NAME :

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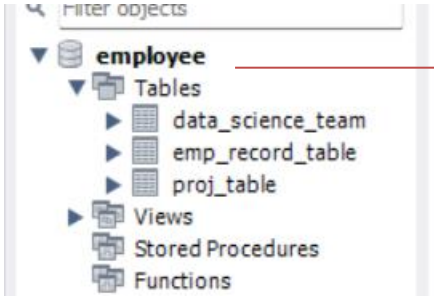
PROJECT NAME :

ScienceQtech Employee Performance Mapping

The task to be performed:

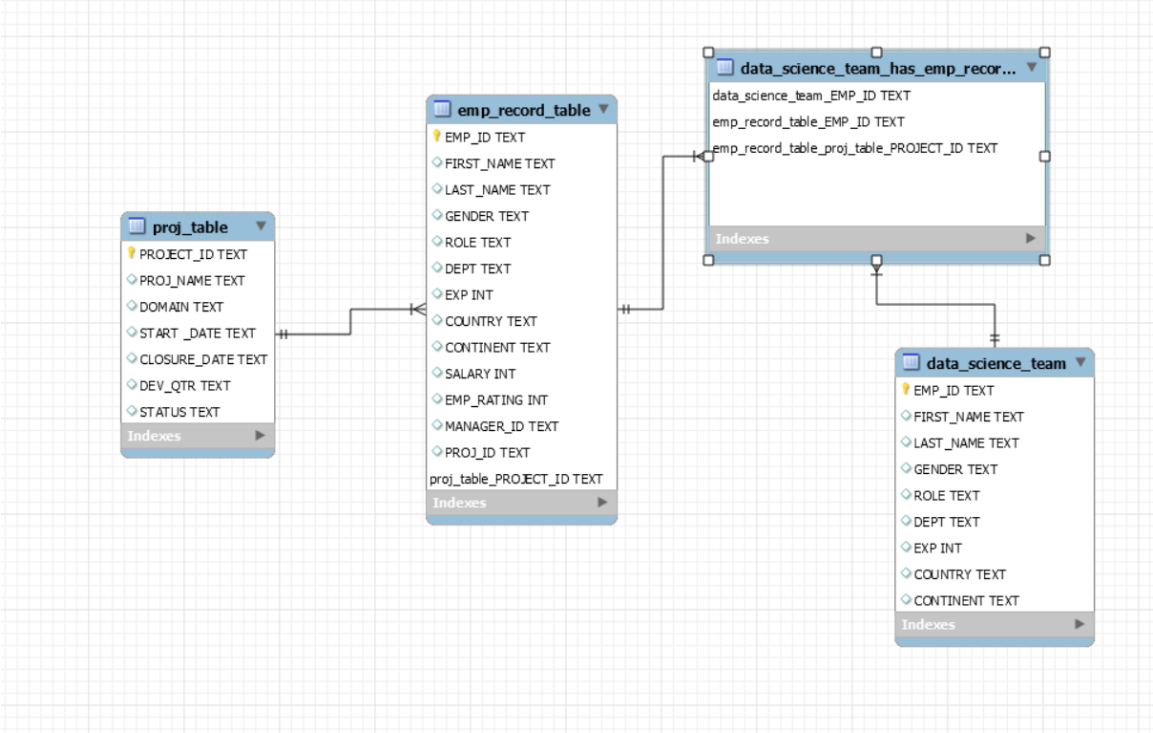
1. Create a database named employee, then import **data_science_team.csv proj_table.csv** and **emp_record_table.csv** into the **employee** database from the given resources.

   OUTPUT :



Create database and import files .

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.

CODE :

```
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT

FROM  employee.emp_record_table;
```

OUTPUT:

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
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

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

CODE :

```
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT,
EMP_RATING
FROM employee.emp_record_table
WHERE EMP_RATING < 2 ;
```

```
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT,
EMP_RATING
FROM employee.emp_record_table
WHERE EMP_RATING > 4 ;

SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT,
EMP_RATING
FROM employee.emp_record_table
WHERE  (EMP_RATING >= 2 AND EMP_RATING <= 4);
```

OUTPUT :

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

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.

CODE

```
SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS NAME
FROM employee.emp_record_table
WHERE DEPT = 'Finance';
```

OUTPUT

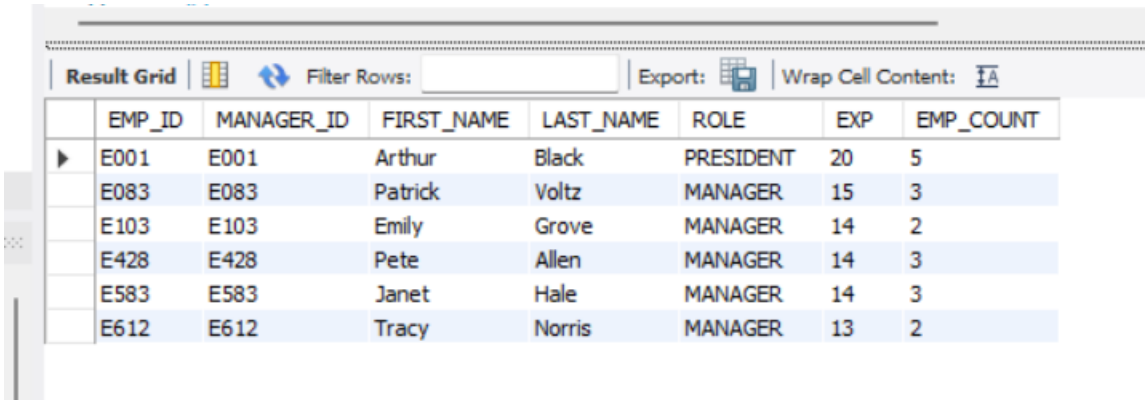
NAME
Eric Hoffman
Emily Grove
Steve Hoffman

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

CODE

```
SELECT
m.EMP_ID,e.MANAGER_ID,m.FIRST_NAME,m.LAST_NAME,m.ROLE,
m.EXP,COUNT(e.EMP_ID) as "EMP_COUNT"
FROM employee.emp_record_table m ,employee.emp_record_table e
WHERE  m.EMP_ID = e.MANAGER_ID
GROUP BY m.EMP_ID
ORDER BY m.EMP_ID;
```

OUTPUT



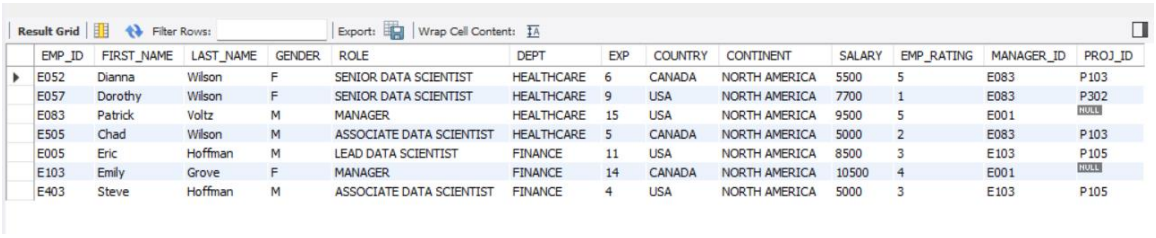
EMP_ID	MANAGER_ID	FIRST_NAME	LAST_NAME	ROLE	EXP	EMP_COUNT
E001	E001	Arthur	Black	PRESIDENT	20	5
E083	E083	Patrick	Voltz	MANAGER	15	3
E103	E103	Emily	Grove	MANAGER	14	2
E428	E428	Pete	Allen	MANAGER	14	3
E583	E583	Janet	Hale	MANAGER	14	3
E612	E612	Tracy	Norris	MANAGER	13	2

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.

CODE

```
SELECT *
FROM employee.emp_record_table
WHERE EMP_ID IN (
    SELECT EMP_ID
    FROM employee.emp_record_table
    WHERE DEPT = 'Healthcare'
)
UNION
SELECT *
FROM employee.emp_record_table
WHERE EMP_ID IN (
    SELECT EMP_ID
    FROM employee.emp_record_table
    WHERE DEPT = 'Finance'
);
```

OUTPUT



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

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

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.

CODE

```
SELECT
   E.EMP_ID,
   E.FIRST_NAME,
   E.LAST_NAME,
   E.ROLE,
   E.DEPT AS DEPARTMENT,
   E.EMP_RATING,
   D.MAX_EMP_RATING
FROM emp_record_table AS E
JOIN (
   SELECT DEPT, MAX(EMP_RATING) AS MAX_EMP_RATING
   FROM emp_record_table
   GROUP BY DEPT
) AS D
ON E.DEPT = D.DEPT;
```

OUTPUT

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPARTMENT	EMP_RATING	MAX_EMP_RATING
E001	Arthur	Black	PRESIDENT	ALL	5	5
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	3	4
E103	Emily	Grove	MANAGER	FINANCE	4	4
E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	3	4
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	2	5
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	5	5
E428	Pete	Allen	MANAGER	AUTOMOTIVE	4	5
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	1	5
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5	5
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	1	5
E083	Patrick	Voltz	MANAGER	HEALTHCARE	5	5
E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	HEALTHCARE	2	5
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	2	4
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	3	4
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	4	4
E583	Janet	Hale	MANAGER	RETAIL	2	4
E612	Tracy	Norris	MANAGER	RETAIL	4	4
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	1	4
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	4	4

Result 8

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.

CODE

```
SELECT ROLE, MIN(SALARY) AS Min_Salary, MAX(SALARY) AS
Max_Salary
FROM employee.emp_record_table
GROUP BY ROLE;
```

OUTPUT

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

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

CODE

```
SELECT *,
      RANK() OVER (ORDER BY EXP DESC) AS Exp_Rank
FROM employee.emp_record_table ;
```

OUTPUT

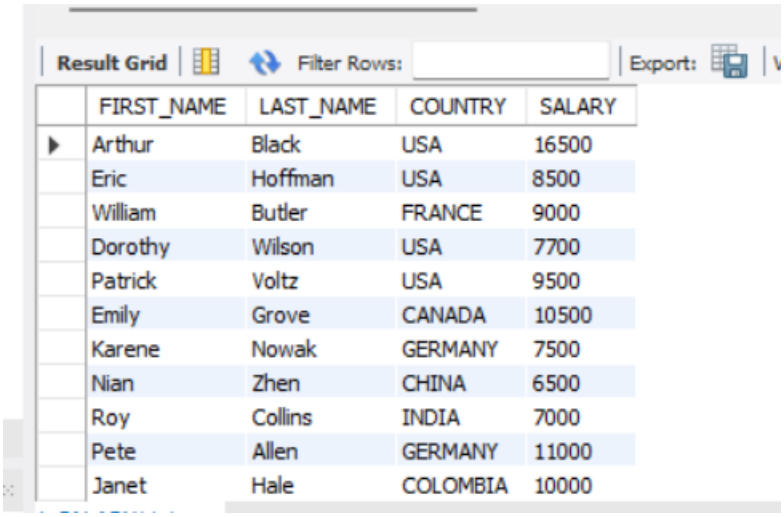
FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID	Exp_Rank
Arthur	Black	M	PRESIDENT	ALL	20	USA	NORTH AMERICA	16500	5	NULL	NULL	1
Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500	5	E001	NULL	2
Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500	4	E001	NULL	3
Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL	3
Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000	2	E001	NULL	3
Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500	4	E001	NULL	6
William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000	2	E428	P204	7
Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105	8
Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700	1	E083	P302	9
Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500	5	E428	P204	10
Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000	3	E583	NA	11
Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500	5	E083	P103	12
Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500	2	E583	P109	12
Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103	14
Steve	Hoffman	M	ASSOCIATE DATA SCIEN...	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105	15
David	Smith	M	ASSOCIATE DATA SCIEN...	RETAIL	3	COLOMBIA	SOUTH AMERICA	4000	4	E583	P109	16
Claire	Brennan	F	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	GERMANY	EUROPE	4300	1	E428	P204	16
Katrina	Allen	F	JUNIOR DATA SCIENTIST	RETAIL	2	INDIA	ASIA	3000	1	E612	P406	18
Jenifer	Jhones	F	JUNIOR DATA SCIENTIST	RETAIL	1	COLOMBIA	SOUTH AMERICA	2800	4	E612	P406	19

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.

CODE :

```
CREATE VIEW EMP_HIGH_SALARY11 AS
SELECT FIRST_NAME ,LAST_NAME ,COUNTRY , SALARY
FROM employee.emp_record_table
WHERE SALARY > 6000 ;
SELECT * FROM EMP_HIGH_SALARY11;
```

OUTPUT:



Result Grid | Filter Rows: | Export:

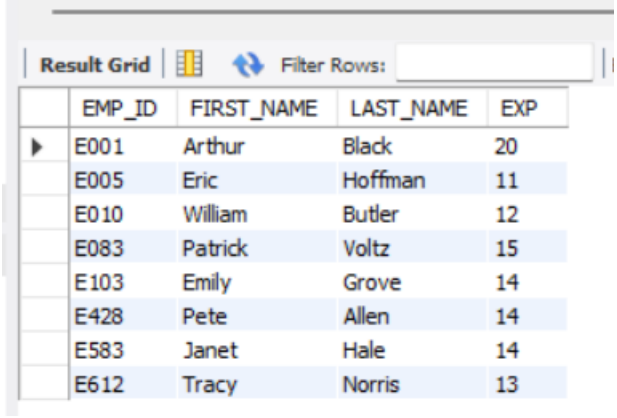
FIRST_NAME	LAST_NAME	COUNTRY	SALARY
Arthur	Black	USA	16500
Eric	Hoffman	USA	8500
William	Butler	FRANCE	9000
Dorothy	Wilson	USA	7700
Patrick	Voltz	USA	9500
Emily	Grove	CANADA	10500
Karene	Nowak	GERMANY	7500
Nian	Zhen	CHINA	6500
Roy	Collins	INDIA	7000
Pete	Allen	GERMANY	11000
Janet	Hale	COLOMBIA	10000

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

CODE :

```
SELECT EMP_ID, FIRST_NAME, LAST_NAME, EXP
FROM employee.emp_record_table
WHERE EXP > (
   SELECT MAX(EXP)
   FROM employee.emp_record_table
   WHERE EXP < 10
);
```

OUTPUT:



Result Grid | Filter Rows:

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

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.

CODE :

```
DELIMITER //

CREATE PROCEDURE GetEmpWithExp(IN minExperience INT)
BEGIN
   SELECT EMP_ID, FIRST_NAME, LAST_NAME, EXP
   FROM employee.emp_record_table
   WHERE EXP > minExperience;
END //

DELIMITER ;
CALL GetEmpWithExp(3);
```

OUTPUT:

Result Grid | Filter Rows: | Export:

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
E204	Karene	Nowak	8
E245	Nian	Zhen	6
E260	Roy	Collins	7
E403	Steve	Hoffman	4
E428	Pete	Allen	14
E505	Chad	Wilson	5
E583	Janet	Hale	14
E612	Tracy	Norris	13

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',

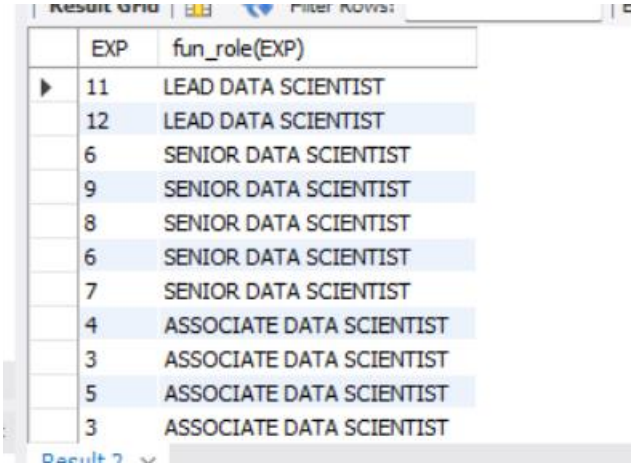
For an employee with the experience of 10 to 12 years assign 'LEAD DATA SCIENTIST',

For an employee with the experience of 12 to 16 years assign 'MANAGER'.

CODE :

```
DELIMITER &&
CREATE FUNCTION fun_role(EXP int)
RETURNS varchar(50)  DETERMINISTIC

BEGIN
DECLARE assig_role varchar(50);

IF EXP <= 2 THEN SET assig_role="JUNIOR DATA SCIENTIST";
ELSEIF EXP <= 5 THEN SET assig_role="ASSOCIATE DATA SCIENTIST";
ELSEIF EXP <= 10 THEN SET assig_role="SENIOR DATA SCIENTIST";
ELSEIF EXP <= 12 THEN SET assig_role="LEAD DATA SCIENTIST";
ELSEIF EXP <= 16 THEN SET assig_role="MANAGER";

 END IF;

RETURN (assig_role);

END &&

SELECT EXP , fun_role(EXP)
FROM employee.data_science_team;
```

OUTPUT:



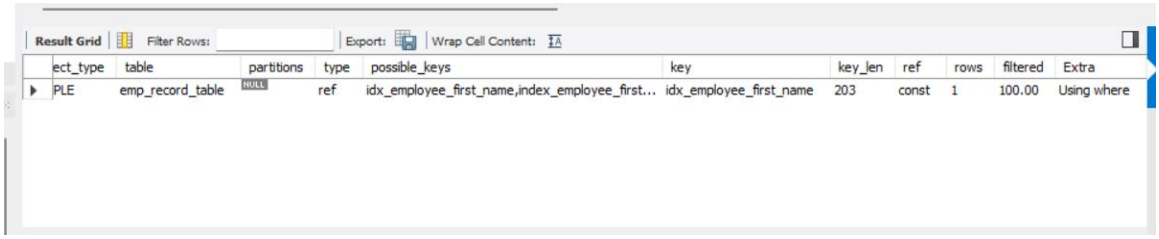
EXP	fun_role(EXP)
11	LEAD DATA SCIENTIST
12	LEAD DATA SCIENTIST
6	SENIOR DATA SCIENTIST
9	SENIOR DATA SCIENTIST
8	SENIOR DATA SCIENTIST
6	SENIOR DATA SCIENTIST
7	SENIOR DATA SCIENTIST
4	ASSOCIATE DATA SCIENTIST
3	ASSOCIATE DATA SCIENTIST
5	ASSOCIATE DATA SCIENTIST
3	ASSOCIATE DATA SCIENTIST

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.

CODE :

```
EXPLAIN SELECT *

FROM employee.emp_record_table

WHERE FIRST_NAME = "Eric";


CREATE INDEX index_name

ON employee.emp_record_table(FIRST_NAME(40));
```

OUTPUT:



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

ect_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
PLE	emp_record_table	NULL	ref	idx_employee_first_name,index_employee_first...	idx_employee_first_name	203	const	1	100.00	Using where

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).

CODE :

```
SELECT
   FIRST_NAME,
   LAST_NAME,
   SALARY,
   EMP_RATING,
   (SALARY * 0.05 * EMP_RATING ) AS Bonus
FROM employee.emp_record_table  ;
```

OUTPUT:

Result Grid | Filter Rows: | Export: | 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
Nian	Zhen	6500	2	650.00
Roy	Collins	7000	3	1050.00
Steve	Hoffman	5000	3	750.00

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

CODE:

```
SELECT CONTINENT, COUNTRY, AVG(SALARY) AS Ave_Salary
```

```
FROM employee.emp_record_table
GROUP BY
   CONTINENT, COUNTRY
ORDER BY
   CONTINENT, COUNTRY;
```

OUTPUT:

CONTINENT	COUNTRY	Ave_Salary
ASIA	CHINA	6500.0000
ASIA	INDIA	6166.6667
EUROPE	FRANCE	9000.0000
EUROPE	GERMANY	7600.0000
NORTH AMERICA	CANADA	7000.0000
NORTH AMERICA	USA	9440.0000
SOUTH AMERICA	COLOMBIA	5600.0000