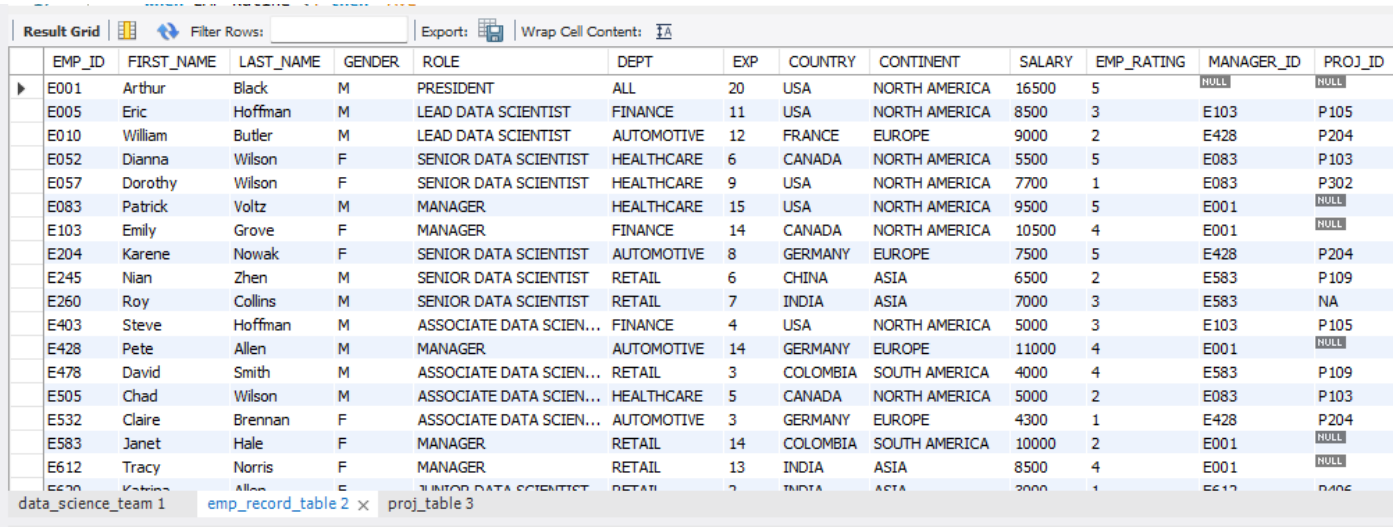
- Tables import in SQL and reading all data from table

```
2 •  Create database employee;
3 •  select * from data_science_team;
4 •  select * from emp_record_table;
5 •  select * from proj_table;
```



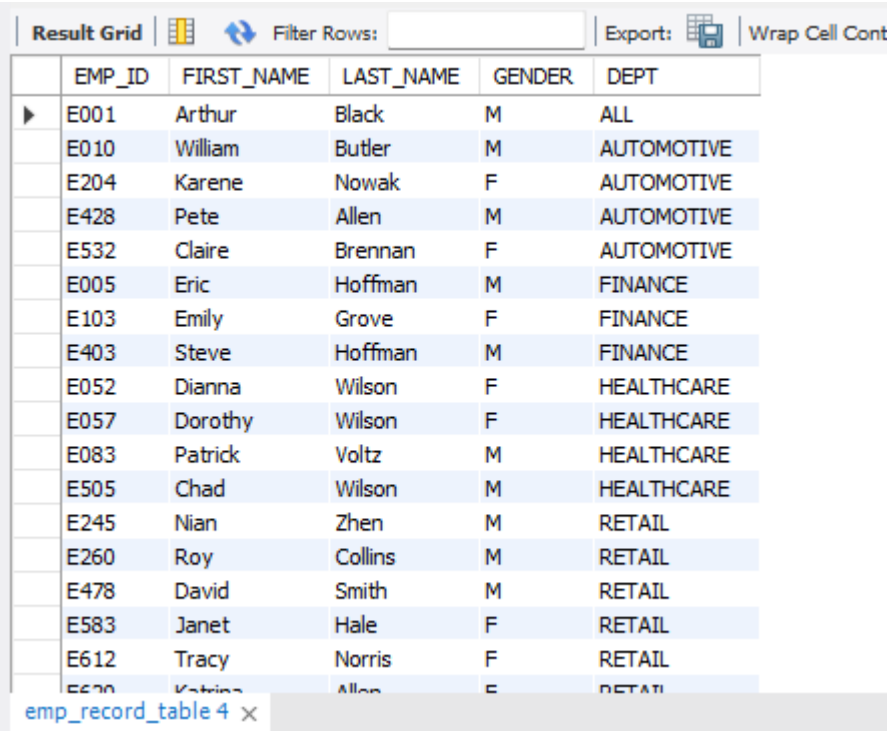
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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
E478	David	Smith	M	ASSOCIATE DATA SCIEN...	RETAIL	3	COLOMBIA	SOUTH AMERICA	4000	4	E583	P109
E505	Chad	Wilson	M	ASSOCIATE DATA SCIEN...	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103
E532	Claire	Brennan	F	ASSOCIATE DATA SCIEN...	AUTOMOTIVE	3	GERMANY	EUROPE	4300	1	E428	P204
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

data_science_team 1 | emp_record_table 2 | proj_table 3

Query 1: 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
order by dept;
```



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

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

emp_record_table 4

Query 2: 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,
case
    when EMP_Rating <2 then 'Low'
    when EMP_Rating <4 then 'Avg'
    else 'High'
    end as Rating_status
 from emp_record_table;
```

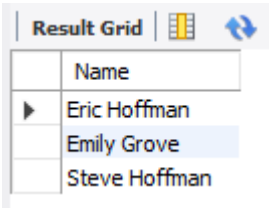
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

EMP_ID	FIRST_NAME	LAST_NAME	GENDER	DEPT	EMP_Rating	Rating_status
E001	Arthur	Black	M	ALL	5	High
E005	Eric	Hoffman	M	FINANCE	3	Avg
E010	William	Butler	M	AUTOMOTIVE	2	Avg
E052	Dianna	Wilson	F	HEALTHCARE	5	High
E057	Dorothy	Wilson	F	HEALTHCARE	1	Low
E083	Patrick	Voltz	M	HEALTHCARE	5	High
E103	Emily	Grove	F	FINANCE	4	High
E204	Karene	Nowak	F	AUTOMOTIVE	5	High
E245	Nian	Zhen	M	RETAIL	2	Avg
E260	Roy	Collins	M	RETAIL	3	Avg
E403	Steve	Hoffman	M	FINANCE	3	Avg
E428	Pete	Allen	M	AUTOMOTIVE	4	High
E478	David	Smith	M	RETAIL	4	High
E505	Chad	Wilson	M	HEALTHCARE	2	Avg
E532	Claire	Brennan	F	AUTOMOTIVE	1	Low
E583	Janet	Hale	F	RETAIL	2	Avg
E612	Tracy	Norris	F	RETAIL	4	High

Query 3: 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';
```



Result Grid

Name
Eric Hoffman
Emily Grove
Steve Hoffman

Query 4: Write a query to list only those employees who have someone reporting to them. Also, show the number of reporters (including the President).

```
select m.FIRST_NAME as Manager_name, count(*)
from emp_record_table e join emp_record_table m
on e.MANAGER_ID=m.EMP_ID
group by m.FIRST_NAME;
```

Result Grid | Filter Rows:

Manager_name	count(*)
Arthur	5
Patrick	3
Emily	2
Pete	3
Janet	3
Tracy	2

Query 5: Write a query to list down all the employees from the healthcare and finance departments using union. Take data from the employee record table.

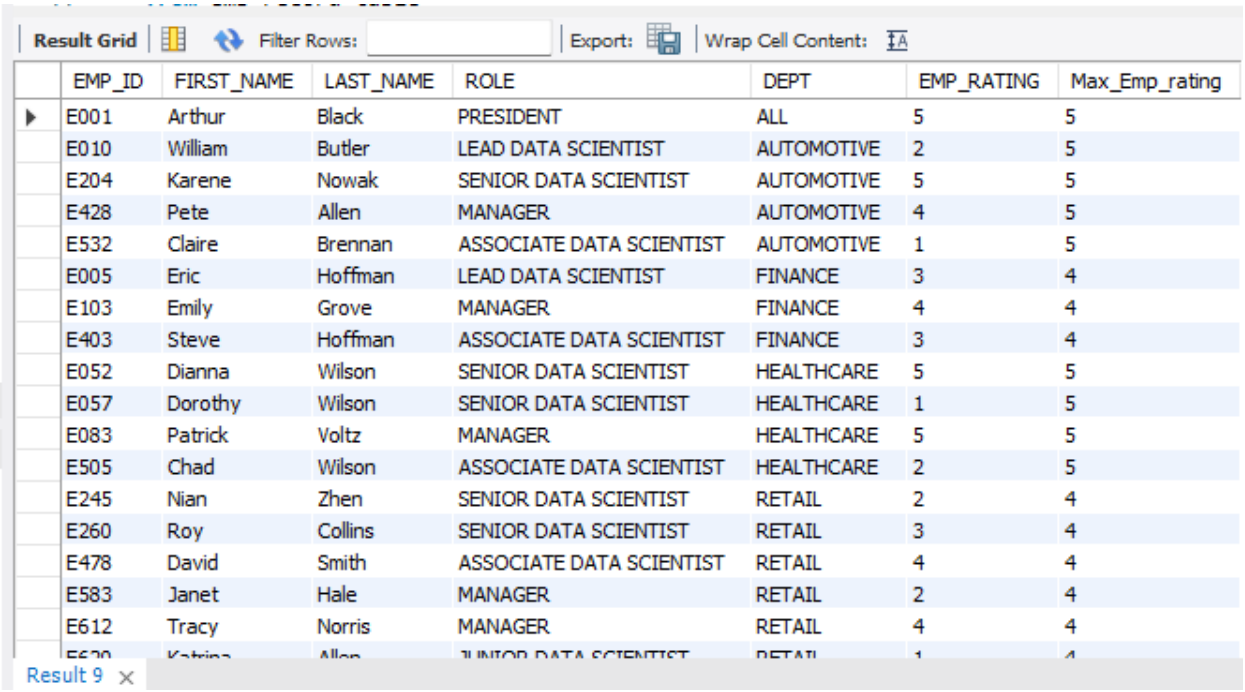
```
select * from emp_record_table where dept = 'Healthcare'
union
select * from emp_record_table where dept = 'finance';
```

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	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

Query 6: 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) Max_Emp_rating
from emp_record_table;
```



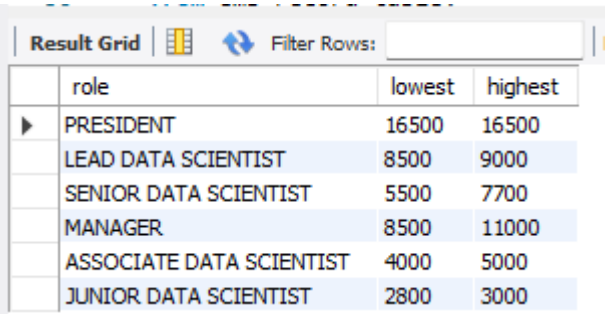
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT	EMP_RATING	Max_Emp_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 9

Query 7: 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) lowest, max(salary) highest
from emp_record_table
group by role;
```

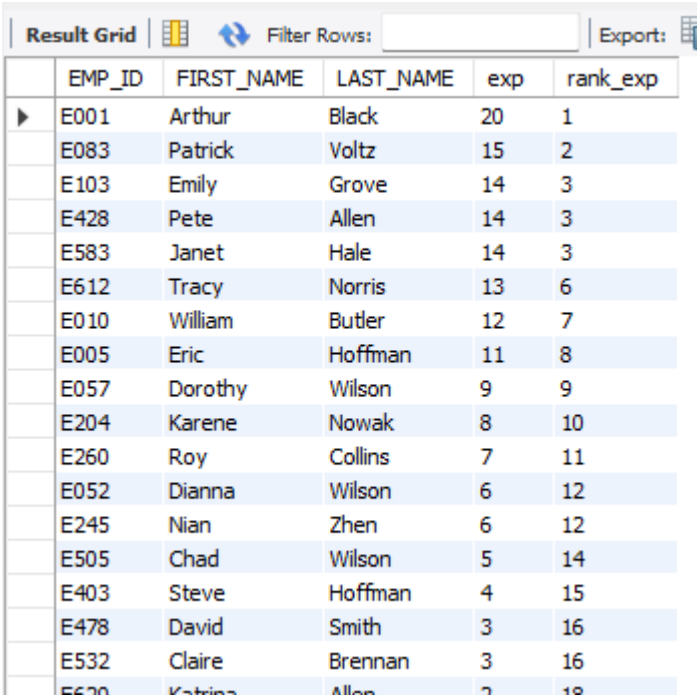


Result Grid | Filter Rows:

role	lowest	highest
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

Query 8: 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 desc) as rank_exp
from emp_record_table;
```



Result Grid | Filter Rows: | Export:

EMP_ID	FIRST_NAME	LAST_NAME	exp	rank_exp
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

Query 9: 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 V_Emp_6k
as
select      Emp_id,      first_name,LAST_NAME,country      from
emp_record_table where salary>6000
order by country;

select * from V_emp_6k;
```

Result Grid | Filter Rows: | Export:

Emp_id	first_name	LAST_NAME	country	salary
E103	Emily	Grove	CANADA	10500
E245	Nian	Zhen	CHINA	6500
E583	Janet	Hale	COLOMBIA	10000
E010	William	Butler	FRANCE	9000
E204	Karene	Nowak	GERMANY	7500
E428	Pete	Allen	GERMANY	11000
E260	Roy	Collins	INDIA	7000
E612	Tracy	Norris	INDIA	8500
E001	Arthur	Black	USA	16500
E005	Eric	Hoffman	USA	8500
E057	Dorothy	Wilson	USA	7700
E083	Patrick	Voltz	USA	9500

Query 10: Write a nested query to find employees with experience of more than ten years. Take data from the employee record table.

```
select * from emp_record_table where emp_id in (
select emp_id from emp_record_table where EXP> 10);
```

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

Query 11: 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.

```
USE `employee`;
DROP procedure IF EXISTS `P_emp_3years`;

DELIMITER $$
USE `employee`$$
CREATE PROCEDURE P_emp_3years ()
BEGIN
	select * from emp_record_table where exp>3;
END$$
```

```
DELIMITER ;

call P_emp_3years;
```

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

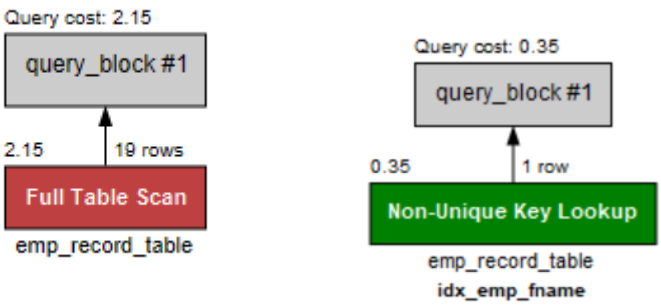
EMP_ID	FIRST_NAME	LAST_NAME	GENDER	ROLE	DEPT	EXP	COUNTRY	CONTINENT	SALARY	EMP_RATING	MANAGER_ID	PROJ_ID
E001	Arthur	Black	M	PRESIDENT	ALL	20	USA	NORTH AMERICA	16500	5	NULL	NULL
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105
E010	William	Butler	M	LEAD DATA SCIENTIST	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

Query 12: 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

```
select * from emp_record_table where FIRST_NAME='Eric';

create index idx_emp_fname on emp_record_table (first_name);

select * from emp_record_table where FIRST_NAME='Eric';
```



Query 13: 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,
(emp_rating * 0.05* salary) as Bonus from emp_record_table;
```

Result Grid | Filter Rows: | Export: | Wr

Emp_id	First_name	last_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

Query 14: 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) from emp_record_table
group by continent, country
order by continent, country;
```

Result Grid | Filter Rows:

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