Employee Performance Mapping

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COURSE- Data Acquisition and Manipulation using SQL

DATE OF SUBMISSON-08-03-2025

Pre-requisites

Cleaning the table excel file proj_table.csv.

- Changed the start_date and closure date to YYYY-MM-DD format as its required to import data into SQL.

	A	B	C	D	E	F	G	H	I
1	PROJECT_ID	PROJ_NAME	DOMAIN	START_DATE	CLOSURE_DATE			DEV_QTR	STATUS
2	P103	Drug Discovery	HEALTHCA	44292	44367	=TEXT(D2,"yyyy-mm-dd")		Q1	DONE
3	P105	Fraud Detection	FINANCE	44297	44372			Q1	DONE
4	P109	Market Basket Analysis	RETAIL	44298	44377			Q1	DELAYED
5	P204	Supply Chain Management	AUTOMOT	44392	44467			Q2	WIP
6	P302	Early Detection of Lung Cancer	HEALTHCA	44477	44548			Q3	YTS
7	P406	Customer Sentiment Analysis	RETAIL	44386	44463			Q2	WIP
8									

- Here what I did is changed Column D &E in text format then I extracted the text using =TEXT(D2,"yyyy-mm-dd")
- Dragged down to get the values for F column
- Similar was done for the G column

	A	B	C	D	E	F	G
1	PROJECT_I	PROJ_NAI	DOMAIN	START_DATE	CLOSURE_DATE		
2	P103	Drug Disc	HEALTHCA	44292	44367	2021-04-06	2021-06-20
3	P105	Fraud Det	FINANCE	44297	44372	2021-04-11	2021-06-25
4	P109	Market Ba	RETAIL	44298	44377	2021-04-12	2021-06-30
5	P204	Supply Ch	AUTOMOT	44392	44467	2021-07-15	2021-09-28
6	P302	Early Dete	HEALTHCA	44477	44548	2021-10-08	2021-12-18
7	P406	Customer	RETAIL	44386	44463	2021-07-09	2021-09-24
8							

- Now copy the values from F column and paste special select values into D
- Do the similar for the G column
- Delete the F and G column

	A	B	C	D	E	F	G
1	PROJECT_ID	PROJ_NAME	DOMAIN	START_DATE	CLOSURE DATE	DEV_QTR	STATUS
2	P103	Drug Discovery	HEALTHCARE	2021-04-11	2021-06-20	Q1	DONE
3	P105	Fraud Detection	FINANCE	2021-04-12	2021-06-25	Q1	DONE
4	P109	Market Basket Analysis	RETAIL	2021-07-15	2021-06-30	Q1	DELAYED
5	P204	Supply Chain Management	AUTOMOTIVE	2021-10-08	2021-09-28	Q2	WIP
6	P302	Early Detection of Lung Cancer	HEALTHCARE	2021-07-09	2021-12-18	Q3	YTS
7	P406	Customer Sentiment Analysis	RETAIL	2021-07-09	2021-09-24	Q2	WIP
8							

- Save back the file to proj_table.csv format
- You can cross check by opening the notepad that dates are in YYYY-MM-DD format or not.
- Replacing NULL values in emp_record_table.csv by find and replace to blanks.

ACTION-1

Database Creation, Table creation and manual data loading into tables

```
create database employee;

USE employee;
```

Creating emp_record_table

```
CREATE TABLE emp_record_table (

EMP_ID VARCHAR(10),

FIRST_NAME VARCHAR(50),

LAST_NAME VARCHAR(50),

GENDER VARCHAR(10),

ROLE VARCHAR(50),

DEPT VARCHAR(50),

EXP INT,

COUNTRY VARCHAR(50),

CONTINENT VARCHAR(50),

SALARY DECIMAL(10,2),

EMP_RATING INT,

MANAGER_ID VARCHAR(10),

PROJ_ID VARCHAR(10)

);
```

Loading data in the table

```
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/emp_record_table.csv'

INTO TABLE emp_record_table

FIELDS TERMINATED BY ','

IGNORE

1 ROWS;
```

Creating proj_table

```
CREATE TABLE proj_table (

PROJECT_ID VARCHAR(10),

PROJ_NAME VARCHAR(100),

DOMAIN VARCHAR(50),
```

```
START_DATE DATE,
CLOSURE_DATE DATE,
DEV_QTR VARCHAR(10),
STATUS VARCHAR(20)
);
```

Loading data in proj_table

```
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/proj_table.csv'
INTO TABLE proj_table
FIELDS TERMINATED BY ','
IGNORE
1 ROWS;
```

Creating data_science_team table

```
CREATE TABLE data_science_team (
   EMP_ID VARCHAR(10),
   FIRST_NAME VARCHAR(50),
   LAST_NAME VARCHAR(50),
   GENDER VARCHAR(10),
   ROLE VARCHAR(50),
   DEPT VARCHAR(50),
   EXP INT,
   COUNTRY VARCHAR(20),
   CONTINENT VARCHAR(50)
   );
```

Loading data in data_science_team table

```
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/data_science_team.csv'
INTO TABLE data_science_team
FIELDS TERMINATED BY ','
IGNORE
1 ROWS;
```

```
59 •  SELECT * FROM data_science_team LIMIT 10;
```

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

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT
E005	Eric	Hoffman	M	"LEAD DATA SCIENTIST"	FINANCE	11	USA	"NORTH AMERICA"
E010	William	Butler	M	"LEAD DATA SCIENTIST"	AUTOMOTIVE	12	FRANCE	EUROPE
E052	Dianna	Wilson	F	"SENIOR DATA SCIENTIST"	HEALTHCARE	6	CANADA	"NORTH AMERICA"
E057	Dorothy	Wilson	F	"SENIOR DATA SCIENTIST"	HEALTHCARE	9	USA	"NORTH AMERICA"
E204	Karene	Nowak	F	"SENIOR DATA SCIENTIST"	AUTOMOTIVE	8	GERMANY	EUROPE
E245	Nian	Zhen	M	"SENIOR DATA SCIENTIST"	RETAIL	6	CHINA	ASIA
E260	Roy	Collins	M	"SENIOR DATA SCIENTIST"	RETAIL	7	INDIA	ASIA
E403	Steve	Hoffman	M	"ASSOCIATE DATA SCIENTIST"	FINANCE	4	USA	"NORTH AMERICA"
E478	David	Smith	M	"ASSOCIATE DATA SCIENTIST"	RETAIL	3	COLOMBIA	"SOUTH AMERICA"
E505	Chad	Wilson	M	"ASSOCIATE DATA SCIENTIST"	HEALTHCARE	5	CANADA	"NORTH AMERICA"

```
60 •  SELECT * FROM emp_record_table LIMIT 10;
```

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

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	16500.00	5		
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500.00	3	E103	P105
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000.00	2	E428	P204
E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500.00	5	E083	P103
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700.00	1	E083	P302
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500.00	5	E001	
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500.00	4	E001	
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500.00	5	E428	P204
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500.00	2	E583	P109
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000.00	3	E583	NA

```
61 •  SELECT * FROM proj_table LIMIT 6;
```

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

PROJECT_ID	PROJ_NAME	DOMAIN	START_DATE	CLOSURE_DATE	DEV_QTR	STATUS
P103	Drug Discovery	HEALTHCARE	2021-04-06	2021-06-20	Q1	DONE
P105	Fraud Detection	FINANCE	2021-04-11	2021-06-25	Q1	DONE
P109	Market Basket Analysis	RETAIL	2021-04-12	2021-06-30	Q1	DELAYED
P204	Supply Chain Management	AUTOMOTIVE	2021-07-15	2021-09-28	Q2	WIP
P302	Early Detection of Lung Cancer	HEALTHCARE	2021-10-08	2021-12-18	Q3	YTS
P406	Customer Sentiment Analysis	RETAIL	2021-07-09	2021-09-24	Q2	WIP

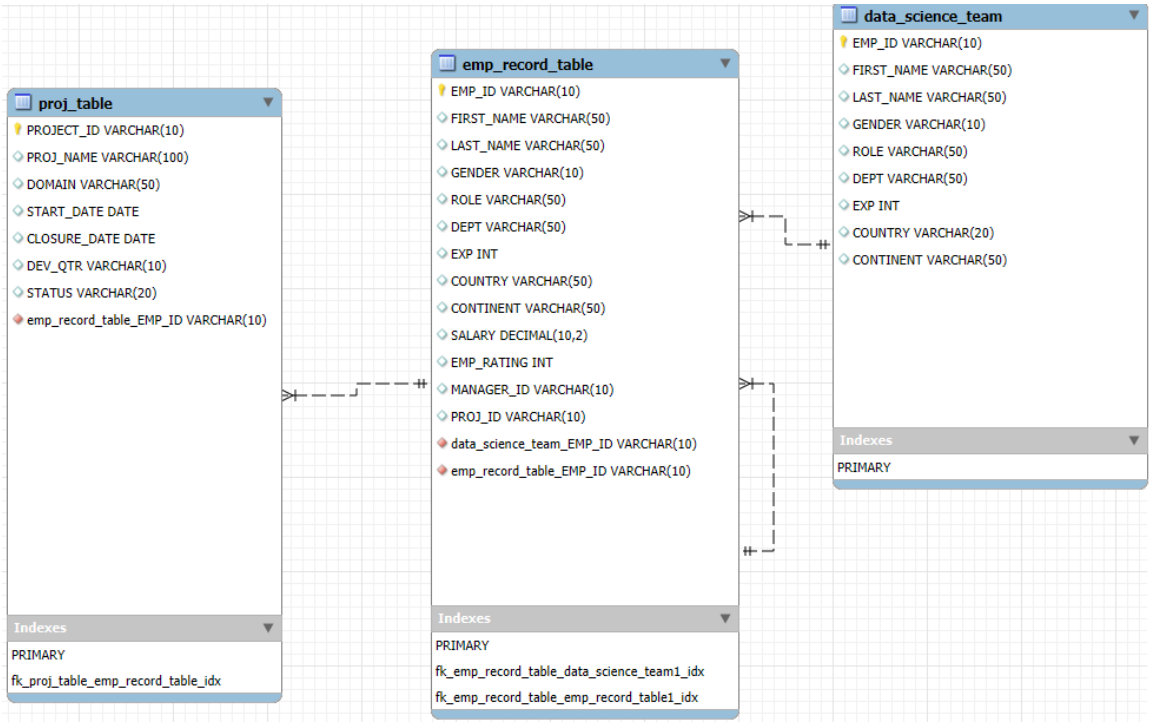
Output

Action Output

#	Time	Action
1	00:42:21	create database employee
2	00:42:23	USE employee
3	00:42:29	CREATE TABLE emp_record_table (EMP_ID VARCHAR(10), FIRST_NAME VARCHAR(50), LAST_NAME VARCHAR(50), GENDER VARCHAR(10), F
4	00:42:38	LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/emp_record_table.csv' INTO TABLE emp_record_table FIELDS TERMINA
5	00:43:09	CREATE TABLE proj_table (PROJECT_ID VARCHAR(10), PROJ_NAME VARCHAR(100), DOMAIN VARCHAR(50), START_DATE DATE, CLOSURE
6	00:43:14	LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/proj_table.csv' INTO TABLE proj_table FIELDS TERMINATED BY ',' IGNO
7	00:43:52	CREATE TABLE data_science_team (EMP_ID VARCHAR(10), FIRST_NAME VARCHAR(50), LAST_NAME VARCHAR(50), GENDER VARC
8	00:44:15	LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/data_science_team.csv' INTO TABLE data_science_team FIELDS TERMI
9	00:44:34	SELECT * FROM data_science_team LIMIT 10
10	00:46:39	SELECT * FROM emp_record_table LIMIT 10
11	00:47:30	SELECT * FROM proj_table LIMIT 6

ACTION-2

Create an ER diagram for the given employee database



ACTION-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;

```
63 •  SELECT EMP_ID, FIRST_NAME, LAST_NAME, GENDER, DEPT FROM emp_record_table;
64
65
```

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

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

.

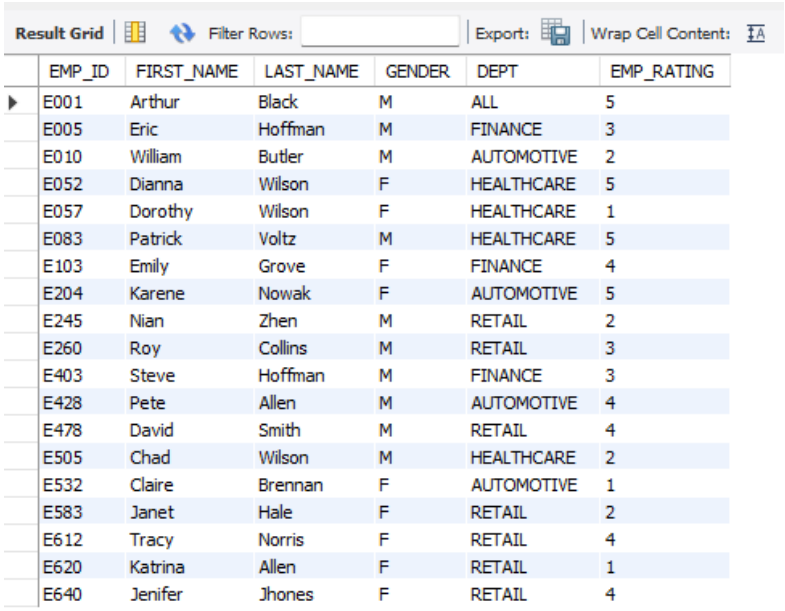
ACTION-4

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 emp_record_table

WHERE EMP_RATING < 2 OR EMP_RATING > 4 OR (EMP_RATING BETWEEN 2 AND 4);



EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_RATING
E001	Arthur	Black	M	ALL	5
E005	Eric	Hoffman	M	FINANCE	3
E010	William	Butler	M	AUTOMOTIVE	2
E052	Dianna	Wilson	F	HEALTHCARE	5
E057	Dorothy	Wilson	F	HEALTHCARE	1
E083	Patrick	Voltz	M	HEALTHCARE	5
E103	Emily	Grove	F	FINANCE	4
E204	Karene	Nowak	F	AUTOMOTIVE	5
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
E532	Claire	Brennan	F	AUTOMOTIVE	1
E583	Janet	Hale	F	RETAIL	2
E612	Tracy	Norris	F	RETAIL	4
E620	Katrina	Allen	F	RETAIL	1
E640	Jenifer	Jhones	F	RETAIL	4

ACTION-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

FROM emp_record_table

WHERE DEPT = 'Finance';

NAME
Eric Hoffman
Emily Grove
Steve Hoffman

ACTION-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 MANAGER_ID, COUNT(EMP_ID) AS Num_Reporters

FROM emp_record_table

WHERE MANAGER_ID IS NOT NULL

GROUP BY MANAGER_ID;
```

Result Grid | Filter Rows:

MANAGER_ID	Num_Reporters
	1
E103	2
E428	3
E083	3
E001	5
E583	3
E612	2

ACTION-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 * FROM emp_record_table WHERE DEPT = 'Healthcare'

UNION

SELECT * FROM emp_record_table WHERE DEPT = 'Finance';
```

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	5500.00	5	E083	P103
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700.00	1	E083	P302
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500.00	5	E001	
E505	Chad	Wilson	M	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5	CANADA	NORTH AMERICA	5000.00	2	E083	P103
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500.00	3	E103	P105
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500.00	4	E001	
E403	Steve	Hoffman	M	ASSOCIATE DATA SCIENTIST	FINANCE	4	USA	NORTH AMERICA	5000.00	3	E103	P105

ACTION 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 DEPT, EMP_ID, FIRST_NAME, LAST_NAME, ROLE, EMP_RATING,

    MAX(EMP_RATING) OVER(PARTITION BY DEPT) AS Max_Rating

FROM emp_record_table;
```

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

DEPT	EMP_ID	FIRST_NAME	LAST_NAME	ROLE	EMP_RATING	Max_Rating
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

ACTION9

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;
```

ROLE	Min_Salary	Max_Salary
PRESIDENT	16500.00	16500.00
LEAD DATA SCIENTIST	8500.00	9000.00
SENIOR DATA SCIENTIST	5500.00	7700.00
MANAGER	8500.00	11000.00
ASSOCIATE DATA SCIENTIST	4000.00	5000.00
JUNIOR DATA SCIENTIST	2800.00	3000.00

ACTION-10

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

Result Grid | Filter Rows: | Export:

EMP_ID	FIRST_NAME	LAST_NAME	EXP	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
E478	David	Smith	3	16
E532	Claire	Brennan	3	16
E620	Katrina	Allen	2	18
E640	Jenifer	Jhones	1	19

ACTION11

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 High_Salary_Employees AS

SELECT * FROM emp_record_table WHERE SALARY > 6000;

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	16500.00	5		
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500.00	3	E103	P105
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000.00	2	E428	P204
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700.00	1	E083	P302
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500.00	5	E001	
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500.00	4	E001	
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500.00	5	E428	P204
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500.00	2	E583	P109
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000.00	3	E583	NA
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000.00	4	E001	
E583	Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000.00	2	E001	
E612	Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500.00	4	E001	

ACTION-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 exp > (SELECT 10);

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

ACTION-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_Experienced_Employees()

BEGIN

  SELECT * FROM emp_record_table WHERE EXP > 3;

END //

DELIMITER ;

CALL Get_Experienced_Employees();
```

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	16500.00	5		
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500.00	3	E103	P105
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000.00	2	E428	P204
E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500.00	5	E083	P103
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700.00	1	E083	P302
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	15	USA	NORTH AMERICA	9500.00	5	E001	
E103	Emily	Grove	F	MANAGER	FINANCE	14	CANADA	NORTH AMERICA	10500.00	4	E001	
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500.00	5	E428	P204
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500.00	2	E583	P109
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000.00	3	E583	NA
E403	Steve	Hoffman	M	ASSOCIATE DATA SCIEN...	FINANCE	4	USA	NORTH AMERICA	5000.00	3	E103	P105
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	14	GERMANY	EUROPE	11000.00	4	E001	
E505	Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000.00	2	E083	P103
E583	Janet	Hale	F	MANAGER	RETAIL	14	COLOMBIA	SOUTH AMERICA	10000.00	2	E001	
E612	Tracy	Norris	F	MANAGER	RETAIL	13	INDIA	ASIA	8500.00	4	E001	

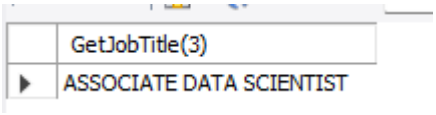
ACTION-14.

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'.

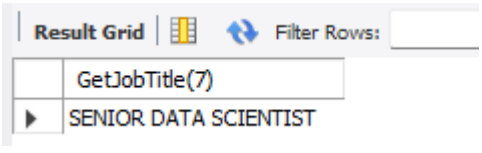
```
DELIMITER //

CREATE FUNCTION GetJobTitle(exp INT) RETURNS VARCHAR(50)
DETERMINISTIC
BEGIN
  RETURN CASE
    WHEN exp < 2 THEN 'JUNIOR DATA SCIENTIST'
    WHEN exp >= 2 AND exp < 5 THEN 'ASSOCIATE DATA SCIENTIST'
    WHEN exp >= 5 AND exp < 10 THEN 'SENIOR DATA SCIENTIST'
    WHEN exp >= 10 AND exp < 12 THEN 'LEAD DATA SCIENTIST'
    WHEN exp >= 12 AND exp < 16 THEN 'MANAGER'
    ELSE 'UNKNOWN'
  END;
END //
DELIMITER ;
```

HOW TO USE THE FUNCTION

```
SELECT GetJobTitle(3);  -- Expected Output: 'ASSOCIATE DATA SCIENTIST'
SELECT GetJobTitle(7);  -- Expected Output: 'SENIOR DATA SCIENTIST'
SELECT GetJobTitle(15); -- Expected Output: 'MANAGER'O USE THE FUNCTION-
```

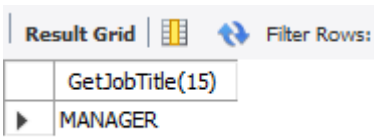


GetJobTitle(3)
ASSOCIATE DATA SCIENTIST



Result Grid | Filter Rows:

GetJobTitle(7)
SENIOR DATA SCIENTIST



Result Grid | Filter Rows:

GetJobTitle(15)
MANAGER

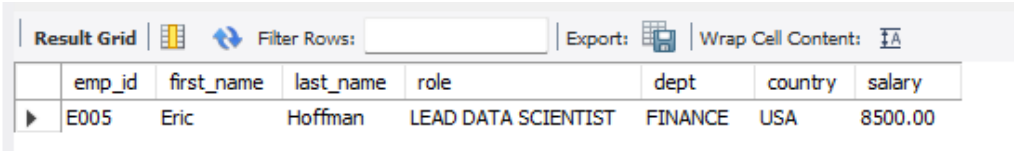
ACTION-15

.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.

INDEX CREATION

CREATE INDEX idx_firstname ON emp_record_table(FIRST_NAME);

SEARCH ERIC

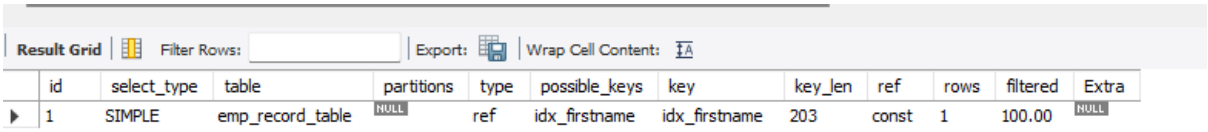


Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_id	first_name	last_name	role	dept	country	salary
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	USA	8500.00

CHECK

EXPLAIN SELECT emp_id, first_name, last_name, role, dept, country, salary FROM emp_record_table WHERE first_name = 'Eric';



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_firstname	idx_firstname	203	const	1	100.00	NULL

ACTION-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, SALARY, EMP_RATING,
  (0.05 * SALARY * EMP_RATING) AS Bonus
FROM emp_record_table;
```

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

EMP_ID	FIRST_NAME	LAST_NAME	SALARY	EMP_RATING	Bonus
E001	Arthur	Black	16500.00	5	4125.0000
E005	Eric	Hoffman	8500.00	3	1275.0000
E010	William	Butler	9000.00	2	900.0000
E052	Dianna	Wilson	5500.00	5	1375.0000
E057	Dorothy	Wilson	7700.00	1	385.0000
E083	Patrick	Voltz	9500.00	5	2375.0000
E103	Emily	Grove	10500.00	4	2100.0000
E204	Karene	Nowak	7500.00	5	1875.0000
E245	Nian	Zhen	6500.00	2	650.0000
E260	Roy	Collins	7000.00	3	1050.0000
E403	Steve	Hoffman	5000.00	3	750.0000
E428	Pete	Allen	11000.00	4	2200.0000
E478	David	Smith	4000.00	4	800.0000
E505	Chad	Wilson	5000.00	2	500.0000
E532	Claire	Brennan	4300.00	1	215.0000
E583	Janet	Hale	10000.00	2	1000.0000
E612	Tracy	Norris	8500.00	4	1700.0000
E620	Katrina	Allen	3000.00	1	150.0000
E640	Jenifer	Jhones	2800.00	4	560.0000

ACTION-17

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

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

FROM emp_record_table

GROUP BY COUNTRY, CONTINENT;
```

Result Grid | Filter Rows:

COUNTRY	CONTINENT	Avg_Salary
USA	NORTH AMERICA	9440.000000
FRANCE	EUROPE	9000.000000
CANADA	NORTH AMERICA	7000.000000
GERMANY	EUROPE	7600.000000
CHINA	ASIA	6500.000000
INDIA	ASIA	6166.666667
COLOMBIA	SOUTH AMERICA	5600.000000