DBMS Project

The HR database is a sample database that was originally created by Microsoft and used as the basis for their tutorials in a variety of database products for decades.

The HR sample database has seven tables:

1. The employees table stores the data of employees.
2. The jobs table stores the job data including job title and salary range.
3. The departments table stores department data.
4. The job\_history table stores the job history of employees.
5. The locations table stores the location of the departments of the company.
6. The countries table stores the data of countries where the company is doing business.
7. The regions table stores the data of regions such as Asia, Europe, America, and the Middle East and Africa. The countries are grouped into regions.  
     
     
     
     
   Tasks

1.  Write a query to find the addresses (location\_id, street\_address, city, state\_province, country\_name) of all the departments

Ans. SELECT

d.department\_id,

l.location\_id,

l.street\_address,

l.city,

l.state\_province,

c.country\_name

FROM

departments d

JOIN

locations l ON d.location\_id = l.location\_id

JOIN

countries c ON l.country\_id = c.country\_id;  
  
  
2. Write a query to find the name (first\_name, last name), department ID and name of all the employees.  
  
Ans. SELECT

e.first\_name,

e.last\_name,

d.department\_id,

d.department\_name

FROM

employees e

JOIN

departments d ON e.department\_id = d.department\_id;  
  
  
  
3. Write a query to find the name (first\_name, last\_name), job, department ID and name of the employees who works in London

Ans. SELECT

e.first\_name,

e.last\_name,

j.job\_title,

d.department\_id,

d.department\_name

FROM

employees e

JOIN

jobs j ON e.job\_id = j.job\_id

JOIN

departments d ON e.department\_id = d.department\_id

JOIN

locations l ON d.location\_id = l.location\_id

WHERE

l.city = 'London';

4. Write a query to find the employee id, name (last\_name) along with their manager\_id and name (last\_name)

Ans. SELECT

e.employee\_id,

e.last\_name AS employee\_last\_name,

e.manager\_id,

m.last\_name AS manager\_last\_name

FROM

employees e

LEFT JOIN

employees m ON e.manager\_id = m.employee\_id;  
  
  
  
5. Write a query to find the name (first\_name, last\_name) and hire date of the employees who was hired after 'Jones'  
  
Ans. SELECT

e.first\_name,

e.last\_name,

e.hire\_date

FROM

employees e

WHERE

e.hire\_date > (SELECT hire\_date FROM employees WHERE last\_name = 'Jones');  
  
  
  
  
6. Write a query to get the department name and number of employees in the department  
  
Ans. SELECT

d.department\_name,

COUNT(e.employee\_id) AS number\_of\_employees

FROM

departments d

LEFT JOIN

employees e ON d.department\_id = e.department\_id

GROUP BY

d.department\_name;

7. Write a query to display department name, name (first\_name, last\_name), hire date, salary of the manager for all managers whose experience is more than 15 years  
  
Ans. SELECT

d.department\_name,

e.first\_name,

e.last\_name,

e.hire\_date,

e.salary

FROM

departments d

JOIN

employees e ON d.manager\_id = e.employee\_id

WHERE

e.hire\_date <= (CURRENT\_DATE - INTERVAL '15 YEAR');  
  
  
  
  
8. Write a query to find the name (first\_name, last\_name) and the salary of the employees who have a higher salary than the employee whose last\_name='Bull'  
  
Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

WHERE

e.salary > (SELECT salary FROM employees WHERE last\_name = 'Bull');

9. Write a query to find the name (first\_name, last\_name) of all employees who works in the IT department

SELECT

e.first\_name,

e.last\_name

FROM

employees e

JOIN

departments d ON e.department\_id = d.department\_id

WHERE

d.department\_name = 'IT';  
  
  
  
  
10. Write a query to find the name (first\_name, last\_name) of the employees who have a manager and worked in a USA based department  
  
Ans. SELECT

e.first\_name,

e.last\_name

FROM

employees e

JOIN

departments d ON e.department\_id = d.department\_id

JOIN

locations l ON d.location\_id = l.location\_id

JOIN

countries c ON l.country\_id = c.country\_id

WHERE

e.manager\_id IS NOT NULL

AND

c.country\_name = 'United States of America';

11. Write a query to find the name (first\_name, last\_name), and salary of the employees whose salary is greater than the average salary

Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

WHERE

e.salary > (SELECT AVG(salary) FROM employees);  
  
  
  
  
12. Write a query to find the name (first\_name, last\_name), and salary of the employees whose salary is equal to the minimum salary for their job grade

Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

JOIN

jobs j ON e.job\_id = j.job\_id

JOIN

(

SELECT

job\_id,

MIN(salary) AS min\_salary

FROM

employees

GROUP BY

job\_id

) min\_salaries ON e.job\_id = min\_salaries.job\_id AND e.salary = min\_salaries.min\_salary;

13. Write a query to find the name (first\_name, last\_name), and salary of the employees who earns more than the average salary and works in any of the IT departments  
  
Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

JOIN

departments d ON e.department\_id = d.department\_id

JOIN

(

SELECT AVG(salary) AS avg\_salary

FROM employees

) avg\_sal ON e.salary > avg\_sal.avg\_salary

WHERE

d.department\_name LIKE 'IT%';  
  
  
  
  
14. Write a query to find the name (first\_name, last\_name), and salary of the employees who earn the same salary as the minimum salary for all departments.

Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

WHERE

e.salary = (SELECT MIN(salary) FROM employees);

15. Write a query to find the name (first\_name, last\_name) and salary of the employees who earn a salary that is higher than the salary of all the Shipping Clerk (JOB\_ID = 'SH\_CLERK'). Sort the results of the salary of the lowest to highest

Ans. SELECT

e.first\_name,

e.last\_name,

e.salary

FROM

employees e

WHERE

e.salary > (SELECT MAX(salary) FROM employees WHERE job\_id = 'SH\_CLERK')

ORDER BY

e.salary;