SQL Project

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ScienceQtech Employee Performance Mapping.

Course-end Project 1

Description

ScienceQtech is a startup that works in the Data Science field. ScienceQtech has worked on fraud detection, market basket, self-driving cars, supply chain, algorithmic early detection of lung cancer, customer sentiment, and the drug discovery field. With the annual appraisal cycle around the corner, the HR department has asked you (Junior Database Administrator) to generate reports on employee details, their performance, and on the project that the employees have undertaken, to analyze the employee database and extract specific data based on different requirements.

Objective:

To facilitate a better understanding, managers have provided ratings for each employee which will help the HR department to finalize the employee performance mapping. As a DBA, you should find the maximum salary of the employees and ensure that all jobs are meeting the organization's profile standard. You also need to calculate bonuses to find extra cost for expenses. This will raise the overall performance of the organization by ensuring that all required employees receive training.

Note: You must download the dataset from the course resource section in LMS and create a table to perform the above objective.

Dataset description:

emp_record_table: It contains the information of all the employees.

- EMP_ID – ID of the employee
- FIRST_NAME – First name of the employee
- LAST_NAME – Last name of the employee
- GENDER – Gender of the employee
- ROLE – Post of the employee
- DEPT – Field of the employee
- EXP – Years of experience the employee has
- COUNTRY – Country in which the employee is presently living
- CONTINENT – Continent in which the country is
- SALARY – Salary of the employee
- EMP_RATING – Performance rating of the employee
- MANAGER_ID – The manager under which the employee is assigned
- PROJ_ID – The project on which the employee is working or has worked on

Proj_table: It contains information about the projects.

- PROJECT_ID – ID for the project
- PROJ_Name – Name of the project
- DOMAIN – Field of the project

- START_DATE – Day the project began
- CLOSURE_DATE – Day the project was or will be completed
- DEV_QTR – Quarter in which the project was scheduled
- STATUS – Status of the project currently

Data_science_team: It contains information about all the employees in the Data Science team.

- EMP_ID – ID of the employee
- FIRST_NAME – First name of the employee
- LAST_NAME – Last name of the employee
- GENDER – Gender of the employee
- ROLE – Post of the employee
- DEPT – Field of the employee
- EXP – Years of experience the employee has
- COUNTRY – Country in which the employee is presently living
- CONTINENT – Continent in which the country is

The task to be performed:

1. Create a database named employee, then import **data_science_team.csv proj_table.csv** and **emp_record_table.csv** into the **employee** database from the given resources.

2. Create an ER diagram for the given **employee** database.

3. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record table, and make a list of employees and details of their department.

4. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:

- less than two
- greater than four
- between two and four

5. Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees in the Finance department from the employee table and then give the resultant column alias as NAME.

6. Write a query to list only those employees who have someone reporting to them. Also, show the number of reporters (including the President).

7. Write a query to list down all the employees from the healthcare and finance departments using union. Take data from the employee record table.

8. Write a query to list down employee details such as EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPARTMENT, and EMP_RATING grouped by dept. Also include the respective employee rating along with the max emp rating for the department.

9. Write a query to calculate the minimum and the maximum salary of the employees in each role. Take data from the employee record table.

10. Write a query to assign ranks to each employee based on their experience. Take data from the employee record table.

11. Write a query to create a view that displays employees in various countries whose salary is more than six thousand. Take data from the employee record table.

12. Write a nested query to find employees with experience of more than ten years. Take data from the employee record table.

13. Write a query to create a stored procedure to retrieve the details of the employees whose experience is more than three years. Take data from the employee record table.

14. Write a query using stored functions in the project table to check whether the job profile assigned to each employee in the data science team matches the organization's set standard.

The standard being:
For an employee with experience less than or equal to 2 years assign 'JUNIOR DATA SCIENTIST',
For an employee with the experience of 2 to 5 years assign 'ASSOCIATE DATA SCIENTIST',
For an employee with the experience of 5 to 10 years assign 'SENIOR DATA SCIENTIST',
For an employee with the experience of 10 to 12 years assign 'LEAD DATA SCIENTIST',
For an employee with the experience of 12 to 16 years assign 'MANAGER'.

15. Create an index to improve the cost and performance of the query to find the employee whose FIRST_NAME is 'Eric' in the employee table after checking the execution plan.

16. Write a query to calculate the bonus for all the employees, based on their ratings and salaries (Use the formula: 5% of salary * employee rating).

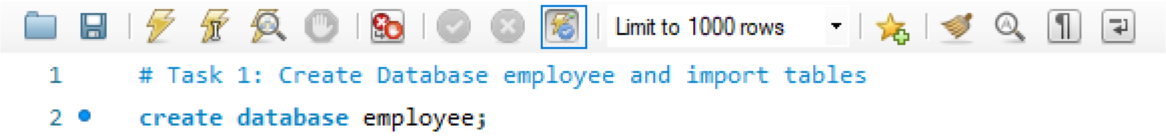
17. Write a query to calculate the average salary distribution based on the continent and country. Take data from the employee record table.

Solution:

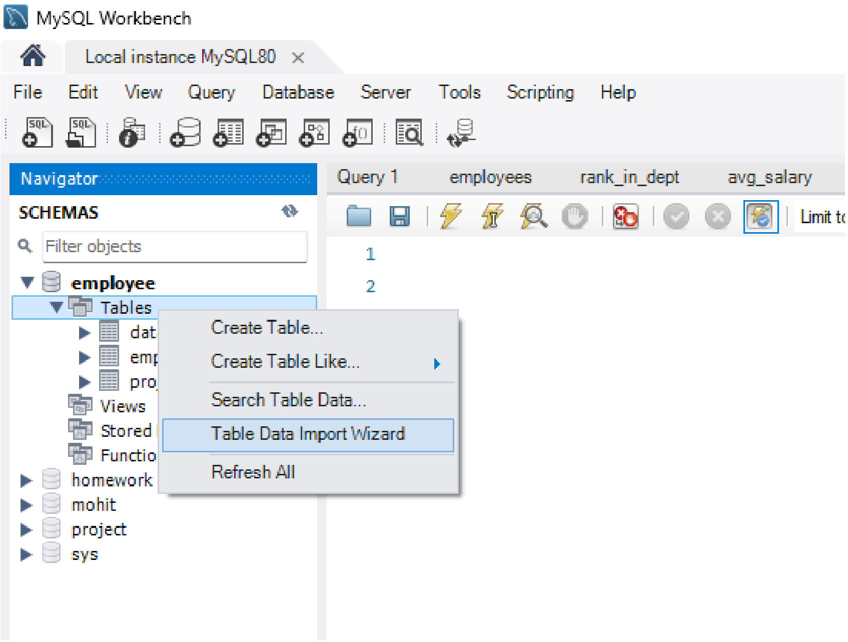
Task 1: Create a database named employee, then import **data_science_team.csv proj_table.csv** and **emp_record_table.csv** into the **employee** database from the given resources.

Solution: To create a dashboard, we can write a query:
CREATE DATABASE employee;

then refresh the MySQL workbench and then from the table option below the employee DATABASE, we can use the table data import wizard to load the tables provided



```
# Task 1: Create Database employee and import tables
create database employee;
```

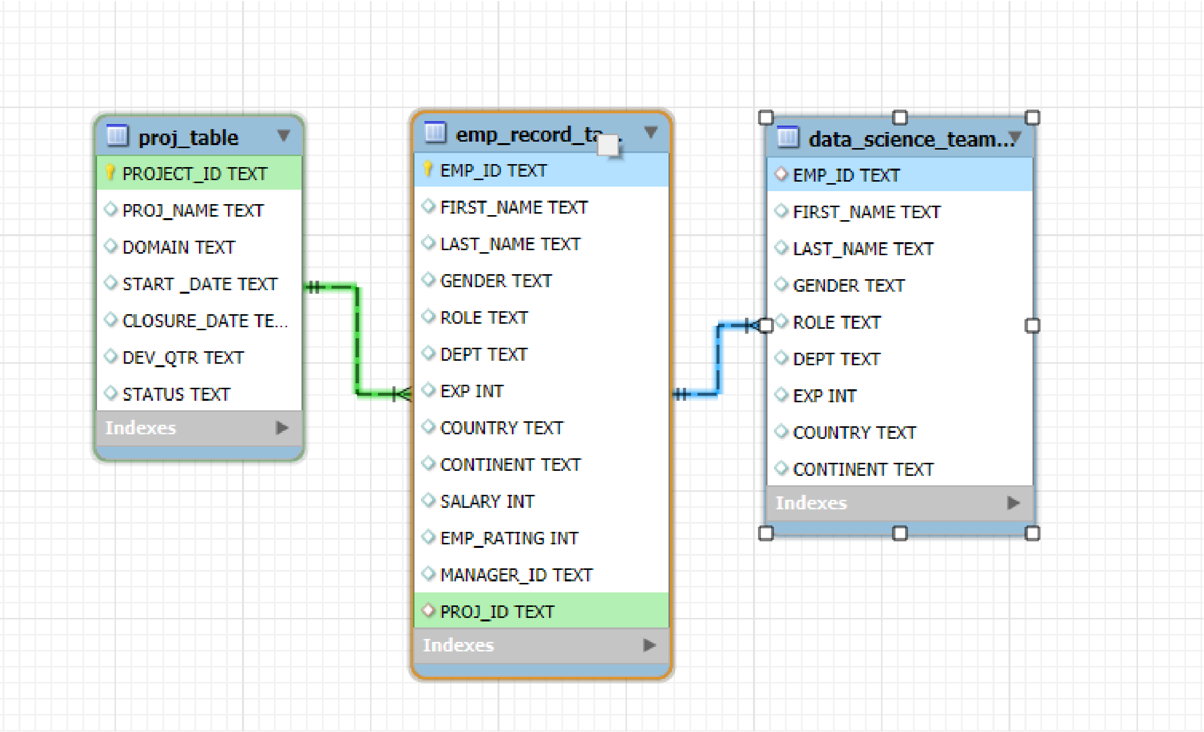


Task 2: Create an ER diagram for the given **employee** database.
To create the ER diagram, go to Database >> Reverse Engineer >> select Database Name

And load all the tables present in the database:

Then choose the Project_ID as Primary Key in the proj_table, EMO_ID as Primary Key in the emp_record_table.

Then choose the foreign key and define key name reference table, col and reference column to create an ER diagram

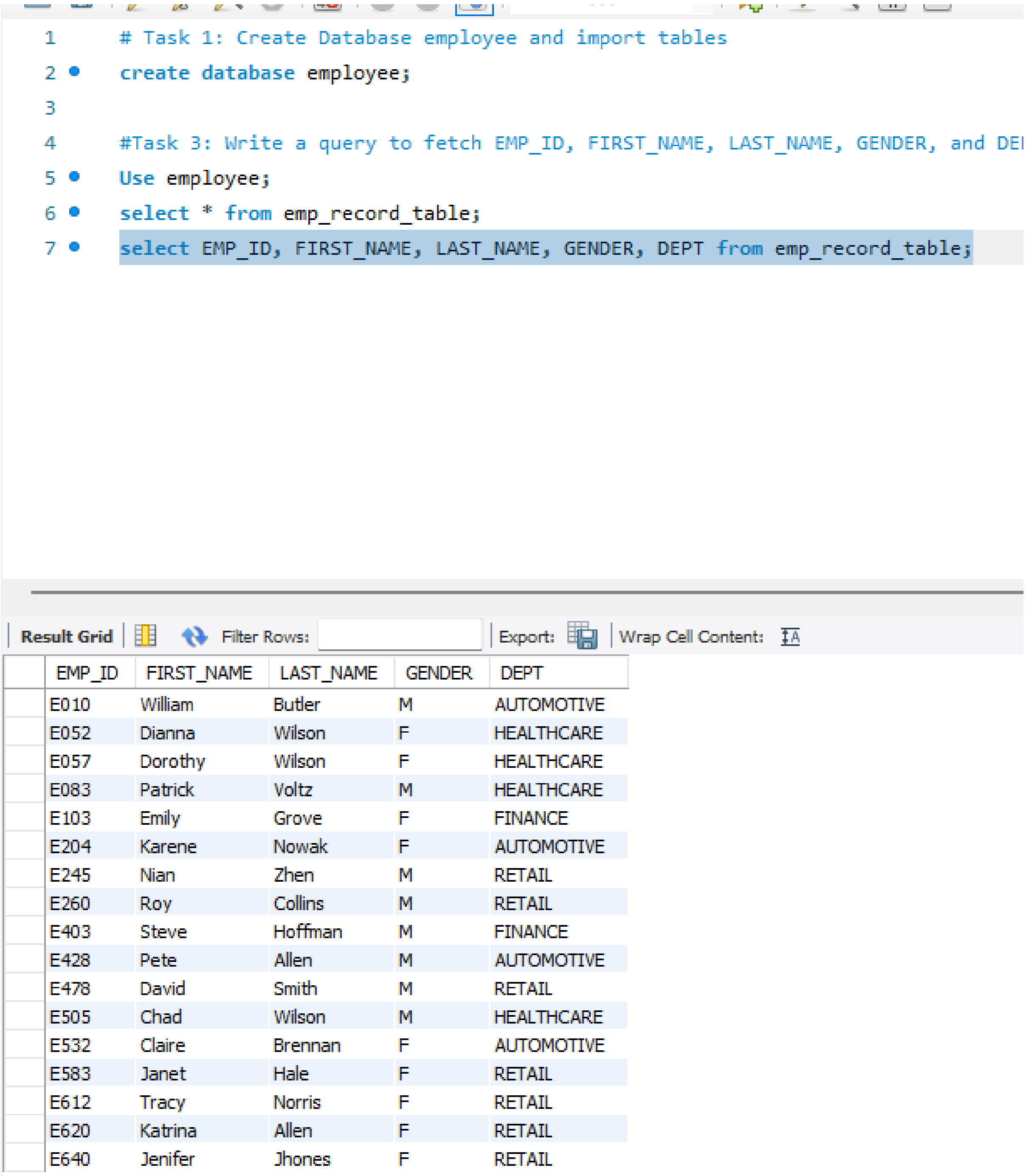


Task 3: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record table, and make a list of employees and details of their department.

First select the database:
Select employee;

Then check all the values/headers in the table:
Select * from emp_record_table;

The choose the selected header by using query:
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;



```
# Task 1: Create Database employee and import tables
create database employee;

#Task 3: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DE
Use employee;
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;
```

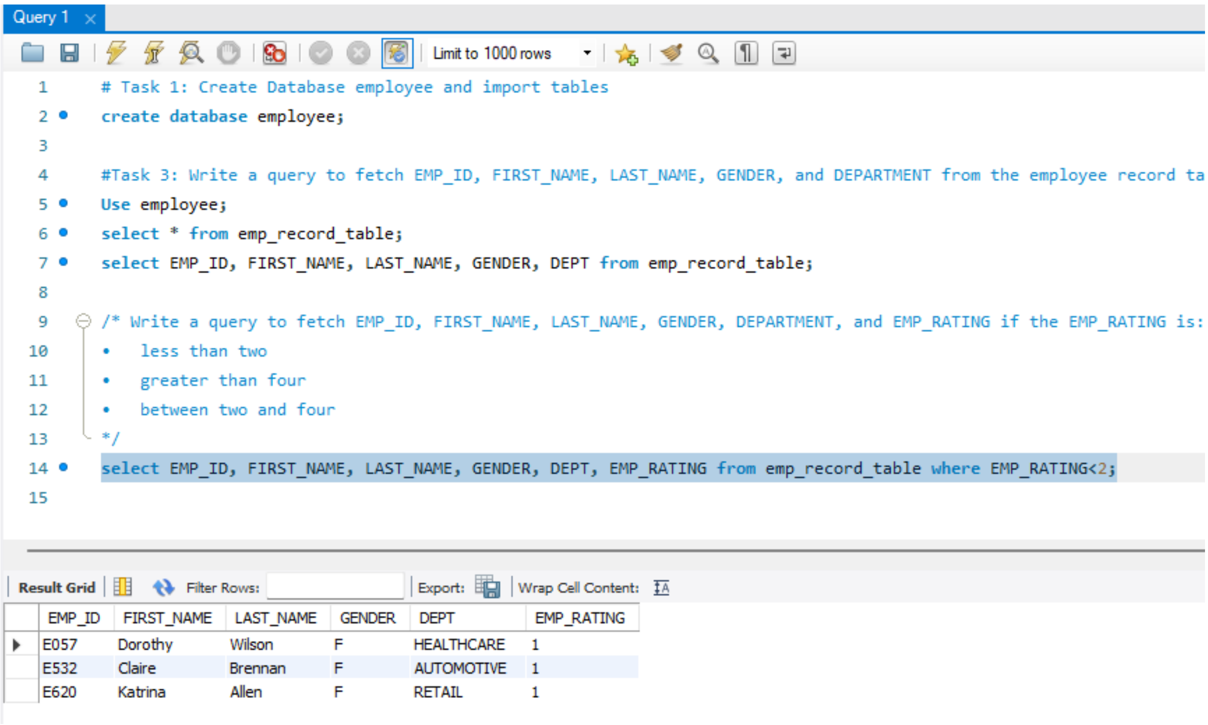
EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT
E010	William	Butler	M	AUTOMOTIVE
E052	Dianna	Wilson	F	HEALTHCARE
E057	Dorothy	Wilson	F	HEALTHCARE
E083	Patrick	Voltz	M	HEALTHCARE
E103	Emily	Grove	F	FINANCE
E204	Karene	Nowak	F	AUTOMOTIVE
E245	Nian	Zhen	M	RETAIL
E260	Roy	Collins	M	RETAIL
E403	Steve	Hoffman	M	FINANCE
E428	Pete	Allen	M	AUTOMOTIVE
E478	David	Smith	M	RETAIL
E505	Chad	Wilson	M	HEALTHCARE
E532	Claire	Brennan	F	AUTOMOTIVE
E583	Janet	Hale	F	RETAIL
E612	Tracy	Norris	F	RETAIL
E620	Katrina	Allen	F	RETAIL
E640	Jenifer	Jhones	F	RETAIL

Task 4: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:

- less than two
- greater than four
- between two and four

for less than two

select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING<2;



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create database employee;

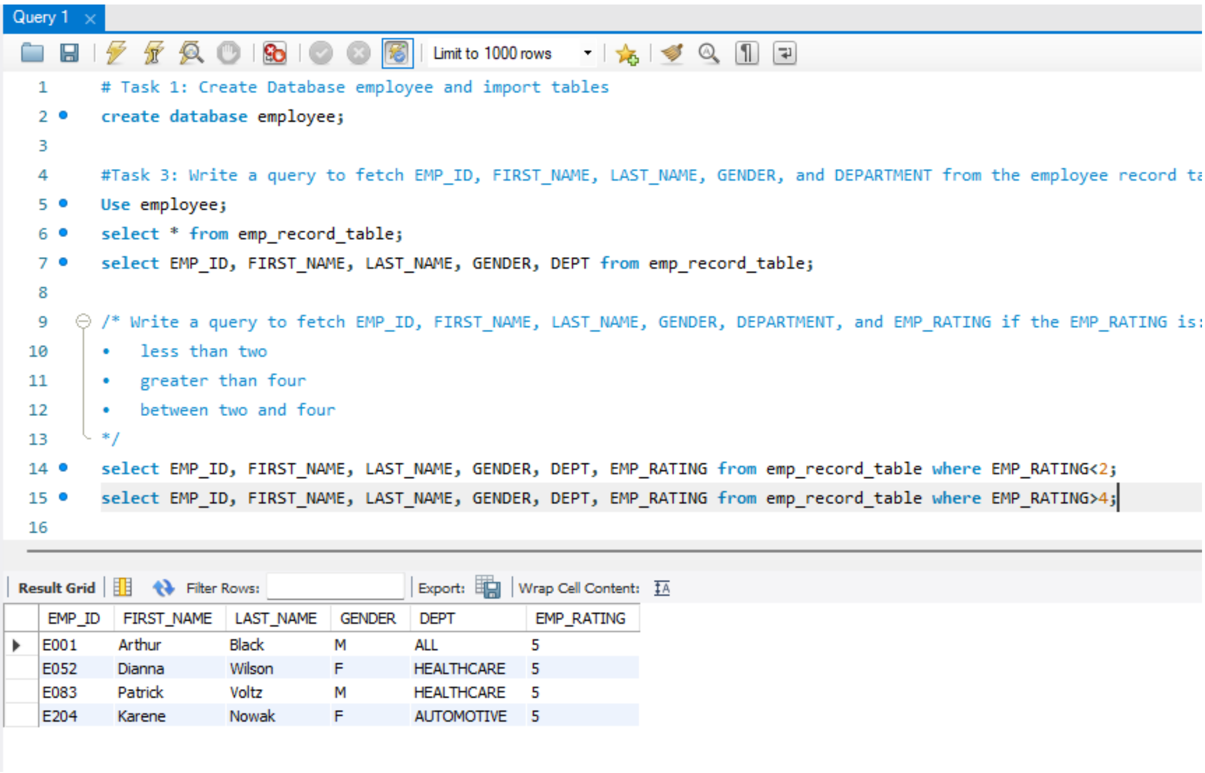
#Task 3: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record ta
Use employee;
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;

/* Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:
  •  less than two
  •  greater than four
  •  between two and four
*/
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING<2;
```

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_RATING
E057	Dorothy	Wilson	F	HEALTHCARE	1
E532	Claire	Brennan	F	AUTOMOTIVE	1
E620	Katrina	Allen	F	RETAIL	1

for greater than four:

select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>4;



```
# Task 1: Create Database employee and import tables
create database employee;

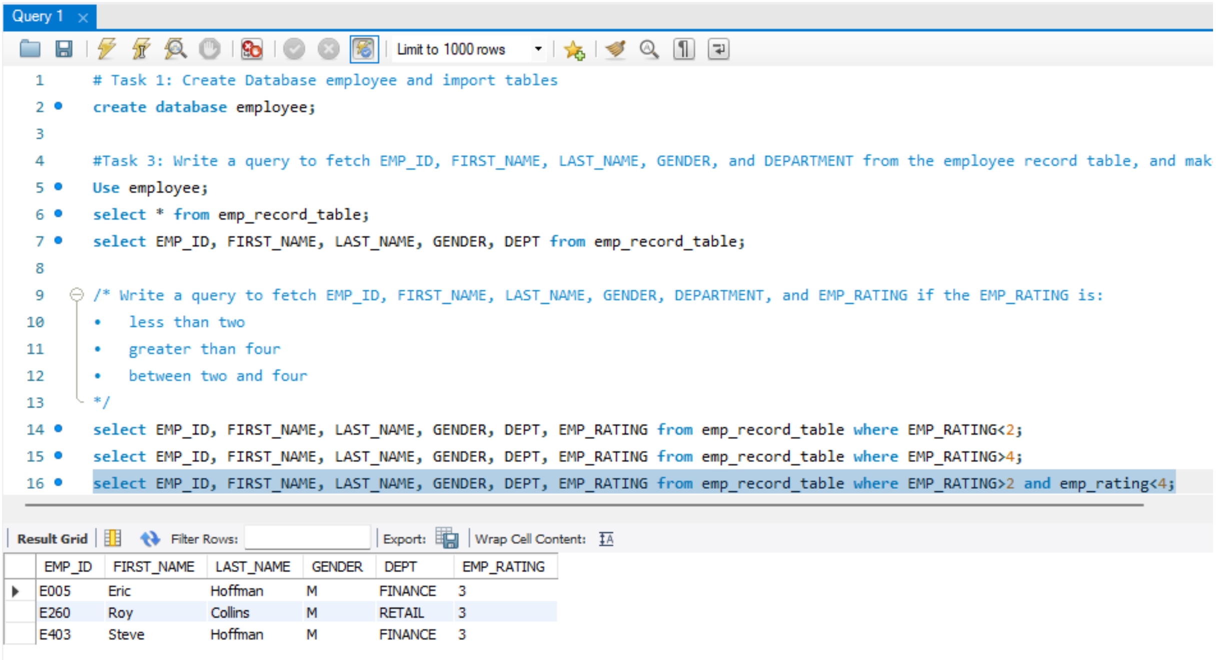
#Task 3: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record ta
Use employee;
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;

/* Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:
•   less than two
•   greater than four
•   between two and four
*/
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING<2;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>4;
```

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_RATING
E001	Arthur	Black	M	ALL	5
E052	Dianna	Wilson	F	HEALTHCARE	5
E083	Patrick	Voltz	M	HEALTHCARE	5
E204	Karene	Nowak	F	AUTOMOTIVE	5

between two and four

select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>2 and emp_rating<4;



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# Task 1: Create Database employee and import tables
create database employee;

#Task 3: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record table, and mak
Use employee;
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;

/* Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:
•   less than two
•   greater than four
•   between two and four
*/
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING<2;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>4;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>2 and emp_rating<4;
```
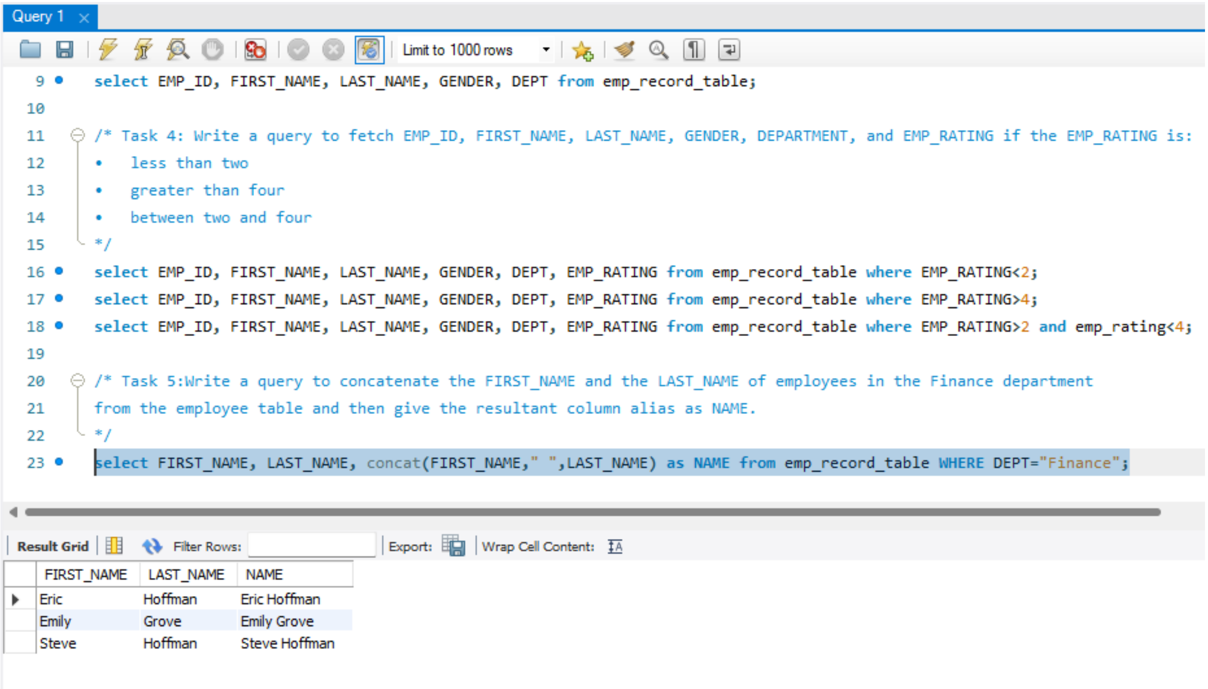

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_RATING
E005	Eric	Hoffman	M	FINANCE	3
E260	Roy	Collins	M	RETAIL	3
E403	Steve	Hoffman	M	FINANCE	3

Task 5: Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees in the Finance department from the employee table and then give the resultant column alias as NAME.

select FIRST_NAME, LAST_NAME, concat(FIRST_NAME," ",LAST_NAME) as NAME from emp_record_table WHERE DEPT="Finance";

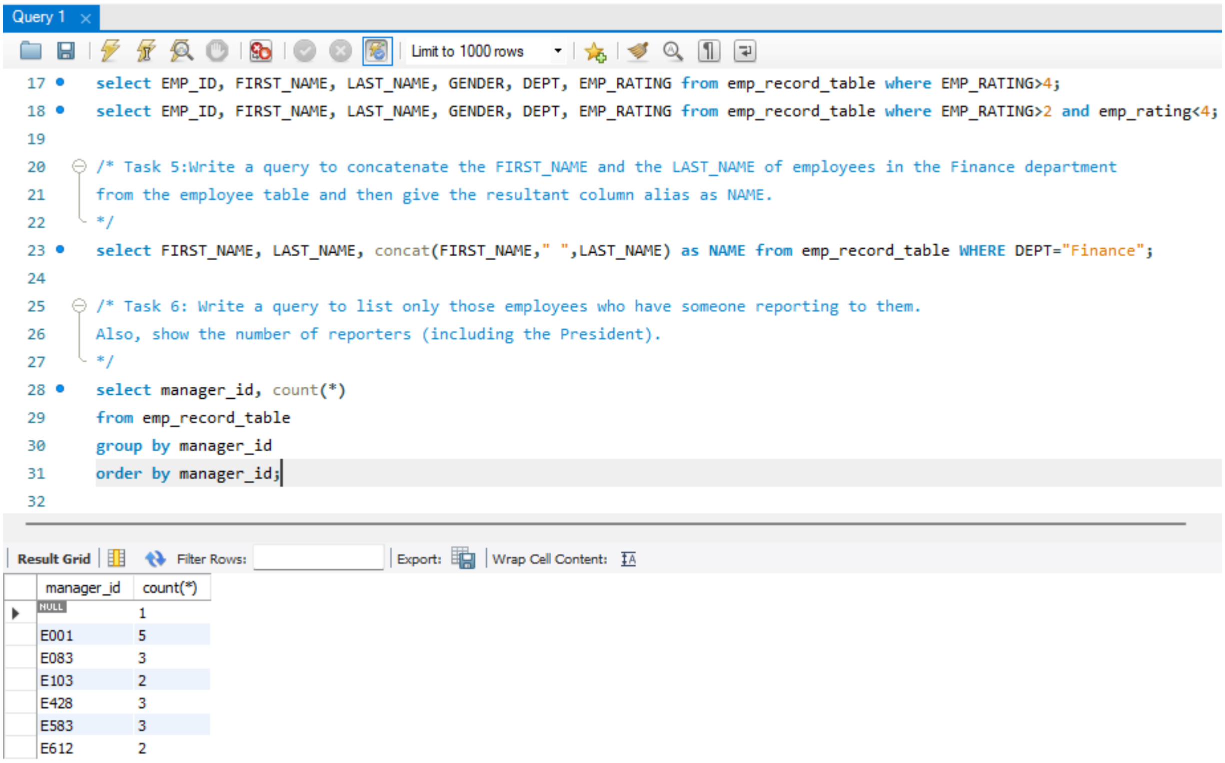


```
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT from emp_record_table;

/* Task 4: Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:
•   less than two
•   greater than four
•   between two and four
*/
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING<2;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>4;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>2 and emp_rating<4;

/* Task 5:Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees in the Finance department
from the employee table and then give the resultant column alias as NAME.
*/
select FIRST_NAME, LAST_NAME, concat(FIRST_NAME," ",LAST_NAME) as NAME from emp_record_table WHERE DEPT="Finance";
```

FIRST_NAME	LAST_NAME	NAME
Eric	Hoffman	Eric Hoffman
Emily	Grove	Emily Grove
Steve	Hoffman	Steve Hoffman

Task 6: Write a query to list only those employees who have someone reporting to them. Also, show the number of reporters (including the President).

select manager_id, count(*)
from emp_record_table
group by manager_id
order by manager_id;

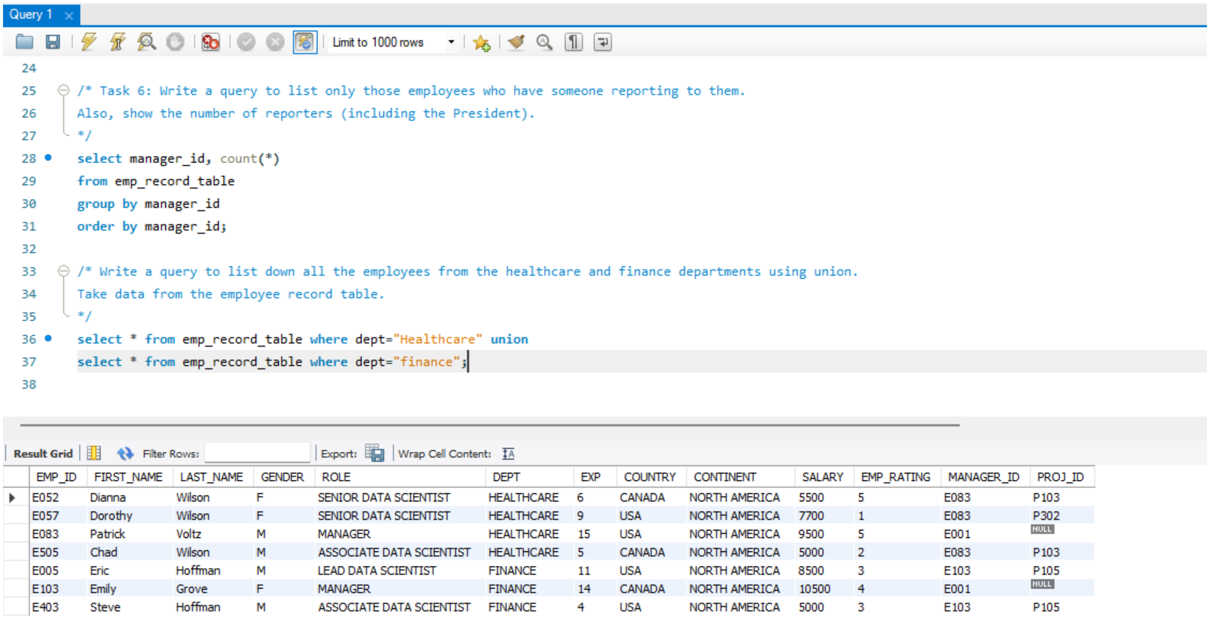


```sql
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>4;
select EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING from emp_record_table where EMP_RATING>2 and emp_rating<4;

/* Task 5:Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees in the Finance department
from the employee table and then give the resultant column alias as NAME.
*/
select FIRST_NAME, LAST_NAME, concat(FIRST_NAME," ",LAST_NAME) as NAME from emp_record_table WHERE DEPT="Finance";

/* Task 6: Write a query to list only those employees who have someone reporting to them.
Also, show the number of reporters (including the President).
*/
select manager_id, count(*)
from emp_record_table
group by manager_id
order by manager_id;

```

manager_id	count(*)
NULL	1
E001	5
E083	3
E103	2
E428	3
E583	3
E612	2

Task 7: Write a query to list down all the employees from the healthcare and finance departments using union. Take data from the employee record table.

select * from emp_record_table where dept="Healthcare" union
select * from emp_record_table where dept="finance";

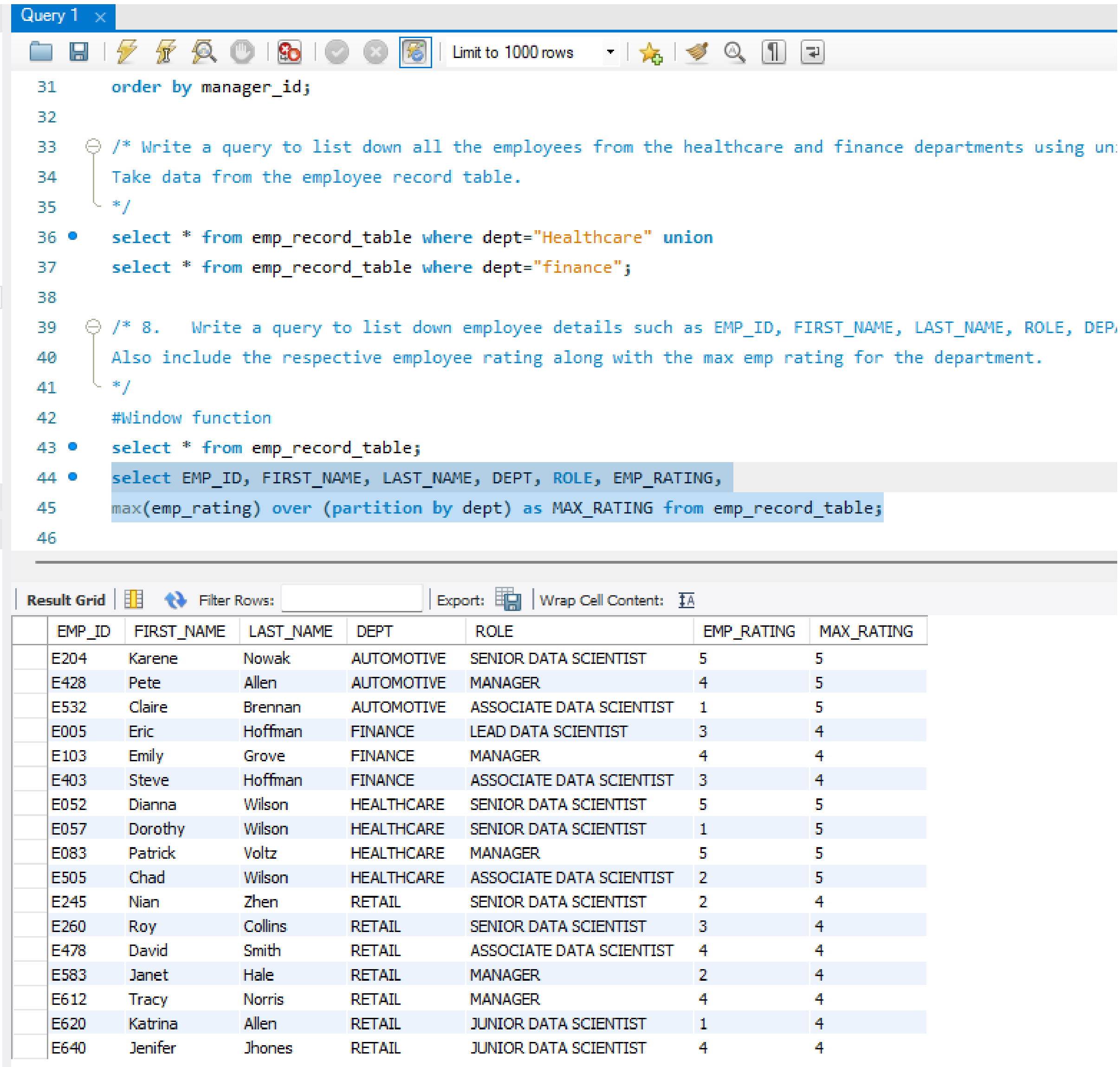


```
/* Task 6: Write a query to list only those employees who have someone reporting to them.
Also, show the number of reporters (including the President).
*/
select manager_id, count(*)
from emp_record_table
group by manager_id
order by manager_id;

/* Write a query to list down all the employees from the healthcare and finance departments using union.
Take data from the employee record table.
*/
select * from emp_record_table where dept="Healthcare" union
select * from emp_record_table where dept="finance";
```

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID
E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500	5	E083	P103
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700	1	E083	P302
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500	5	E001	NULL
E505	Chad	Wilson	M	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500	4	E001	NULL
E403	Steve	Hoffman	M	ASSOCIATE DATA SCIENTIST	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105

Task 8: Write a query to list down employee details such as EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPARTMENT, and EMP_RATING grouped by dept. Also include the respective employee rating along with the max emp rating for the department.

select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by dept) as MAX_RATING from emp_record_table;



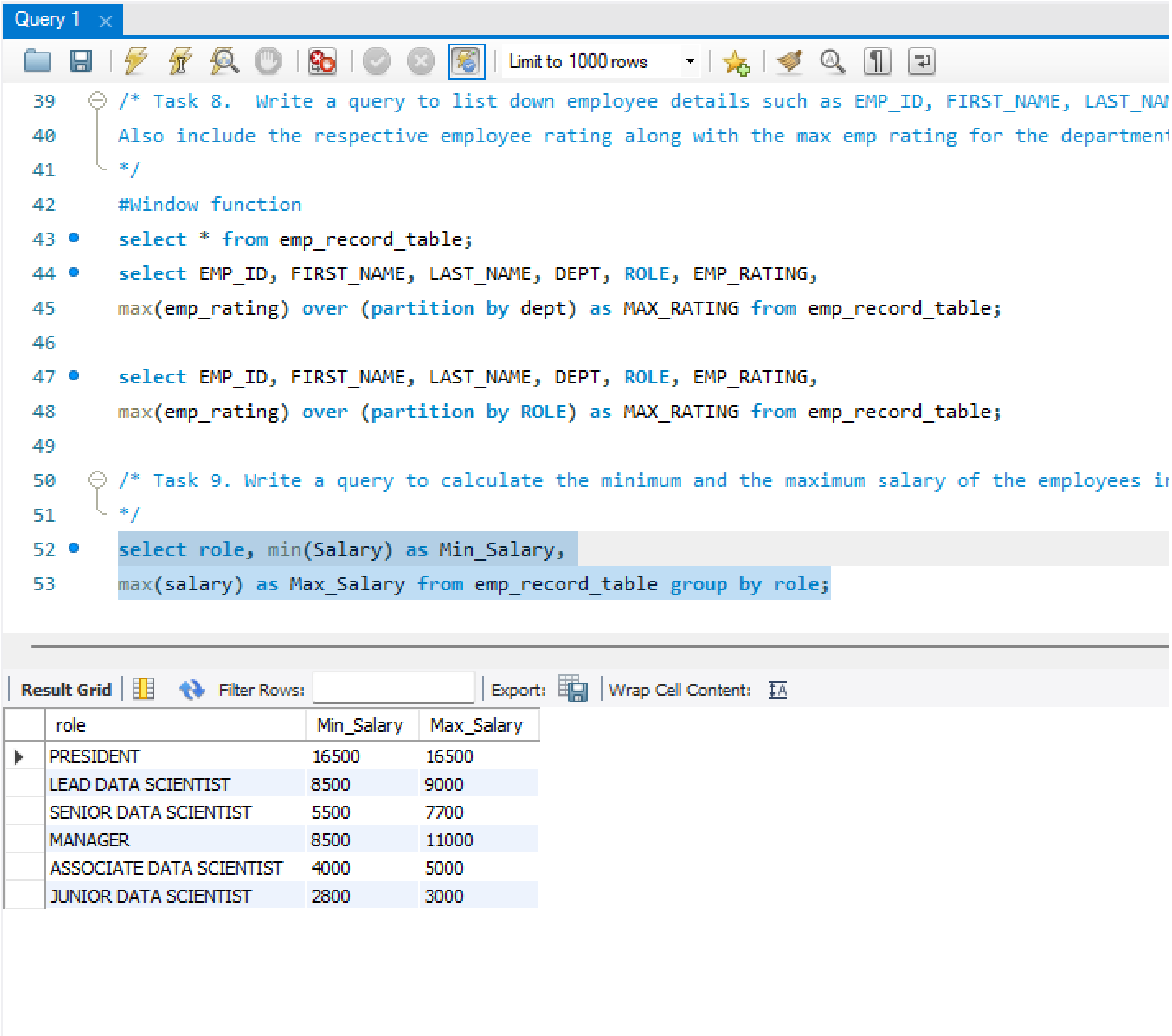
```
order by manager_id;

/* Write a query to list down all the employees from the healthcare and finance departments using un
Take data from the employee record table.
*/
select * from emp_record_table where dept="Healthcare" union
select * from emp_record_table where dept="finance";

/* 8.  Write a query to list down employee details such as EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEP
Also include the respective employee rating along with the max emp rating for the department.
*/
#Window function
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by dept) as MAX_RATING from emp_record_table;
```

EMP_ID	FIRST_NAME	LAST_NAME	DEPT	ROLE	EMP_RATING	MAX_RATING
E204	Karene	Nowak	AUTOMOTIVE	SENIOR DATA SCIENTIST	5	5
E428	Pete	Allen	AUTOMOTIVE	MANAGER	4	5
E532	Claire	Brennan	AUTOMOTIVE	ASSOCIATE DATA SCIENTIST	1	5
E005	Eric	Hoffman	FINANCE	LEAD DATA SCIENTIST	3	4
E103	Emily	Grove	FINANCE	MANAGER	4	4
E403	Steve	Hoffman	FINANCE	ASSOCIATE DATA SCIENTIST	3	4
E052	Dianna	Wilson	HEALTHCARE	SENIOR DATA SCIENTIST	5	5
E057	Dorothy	Wilson	HEALTHCARE	SENIOR DATA SCIENTIST	1	5
E083	Patrick	Voltz	HEALTHCARE	MANAGER	5	5
E505	Chad	Wilson	HEALTHCARE	ASSOCIATE DATA SCIENTIST	2	5
E245	Nian	Zhen	RETAIL	SENIOR DATA SCIENTIST	2	4
E260	Roy	Collins	RETAIL	SENIOR DATA SCIENTIST	3	4
E478	David	Smith	RETAIL	ASSOCIATE DATA SCIENTIST	4	4
E583	Janet	Hale	RETAIL	MANAGER	2	4
E612	Tracy	Norris	RETAIL	MANAGER	4	4
E620	Katrina	Allen	RETAIL	JUNIOR DATA SCIENTIST	1	4
E640	Jenifer	Jhones	RETAIL	JUNIOR DATA SCIENTIST	4	4

Task 9: Write a query to calculate the minimum and the maximum salary of the employees in each role. Take data from the employee record table.

select role, min(Salary) as Min_Salary,

max(salary) as Max_Salary from emp_record_table group by role;



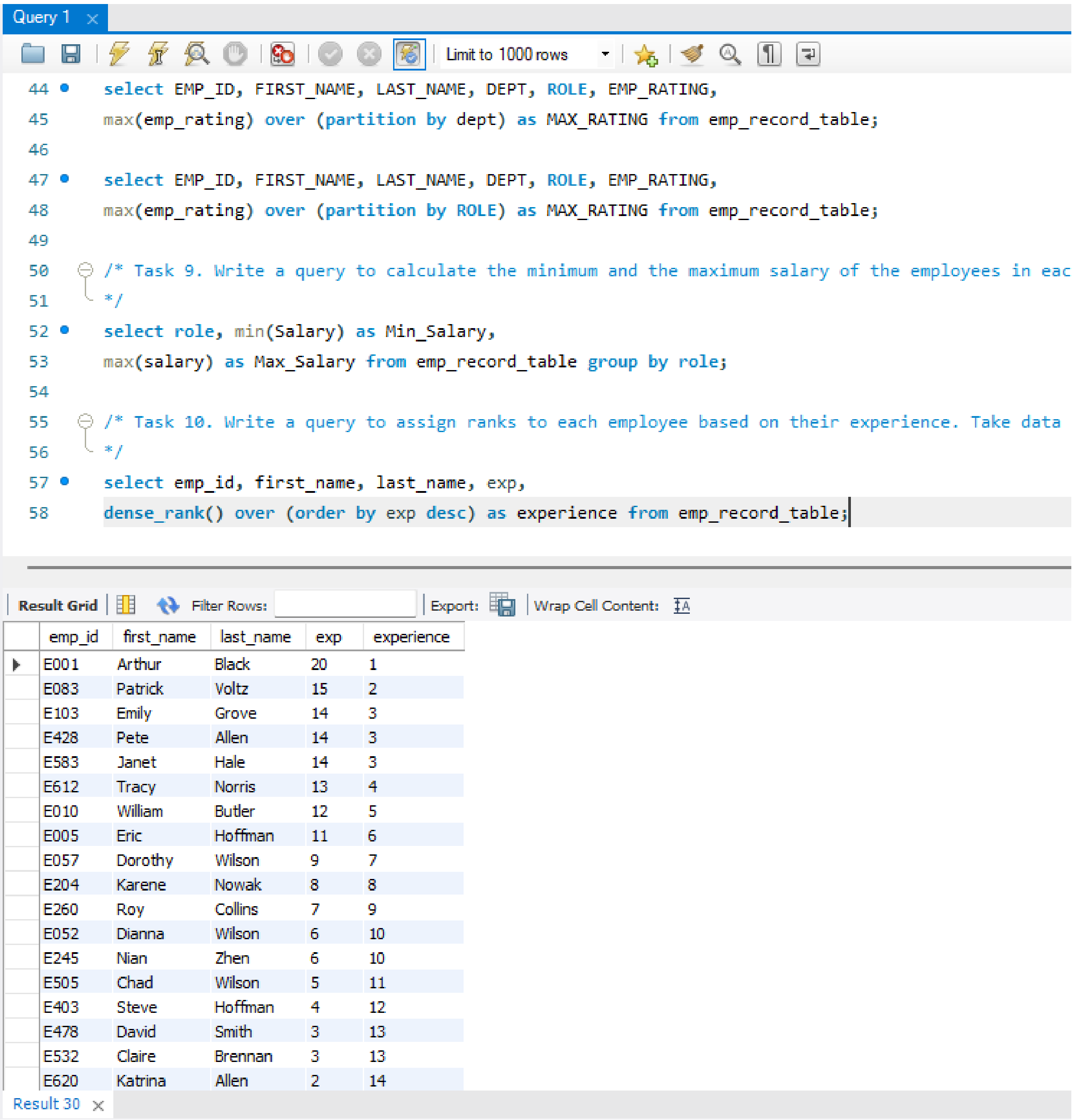
```
/* Task 8.  Write a query to list down employee details such as EMP_ID, FIRST_NAME, LAST_NAI
Also include the respective employee rating along with the max emp rating for the departmen
*/
#Window function
select * from emp_record_table;
select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by dept) as MAX_RATING from emp_record_table;

select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by ROLE) as MAX_RATING from emp_record_table;

/* Task 9. Write a query to calculate the minimum and the maximum salary of the employees ir
*/
select role, min(Salary) as Min_Salary,
max(salary) as Max_Salary from emp_record_table group by role;
```

role	Min_Salary	Max_Salary
PRESIDENT	16500	16500
LEAD DATA SCIENTIST	8500	9000
SENIOR DATA SCIENTIST	5500	7700
MANAGER	8500	11000
ASSOCIATE DATA SCIENTIST	4000	5000
JUNIOR DATA SCIENTIST	2800	3000

Task 10: Write a query to assign ranks to each employee based on their experience. Take data from the employee record table.

select emp_id, first_name, last_name, exp,

dense_rank() over (order by exp desc) as experience from emp_record_table;

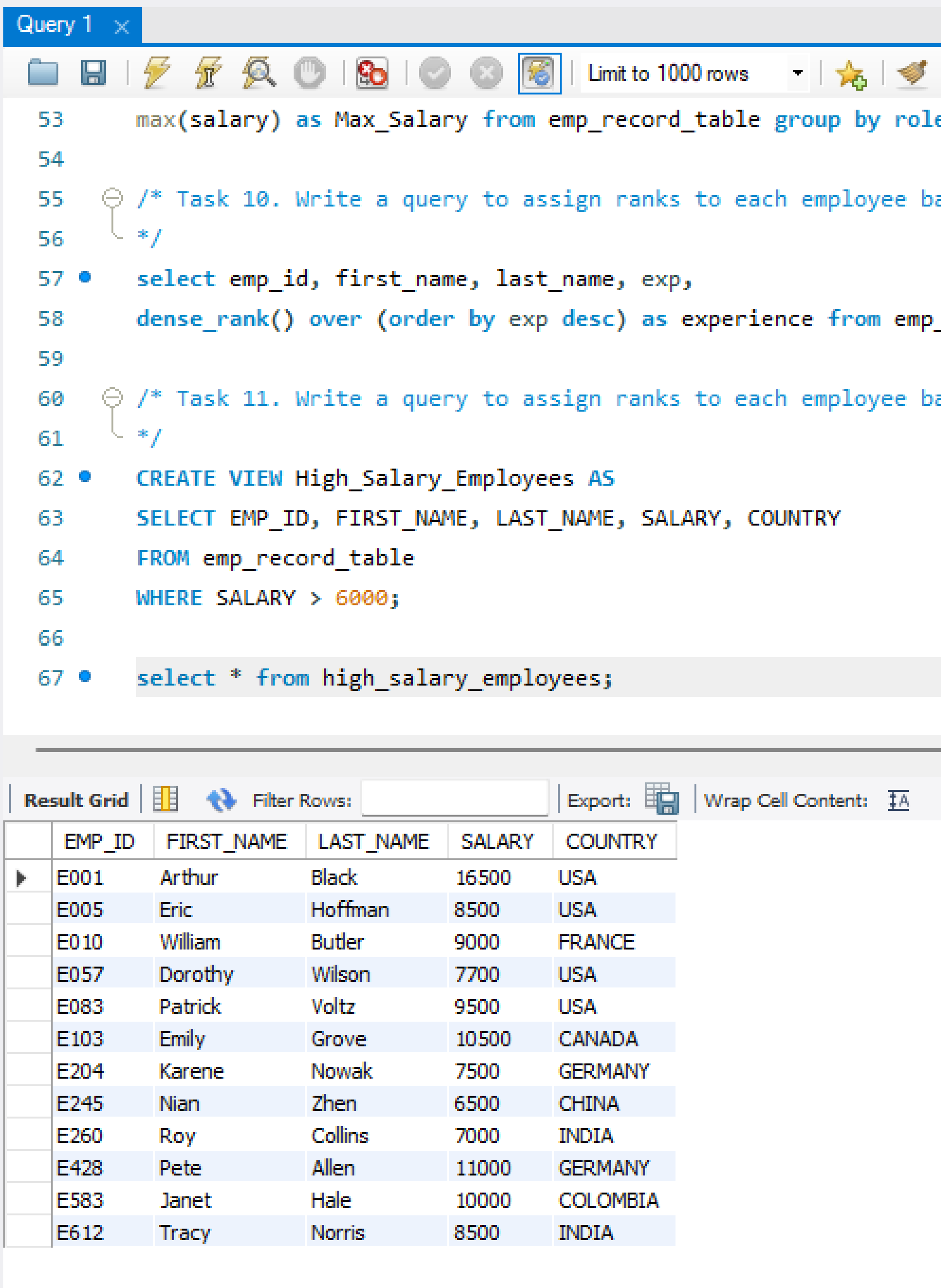


```
select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by dept) as MAX_RATING from emp_record_table;

select EMP_ID, FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_RATING,
max(emp_rating) over (partition by ROLE) as MAX_RATING from emp_record_table;

/* Task 9. Write a query to calculate the minimum and the maximum salary of the employees in eac
*/
select role, min(Salary) as Min_Salary,
max(salary) as Max_Salary from emp_record_table group by role;

/* Task 10. Write a query to assign ranks to each employee based on their experience. Take data
*/
select emp_id, first_name, last_name, exp,
dense_rank() over (order by exp desc) as experience from emp_record_table;
```

emp_id	first_name	last_name	exp	experience
E001	Arthur	Black	20	1
E083	Patrick	Voltz	15	2
E103	Emily	Grove	14	3
E428	Pete	Allen	14	3
E583	Janet	Hale	14	3
E612	Tracy	Norris	13	4
E010	William	Butler	12	5
E005	Eric	Hoffman	11	6
E057	Dorothy	Wilson	9	7
E204	Karene	Nowak	8	8
E260	Roy	Collins	7	9
E052	Dianna	Wilson	6	10
E245	Nian	Zhen	6	10
E505	Chad	Wilson	5	11
E403	Steve	Hoffman	4	12
E478	David	Smith	3	13
E532	Claire	Brennan	3	13
E620	Katrina	Allen	2	14

Task 11: Write a query to create a view that displays employees in various countries whose salary is more than six thousand. Take data from the employee record table.

```
CREATE VIEW High_Salary_Employees AS
SELECT EMP_ID, FIRST_NAME, LAST_NAME, SALARY, COUNTRY
FROM emp_record_table
WHERE SALARY > 6000;

select * from high_salary_employees;
```



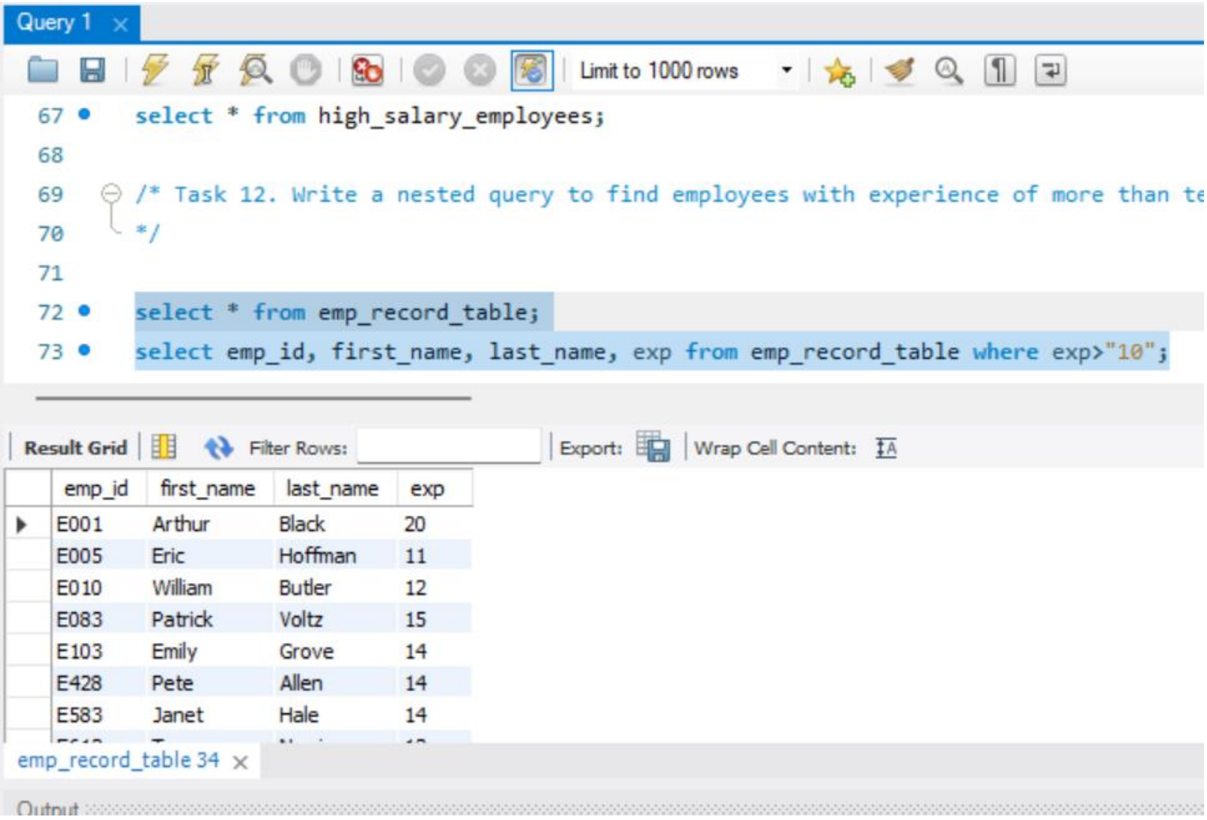
```
    max(salary) as Max_Salary from emp_record_table group by role

/* Task 10. Write a query to assign ranks to each employee ba
*/
select emp_id, first_name, last_name, exp,
dense_rank() over (order by exp desc) as experience from emp_

/* Task 11. Write a query to assign ranks to each employee ba
*/
CREATE VIEW High_Salary_Employees AS
SELECT EMP_ID, FIRST_NAME, LAST_NAME, SALARY, COUNTRY
FROM emp_record_table
WHERE SALARY > 6000;

select * from high_salary_employees;
```

EMP_ID	FIRST_NAME	LAST_NAME	SALARY	COUNTRY
E001	Arthur	Black	16500	USA
E005	Eric	Hoffman	8500	USA
E010	William	Butler	9000	FRANCE
E057	Dorothy	Wilson	7700	USA
E083	Patrick	Voltz	9500	USA
E103	Emily	Grove	10500	CANADA
E204	Karene	Nowak	7500	GERMANY
E245	Nian	Zhen	6500	CHINA
E260	Roy	Collins	7000	INDIA
E428	Pete	Allen	11000	GERMANY
E583	Janet	Hale	10000	COLOMBIA
E612	Tracy	Norris	8500	INDIA

Task 12: Write a nested query to find employees with experience of more than ten years. Take data from the employee record table.

select * from emp_record_table;

select emp_id, first_name, last_name, exp from emp_record_table where exp>"10";

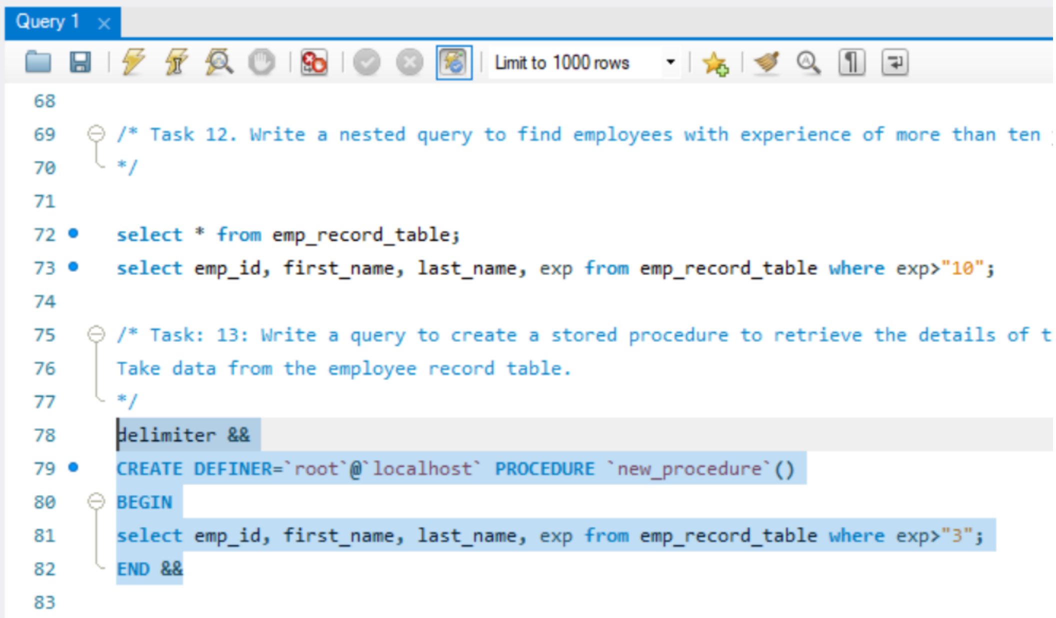


```
select * from high_salary_employees;

/* Task 12. Write a nested query to find employees with experience of more than te
*/

select * from emp_record_table;
select emp_id, first_name, last_name, exp from emp_record_table where exp>"10";
```

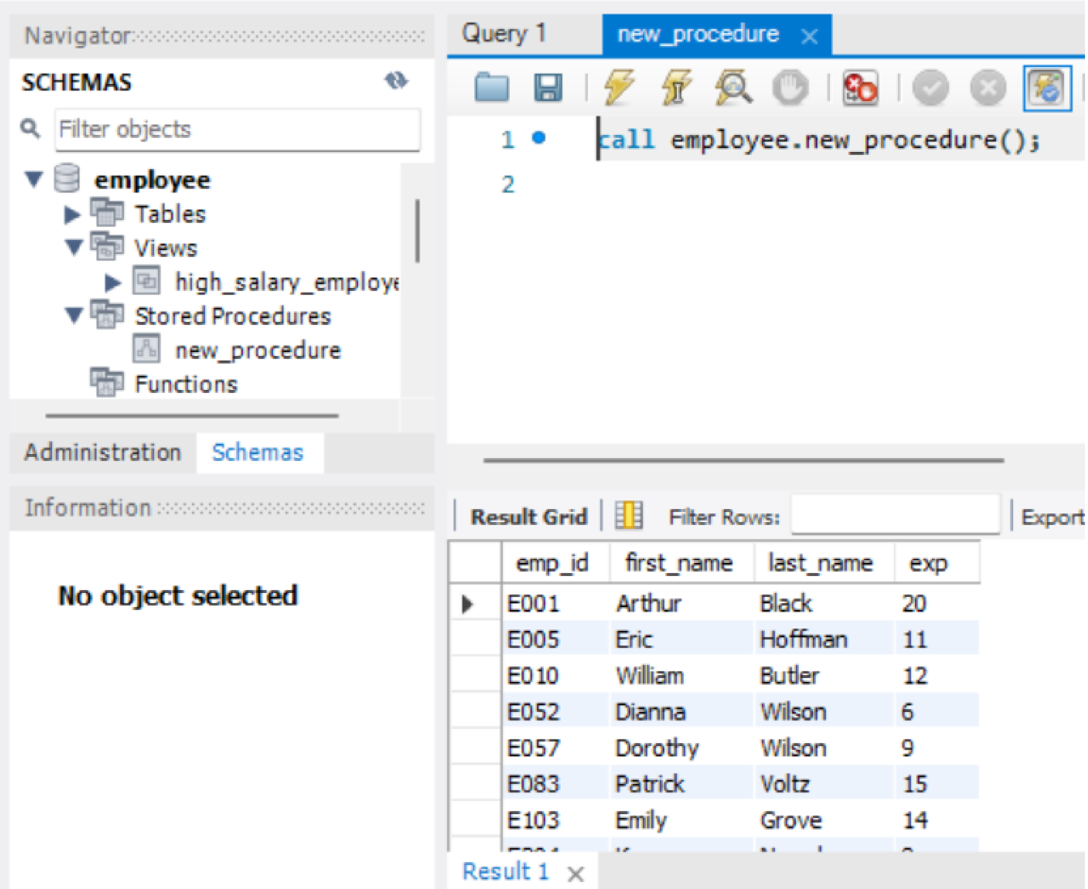
emp_id	first_name	last_name	exp
E001	Arthur	Black	20
E005	Eric	Hoffman	11
E010	William	Butler	12
E083	Patrick	Voltz	15
E103	Emily	Grove	14
E428	Pete	Allen	14
E583	Janet	Hale	14

Task 13: Write a query to create a stored procedure to retrieve the details of the employees whose experience is more than three years. Take data from the employee record table.

delimiter &&
CREATE DEFINER=`root`@`localhost` PROCEDURE `new_procedure`()
BEGIN
select emp_id, first_name, last_name, exp from emp_record_table where exp>"3";
END &&



```
/* Task 12. Write a nested query to find employees with experience of more than ten
*/

select * from emp_record_table;
select emp_id, first_name, last_name, exp from emp_record_table where exp>"10";

/* Task: 13: Write a query to create a stored procedure to retrieve the details of t
Take data from the employee record table.
*/
delimiter &&
CREATE DEFINER=`root`@`localhost` PROCEDURE `new_procedure`()
BEGIN
select emp_id, first_name, last_name, exp from emp_record_table where exp>"3";
END &&
```



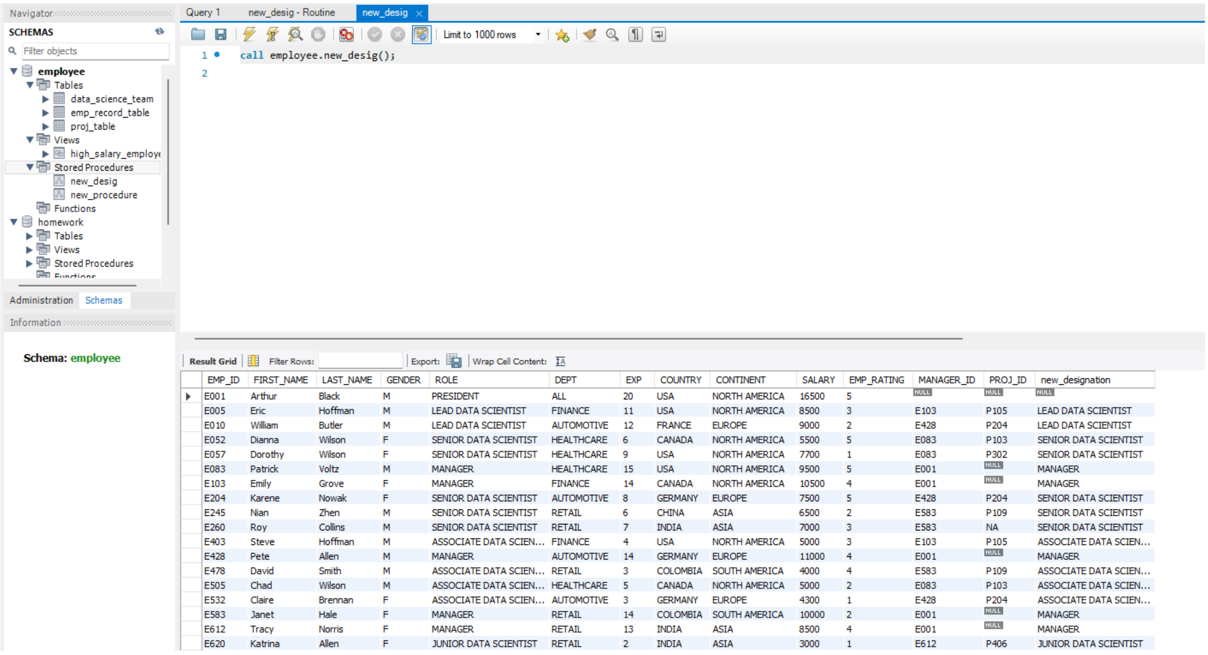
```
call employee.new_procedure();
```

emp_id	first_name	last_name	exp
E001	Arthur	Black	20
E005	Eric	Hoffman	11
E010	William	Butler	12
E052	Dianna	Wilson	6
E057	Dorothy	Wilson	9
E083	Patrick	Voltz	15
E103	Emily	Grove	14

Case 14: Write a query using stored functions in the project table to check whether the job profile assigned to each employee in the data science team matches the organization's set standard.

The standard being:
For an employee with experience less than or equal to 2 years assign 'JUNIOR DATA SCIENTIST',
For an employee with the experience of 2 to 5 years assign 'ASSOCIATE DATA SCIENTIST',
For an employee with the experience of 5 to 10 years assign 'SENIOR DATA SCIENTIST',
For an employee with the experience of 10 to 12 years assign 'LEAD DATA SCIENTIST',
For an employee with the experience of 12 to 16 years assign 'MANAGER'.

```
DELIMITER $$
USE `employee`$$
CREATE PROCEDURE `new_desig` ()
BEGIN
select *, case
when exp<="2" then "JUNIOR DATA SCIENTIST"
when exp between 2 and 5 then "ASSOCIATE DATA SCIENTIST"
when exp between 5 and 10 then "SENIOR DATA SCIENTIST"
when exp between 10 and 12 then "LEAD DATA SCIENTIST"
when exp between 12 and 16 then "MANAGER"
END as new_designation from emp_record_table;
END$$
```



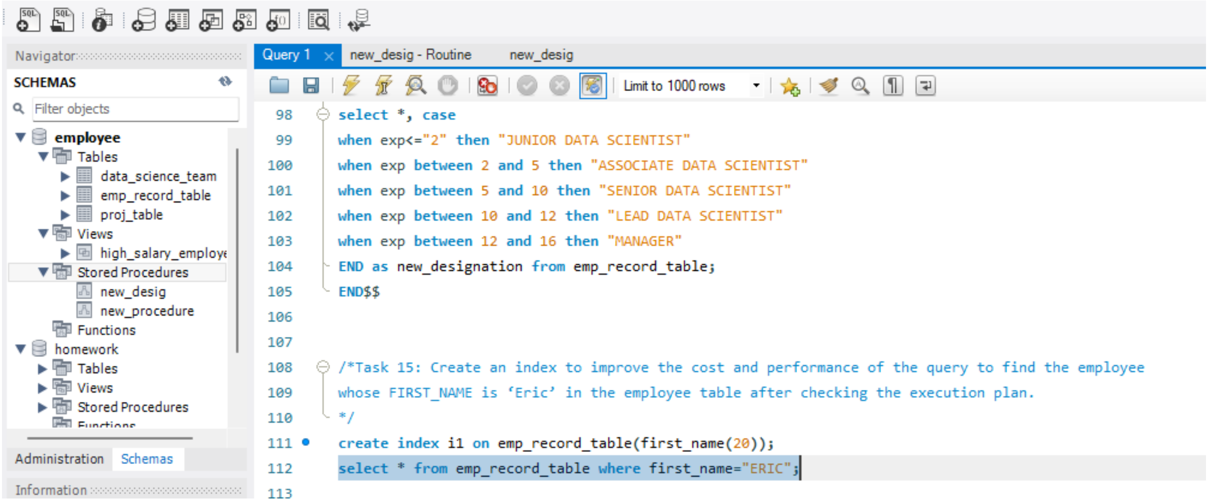
```
call employee.new_desig();
```

	EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID	new_designation
▶	E001	Arthur	Black	M	PRESIDENT	ALL	20	USA	NORTH AMERICA	16500	5	NULL	NULL	NULL
	E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105	LEAD DATA SCIENTIST
	E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000	2	E428	P204	LEAD DATA SCIENTIST
	E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500	5	E083	P103	SENIOR DATA SCIENTIST
	E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700	1	E083	P302	SENIOR DATA SCIENTIST
	E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500	5	E001	NULL	MANAGER
	E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500	4	E001	NULL	MANAGER
	E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500	5	E428	P204	SENIOR DATA SCIENTIST
	E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500	2	E583	P109	SENIOR DATA SCIENTIST
	E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000	3	E583	NA	SENIOR DATA SCIENTIST
	E403	Steve	Hoffman	M	ASSOCIATE DATA SCIEN...	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105	ASSOCIATE DATA SCIEN...
	E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL	MANAGER
	E478	David	Smith	M	ASSOCIATE DATA SCIEN...	RETAIL	3	COLOMBIA	SOUTH AMERICA	4000	4	E583	P109	ASSOCIATE DATA SCIEN...
	E505	Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103	ASSOCIATE DATA SCIEN...
	E532	Claire	Brennan	F	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	GERMANY	EUROPE	4300	1	E428	P204	ASSOCIATE DATA SCIEN...
	E583	Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000	2	E001	NULL	MANAGER
	E612	Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500	4	E001	NULL	MANAGER
	E620	Katrina	Allen	F	JUNIOR DATA SCIENTIST	RETAIL	2	INDIA	ASIA	3000	1	E612	P406	JUNIOR DATA SCIENTIST

Task 15: Create an index to improve the cost and performance of the query to find the employee whose FIRST_NAME is ‘Eric’ in the employee table after checking the execution plan.

create index i1 on emp_record_table(first_name(20));

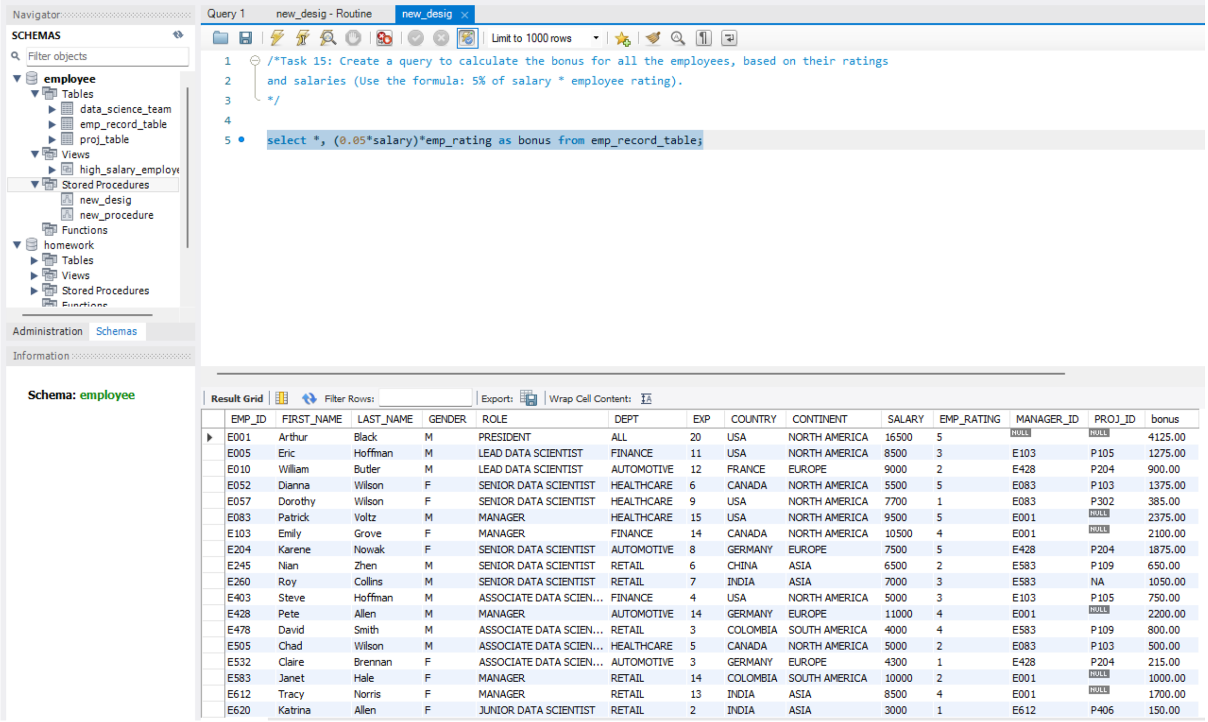
select * from emp_record_table where first_name="ERIC";



```
select *, case
when exp<="2" then "JUNIOR DATA SCIENTIST"
when exp between 2 and 5 then "ASSOCIATE DATA SCIENTIST"
when exp between 5 and 10 then "SENIOR DATA SCIENTIST"
when exp between 10 and 12 then "LEAD DATA SCIENTIST"
when exp between 12 and 16 then "MANAGER"
END as new_designation from emp_record_table;
END$$


/*Task 15: Create an index to improve the cost and performance of the query to find the employee
whose FIRST_NAME is ‘Eric’ in the employee table after checking the execution plan.
*/
create index i1 on emp_record_table(first_name(20));
select * from emp_record_table where first_name="ERIC";
```

Task 16: Write a query to calculate the bonus for all the employees, based on their ratings and salaries (Use the formula: 5% of salary * employee rating).

select *, (0.05*salary)*emp_rating as bonus from emp_record_table;

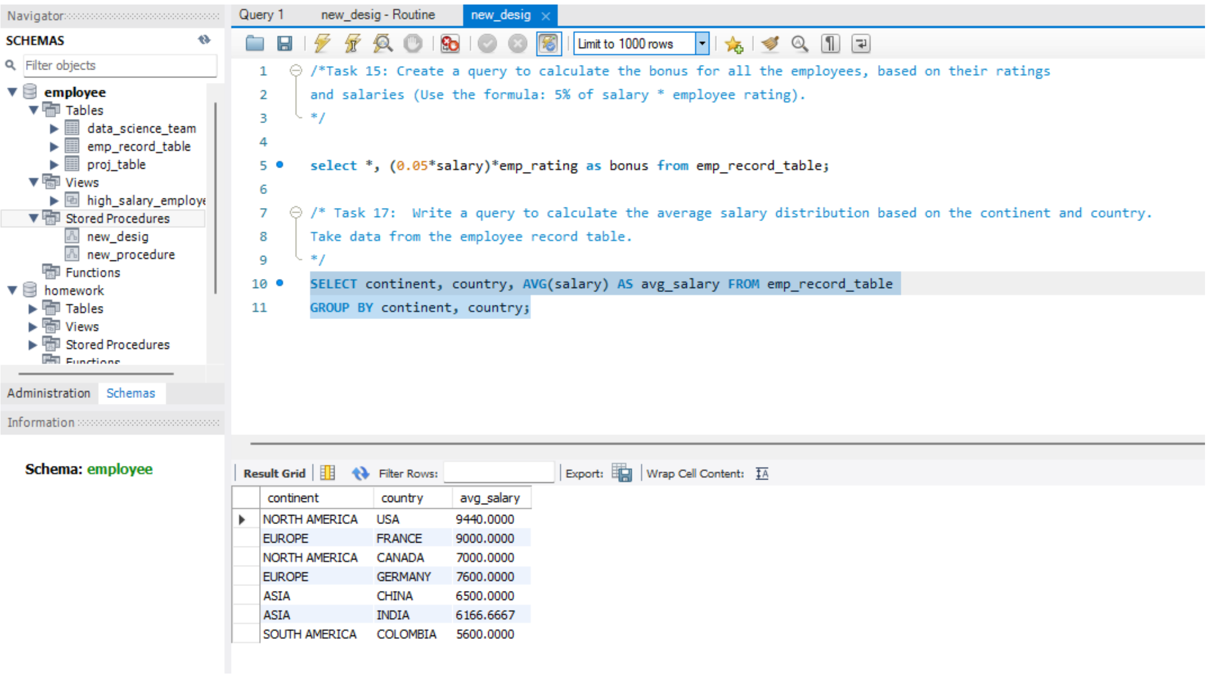


```
/*Task 15: Create a query to calculate the bonus for all the employees, based on their ratings
and salaries (Use the formula: 5% of salary * employee rating).
*/

select *, (0.05*salary)*emp_rating as bonus from emp_record_table;
```

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID	bonus
E001	Arthur	Black	M	PRESIDENT	ALL	20	USA	NORTH AMERICA	16500	5	NULL	NULL	4125.00
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105	1275.00
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000	2	E428	P204	900.00
E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500	5	E083	P103	1375.00
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700	1	E083	P302	385.00
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500	5	E001	NULL	2375.00
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500	4	E001	NULL	2100.00
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500	5	E428	P204	1875.00
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500	2	E583	P109	650.00
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000	3	E583	NA	1050.00
E403	Steve	Hoffman	M	ASSOCIATE DATA SCIEN...	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105	750.00
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL	2200.00
E478	David	Smith	M	ASSOCIATE DATA SCIEN...	RETAIL	3	COLOMBIA	SOUTH AMERICA	4000	4	E583	P109	800.00
E505	Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103	500.00
E532	Claire	Brennan	F	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	GERMANY	EUROPE	4300	1	E428	P204	215.00
E583	Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000	2	E001	NULL	1000.00
E612	Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500	4	E001	NULL	1700.00
E620	Katrina	Allen	F	JUNIOR DATA SCIENTIST	RETAIL	2	INDIA	ASIA	3000	1	E612	P406	150.00

Task 17: Write a query to calculate the average salary distribution based on the continent and country. Take data from the employee record table.

SELECT continent, country, AVG(salary) AS avg_salary FROM emp_record_table
GROUP BY continent, country;



```
/*Task 15: Create a query to calculate the bonus for all the employees, based on their ratings
and salaries (Use the formula: 5% of salary * employee rating).
*/

select *, (0.05*salary)*emp_rating as bonus from emp_record_table;

/* Task 17:  Write a query to calculate the average salary distribution based on the continent and country.
Take data from the employee record table.
*/
SELECT continent, country, AVG(salary) AS avg_salary FROM emp_record_table
GROUP BY continent, country;
```

continent	country	avg_salary
NORTH AMERICA	USA	9440.0000
EUROPE	FRANCE	9000.0000
NORTH AMERICA	CANADA	7000.0000
EUROPE	GERMANY	7600.0000
ASIA	CHINA	6500.0000
ASIA	INDIA	6166.6667
SOUTH AMERICA	COLOMBIA	5600.0000