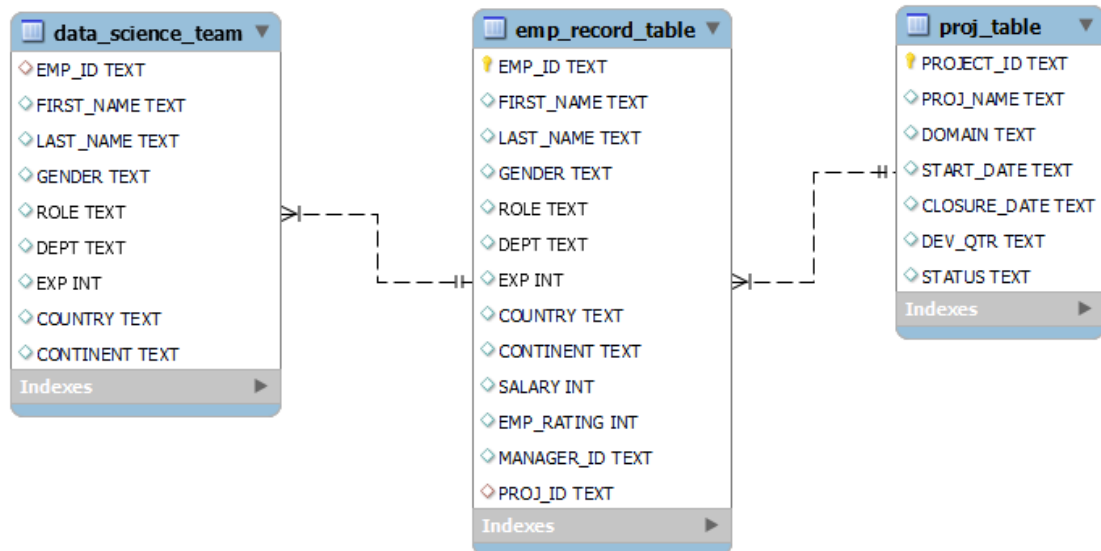


## The task performed:

1. Created a database named *employee*, then imported **data\_science\_team.csv**, **proj\_table.csv** and **emp\_record\_table.csv** into the **employee** database.
2. Created an ER diagram for the given **employee** database using the reverse engineer tool on MySQL Workbench. Identified the common pointers in tables to create the diagram.



3. Wrote a query to fetch EMP\_ID, FIRST\_NAME, LAST\_NAME, GENDER, and DEPARTMENT from the employee record table, and made a list of employees and details of their department.

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

4. Wrote a query to fetch EMP\_ID, FIRST\_NAME, LAST\_NAME, GENDER, DEPARTMENT, and EMP\_RATING if the EMP\_RATING is:
- less than two

	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

	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

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

- Wrote a query to concatenate the FIRST\_NAME and the LAST\_NAME of employees in the *Finance* department from the employee table with alias as NAME.

	NAME
▶	Eric Hoffman
	Emily Grove
	Steve Hoffman

- Wrote a query to list only those employees who have someone reporting to them along with the number of reporters.

	Manager_Name	Number_of_Reporters
▶	Emily Grove	2
	Pete Allen	3
	Patrick Voltz	3
	Arthur Black	5
	Janet Hale	3
	Tracy Norris	2

- Wrote a query to list down all the employees from the healthcare and finance departments using union.

	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

8. Wrote a query to list down employee details such as EMP\_ID, FIRST\_NAME, LAST\_NAME, ROLE, DEPARTMENT, and EMP\_RATING grouped by dept along with the max emp rating for the department.

EMP_ID	FIRST_NAME	LAST_NAME	ROLE	Dept	EMP_RATING	Max_Rating
E001	Arthur	Black	PRESIDENT	ALL	5	5
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	1	5
E428	Pete	Allen	MANAGER	AUTOMOTIVE	4	5
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	5	5
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	2	5
E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	3	4
E103	Emily	Grove	MANAGER	FINANCE	4	4
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	3	4
E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	HEALTHCARE	2	5
E083	Patrick	Voltz	MANAGER	HEALTHCARE	5	5
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	1	5
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5	5
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	4	4
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	1	4
E612	Tracy	Norris	MANAGER	RETAIL	4	4
E583	Janet	Hale	MANAGER	RETAIL	2	4
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	4	4
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	3	4
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	2	4

9. Wrote a query to calculate the minimum and the maximum salary of the employees in each role.

	Max_sal	Min_sal	role
►	16500	16500	PRESIDENT
	9000	8500	LEAD DATA SCIENTIST
	7700	5500	SENIOR DATA SCIENTIST
	11000	8500	MANAGER
	5000	4000	ASSOCIATE DATA SCIENTIST
	3000	2800	JUNIOR DATA SCIENTIST

10. Wrote a query to assign ranks to each employee based on their experience.

emp_id	FIRST_NAME	LAST_NAME	role	dept	EXP	Rank_by_exp
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	3
E583	Janet	Hale	MANAGER	RETAIL	14	3
E612	Tracy	Norris	MANAGER	RETAIL	13	4
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	12	5
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	11	6
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	9	7
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	8
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	7	9
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	6	10
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	6	10
E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5	11
E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	4	12
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	3	13
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	3	13
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	2	14
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	1	15

11. Wrote a query to create a view that displays employees in various countries whose salary is more than six thousand.

emp_id	FIRST_NAME	LAST_NAME	gender	role	dept	salary	country
E001	Arthur	Black	M	PRESIDENT	ALL	16500	USA
E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	8500	USA
E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	7700	USA
E083	Patrick	Voltz	M	MANAGER	HEALTHCARE	9500	USA
E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7000	INDIA
E612	Tracy	Norris	F	MANAGER	RETAIL	8500	INDIA
E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	7500	GERMANY
E428	Pete	Allen	M	MANAGER	AUTOMOTIVE	11000	GERMANY
E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	9000	FRANCE
E583	Janet	Hale	F	MANAGER	RETAIL	10000	COLOMBIA
E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6500	CHINA
E103	Emily	Grove	F	MANAGER	FINANCE	10500	CANADA

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

emp_id	first_name	last_name	role	dept	EXP
E001	Arthur	Black	PRESIDENT	ALL	20
E083	Patrick	Voltz	MANAGER	HEALTHCARE	15
E103	Emily	Grove	MANAGER	FINANCE	14
E428	Pete	Allen	MANAGER	AUTOMOTIVE	14
E583	Janet	Hale	MANAGER	RETAIL	14
E612	Tracy	Norris	MANAGER	RETAIL	13
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	12
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	11



13. Wrote a query to create a stored procedure to retrieve the details of the employees whose experience is more than three years. Called procedure to find the below data.

	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
	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	INDIA	8500	4	E001	NULL
	E010	William	Butler	M	LEAD DATA SCIENTIST	AUTOMOTIVE	12	FRANCE	EUROPE	9000	2	E428	P204
	E005	Eric	Hoffman	M	LEAD DATA SCIENTIST	FINANCE	11	USA	NORTH AMERICA	8500	3	E103	P105
	E057	Dorothy	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	9	USA	NORTH AMERICA	7700	1	E083	P302
	E204	Karene	Nowak	F	SENIOR DATA SCIENTIST	AUTOMOTIVE	8	GERMANY	EUROPE	7500	5	E428	P204
	E260	Roy	Collins	M	SENIOR DATA SCIENTIST	RETAIL	7	INDIA	ASIA	7000	3	E583	NA
	E052	Dianna	Wilson	F	SENIOR DATA SCIENTIST	HEALTHCARE	6	CANADA	NORTH AMERICA	5500	5	E083	P103
	E245	Nian	Zhen	M	SENIOR DATA SCIENTIST	RETAIL	6	CHINA	ASIA	6500	2	E583	P109
	E505	Chad	Wilson	M	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5	CANADA	NORTH AMERICA	5000	2	E083	P103
	E403	Steve	Hoffman	M	ASSOCIATE DATA SCIENTIST	FINANCE	4	USA	NORTH AMERICA	5000	3	E103	P105

14. Create a function to check whether the job profile assigned to each employee in the data science team matches the organization's set standard. Called the function in a query to check whether the role assigned matches the standard or not.

	EMP_ID	FIRST_NAME	LAST_NAME	EXP	ROLE	STANDARD_PROFILE	PROFILE_MATCH
▶	E005	Eric	Hoffman	11	LEAD DATA SCIENTIST	LEAD DATA SCIENTIST	MATCHES
	E010	William	Butler	12	LEAD DATA SCIENTIST	LEAD DATA SCIENTIST	MATCHES
	E052	Dianna	Wilson	6	SENIOR DATA SCIENTIST	SENIOR DATA SCIENTIST	MATCHES
	E057	Dorothy	Wilson	9	SENIOR DATA SCIENTIST	SENIOR DATA SCIENTIST	MATCHES
	E204	Karene	Nowak	8	SENIOR DATA SCIENTIST	SENIOR DATA SCIENTIST	MATCHES
	E245	Nian	Zhen	6	SENIOR DATA SCIENTIST	SENIOR DATA SCIENTIST	MATCHES
	E260	Roy	Collins	7	SENIOR DATA SCIENTIST	SENIOR DATA SCIENTIST	MATCHES
	E403	Steve	Hoffman	4	ASSOCIATE DATA SCIENTIST	ASSOCIATE DATA SCIENTIST	MATCHES
	E478	David	Smith	3	ASSOCIATE DATA SCIENTIST	ASSOCIATE DATA SCIENTIST	MATCHES
	E505	Chad	Wilson	5	ASSOCIATE DATA SCIENTIST	ASSOCIATE DATA SCIENTIST	MATCHES
	E532	Claire	Brennan	3	ASSOCIATE DATA SCIENTIST	ASSOCIATE DATA SCIENTIST	MATCHES
	E620	Katrina	Allen	2	JUNIOR DATA SCIENTIST	JUNIOR DATA SCIENTIST	MATCHES
	E640	Jenifer	Jhones	1	JUNIOR DATA SCIENTIST	JUNIOR DATA SCIENTIST	MATCHES

15. Created an index to improve the cost and performance of the query to find the employee whose FIRST\_NAME is 'Eric'. Used "Explain" feature to find out the execution process.

	EMP_ID	FIRST_NAME	LAST_NAME	ROLE	DEPT
▶	E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE

Explanation of the execution process:

	id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
▶	1	SIMPLE	emp_record_table	NULL	ref	i1	i1	63	const	1	100.00	NULL

16. Wrote a query to calculate the bonus for all the employees, based on their ratings and salaries Using the formula: 5% of salary \* employee rating.

EMP_ID	FIRST_NAME	LAST_NAME	role	dept	salary	EMP_RATING	bonus
E001	Arthur	Black	PRESIDENT	ALL	16500	5	4125
E005	Eric	Hoffman	LEAD DATA SCIENTIST	FINANCE	8500	3	1275
E010	William	Butler	LEAD DATA SCIENTIST	AUTOMOTIVE	9000	2	900
E052	Dianna	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	5500	5	1375
E057	Dorothy	Wilson	SENIOR DATA SCIENTIST	HEALTHCARE	7700	1	385
E083	Patrick	Voltz	MANAGER	HEALTHCARE	9500	5	2375
E103	Emily	Grove	MANAGER	FINANCE	10500	4	2100
E204	Karene	Nowak	SENIOR DATA SCIENTIST	AUTOMOTIVE	7500	5	1875
E245	Nian	Zhen	SENIOR DATA SCIENTIST	RETAIL	6500	2	650
E260	Roy	Collins	SENIOR DATA SCIENTIST	RETAIL	7000	3	1050
E403	Steve	Hoffman	ASSOCIATE DATA SCIENTIST	FINANCE	5000	3	750
E428	Pete	Allen	MANAGER	AUTOMOTIVE	11000	4	2200
E478	David	Smith	ASSOCIATE DATA SCIENTIST	RETAIL	4000	4	800
E505	Chad	Wilson	ASSOCIATE DATA SCIENTIST	HEALTHCARE	5000	2	500
E532	Claire	Brennan	ASSOCIATE DATA SCIENTIST	AUTOMOTIVE	4300	1	215
E583	Janet	Hale	MANAGER	RETAIL	10000	2	1000
E612	Tracy	Norris	MANAGER	RETAIL	8500	4	1700
E620	Katrina	Allen	JUNIOR DATA SCIENTIST	RETAIL	3000	1	150
E640	Jenifer	Jhones	JUNIOR DATA SCIENTIST	RETAIL	2800	4	560

17. Wrote a query to calculate the average salary distribution based on the continent and country.

	continent	country	average_salary
▶	ASIA	CHINA	6500.0000
	ASIA	INDIA	6166.6667
	EUROPE	FRANCE	9000.0000
	EUROPE	GERMANY	7600.0000
	NORTH AMERICA	USA	9440.0000
	NORTH AMERICA	CANADA	7000.0000
	SOUTH AMERICA	COLOMBIA	5600.0000