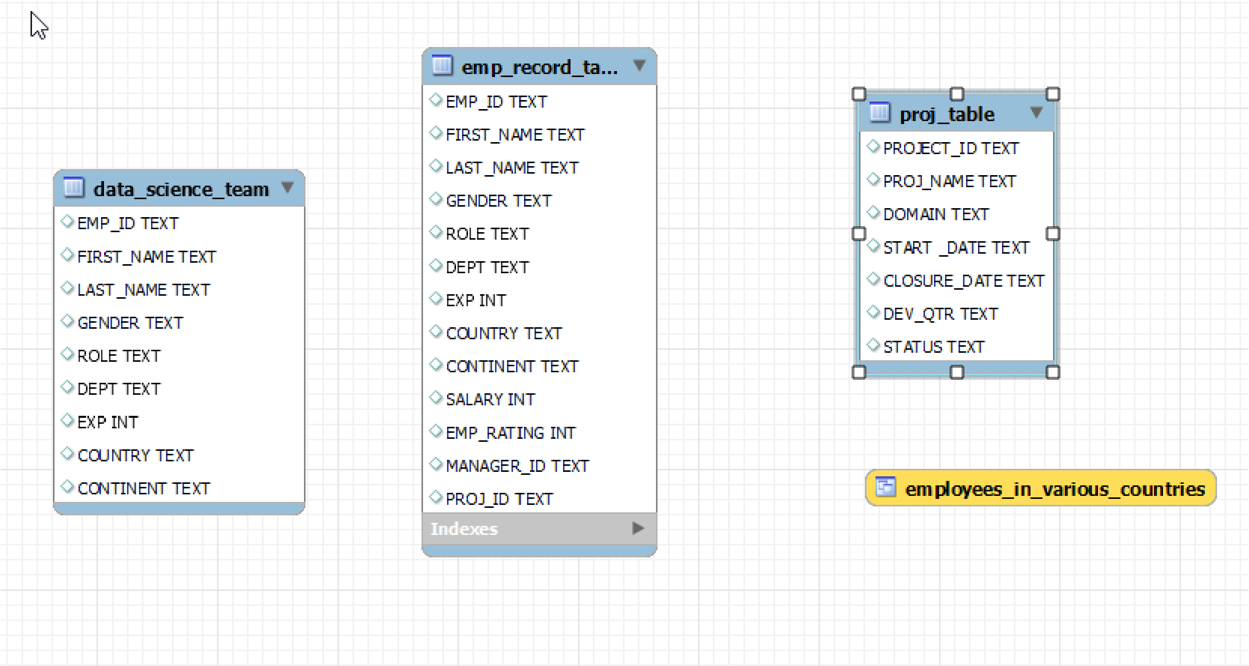
ScienceQtech Employee Performance Mapping.

#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.

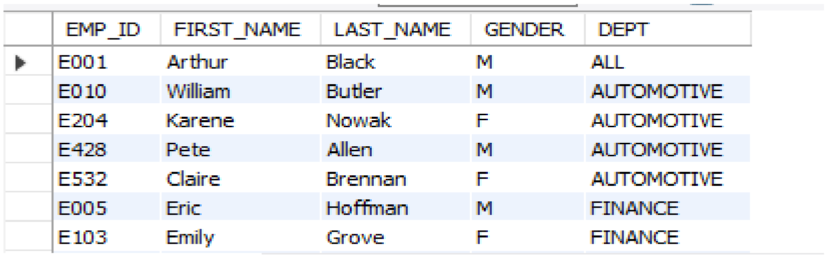
```
create database employee;

use employee;

show tables;
```

#2 Create an ER diagram for the given employee database.



#3 Write a query to Write a query tofetch EMP_ID, FIRST_NAME, LAST_NAME, GENDER, and DEPT from the employee record table, and make a list of employees and details of their department.

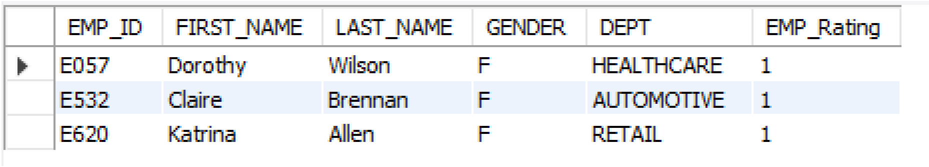
```
Select EMP_ID,FIRST_NAME,LAST_NAME,GENDER,DEPT

from emp_record_table

order by DEPT;
```



	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

#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, ,

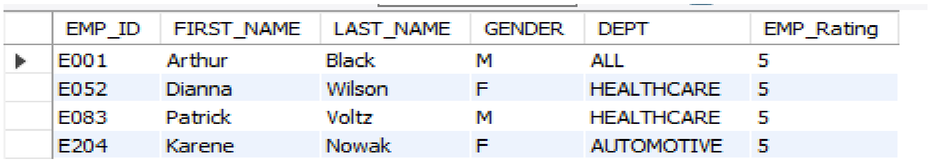
```
Select EMP_ID,FIRST_NAME,LAST_NAME,GENDER,DEPT, EMP_Rating

 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

greater than four

```
Select EMP_ID,FIRST_NAME,LAST_NAME,GENDER,DEPT, EMP_Rating

 from emp_record_table where emp_rating> 4;
```

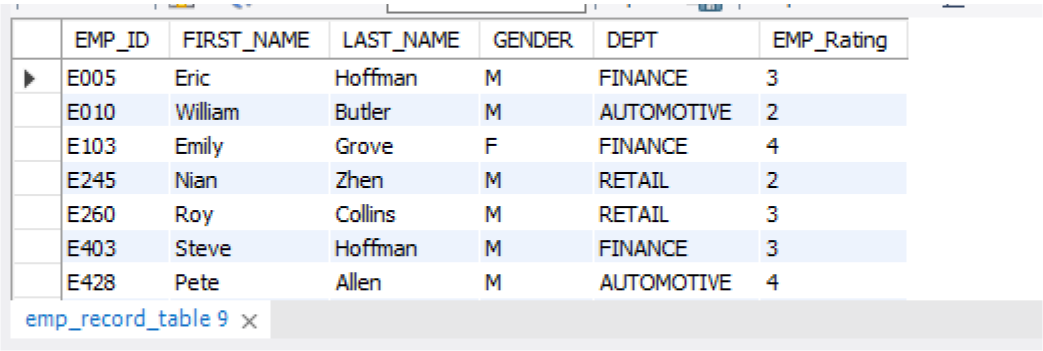


	EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_Rating
▶	E001	Arthur	Black	M	ALL	5
	E052	Dianna	Wilson	F	HEALTHCARE	5
	E083	Patrick	Voltz	M	HEALTHCARE	5
	E204	Karene	Nowak	F	AUTOMOTIVE	5

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;



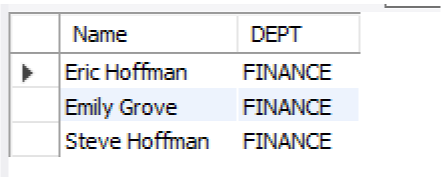
EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_Rating
E005	Eric	Hoffman	M	FINANCE	3
E010	William	Butler	M	AUTOMOTIVE	2
E103	Emily	Grove	F	FINANCE	4
E245	Nian	Zhen	M	RETAIL	2
E260	Roy	Collins	M	RETAIL	3
E403	Steve	Hoffman	M	FINANCE	3
E428	Pete	Allen	M	AUTOMOTIVE	4

#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

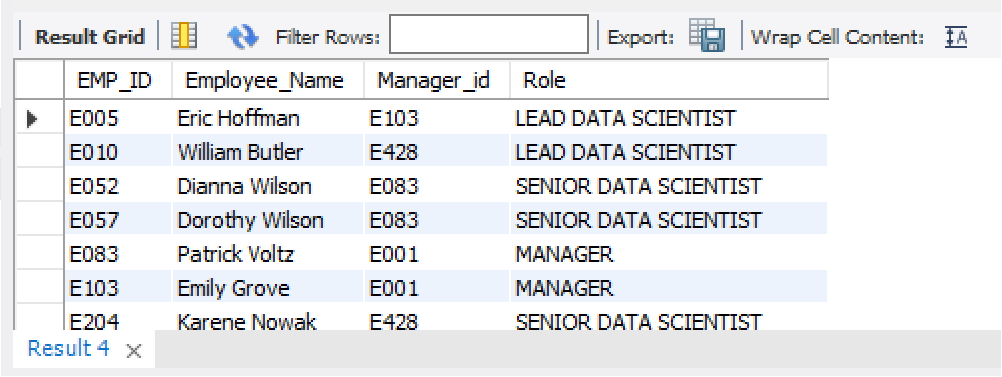
where DEPT="finance";



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).

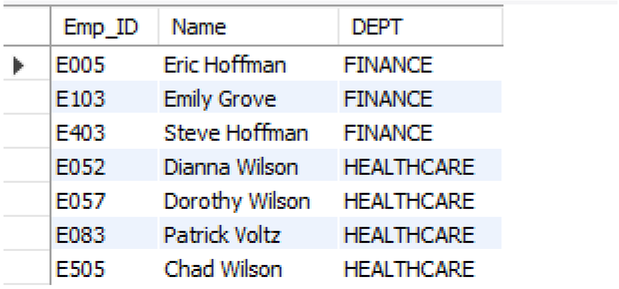
```
select EMP_ID,concat(first_name," ",Last_name) as Employee_Name, Manager_id,Role

from emp_record_table

where Manager_id  is not null

order by emp_id;
```



EMP_ID	Employee_Name	Manager_id	Role
E005	Eric Hoffman	E103	LEAD DATA SCIENTIST
E010	William Butler	E428	LEAD DATA SCIENTIST
E052	Dianna Wilson	E083	SENIOR DATA SCIENTIST
E057	Dorothy Wilson	E083	SENIOR DATA SCIENTIST
E083	Patrick Voltz	E001	MANAGER
E103	Emily Grove	E001	MANAGER
E204	Karene Nowak	E428	SENIOR DATA SCIENTIST

#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,concat(first_name," ",Last_name) as Name,DEPT

 from emp_record_table

where DEPT="finance"

union

select EMP_ID,concat(first_name," ",Last_name) as Name,DEPT
 from emp_record_table
where DEPT="Healthcare";
```



Emp_ID	Name	DEPT
E005	Eric Hoffman	FINANCE
E103	Emily Grove	FINANCE
E403	Steve Hoffman	FINANCE
E052	Dianna Wilson	HEALTHCARE
E057	Dorothy Wilson	HEALTHCARE
E083	Patrick Voltz	HEALTHCARE
E505	Chad Wilson	HEALTHCARE

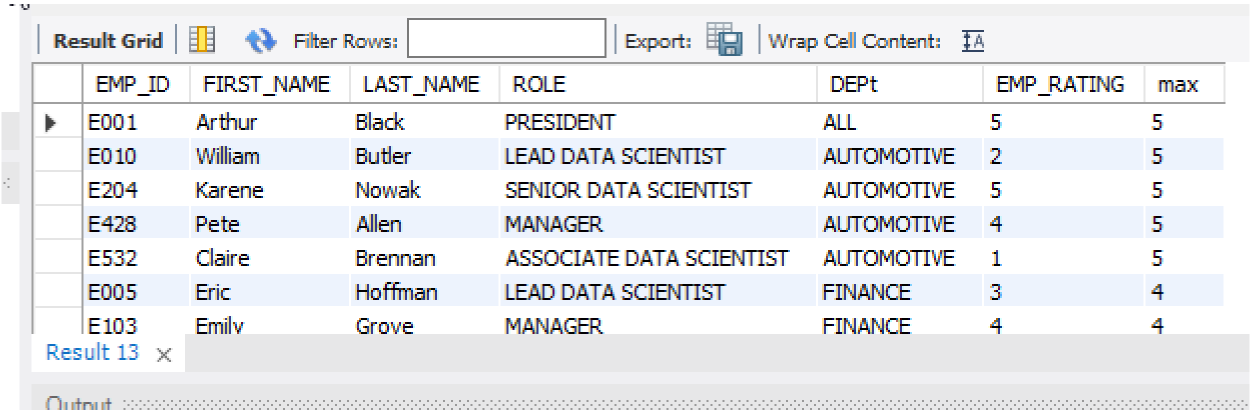
#8 Write a query to list down employee details such as EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPARTMENT, and EMP_RATING grouped by dept. Also include the respective employee rating along with the max emp rating for the department.

select EMP_ID, FIRST_NAME, LAST_NAME, ROLE, DEPt, EMP_RATING ,

max(emp_rating) over(partition by dept) as max

from emp_record_table

order by dept;



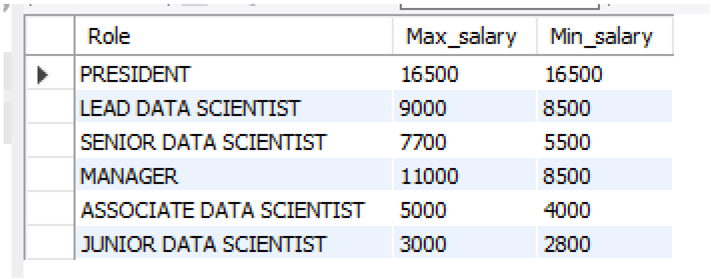
EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPt	EMP_RATING	max
E001	Arthur	Black	PRESIDENT	ALL	5	5
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	2	5
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	5	5
E428	Pete	Allen	MANAGER	AUTOMOTIVE	4	5
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	1	5
E005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

#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, max(salary) as Max_salary, min(salary) as Min_salary

from emp_record_table

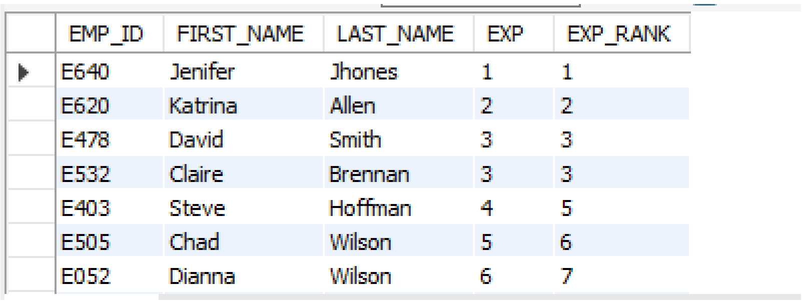
group by role;



Role	Max_salary	Min_salary
PRESIDENT	16500	16500
LEAD DATA SCIENTIST	9000	8500
SENIOR DATA SCIENTIST	7700	5500
MANAGER	11000	8500
ASSOCIATE DATA SCIENTIST	5000	4000
JUNIOR DATA SCIENTIST	3000	2800

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

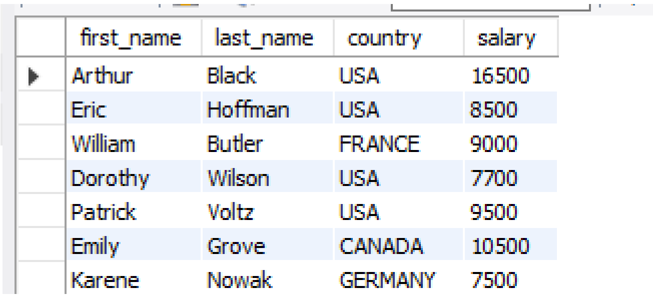
```
SELECT EMP_ID,FIRST_NAME,LAST_NAME,EXP,

 RANK() OVER(ORDER BY EXP) EXP_RANK

 FROM emp_record_table;
```



EMP_ID	FIRST_NAME	LAST_NAME	EXP	EXP_RANK
E640	Jenifer	Jhones	1	1
E620	Katrina	Allen	2	2
E478	David	Smith	3	3
E532	Claire	Brennan	3	3
E403	Steve	Hoffman	4	5
E505	Chad	Wilson	5	6
E052	Dianna	Wilson	6	7

#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 employees_sal AS

 select first_name,last_name,country,salary

from emp_record_table

 where salary >6000;


 select * from employees_sal;
```



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

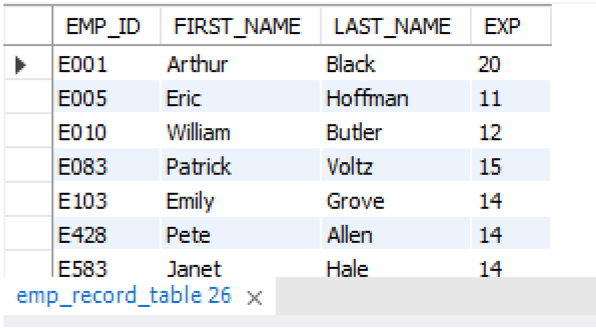
#12 Write a nested query to find employees with experience of more than ten years. Take data from the employee record table.

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

#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.

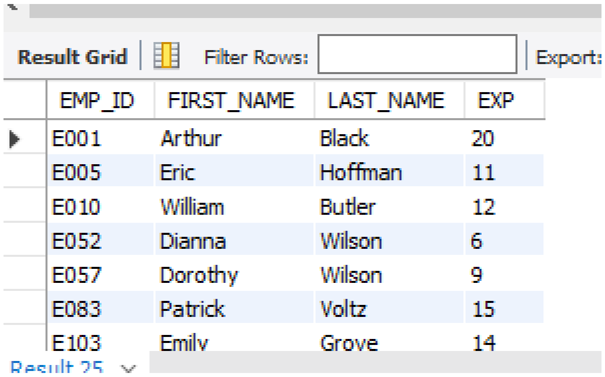
DELIMITER //

 CREATE PROCEDURE get_experience_details()

 BEGIN

 SELECT EMP_ID,FIRST_NAME,LAST_NAME,EXP

```
FROM emp_record_table WHERE EXP>3;

 END //

 CALL get_experience_details();
```



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

#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',

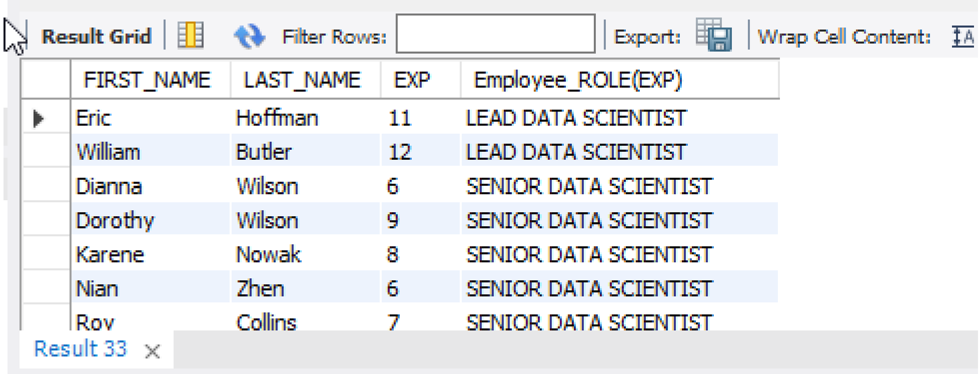
#For an employee with the experience of 5 to 10 years assign 'SENIOR DATA SCIENTIST',

#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 Employee_ROLE(

 EXP int

 )

 RETURNS VARCHAR(40)

 DETERMINISTIC

 BEGIN

 DECLARE Employee_ROLE VARCHAR(40);

 IF EXP>12 AND 16 THEN SET Employee_ROLE="MANAGER";
```

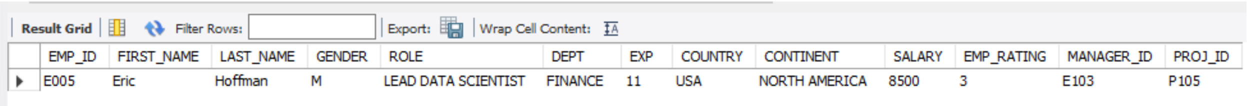
```
ELSEIF EXP>10 AND 12 THEN

SET Employee_ROLE ="LEAD DATA SCIENTIST";

ELSEIF EXP>5 AND 10 THEN SET Employee_ROLE ="SENIOR DATA SCIENTIST";

ELSEIF EXP>2 AND 5 THEN SET Employee_ROLE ="ASSOCIATE DATA SCIENTIST";

ELSEIF EXP<=2 THEN

SET Employee_ROLE ="JUNIOR DATA SCIENTIST";END IF;RETURN (Employee_ROLE);

END //

SELECTFIRST_NAME, LAST_NAME, EXP,Employee_ROLE(EXP)FROM data_science_team;
```



FIRST_NAME	LAST_NAME	EXP	Employee_ROLE(EXP)
Eric	Hoffman	11	LEAD DATA SCIENTIST
William	Butler	12	LEAD DATA SCIENTIST
Dianna	Wilson	6	SENIOR DATA SCIENTIST
Dorothy	Wilson	9	SENIOR DATA SCIENTIST
Karene	Nowak	8	SENIOR DATA SCIENTIST
Nian	Zhen	6	SENIOR DATA SCIENTIST
Roy	Collins	7	SENIOR 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.

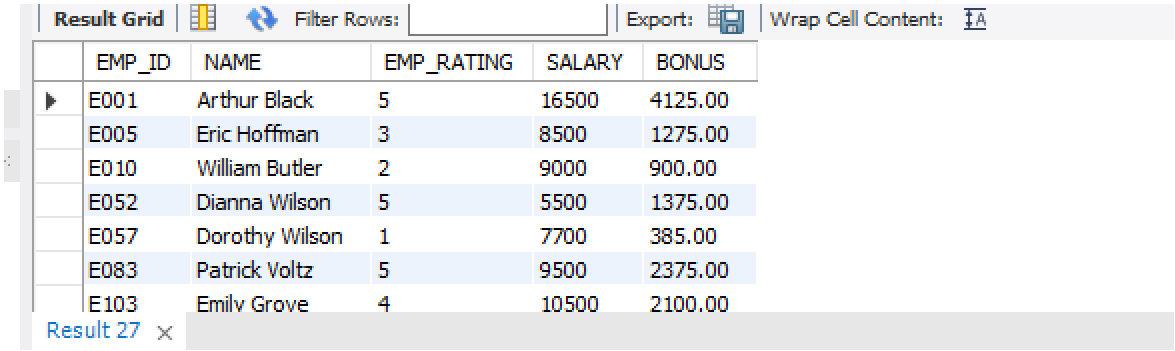
```
CREATE INDEX idx_first_name

ON emp_record_table(FIRST_NAME(20));

SELECT * FROM emp_record_table

WHERE FIRST_NAME='Eric';
```



EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105

#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).

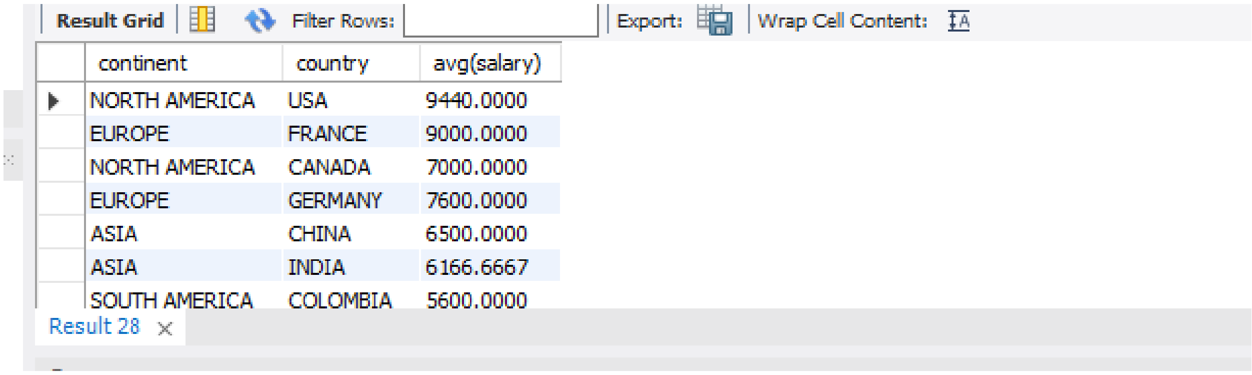
```
select EMP_ID, concat(FIRST_NAME," ",LAST_NAME) as NAME, EMP_RATING, SALARY,
(SALARY*0.05)*EMP_RATING as BONUS
from emp_record_table;
```



EMP_ID	NAME	EMP_RATING	SALARY	BONUS
E001	Arthur Black	5	16500	4125.00
E005	Eric Hoffman	3	8500	1275.00
E010	William Butler	2	9000	900.00
E052	Dianna Wilson	5	5500	1375.00
E057	Dorothy Wilson	1	7700	385.00
E083	Patrick Voltz	5	9500	2375.00
E103	Emily Grove	4	10500	2100.00

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

```
select continent, country, avg(salary)
from emp_record_table
group by continent, country;
```



continent	country	avg(salary)
NORTH AMERICA	USA	9440.0000
EUROPE	FRANCE	9000.0000
NORTH AMERICA	CANADA	7000.0000
EUROPE	GERMANY	7600.0000
ASIA	CHINA	6500.0000
ASIA	INDIA	6166.6667
SOUTH AMERICA	COLOMBIA	5600.0000