

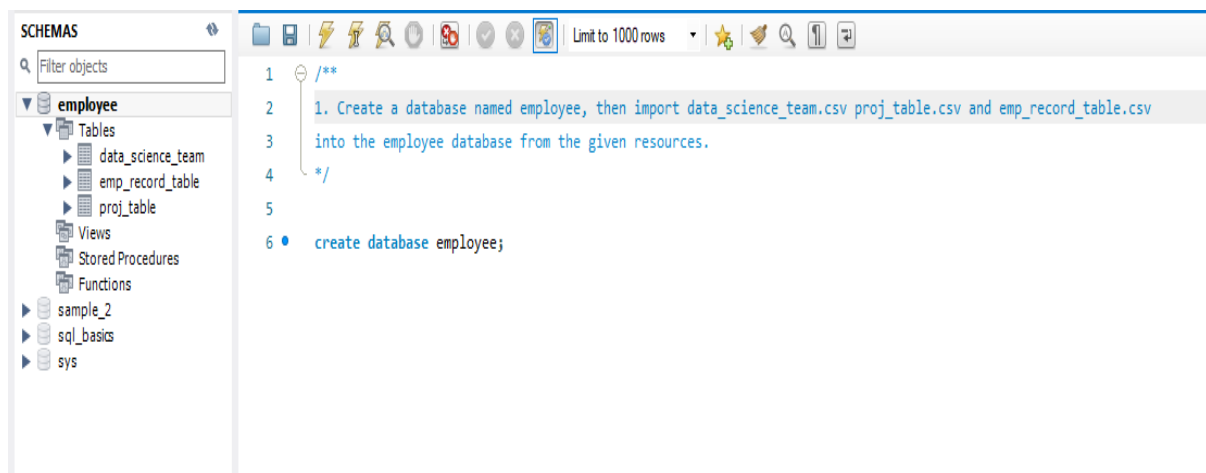
DESCRIPTION

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.

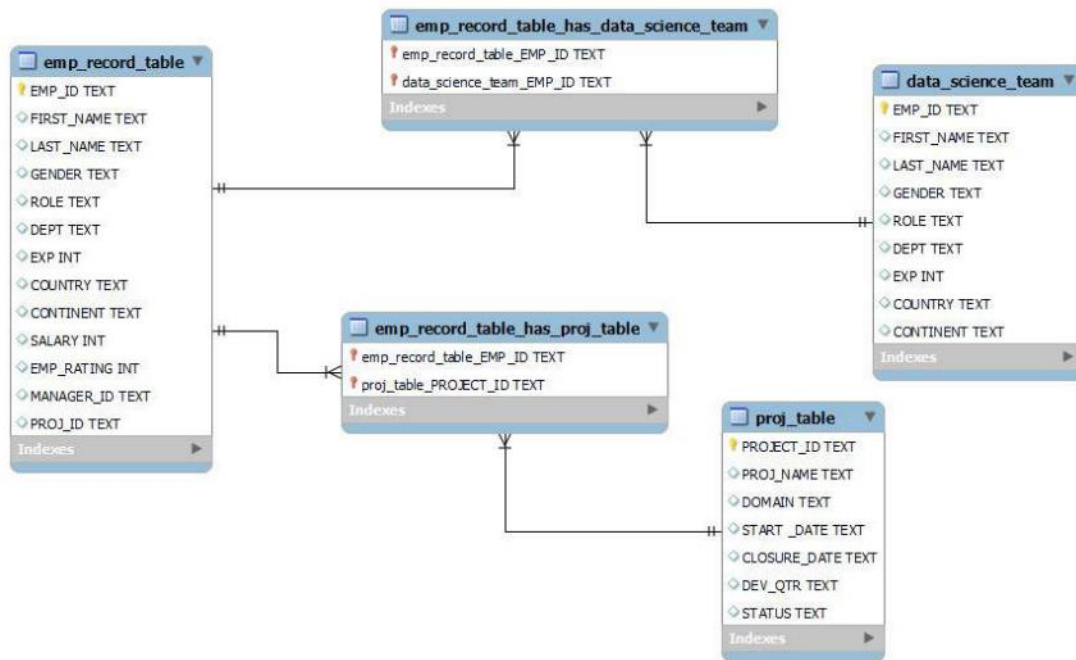
Objective:

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.

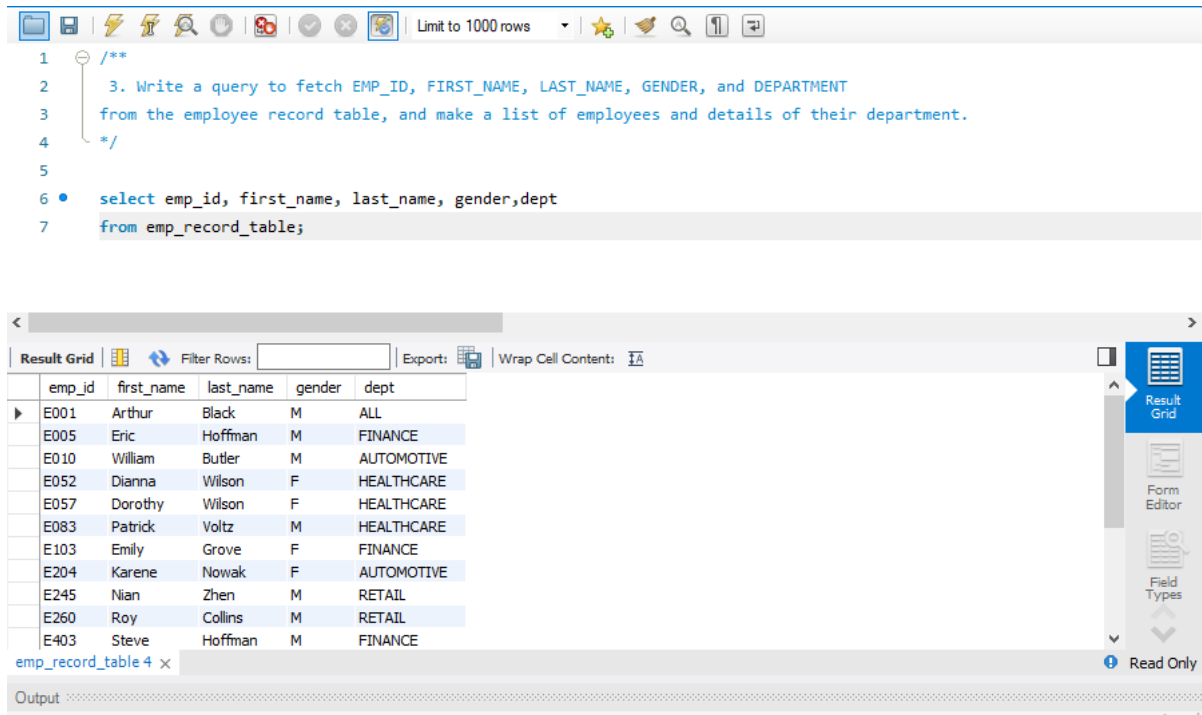
1. Create a database named `employee`, then import `data_science_team.csv` `proj_table.csv` and `emp_record_table.csv` into the `employee` database from the given resources.



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.



The screenshot shows the SQL Developer interface. The query editor contains the following SQL code:

```

1  /**
2   3. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT
3   from the employee record table, and make a list of employees and details of their department.
4   */
5
6  • select emp_id, first_name, last_name, gender, dept
7     from emp_record_table;

```

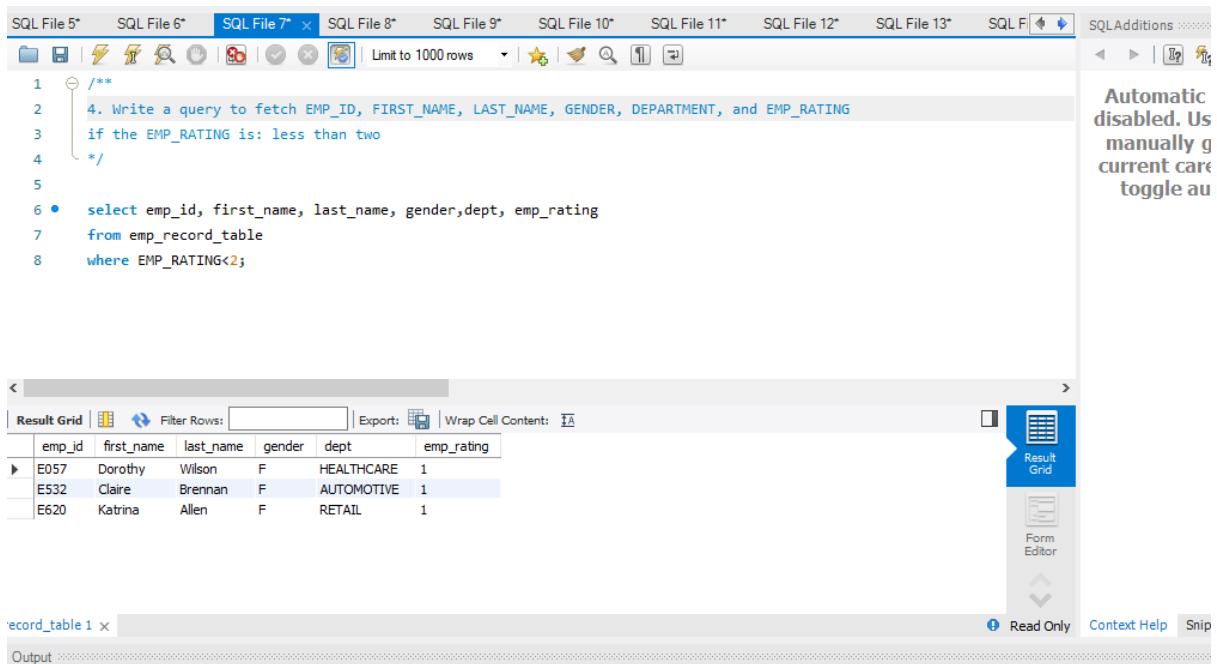
The result grid displays the following data:

emp_id	first_name	last_name	gender	dept
E001	Arthur	Black	M	ALL
E005	Eric	Hoffman	M	FINANCE
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

The window title is "emp_record_table 4 x". The status bar indicates "Read Only".

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



The screenshot shows the SQL Developer interface. The query editor contains the following SQL code:

```

1  /**
2   4. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING
3   if the EMP_RATING is: less than two
4   */
5
6  • select emp_id, first_name, last_name, gender, dept, emp_rating
7     from emp_record_table
8     where EMP_RATING < 2;

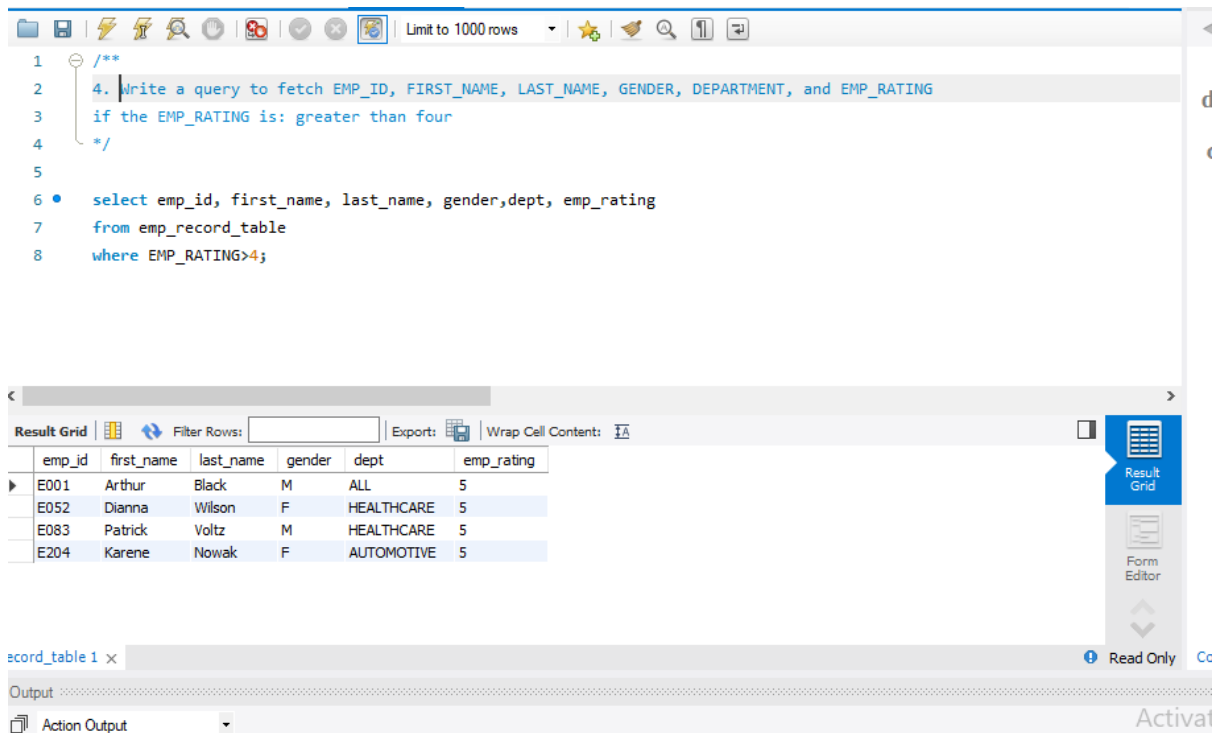
```

The result grid displays the following data:

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

The window title is "emp_record_table 1 x". The status bar indicates "Read Only".

- 4. greater than four



The screenshot shows a database query editor with a toolbar at the top. The query is as follows:

```

1  /**
2  4. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING
3  if the EMP_RATING is: greater than four
4  */
5
6  • select emp_id, first_name, last_name, gender,dept, emp_rating
7  from emp_record_table
8  where EMP_RATING>4;

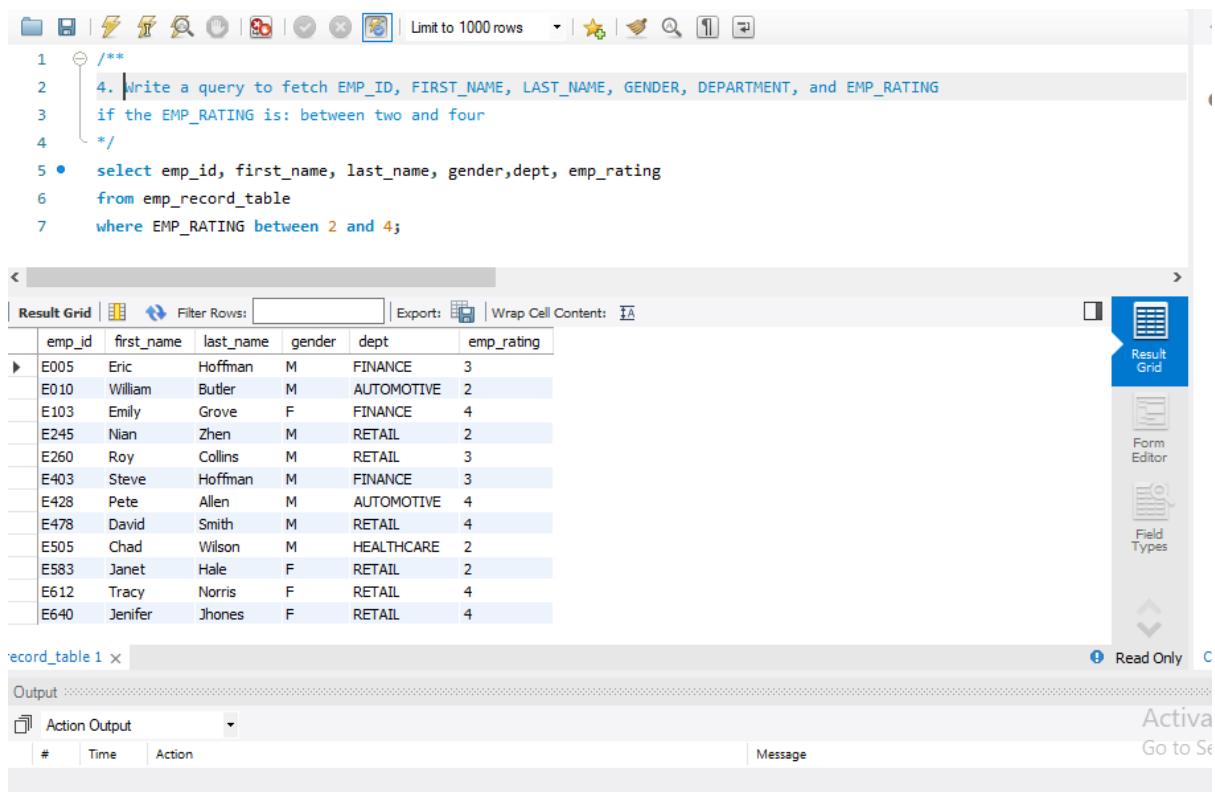
```

The results are displayed in a table with the following data:

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

The interface includes a 'Result Grid' button on the right and a 'Form Editor' button below it. The bottom status bar shows 'Record_table 1 x' and 'Read Only'.

- 4. between two and four



The screenshot shows a database query editor with a toolbar at the top. The query is as follows:

```

1  /**
2  4. Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING
3  if the EMP_RATING is: between two and four
4  */
5
6  • select emp_id, first_name, last_name, gender,dept, emp_rating
7  from emp_record_table
8  where EMP_RATING between 2 and 4;

```

The results are displayed in a table with the following data:

emp_id	first_name	last_name	gender	dept	emp_rating
E005	Eric	Hoffman	M	FINANCE	3
E010	William	Butler	M	AUTOMOTIVE	2
E103	Emily	Grove	F	FINANCE	4
E245	Nian	Zhen	M	RETAIL	2
E260	Roy	Collins	M	RETAIL	3
E403	Steve	Hoffman	M	FINANCE	3
E428	Pete	Allen	M	AUTOMOTIVE	4
E478	David	Smith	M	RETAIL	4
E505	Chad	Wilson	M	HEALTHCARE	2
E583	Janet	Hale	F	RETAIL	2
E612	Tracy	Norris	F	RETAIL	4
E640	Jenifer	Jhones	F	RETAIL	4

The interface includes a 'Result Grid' button on the right and a 'Form Editor' button below it. The bottom status bar shows 'Record_table 1 x' and 'Read Only'.

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.

Open a script file in this editor

```
2 5. Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees
3 in the Finance department from the employee table and
4 then give the resultant column alias as NAME.
5 */
6 • select concat(FIRST_NAME, LAST_NAME) as NAME
7 from emp_record_table
8 where dept = "FINANCE";
9
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

NAME
EricHoffman
EmilyGrove
SteveHoffman

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

```
1 /**
2 6. Write a query to list only those employees who have someone reporting to them.
3 Also, show the number of reporters (including the President).
4 */
5 • select concat(FIRST_NAME," ",LAST_NAME) as Name, ROLE from employee.emp_record_table where
6 ROLE='PRESIDENT' or ROLE='MANAGER';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Name	ROLE
Arthur Black	PRESIDENT
Patrick Voltz	MANAGER
Emily Grove	MANAGER
Pete Allen	MANAGER
Janet Hale	MANAGER
Tracy Norris	MANAGER

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

```

1  /**
2  7. Write a query to list down all the employees from the healthcare and finance departments using union.
3  Take data from the employee record table.
4  */
5  • select concat(FIRST_NAME, " ", LAST_NAME) as Name, DEPT
6  from employee.emp_record_table
7  where DEPT='healthcare'
8  union
9  select concat(FIRST_NAME, " ", LAST_NAME) as Name, DEPT
10 from employee.emp_record_table
11 where DEPT='finance';
12

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Name	DEPT
Dianna Wilson	HEALTHCARE
Dorothy Wilson	HEALTHCARE
Patrick Voltz	HEALTHCARE
Chad Wilson	HEALTHCARE
Eric Hoffman	FINANCE
Emily Grove	FINANCE
Steve Hoffman	FINANCE

Result 1 x | Read Only

Output

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.

```

1  /**
2  8. Write a query to list down employee details such as
3  EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPARTMENT, and EMP_RATING grouped by dept.
4  Also include the respective employee rating along with the max emp rating for the department.
5  */
6
7  • select EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, EMP_RATING
8  from employee.emp_record_table
9  where EMP_RATING in
10      (Select max(EMP_RATING) from employee.emp_record_table group by DEPT);

```

Limit to 1000 rows

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EMP_RATING
E001	Arthur	Black	PRESIDENT	ALL	5
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5
E083	Patrick	Voltz	MANAGER	HEALTHCARE	5
E103	Emily	Grove	MANAGER	FINANCE	4
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	5
E428	Pete	Allen	MANAGER	AUTOMOTIVE	4
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	4
E612	Tracy	Norris	MANAGER	RETAIL	4

emp_record_table 3 x

Output

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.

```

1  /**
2   9. Write a query to calculate the minimum and the maximum salary of the employees in each role.
3   Take data from the employee record table.
4   */
5  • select min(SALARY) as MINSALARY, max(SALARY) as MAXSALARY, ROLE, DEPT
6     from employee.emp_record_table
7     group by ROLE;
8

```

Result Grid

MINSALARY	MAXSALARY	ROLE	DEPT
16500	16500	PRESIDENT	ALL
8500	9000	LEAD DATA SCIENTIST	FINANCE
5500	7700	SENIOR DATA SCIENTIST	HEALTHCARE
8500	11000	MANAGER	HEALTHCARE
4000	5000	ASSOCIATE DATA SCIENTIST	FINANCE
2800	3000	JUNIOR DATA SCIENTIST	RETAIL

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

```

1  /**
2   10. Write a query to assign ranks to each employee based on their experience.
3   Take data from the employee record table.
4   */
5  • select EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, SALARY, RANK() over (order by SALARY desc)
6     from employee.emp_record_table
7     ORDER by SALARY;

```

Result Grid

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	SALARY	RANK() over (order by SALARY desc)
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	2800	19
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	3000	18
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	4000	17
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	4300	16
E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	5000	14
E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5000	14
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5500	13
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	6500	12
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	7000	11
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	7500	10
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	7700	9
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	8500	7
E612	Tracy	Norris	MANAGER	RETAIL	8500	7

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.

The screenshot shows a database query editor with a SQL query and its result grid. The query is as follows:

```

1  /**
2   11. Write a query to create a view that displays employees in various countries
3   whose salary is more than six thousand.
4   Take data from the employee record table.
5   */
6
7  • select EMP_ID, FIRST_NAME, LAST_NAME, COUNTRY, SALARY
8     from employee.emp_record_table
9     where SALARY > 6000;

```

The result grid displays the following data:

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

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

The screenshot shows a database query editor with a nested SQL query and its result grid. The query is as follows:

```

1  /**
2   12. Write a nested query to find employees with experience of more than ten years.
3   Take data from the employee record table.
4   */
5  • select EMP_ID, FIRST_NAME, LAST_NAME, EXP
6     from employee.emp_record_table
7     where EXP in
8         (select EXP
9          from employee.emp_record_table
10         where EXP > 10);

```

The result grid displays the following data:

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
E612	Tracy	Norris	13

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).

```

1  /**
2   16. Write a query to calculate the bonus for all the employees, based on their ratings and salaries
3   (Use the formula: 5% of salary * employee rating).
4   */
5
6  • select FIRST_NAME, LAST_NAME, SALARY, EMP_RATING, (SALARY*0.05)*EMP_RATING as Bonus
7    from emp_record_table;
8

```

Result Grid | Filter Rows: | Exports: | Wrap Cell Content: |

	FIRST_NAME	LAST_NAME	SALARY	EMP_RATING	Bonus
▶	Arthur	Black	16500	5	4125.00
	Eric	Hoffman	8500	3	1275.00
	William	Butler	9000	2	900.00
	Dianna	Wilson	5500	5	1375.00
	Dorothy	Wilson	7700	1	385.00
	Patrick	Voltz	9500	5	2375.00
	Emily	Grove	10500	4	2100.00
	Karene	Nowak	7500	5	1875.00

Result 1 x | Read Only

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

```

1  /**
2   17. Write a query to calculate the average salary distribution based on the continent and country.
3   Take data from the employee record table.
4   */
5
6  • select CONTINENT, SALARY, avg(SALARY) as Avg_Sal_Distribution
7    from emp_record_table
8   group by CONTINENT;
9

```

Result Grid | Filter Rows: | Exports: | Wrap Cell Content: |

	CONTINENT	SALARY	Avg_Sal_Distribution
	NORTH AMERICA	16500	8525.0000
	EUROPE	9000	7950.0000
	ASIA	6500	6250.0000
	SOUTH AMERICA	4000	5600.0000

Result 1 x | Read Only

17.

The screenshot shows a SQL IDE interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains a multi-line comment and a SQL query. The query calculates the average salary distribution by continent and country from the 'emp_record_table'. Below the editor, the 'Result Grid' tab is active, displaying a table with two columns: 'CONTINENT' and 'Avg_Sal_Distribution'. The table contains six rows of data. On the right side, there are buttons for 'Result Grid' and 'Form Editor', and a 'Read Only' status indicator at the bottom.

```
1  /**
2  17. Write a query to calculate the average salary distribution based on the continent and country.
3  Take data from the employee record table.
4  */
5
6  •  select CONTINENT, avg(SALARY) as Avg_Sal_Distribution
7     from emp_record_table
8     group by COUNTRY;
```

CONTINENT	Avg_Sal_Distribution
NORTH AMERICA	9440.0000
EUROPE	9000.0000
NORTH AMERICA	7000.0000
EUROPE	7600.0000
ASIA	6500.0000
ASIA	6166.6667
SOUTH AMERICA	5600.0000

Result 1 x Read Only