ScienceQtech Employee Performance Mapping

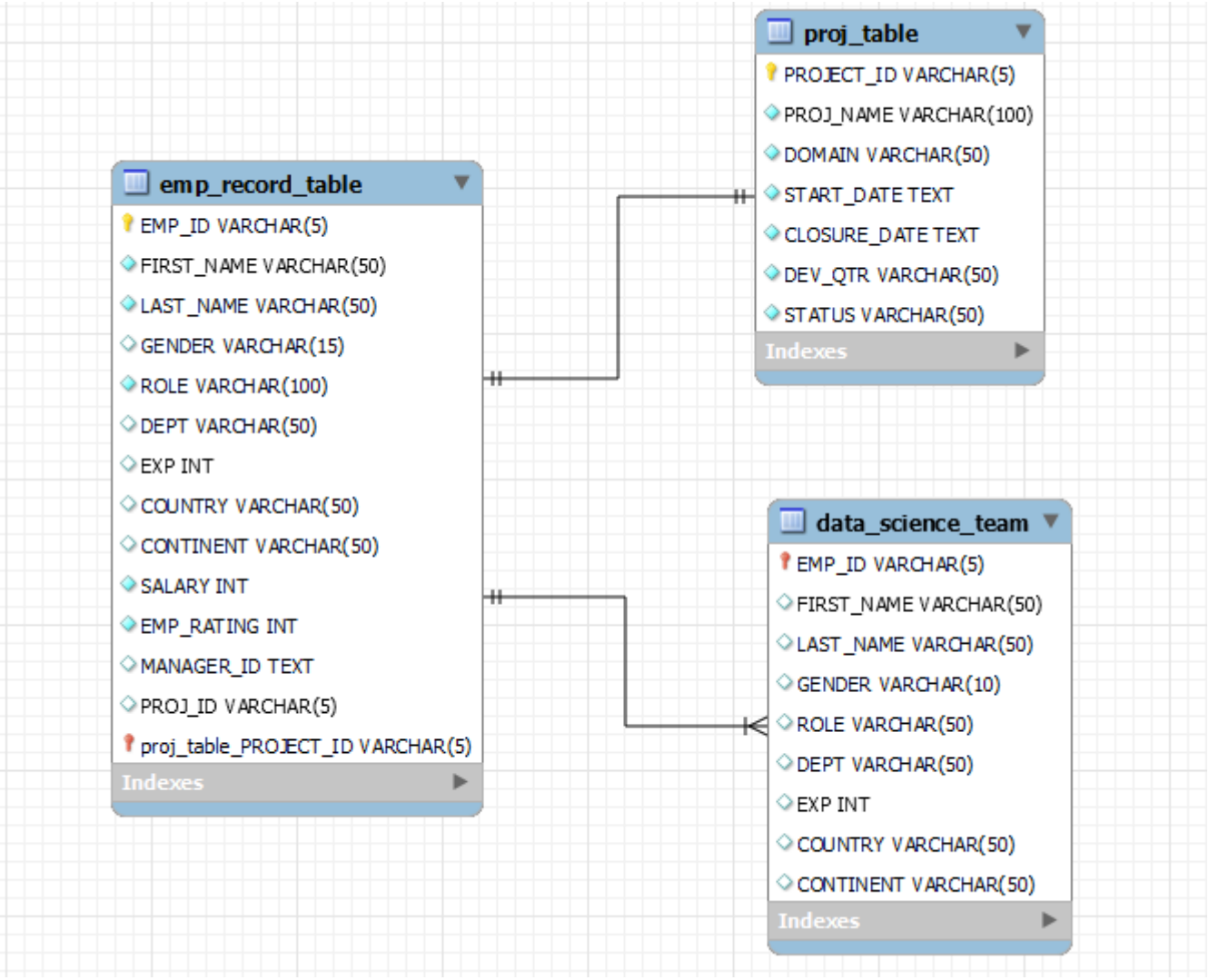
1. Create a database named employee, then

   >>> CREATE DATABASE employee;

- import **data_science_team.csv proj_table.csv** and **emp_record_table.csv** into the **employee** database from the given resources.

  >>> Right click on Table Tab >> Click on Table Data Import Wizard >> Select file Path >> import data

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.

```
SELECT
        EMP_ID,
        FIRST_NAME,
   LAST_NAME,
   GENDER,
   DEPT
FROM emp_record_table;
```

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
NULL	NULL	NULL	NULL	NULL

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**

```
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
NULL	NULL	NULL	NULL	NULL	NULL

- **greater than four**

```
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
NULL	NULL	NULL	NULL	NULL	NULL

- **between two and four**

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

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

NAME	DEPT
Eric Hoffman	FINANCE
Emily Grove	FINANCE
Steve Hoffman	FINANCE

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

        employee.EMP_ID,

        CONCAT(employee.FIRST_NAME, ' ',employee.LAST_NAME) AS Employee_Name,

        manager.MANAGER_ID,

        CONCAT(manager.FIRST_NAME, ' ',manager.LAST_NAME) AS Manager_Name,

         manager.ROLE AS ROLE

FROM  emp_record_table  employee

JOIN emp_record_table  manager

ON employee.MANAGER_ID = manager.EMP_ID;
```

EMP_ID	Employee_Name	MANAGER_ID	Manager_Name	ROLE
E005	Eric Hoffman	E001	Emily Grove	MANAGER
E010	William Butler	E001	Pete Allen	MANAGER
E052	Dianna Wilson	E001	Patrick Voltz	MANAGER
E057	Dorothy Wilson	E001	Patrick Voltz	MANAGER
E204	Karene Nowak	E001	Pete Allen	MANAGER
E245	Nian Zhen	E001	Janet Hale	MANAGER
E260	Roy Collins	E001	Janet Hale	MANAGER
E403	Steve Hoffman	E001	Emily Grove	MANAGER
E478	David Smith	E001	Janet Hale	MANAGER
E505	Chad Wilson	E001	Patrick Voltz	MANAGER
E532	Claire Brennan	E001	Pete Allen	MANAGER
E620	Katrina Allen	E001	Tracy Norris	MANAGER
E640	Jenifer Jhones	E001	Tracy Norris	MANAGER
E083	Patrick Voltz	NULL	Arthur Black	PRESIDENT
E103	Emily Grove	NULL	Arthur Black	PRESIDENT
E428	Pete Allen	NULL	Arthur Black	PRESIDENT
E583	Janet Hale	NULL	Arthur Black	PRESIDENT
E612	Tracy Norris	NULL	Arthur Black	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.

```
SELECT

        EMP_ID,

    FIRST_NAME,

    LAST_NAME,

    DEPT AS Department

FROM  emp_record_table
```

```
WHERE DEPT = 'HEALTHCARE'

UNION

SELECT

        EMP_ID,

   FIRST_NAME,

   LAST_NAME,

   DEPT AS Department

FROM  emp_record_table

WHERE DEPT = 'FINANCE';
```

EMP_ID	FIRST_NAME	LAST_NAME	Department
E052	Dianna	Wilson	HEALTHCARE
E057	Dorothy	Wilson	HEALTHCARE
E083	Patrick	Voltz	HEALTHCARE
E505	Chad	Wilson	HEALTHCARE
E005	Eric	Hoffman	FINANCE
E103	Emily	Grove	FINANCE
E403	Steve	Hoffman	FINANCE

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,

   ROLE,

   DEPT,

        MAX(EMP_RATING)

FROM   emp_record_table

GROUP BY DEPT;
```

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	MAX(EMP_RATING)
E001	Arthur	Black	PRESIDENT	ALL	5
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	4
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	5
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	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.

```
SELECT

   ROLE,

   MIN(SALARY) AS Min_Sal,

   MAX(SALARY) AS Max_Sal

FROM emp_record_table
```

ROLE	Min_Sal	Max_Sal
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

GROUP BY ROLE;

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,
        ROLE,
        DEPT,
        EXP,
        ROW_NUMBER() OVER (ORDER BY EXP DESC) AS Ranking
FROM emp_record_table ;
```

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EXP	Ranking
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	4
E583	Janet	Hale	MANAGER	RETAIL	14	5
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	13
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	17
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 six thousand. Take data from the employee record table.

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

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
E612	Tracy	Norris	INDIA	8500

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

```
SELECT
        EMP_ID,
        FIRST_NAME,
   LAST_NAME,
   EXP
FROM  emp_record_table
WHERE EMP_ID IN
                (SELECT EMP_ID
                 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
E612	Tracy	Norris	13
NULL	NULL	NULL	NULL

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 $$
CREATE PROCEDURE  get_employee_exp()
BEGIN
SELECT * FROM emp_record_table WHERE EXP > 3;
END$$
CALL get_employee_exp();
```

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID
E001	Arthur	Black	M	PRESIDENT	ALL	20	USA	NORTH AMERICA	16500	5	NULL	NULL
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000	2	E428	P204
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
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500	4	E001	NULL
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500	5	E428	P204
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500	2	E583	P109
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000	3	E583	NA
E403	Steve	Hoffman	M	ASSOCIATE DATA SCIEN...	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL
E505	Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103
E583	Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000	2	E001	NULL
E612	Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500	4	E001	NULL

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.

```
DELIMITER $$

CREATE FUNCTION employee_job_profile(EXP int)

RETURNS VARCHAR(50)

DETERMINISTIC

BEGIN

    DECLARE employee_job_profile VARCHAR(50);

     IF EXP <= 2 THEN

            SET employee_job_profile = 'JUNIOR DATA SCIENTIST';

     ELSEIF EXP BETWEEN 2 AND 5 THEN

            SET employee_job_profile = 'ASSOCIATE DATA SCIENTIST';

     ELSEIF EXP BETWEEN 5 AND 10 THEN

            SET employee_job_profile = 'SENIOR DATA SCIENTIST';

    ELSEIF EXP BETWEEN 10 AND 12 THEN

            SET employee_job_profile = 'LEAD DATA SCIENTIST';

    ELSEIF EXP BETWEEN 12 AND 16 THEN

            SET employee_job_profile = 'MANAGER';

     END IF;

    RETURN (employee_job_profile);

END$$

SELECT EMP_ID, FIRST_NAME, EXP, employee_job_profile(EXP)

FROM emp_record_table;
```

EMP_ID	FIRST_NAME	EXP	employee_job_profile(EXP)
E001	Arthur	20	NULL
E005	Eric	11	LEAD DATA SCIENTIST
E010	William	12	LEAD DATA SCIENTIST
E052	Dianna	6	SENIOR DATA SCIENTIST
E057	Dorothy	9	SENIOR DATA SCIENTIST
E083	Patrick	15	MANAGER
E103	Emily	14	MANAGER
E204	Karene	8	SENIOR DATA SCIENTIST
E245	Nian	6	SENIOR DATA SCIENTIST
E260	Roy	7	SENIOR DATA SCIENTIST
E403	Steve	4	ASSOCIATE DATA SCIENT...
E428	Pete	14	MANAGER
E478	David	3	ASSOCIATE DATA SCIENT...
E505	Chad	5	ASSOCIATE DATA SCIENT...
E532	Claire	3	ASSOCIATE DATA SCIENT...
E583	Janet	14	MANAGER
E612	Tracy	13	MANAGER
E620	Katrina	2	JUNIOR DATA SCIENTIST
E640	Jenifer	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.

```
CREATE INDEX idx_first_name ON emp_record_table(FIRST_NAME);

EXPLAIN SELECT EMP_ID, FIRST_NAME, LAST_NAME

FROM emp_record_table

WHERE  FIRST_NAME = 'Eric';
```

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	emp_record_table	NULL	ref	idx_first_name	idx_first_name	202	const	1	100.00	NULL

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 EMP_ID, FIRST_NAME, LAST_NAME,

   ROLE, DEPT, EXP, SALARY, EMP_RATING,

   (0.05 * SALARY)*EMP_RATING AS Bonus

FROM emp_record_table;
```

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EXP	SALARY	EMP_RATING	Bonus
E001	Arthur	Black	PRESIDENT	ALL	20	16500	5	4125.00
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	11	8500	3	1275.00
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	12	9000	2	900.00
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	6	5500	5	1375.00
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	9	7700	1	385.00
E083	Patrick	Voltz	MANAGER	HEALTHCARE	15	9500	5	2375.00
E103	Emily	Grove	MANAGER	FINANCE	14	10500	4	2100.00
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	7500	5	1875.00
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	6	6500	2	650.00
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	7	7000	3	1050.00
E403	Steve	Hoffman	ASSOCIATE DATA SCIEN...	FINANCE	4	5000	3	750.00
E428	Pete	Allen	MANAGER	AUTOMOTIVE	14	11000	4	2200.00
E478	David	Smith	ASSOCIATE DATA SCIEN...	RETAIL	3	4000	4	800.00
E505	Chad	Wilson	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	5000	2	500.00
E532	Claire	Brennan	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	4300	1	215.00
E583	Janet	Hale	MANAGER	RETAIL	14	10000	2	1000.00
E612	Tracy	Norris	MANAGER	RETAIL	13	8500	4	1700.00
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	2	3000	1	150.00
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	1	2800	4	560.00

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

```
SELECT EMP_ID, FIRST_NAME,LAST_NAME, COUNTRY,CONTINENT, AVG(SALARY)

FROM emp_record_table

GROUP BY CONTINENT,COUNTRY;
```

EMP_ID	FIRST_NAME	LAST_NAME	COUNTRY	CONTINENT	AVG(SALARY)
E001	Arthur	Black	USA	NORTH AMERICA	9440.0000
E010	William	Butler	FRANCE	EUROPE	9000.0000
E052	Dianna	Wilson	CANADA	NORTH AMERICA	7000.0000
E204	Karene	Nowak	GERMANY	EUROPE	7600.0000
E245	Nian	Zhen	CHINA	ASIA	6500.0000
E260	Roy	Collins	INDIA	ASIA	6166.6667
E478	David	Smith	COLOMBIA	SOUTH AMERICA	5600.0000