Employee Performance Mapping

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.

```
1   -- ------------------------------------------------------------------------------------------------------------------------ action 1 --
2   ## Create a database named employee,
3
4   CREATE DATABASE employee;
5
6   ## then import data_science_team.csv proj_table.csv and emp_record_table.csv into the employee database from the given resources.
7
8   use employee;
9   show databases;
10  show tables;
```

Result

Result Grid | Filter Rows:

Database
aircargo
csv
employee
employee_db
information_schema
mysql
performance_schema
sys

Result 1

Result Grid | Filter Rows:

Tables_in_employee
data_science_team
emp_record_table
highsalaryemployees
proj_table

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.

```
12    -- ---------------------------------------------------------------------------------------------------------------------- action 3 --
13    ## Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPARTMENT from the employee record table
14    ##and make a list of employees and details of their department.
15
16 •  select *
17    from employee.emp_record_table;
18
19 •  select emp_id, first_name, last_name, gender, dept
20    from employee.emp_record_table;
```

Result

Result Grid | Filter Rows: | Export:

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

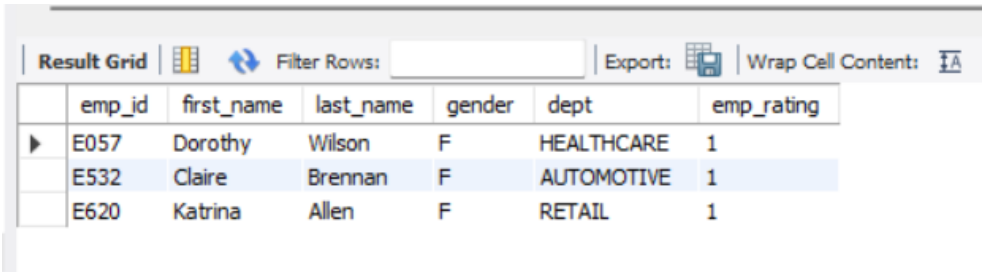
emp_record_table 3 ×

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

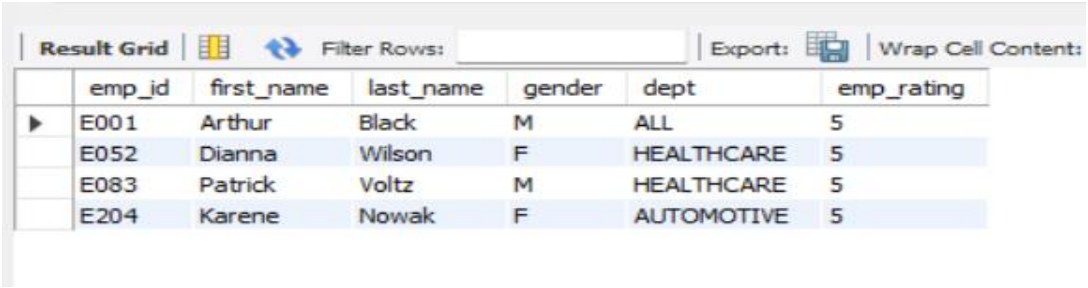
```sql
-- ---------------------------------------------------------------------------------------------------------------------- action 4 --
## Write a query to fetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPARTMENT, and EMP_RATING if the EMP_RATING is:
## less than two
## greater than four
## between two and four

select emp_id, first_name, last_name, gender, dept, emp_rating
from 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 between 2 and 4;
```

Result



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

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



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

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

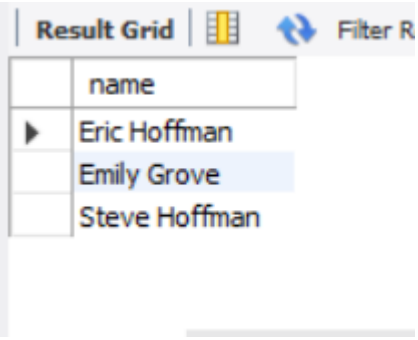
Result Grid | Filter Rows: | Export: | Wrap Cell Conter

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.

```
40  -- ------------------------------------------------------------------------------------------------------------
41  ## Write a query to concatenate the FIRST_NAME and the LAST_NAME of employees in the Finance department
42  ## from the employee table and then give the resultant column alias as NAME.
43
44  select concat(first_name,' ',last_name) as name
45  from employee.emp_record_table
46  where dept = 'finance';
47
```

Result



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

```
48  -- ------------------------------------------------------------------------------------------------------------
49  ## Write a query to list only those employees who have someone reporting to them.
50  ## Also, show the number of reporters (including the President).
51  ##  प्रश्न के अनुसार, जिन कर्मचारियों के अधीन कुछ रिपोर्टर (अधीनस्थ कर्मचारी) हैं, उन्हें सूचीबद्ध करना है। इसीलिए मुझे inner join का use करना होगा
52
53  select
54      m.EMP_ID,
55      concat(m.first_name,'   ',m.last_name) AS MANAGER_NAME,
56      m.ROLE,
57      m.DEPT,
58      COUNT(r.EMP_ID) AS number_of_reporters  ## रिपोर्टरों की अनुमानित संख्या दर्शाई जानी चाहिए।
59  from emp_record_table as m
60  join emp_record_table as r
61  on m.emp_id=r.manager_id
62  GROUP BY                        ## error code मे group by करनेको कहगाया है। क्योंकि आगे हमने count का उपयोग किया है इसीलिए
63      m.EMP_ID, m.FIRST_NAME, m.LAST_NAME, m.ROLE, m.DEPT
64  ORDER BY                        ## अध्यक्ष को पहेले recode मे दिखाय देना चाहिए
65      number_of_reporters DESC;
```

Result

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

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

Result 8

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.

```
67  -- ------------------------------------------------------------------------------------------------------------
68  ## Write a query to list down all the employees from the healthcare and finance departments using union.
69  ## Take data from the employee record table.
70
71  select * from emp_record_table
72  where dept in ('healthcare', 'finance');
73
74  SELECT * FROM emp_record_table WHERE DEPT = 'HEALTHCARE'
75  UNION
76  SELECT * FROM emp_record_table WHERE DEPT = 'FINANCE';
```

Result

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	5000	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

Result 9

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.

```sql
-- ------------------------------------------------------------------------------------------------------------------------
## 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.
## प्रत्येक कर्मचारी का विवरण दिखाया जाना है (EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPARTMENT, and EMP_RATING)
## इसके अलावा DEPARTMENT से संबद्ध प्रत्येक कर्मचारी के लिए उच्चतम EMP_RATING वाला कर्मचारी भी दिखाना है।
## लेकिन प्रत्येक कर्मचारी के विवरण के साथ grouped by dept सीधे SQL में संभव नहीं है।
## इसलिए GROUP BY के बजाए WINDOW FUNCTION का उपयोग करना सही होगा. अर्थात MAX(EMP_RATING) OVER (PARTITION BY DEPT), ताकि प्रत्येक पंक्ति में उस विभाग की उच्चतम रेटिंग दिखाई जा सके।

SELECT
    EMP_ID,
    concat(first_name,'   ',last_name) AS NAME,
    ROLE,
    DEPT,
    EMP_RATING,
    MAX(EMP_RATING) OVER (PARTITION BY DEPT) AS MAX_DEPT_RATING
FROM emp_record_table;
```

Result

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

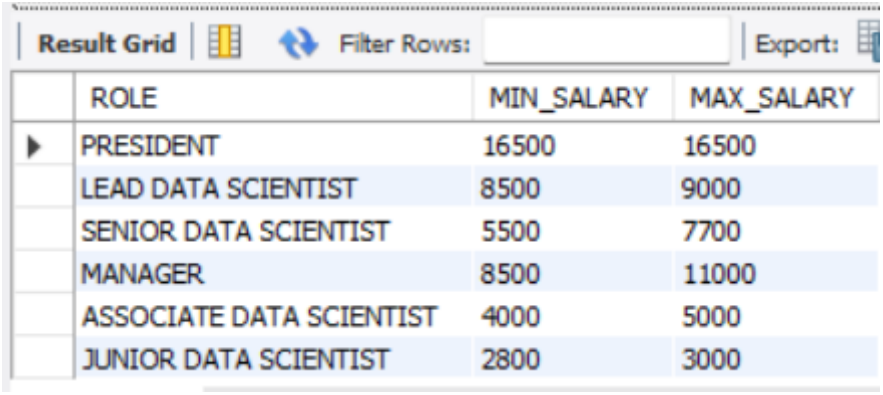
EMP_ID	NAME	ROLE	DEPT	EMP_RATING	MAX_DEPT_RATING
E001	Arthur Black	PRESIDENT	ALL	5	5
E010	William Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	2	5
E204	Karene Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	5	5
E428	Pete Allen	MANAGER	AUTOMOTIVE	4	5
E532	Claire Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	1	5
E005	Eric Hoffman	LEAD DATA SCIENTIST	FINANCE	3	4
E103	Emily Grove	MANAGER	FINANCE	4	4
E403	Steve Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	3	4
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

Result 10

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.

```sql
-- ------------------------------------------------------------------------------------------------------------------------
## 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;
```

Result

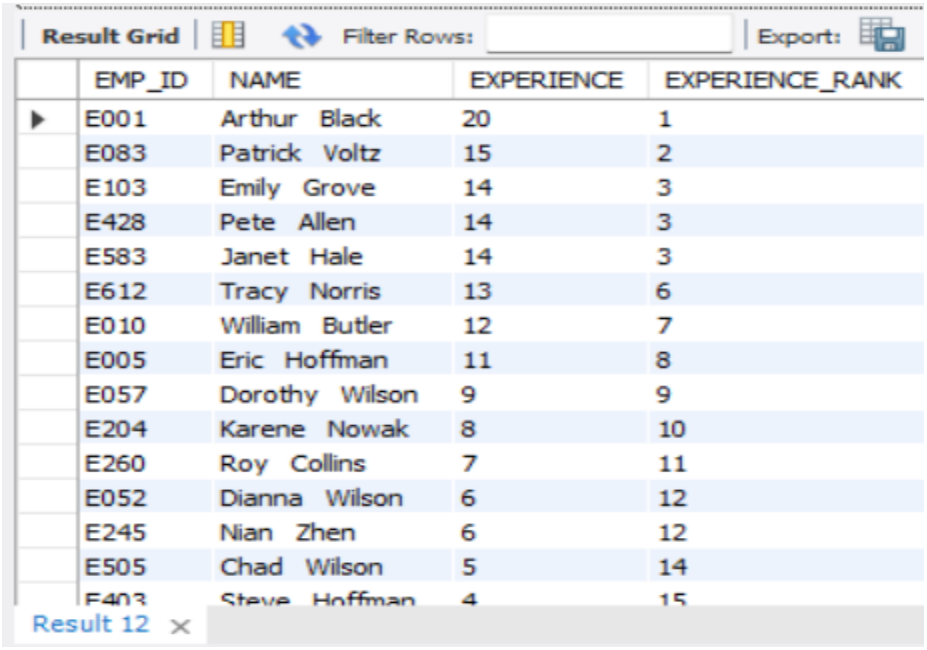


ROLE	MIN_SALARY	MAX_SALARY
PRESIDENT	16500	16500
LEAD DATA SCIENTIST	8500	9000
SENIOR DATA SCIENTIST	5500	7700
MANAGER	8500	11000
ASSOCIATE DATA SCIENTIST	4000	5000
JUNIOR DATA SCIENTIST	2800	3000

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

```
106     -- ------------------------------------------------------------------------
107     ## Write a query to assign ranks to each employee based on their experience.
108     ## Take data from the employee record table.
109     ## use  WINDOW FUNCTION -> ranking functions -> rank()
110
111 •   select
112         EMP_ID,
113         concat(first_name,'    ',last_name) as NAME,
114         exp AS EXPERIENCE,
115         rank() over(order by exp desc) as EXPERIENCE_RANK
116     from emp_record_table;
```

Result



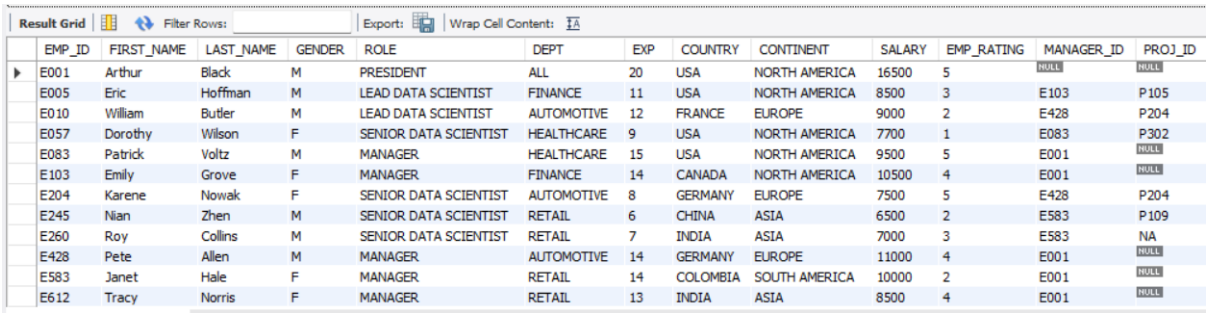
EMP_ID	NAME	EXPERIENCE	EXPERIENCE_RANK
E001	Arthur Black	20	1
E083	Patrick Voltz	15	2
E103	Emily Grove	14	3
E428	Pete Allen	14	3
E583	Janet Hale	14	3
E612	Tracy Norris	13	6
E010	William Butler	12	7
E005	Eric Hoffman	11	8
E057	Dorothy Wilson	9	9
E204	Karene Nowak	8	10
E260	Roy Collins	7	11
E052	Dianna Wilson	6	12
E245	Nian Zhen	6	12
E505	Chad Wilson	5	14
E403	Steve Hoffman	4	15

Result 12

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.

```
118  -- ----------------------------------------------------------------------------------------------------------------
119  ##  Write a query to create a view that displays employees in various countries whose salary is more than six thousand.
120  ## Take data from the employee record table.
121
122  create view HighSalaryEmployees as
123  select *
124  from emp_record_table
125  where salary > 6000;
126
127  SELECT * FROM HighSalaryEmployees;
```

Result



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
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
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
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL
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

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

```
129  -- ----------------------------------------------------------------------------------------------------------------
130  ##  Write a nested query to find employees with experience of more than ten years.
131  ##  Take data from the employee record table.
132
133  select *
134  from emp_record_table
135  where exp > 10;
136
137  select *
138  from emp_record_table
139  where emp_id in (
140      select emp_id
141      from emp_record_table
142      where exp > 10
143  );
```

Result

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
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
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
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000	4	E001	NULL
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

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.

```
145    -- ----------------------------------------------------------------------------------------------------------------------------
146    ##  Write a query to create a stored procedure to retrieve the details of the employees whose experience is more than three years.
147    ## Take data from the employee record table.
148
149    delimiter //
150 •  CREATE PROCEDURE Get_Experience_Employees()
151    BEGIN
152        SELECT *
153        FROM emp_record_table
154        WHERE EXP > 3;
155    end //
156    delimiter ;
157
158 •  CALL Get_Experience_Employees();
```

Result

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
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	1000(	10000	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.
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 //

CREATE FUNCTION GetStandardJobProfile(exp INT) RETURNS VARCHAR(50)
DETERMINISTIC
BEGIN
  DECLARE profile VARCHAR(50);

  IF exp <= 2 THEN
    SET profile = 'JUNIOR DATA SCIENTIST';
  ELSEIF exp > 2 AND exp <= 5 THEN
    SET profile = 'ASSOCIATE DATA SCIENTIST';
  ELSEIF exp > 5 AND exp <= 10 THEN
    SET profile = 'SENIOR DATA SCIENTIST';
  ELSEIF exp > 10 AND exp <= 12 THEN
    SET profile = 'LEAD DATA SCIENTIST';
  ELSEIF exp > 12 AND exp <= 16 THEN
    SET profile = 'MANAGER';
  ELSE
    SET profile = 'UNKNOWN';
  END IF;

  RETURN profile;
END //

DELIMITER ;
```

```
198     SELECT
199       e.emp_id,
200       e.exp,
201       p.PROJ_NAME,
202       GetStandardJobProfile(e.exp) AS expected_profile,
203       CASE
204         WHEN p.PROJ_NAME = GetStandardJobProfile(e.exp) THEN 'MATCH'
205         ELSE 'MISMATCH'
206       END AS result
207     FROM
208       emp_record_table e
209     JOIN
210       proj_table p
211     ON e.PROJ_ID = p.PROJECT_ID;
```

Result

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

emp_id	exp	PROJ_NAME	expected_profile	result
E005	11	Fraud Detection	LEAD DATA SCIENTIST	MISMATCH
E010	12	Supply Chain Management	LEAD DATA SCIENTIST	MISMATCH
E052	6	Drug Discovery	SENIOR DATA SCIENTIST	MISMATCH
E057	9	Early Detection of Lung Cancer	SENIOR DATA SCIENTIST	MISMATCH
E204	8	Supply Chain Management	SENIOR DATA SCIENTIST	MISMATCH
E245	6	Market Basket Analysis	SENIOR DATA SCIENTIST	MISMATCH
E403	4	Fraud Detection	ASSOCIATE DATA SCIENTIST	MISMATCH
E478	3	Market Basket Analysis	ASSOCIATE DATA SCIENTIST	MISMATCH
E505	5	Drug Discovery	ASSOCIATE DATA SCIENTIST	MISMATCH
E532	3	Supply Chain Management	ASSOCIATE DATA SCIENTIST	MISMATCH
E620	2	Customer Sentiment Analysis	JUNIOR DATA SCIENTIST	MISMATCH
E640	1	Customer Sentiment Analysis	JUNIOR DATA SCIENTIST	MISMATCH

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.

```
213 -- ------------------------------------------------------------------------------------------------------------------------
214 ## 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
215 ## checking the execution plan.
216
217 • EXPLAIN SELECT * FROM emp_record_table WHERE FIRST_NAME = 'Eric';
218
219 • CREATE INDEX idx_first_name ON emp_record_table(FIRST_NAME(50));
```

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

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	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).

```
221     -- ----------------------------------------
222     ## Write a query to calculate the bonus for all
223
224 •   SELECT
225       EMP_ID,
226       concat(first_name,'    ',last_name) AS NAME,
227       SALARY,
228       EMP_RATING,
229       (SALARY * 0.05 * EMP_RATING) AS BONUS
230     FROM emp_record_table;
```

Result

Result Grid | Filter Rows: | Export:

EMP_ID	NAME	SALARY	EMP_RATING	BONUS
E001	Arthur Black	16500	5	4125.00
E005	Eric Hoffman	8500	3	1275.00
E010	William Butler	9000	2	900.00
E052	Dianna Wilson	5500	5	1375.00
E057	Dorothy Wilson	7700	1	385.00
E083	Patrick Voltz	9500	5	2375.00
E103	Emily Grove	10500	4	2100.00
E204	Karene Nowak	7500	5	1875.00
E245	Nian Zhen	6500	2	650.00
E260	Roy Collins	7000	3	1050.00
E403	Steve Hoffman	5000	3	750.00
E428	Pete Allen	11000	4	2200.00
E478	David Smith	4000	4	800.00

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

```sql
## 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 Average_Salary
FROM emp_record_table
GROUP BY CONTINENT, COUNTRY
ORDER BY CONTINENT, COUNTRY;
```

Result

Result Grid | Filter Rows:

CONTINENT	COUNTRY	Average_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