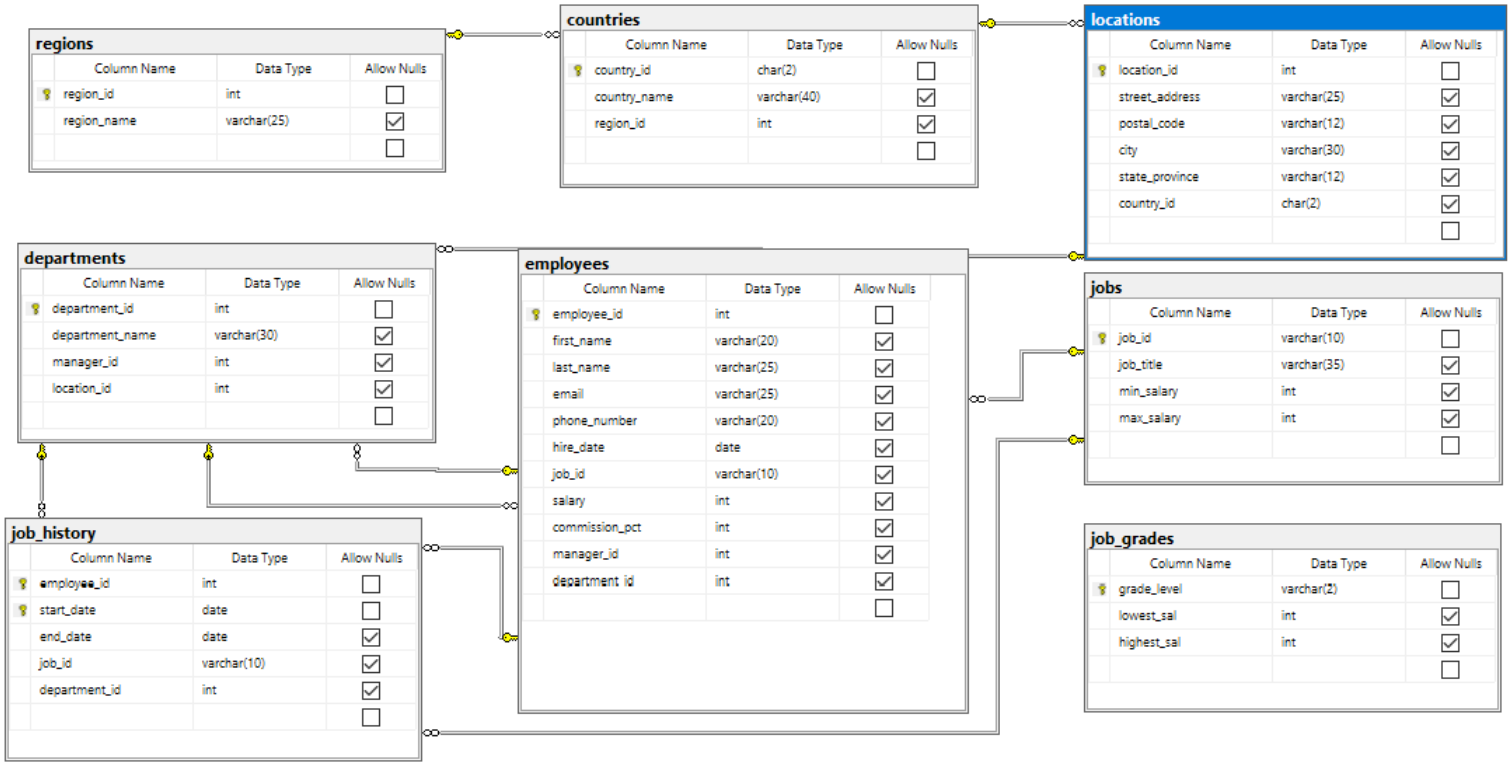
1. **Database sample: Human Resource (HR) Database**




2. **Write SQL statements for the following requirements**: (**please store all following statement in a SQL files named: lab2_studentName_studentID.sql)**

**First of all, please write SQL statement for the requirements in blue color**

**Add constraint:**

1) manager_id in employees table is id of the direct manager of an employee. The direct manager is also an employee but may be not the department manager. Please add a corresponding (foreign key) constraint for employee table.

**Joins / Self-joins**

2) Write a query to find the full name (first_name, last_name), job, department ID and department name of the employees who works in London.

3) Write a query to display the department ID and name and firstname of department manager.

4) Write a query to find the employee id, name (last_name) along with their direct manager_id and name (last_name).

5) Write a query to find the employee id, name (last_name) along with their direct manager_id and name (last_name), their department name and the department manager (last_name).

**SET operations**

6) Employees who work in "accounting" department or "human resources" department.

7) Employees who worked in region 'Europe' but never in 'Asia'?

**Expression, normal functions, and aggregate functions**

**All functions:**
https://docs.microsoft.com/en-us/sql/t-sql/functions/functions?view=sql-server-ver15
**Date functions:**
https://docs.microsoft.com/en-us/sql/t-sql/functions/date-and-time-data-types-and-functions-transact-sql?view=sql-server-ver15

8) Write a query to find the employee ID, job title, number of days between ending date and starting date for all jobs in department 20.

9) Write a query to display the average salary of employees for job "Mechanism engineer".

10) Write a query to display employee name, his/her salary and the difference between salary of the employee and minimum salary for the job "Mechanism engineer".

11) Display the job history that were done by any employee who is currently earning more than 10000 of salary, order by employee_id.

12) Write a query to get the highest, lowest, sum, and average salary of all employees.

13) Write a query to get the average salary for all departments employing more than 10 employees.

**WITH clause, GROUP BY, HAVING clause**

**WITH clause:** https://docs.microsoft.com/en-us/sql/t-sql/queries/with-common-table-expression-transact-sql?view=sql-server-ver15

14) Write a query to display the job title and average salary of employees.

15) Write a query to display the job title and average salary of employees if the average salary for the job is higher than 10000.

16) Write a query to display the job title and average salary of employees for the jobs that have the highest average salary.

17) Write a query to display the job title and average salary of employees for the jobs that its average salary is higher than the average of all jobs

18) Write a query to display job title, employee name, and the difference between salary of the employee and minimum salary for the job.

19) Write a query to display employee name and their number years of experience, order by descending the number years of experiences.

20) Write a query to display employee name and their job history for all employees whose experience is more than 15 years.

21) Who has the most experience?