ScienceQtech Employee Performance Mapping - 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

The objective of the ScienceQtech Employee Performance Mapping project is to carry out a comprehensive analysis of employee performance that will optimize the human resources department's processing and measurement of progress and effectiveness in achieving personnel goals. In addition to verifying that all positions comply with organizational standards such as the conditions to receive maximum salary and bonuses based on employee experience. This, together, will increase the overall performance of the organization, and will help HR professionals determine clear expectations for their employees and ensure that all individuals receive training tailored to their needs.

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.

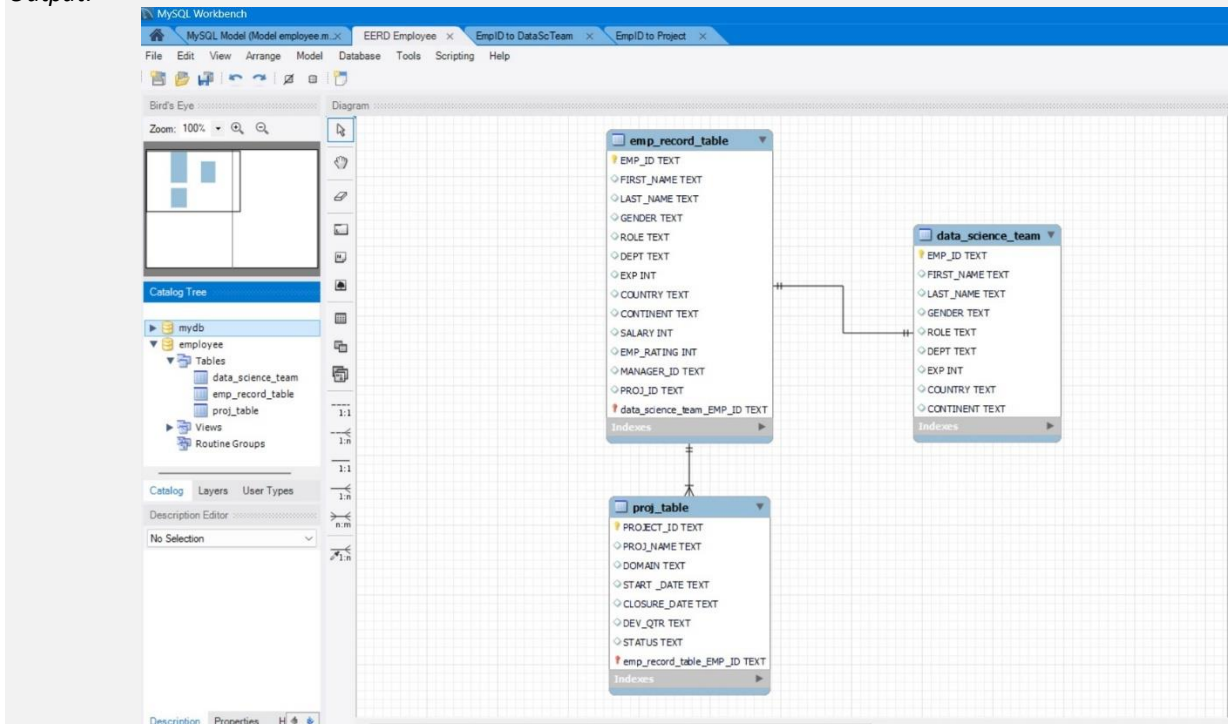| EMP_ID	ID of the employee
FIRST_NAME	First name of the employee
LAST_NAME	Last name of the employee
GENDER	Gender of the employee
ROLE	Post of the employee
DEPT	Field of the employee
EXP	Years of experience the employee has
COUNTRY	Country in which the employee is presently living
CONTINENT	Continent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

Tasks:

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:
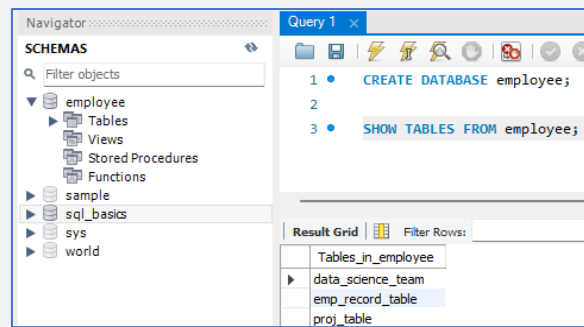
2. Create an ER diagram for the given employee database.
   Output:

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.
   My Query:
```sql
USE employee;
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT
FROM emp_record_table
ORDER BY DEPT ASC;
```

Output:

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT
E001	Arthur	Black	M	ALL
E010	William	Butler	M	AUTOMOTIVE
E204	Karene	Nowak	F	AUTOMOTIVE
E428	Pete	Allen	M	AUTOMOTIVE
E532	Claire	Brennan	F	AUTOMOTIVE
E005	Eric	Hoffman	M	FINANCE
E103	Emily	Grove	F	FINANCE
E403	Steve	Hoffman	M	FINANCE
E052	Dianna	Wilson	F	HEALTHCARE
E057	Dorothy	Wilson	F	HEALTHCARE
E083	Patrick	Voltz	M	HEALTHCARE
E505	Chad	Wilson	M	HEALTHCARE
E245	Nian	Zhen	M	RETAIL
E260	Roy	Collins	M	RETAIL
E478	David	Smith	M	RETAIL
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 2.
   • greater than 4.
   • between 2 and 4.

My Query:
```sql
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING
FROM emp_record_table
WHERE EMP_RATING < 2;
```

Output:

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

My Query:
```sql
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING
FROM emp_record_table
WHERE EMP_RATING > 4;
```

Output:

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

My Query:
```sql
SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT, EMP_RATING
FROM emp_record_table
WHERE EMP_RATING BETWEEN 2 AND 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.

My Query:
```sql
SELECT CONCAT (FIRST_NAME,' ',LAST_NAME) AS NAME
FROM 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).

My Query:
```sql
SELECT * FROM (
    SELECT MANAGER_ID, COUNT(*) AS No_OF_REPORTERS
    FROM emp_record_table
    GROUP BY MANAGER_ID
    HAVING No_OF_REPORTERS > 1
    ORDER BY MANAGER_ID
)a JOIN (
    SELECT CONCAT (FIRST_NAME,' ',LAST_NAME) AS MANAGER_NAME, DEPT, ROLE, EMP_ID
    FROM emp_record_table
    WHERE ROLE IN  ("MANAGER", "PRESIDENT")
    GROUP BY FIRST_NAME, LAST_NAME, DEPT, ROLE, EMP_ID
)b ON (a.MANAGER_ID = b.EMP_ID;
```

Output:

MANAGER_ID	No_OF_REPORTERS	MANAGER_NAME	DEPT	ROLE	EMP_ID
E001	5	Arthur Black	ALL	PRESIDENT	E001
E083	3	Patrick Voltz	HEALTHCARE	MANAGER	E083
E103	2	Emily Grove	FINANCE	MANAGER	E103
E428	3	Pete Allen	AUTOMOTIVE	MANAGER	E428
E583	3	Janet Hale	RETAIL	MANAGER	E583
E612	2	Tracy Norris	RETAIL	MANAGER	E612

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.

My Query:
```sql
SELECT * FROM emp_record_table
WHERE DEPT = "HEALTHCARE"
UNION
SELECT * FROM emp_record_table
WHERE DEPT = "FINANCE";
```

Output:

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.

My Query:
```sql
SELECT DEPT, EMP_ID, FIRST_NAME, LAST_NAME, ROLE, EMP_RATING,
    MAX (EMP_RATING) OVER (PARTITION BY DEPT) AS MAX_EMP_RATING_PER_DEPT
FROM emp_record_table;
```

Output:

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

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.

My Query:
```sql
SELECT ROLE, MIN (SALARY), MAX (SALARY)
FROM emp_record_table
GROUP BY ROLE
ORDER BY MAX (SALARY) DESC;
```

Output:

ROLE	MIN(SALARY)	MAX(SALARY)
PRESIDENT	16500	16500
MANAGER	8500	11000
LEAD DATA SCIENTIST	8500	9000
SENIOR DATA SCIENTIST	5500	7700
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.

My Query:
```sql
SELECT EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, EXP,
    RANK() OVER (
        ORDER BY EXP DESC
    ) EXP_RANK
FROM emp_record_table;
```

Output:

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EXP	EXP_RANK
E001	Arthur	Black	PRESIDENT	ALL	20	1
E083	Patrick	Voltz	MANAGER	HEALTHCARE	15	2
E103	Emily	Grove	MANAGER	FINANCE	14	3
E428	Pete	Allen	MANAGER	AUTOMOTIVE	14	3
E583	Janet	Hale	MANAGER	RETAIL	14	3
E612	Tracy	Norris	MANAGER	RETAIL	13	6
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	12	7
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	11	8
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	9	9
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	10
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	7	11
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	6	12
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	6	12
E505	Chad	Wilson	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	14
E403	Steve	Hoffman	ASSOCIATE DATA SCIEN...	FINANCE	4	15
E478	David	Smith	ASSOCIATE DATA SCIEN...	RETAIL	3	16
E532	Claire	Brennan	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	16
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	2	18
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	1	19

11. Write a query to create a view that displays employees in various countries whose salary is more than 6000. Take data from the employee record table.

My Query:
```sql
CREATE VIEW employee.HIGH_SALARY
AS
SELECT EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, COUNTRY, SALARY
FROM emp_record_table
WHERE SALARY > 6000
ORDER BY SALARY;
SELECT * FROM employee.HIGH_SALARY;
```

Output:

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

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

My Query:
```sql
SELECT EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, EXP
FROM emp_record_table
WHERE EXP > (SELECT AVG(EXP) FROM emp_record_table)
GROUP BY EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPT, EXP HAVING EXP > 10
ORDER BY EXP DESC;
```

Output:

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EXP
E001	Arthur	Black	PRESIDENT	ALL	20
E083	Patrick	Voltz	MANAGER	HEALTHCARE	15
E103	Emily	Grove	MANAGER	FINANCE	14
E428	Pete	Allen	MANAGER	AUTOMOTIVE	14
E583	Janet	Hale	MANAGER	RETAIL	14
E612	Tracy	Norris	MANAGER	RETAIL	13
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	12
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	11

13. Write a query to create a **stored procedure** to retrieve the details of the employees whose **experience is more than 3 years**. Take data from the employee record table.

My Query:
```sql
DELIMITER $$
USE 'employee' $$
CREATE PROCEDURE 'Exp_employees'()
BEGIN
    SELECT * FROM emp_record_table
    WHERE EXP > 3
    ORDER BY EXP
END$$

DELIMITER ;
```

Output:

My Query:
```sql
CALL Exp_emp_employees;
```

Output:

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'.

My Query:
```
USE employee
DELIMITER $$
CREATE FUNCTION StandardRole(experience INT) RETURNS VARCHAR(50)
DETERMINISTIC
BEGIN
    DECLARE role VARCHAR(50);
    IF experience <= 2 THEN
        SET role = 'JUNIOR DATA SCIENTIST';
    ELSEIF experience > 2 AND experience <= 5 THEN
        SET role = 'ASSOCIATE DATA SCIENTIST';
    ELSEIF experience > 5 AND experience <= 10 THEN
        SET role = 'SENIOR DATA SCIENTIST';
    ELSEIF experience > 10 AND experience <= 12 THEN
        SET role = 'LEAD DATA SCIENTIST';
    ELSEIF experience > 12 AND experience <= 16 THEN
        SET role = 'MANAGER';
    ELSE
        SET role = 'ROLE NOT DEFINED';
    END IF
    RETURN role;
END$$

DELIMITER ;

SHOW FUNCTION STATUS WHERE db = 'employee';
```

Output:

My Query:
```
SELECT EMP_ID, FIRST_NAME, LAST_NAME, DEPT, EXP, StandardRole(EXP)
FROM data_science_team;
```
Output:

EMP_ID	FIRST_NAME	LAST_NAME	DEPT	EXP	StandardRole(EXP)
E005	Eric	Hoffman	FINANCE	11	LEAD DATA SCIENTIST
E010	William	Butler	AUTOMOTIVE	12	LEAD DATA SCIENTIST
E052	Dianna	Wilson	HEALTHCARE	6	SENIOR DATA SCIENTIST
E057	Dorothy	Wilson	HEALTHCARE	9	SENIOR DATA SCIENTIST
E204	Karene	Nowak	AUTOMOTIVE	8	SENIOR DATA SCIENTIST
E245	Nian	Zhen	RETAIL	6	SENIOR DATA SCIENTIST
E260	Roy	Collins	RETAIL	7	SENIOR DATA SCIENTIST
E403	Steve	Hoffman	FINANCE	4	ASSOCIATE DATA SCIENTIST
E478	David	Smith	RETAIL	3	ASSOCIATE DATA SCIENTIST
E505	Chad	Wilson	HEALTHCARE	5	ASSOCIATE DATA SCIENTIST
E532	Claire	Brennan	AUTOMOTIVE	3	ASSOCIATE DATA SCIENTIST
E620	Katrina	Allen	RETAIL	2	JUNIOR DATA SCIENTIST
E640	Jenifer	Jhones	RETAIL	1	JUNIOR 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**.

My Query:
```
EXPLAIN SELECT * FROM emp_record_table
WHERE FIRST_NAME LIKE 'Eric';
```
Output:

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	emp_record_table	NULL	ALL	NULL	NULL	NULL	NULL	19	11.11	Using where

My Query:
```
CREATE INDEX idx_firstname
ON emp_record_table (FIRST_NAME(10));

EXPLAIN SELECT * FROM emp_record_table
WHERE FIRST_NAME LIKE 'Eric';
```
Output:

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	emp_record_table	NULL	range	idx_firstname	idx_firstname	43	NULL	1	100.00	Using where

16. Write a query to calculate the bonus on 5% of salary for all the employees, based on their ratings and salaries.

My Query:
```
SELECT Emp_ID, FIRST_NAME,LAST_NAME, ROLE, DEPT, ROUND((SALARY * 0.05) * EMP_RATING) AS EMP_BONUS
FROM emp_record_table
ORDER BY EMP_BONUS DESC;
```
Output:

Emp_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EMP_BONUS
E001	Arthur	Black	PRESIDENT	ALL	4125
E083	Patrick	Voltz	MANAGER	HEALTHCARE	2375
E428	Pete	Allen	MANAGER	AUTOMOTIVE	2200
E103	Emily	Grove	MANAGER	FINANCE	2100
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	1875
E612	Tracy	Norris	MANAGER	RETAIL	1700
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	1375
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	1275
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	1050
E583	Janet	Hale	MANAGER	RETAIL	1000
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	900
E478	David	Smith	ASSOCIATE DATA SCIEN...	RETAIL	800
E403	Steve	Hoffman	ASSOCIATE DATA SCIEN...	FINANCE	750
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	650
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	560
E505	Chad	Wilson	ASSOCIATE DATA SCIEN...	HEALTHCARE	500
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	385
E532	Claire	Brennan	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	215
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	150

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

My Query:
```sql
SELECT CONTINENT, COUNTRY, ROUND(AVG(SALARY)) AS SALARY_DISTRIBUTION
FROM emp_record_table
GROUP BY CONTINENT, COUNTRY
ORDER BY SALARY_DISTRIBUTION DESC;
```

Output:

CONTINENT	COUNTRY	SALARY_DISTRIBUTION
NORTH AMERICA	USA	9440
EUROPE	FRANCE	9000
EUROPE	GERMANY	7600
NORTH AMERICA	CANADA	7000
ASIA	CHINA	6500
ASIA	INDIA	6167
SOUTH AMERICA	COLOMBIA	5600

18. Calculate the average employee performance rating per department.

MyQuery:
```sql
SELECT DEPT, EMP_ID, FIRST_NAME, LAST_NAME, ROLE, EMP_RATING,
    ROUND(AVG(EMP_RATING) OVER (PARTITION BY DEPT), 2) AS AVG_EMP_RATING_PER_DEPT
FROM emp_record_table
ORDER BY AVG_EMP_RATING_PER_DEPT DESC;
```

Output:

DEPT	EMP_ID	FIRST_NAME	LAST_NAME	ROLE	EMP_RATING	AVG_EMP_RATING_PER_DEPT
ALL	E001	Arthur	Black	PRESIDENT	5	5.00
FINANCE	E005	Eric	Hoffman	LEAD DATA SCIENTIST	3	3.33
FINANCE	E103	Emily	Grove	MANAGER	4	3.33
FINANCE	E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	3	3.33
HEALTHCARE	E052	Dianna	Wilson	SENIOR DATA SCIENTIST	5	3.25
HEALTHCARE	E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	1	3.25
HEALTHCARE	E083	Patrick	Voltz	MANAGER	5	3.25
HEALTHCARE	E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	2	3.25
AUTOMOTIVE	E010	William	Butler	LEAD DATA SCIENTIST	2	3.00
AUTOMOTIVE	E204	Karene	Nowak	SENIOR DATA SCIENTIST	5	3.00
AUTOMOTIVE	E428	Pete	Allen	MANAGER	4	3.00
AUTOMOTIVE	E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	1	3.00
RETAIL	E245	Nian	Zhen	SENIOR DATA SCIENTIST	2	2.86
RETAIL	E260	Roy	Collins	SENIOR DATA SCIENTIST	3	2.86
RETAIL	E478	David	Smith	ASSOCIATE DATA SCIENTIST	4	2.86
RETAIL	E583	Janet	Hale	MANAGER	2	2.86
RETAIL	E612	Tracy	Norris	MANAGER	4	2.86
RETAIL	E620	Katrina	Allen	JUNIOR DATA SCIENTIST	1	2.86
RETAIL	E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	4	2.86

19. Calculate the average employee performance rating per role.

MyQuery:
```sql
SELECT ROLE, EMP_ID, FIRST_NAME, LAST_NAME, DEPT, EMP_RATING,
    ROUND(AVG(EMP_RATING) OVER (PARTITION BY ROLE), 2) AS AVG_EMP_RATING_PER_ROLE
FROM emp_record_table
ORDER BY AVG_EMP_RATING_PER_ROLE DESC;
```

Output:

ROLE	EMP_ID	FIRST_NAME	LAST_NAME	DEPT	EMP_RATING	AVG_EMP_RATING_PER_ROLE
PRESIDENT	E001	Arthur	Black	ALL	5	5.00
MANAGER	E083	Patrick	Voltz	HEALTHCARE	5	3.80
MANAGER	E103	Emily	Grove	FINANCE	4	3.80
MANAGER	E428	Pete	Allen	AUTOMOTIVE	4	3.80
MANAGER	E583	Janet	Hale	RETAIL	2	3.80
MANAGER	E612	Tracy	Norris	RETAIL	4	3.80
SENIOR DATA SCIENTIST	E052	Dianna	Wilson	HEALTHCARE	5	3.20
SENIOR DATA SCIENTIST	E057	Dorothy	Wilson	HEALTHCARE	1	3.20
SENIOR DATA SCIENTIST	E204	Karene	Nowak	AUTOMOTIVE	5	3.20
SENIOR DATA SCIENTIST	E245	Nian	Zhen	RETAIL	2	3.20
SENIOR DATA SCIENTIST	E260	Roy	Collins	RETAIL	3	3.20
ASSOCIATE DATA SCIEN...	E403	Steve	Hoffman	FINANCE	3	2.50
ASSOCIATE DATA SCIEN...	E478	David	Smith	RETAIL	4	2.50
ASSOCIATE DATA SCIEN...	E505	Chad	Wilson	HEALTHCARE	2	2.50
ASSOCIATE DATA SCIEN...	E532	Claire	Brennan	AUTOMOTIVE	1	2.50
JUNIOR DATA SCIENTIST	E620	Katrina	Allen	RETAIL	1	2.50
JUNIOR DATA SCIENTIST	E640	Jenifer	Jhones	RETAIL	4	2.50
LEAD DATA SCIENTIST	E005	Eric	Hoffman	FINANCE	3	2.50
LEAD DATA SCIENTIST	E010	William	Butler	AUTOMOTIVE	2	2.50