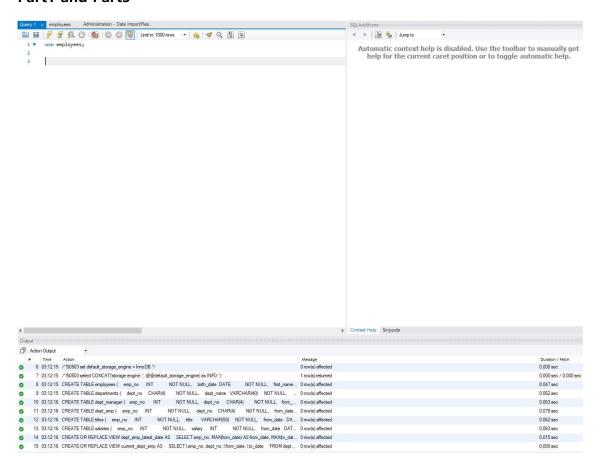# Assignment2

CSC 4710 Database System

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Panther#: 002-34-4677

Part1 and Part3

Part2

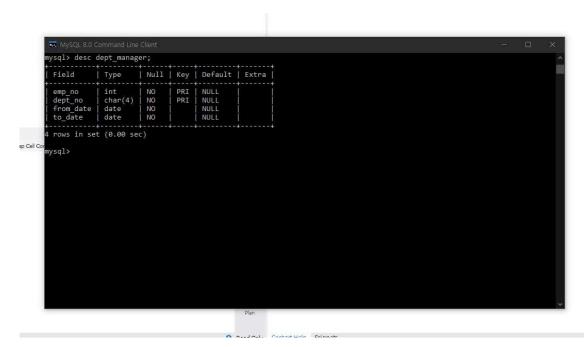**1.** employees

2. 8 tables

3. "employees" are both schema and table name.

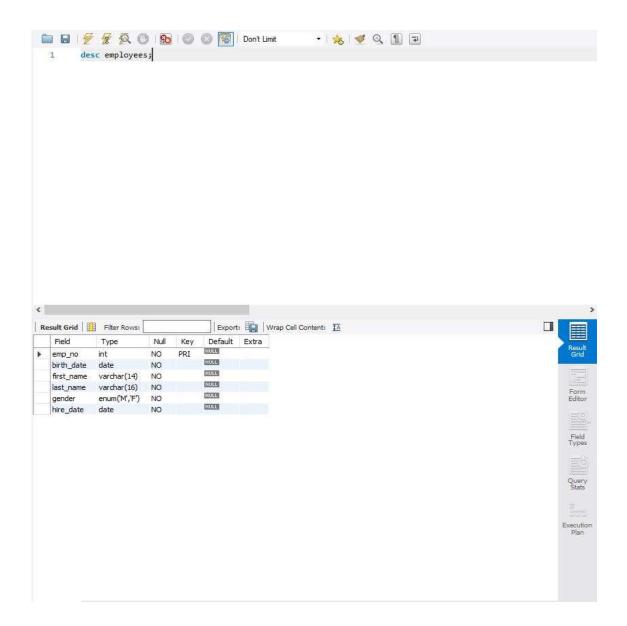**4.** emp_no, birth_date, first_name, last_name, gender, hire_date

```
MySQL 8.0 Command Line Client                                          —   □   ×
mysql> desc employees;
+------------+--------------+------+-----+---------+-------+
| Field      | Type         | Null | Key | Default | Extra |
+------------+--------------+------+-----+---------+-------+
| emp_no     | int          | NO   | PRI | NULL    |       |
| birth_date | date         | NO   |     | NULL    |       |
| first_name | varchar(14)  | NO   |     | NULL    |       |
| last_name  | varchar(16)  | NO   |     | NULL    |       |
| gender     | enum('M','F')| NO   |     | NULL    |       |
| hire_date  | date         | NO   |     | NULL    |       |
+------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql>
```

5. emp_no, dept_no, from_date, to_date

```
MySQL 8.0 Command Line Client                                          —   □   ×
mysql> desc dept_manager;
+-----------+----------+------+-----+---------+-------+
| Field     | Type     | Null | Key | Default | Extra |
+-----------+----------+------+-----+---------+-------+
| emp_no    | int      | NO   | PRI | NULL    |       |
| dept_no   | char(4)  | NO   | PRI | NULL    |       |
| from_date | date     | NO   |     | NULL    |       |
| to_date   | date     | NO   |     | NULL    |       |
+-----------+----------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>
```

6.

```
MySQL 8.0 Command Line Client                                                   —   □   ×
+----------------------+
| Tables_in_employees  |
+----------------------+
| current_dept_emp     |
| departments          |
| dept_emp             |
| dept_emp_latest_date |
| dept_manager         |
| employees            |
| salaries             |
| titles               |
+----------------------+
8 rows in set (0.00 sec)

mysql> select * from departments limit 5;
+---------+------------------+
| dept_no | dept_name        |
+---------+------------------+
| d009    | Customer Service |
| d005    | Development      |
| d002    | Finance          |
| d003    | Human Resources  |
| d001    | Marketing        |
+---------+------------------+
5 rows in set (0.00 sec)

mysql>
```

7. No. the employee table does not hold SSN number of the employees

Desc employees;

8.

Select *

FROM employees

INNER JOIN salaries ON employees.emp_no= salaries.emp_no where salary> 100000;
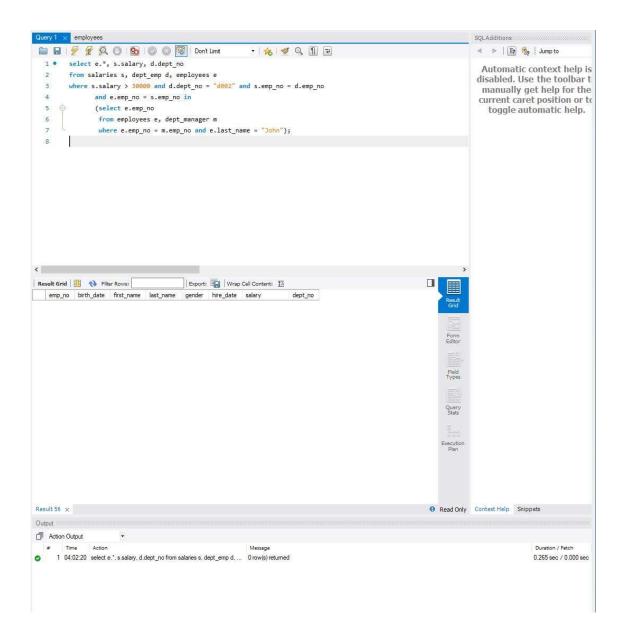
9.

Select *

FROM employees

INNER JOIN salaries ON employees.emp_no= salaries.emp_no where salary <= 30000;

10.

```
select e.*, s.salary, d.dept_no

from salaries s, dept_emp d, employees e

where s.salary > 30000 and d.dept_no = "d002" and s.emp_no = d.emp_no

        and e.emp_no = s.emp_no;
```
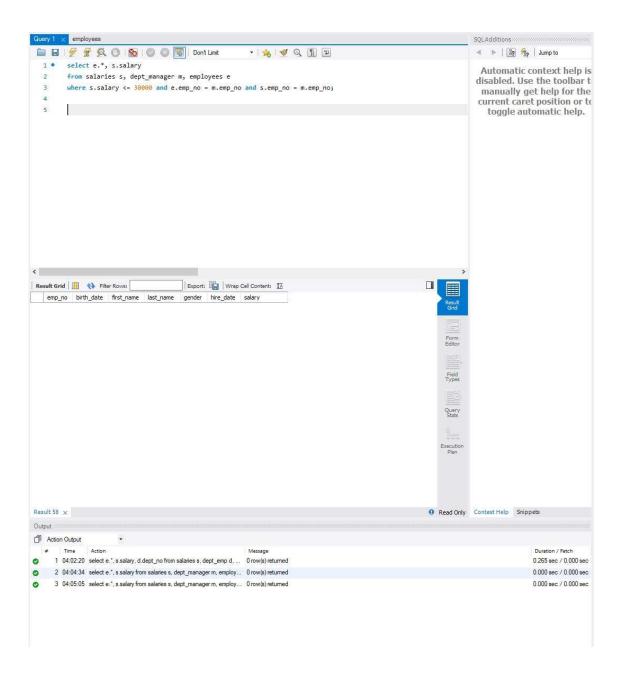
11

```
select e.*, s.salary, d.dept_no

from salaries s, dept_emp d, employees e

where s.salary > 30000 and d.dept_no = "d002" and s.emp_no = d.emp_no

        and e.emp_no = s.emp_no in

    (select e.emp_no

        from employees e, dept_manager m

      where e.emp_no = m.emp_no and e.last_name = "John");
```

12

select e.*, s.salary

from salaries s, dept_manager m, employees e

where s.salary <= 30000 and e.emp_no = m.emp_no and s.emp_no = m.emp_no;

13.

select e.first_name, e.last_name, s.salary

from salaries s, dept_manager m, employees e

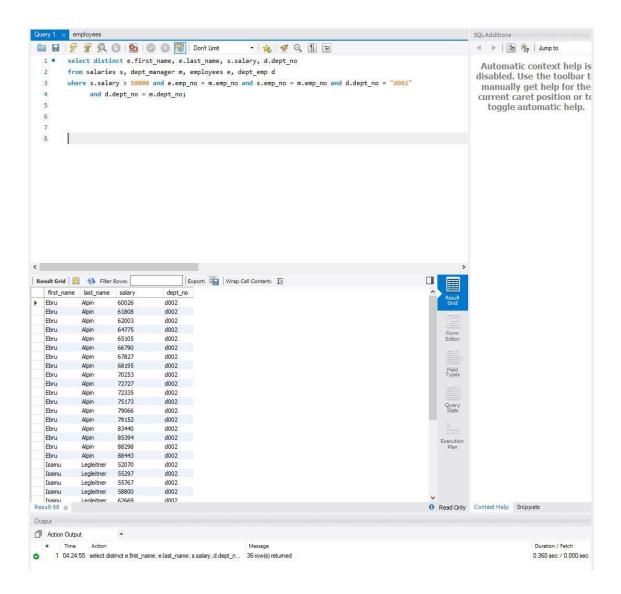where s.salary > 50000 and e.emp_no = m.emp_no and s.emp_no = m.emp_no;

14.

select distinct e.first_name, e.last_name, s.salary, d.dept_no

from salaries s, dept_manager m, employees e, dept_emp d

where s.salary > 50000 and e.emp_no = m.emp_no and s.emp_no = m.emp_no and d.dept_no = "d002"
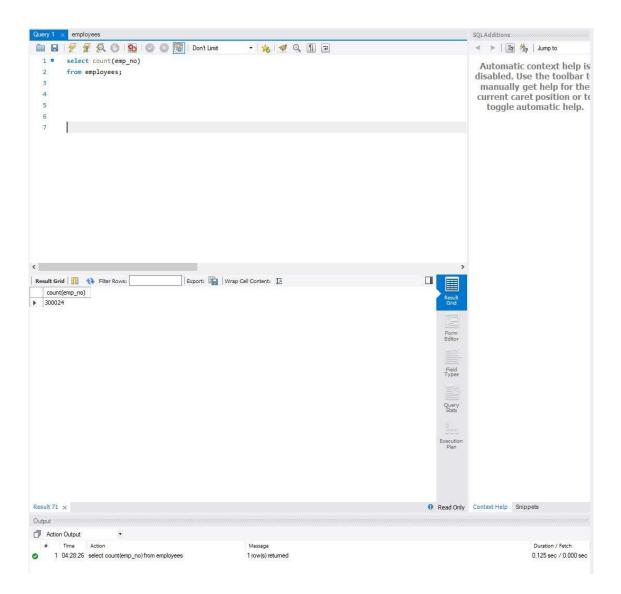
       and d.dept_no = m.dept_no;

15.

300024 employees

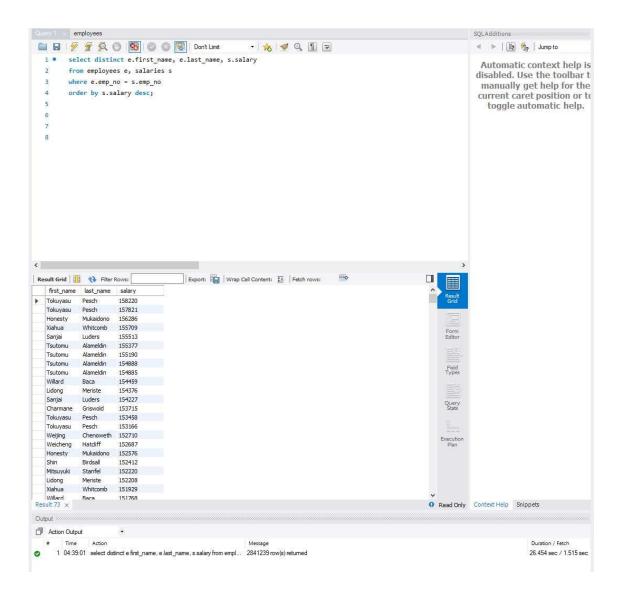select count(emp_no)

from employees;

16.

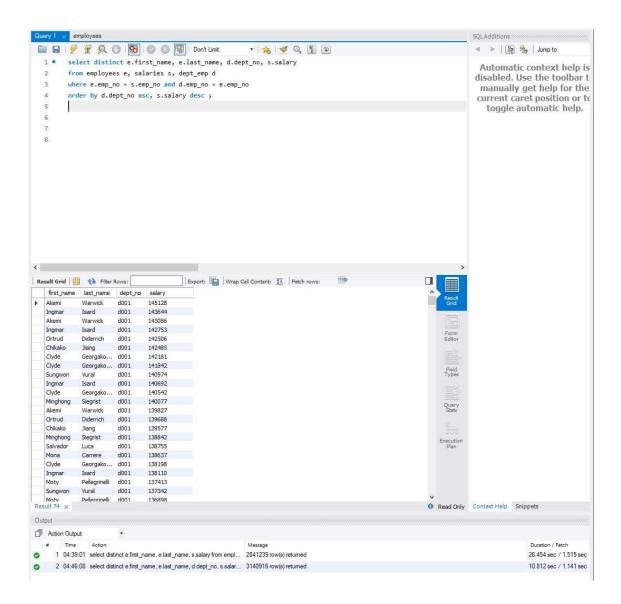select distinct e.first_name, e.last_name, s.salary

from employees e, salaries s

where e.emp_no = s.emp_no

order by s.salary desc;

17.

select distinct e.first_name, e.last_name, d.dept_no, s.salary

from employees e, salaries s, dept_emp d

where e.emp_no = s.emp_no and d.emp_no = e.emp_no

order by d.dept_no asc, s.salary desc ;
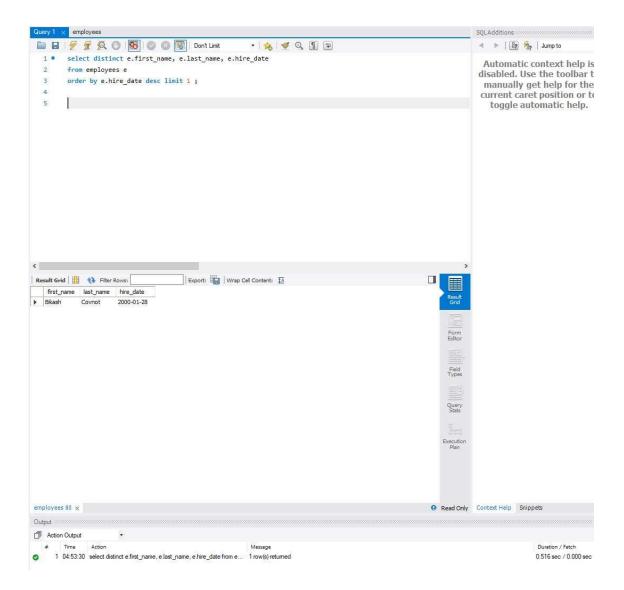
18.

Bikash Covnot was the last person

select distinct e.first_name, e.last_name, e.hire_date

from employees e

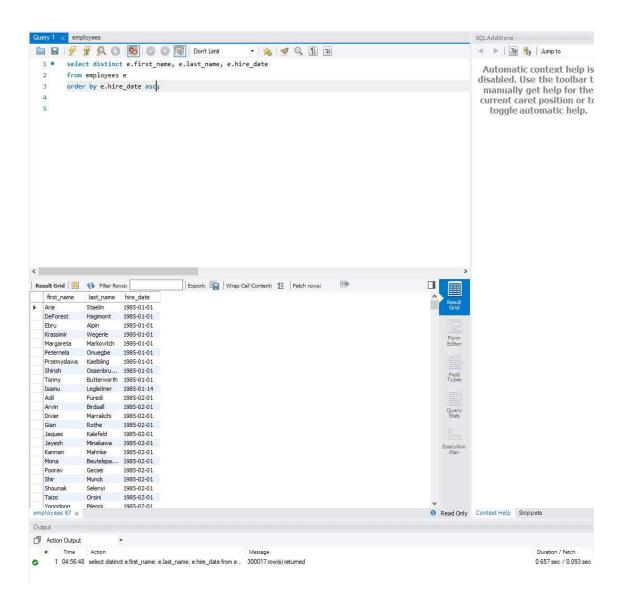order by e.hire_date desc limit 1 ;

19. Arie Staelin was the first person

select distinct e.first_name, e.last_name, e.hire_date

from employees e

order by e.hire_date asc;

20

Seven job titles

select count(distinct title)

from titles;

21.

Number of male employees: 179973

select count(distinct emp_no)

from employees

where employees.gender = "M";

22

Female: 40.0138%

Male: 59.9862%

select

        (female_sum/total_sum * 100) as female_ratio,

    (male_sum/total_sum * 100) as male_ratio

from

    (select count(e.emp_no) as female_sum

```
from employees e

where e.gender = "F"

) as female_sum_result,


(select count(e.emp_no) as male_sum

from employees e

where e.gender = "M"

) as male_sum_result,


(select count(e.emp_no) as total_sum

from employees e

) as total_sum_result;
```

23.

Female: 39.9785%

Male: 60.0215%

select

        (female_sum/total_sum * 100) as female_ratio,

    (male_sum/total_sum * 100) as male_ratio

from

    (select sum(s.salary) as female_sum

```sql
from employees e inner join salaries s

on e.emp_no = s.emp_no

where e.gender = "F"

) as female_sum_result,


(select sum(s.salary) as male_sum

from employees e inner join salaries s

on e.emp_no = s.emp_no

where e.gender = "M"

) as male_sum_result,


(select sum(s.salary) as total_sum

from employees e inner join salaries s

on e.emp_no = s.emp_no

) as total_sum_result;
```

```
1 • select
2         (female_sum/total_sum * 100) as female_ratio,
3         (male_sum/total_sum * 100) as male_ratio
4     from
5         (select sum(s.salary) as female_sum
6         from employees e inner join salaries s
7         on e.emp_no = s.emp_no
8         where e.gender = "F"
9         ) as female_sum_result,
10
11        (select sum(s.salary) as male_sum
12        from employees e inner join salaries s
13        on e.emp_no = s.emp_no
14        where e.gender = "M"
15        ) as male_sum_result,
16
17        (select sum(s.salary) as total_sum
18        from employees e inner join salaries s
19        on e.emp_no = s.emp_no
20        ) as total_sum_result;
21
22
```
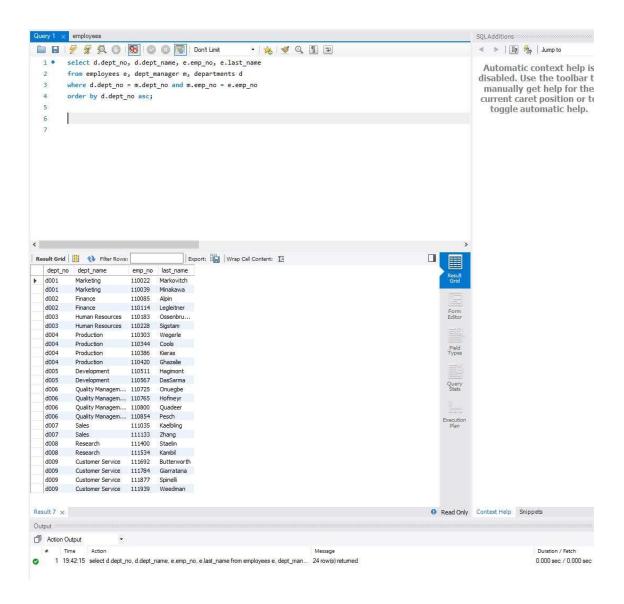
female_ratio	male_ratio
39.9785	60.0215

24.

select e.emp_no, e.first_name, e.last_name, m.from_date

from employees e, dept_manager m

where e.emp_no = m.emp_no

order by m.from_date asc;

```sql
select e.emp_no, e.first_name, e.last_name, m.from_date
from employees e, dept_manager m
where e.emp_no = m.emp_no
order by m.from_date asc;
```

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

emp_no	first_name	last_name	from_date
110022	Margareta	Markovitch	1985-01-01
110085	Ebru	Alpin	1985-01-01
110183	Shirish	Ossenbru...	1985-01-01
110303	Krassimir	Wegerle	1985-01-01
110511	DeForest	Hagimont	1985-01-01
110725	Peternela	Onuegbe	1985-01-01
111035	Przemyslawa	Kaelbling	1985-01-01
111400	Arie	Staelin	1985-01-01
111692	Tonny	Butterworth	1985-01-01
110344	Rosine	Cools	1988-09-09
111784	Marjo	Giarratana	1988-10-17
110765	Rutger	Hofmeyr	1989-05-06
110114	Isamu	Legleitner	1989-12-17
111133	Hauke	Zhang	1991-03-07
111534	Hilary	Kambil	1991-04-08
110800	Sanjoy	Quadeer	1991-09-12
110039	Vishwani	Minakawa	1991-10-01
110228	Karsten	Sigstam	1992-03-21
110567	Leon	DasSarma	1992-04-25
110386	Shem	Kieras	1992-08-02
111877	Xiaobin	Spinelli	1992-09-08
110854	Dung	Pesch	1994-06-28
111939	Yuchang	Weedman	1996-01-03

Output — Action Output

#	Time	Action	Message	Duration / Fetch
1	17:55:16	use employees	0 row(s) affected	0.000 sec
2	17:55:33	select count(distinct emp_no) from employees where employees.gender = "M"	1 row(s) returned	0.172 sec / 0.000 sec
3	19:14:39	select e.emp_no, e.gender, s.salary from employees e inner join salary s on e.emp_no...	Error Code: 1146. Table 'employees.salary' doesn't exist	0.000 sec
4	19:15:06	select e.emp_no, e.gender, s.salary from employees e inner join salaries s on e.emp_n...	1706321 row(s) returned	0.000 sec / 1.187 sec
5	19:29:03	select e.emp_no, e.first_name, e.last_naem, m.from_date from employees e, dept_ma...	Error Code: 1054. Unknown column 'e.last_naem' in 'field list'	0.000 sec
6	19:29:12	select e.emp_no, e.first_name, e.last_name, m.from_date from employees e, dept_ma...	24 row(s) returned	0.000 sec / 0.000 sec
7	19:29:45	select e.emp_no, e.first_name, e.last_name, m.from_date from employees e, dept_ma...	24 row(s) returned	0.000 sec / 0.000 sec

25.

select d.dept_no, d.dept_name, e.emp_no, e.last_name

from employees e, dept_manager m, departments d

where d.dept_no = m.dept_no and m.emp_no = e.emp_no
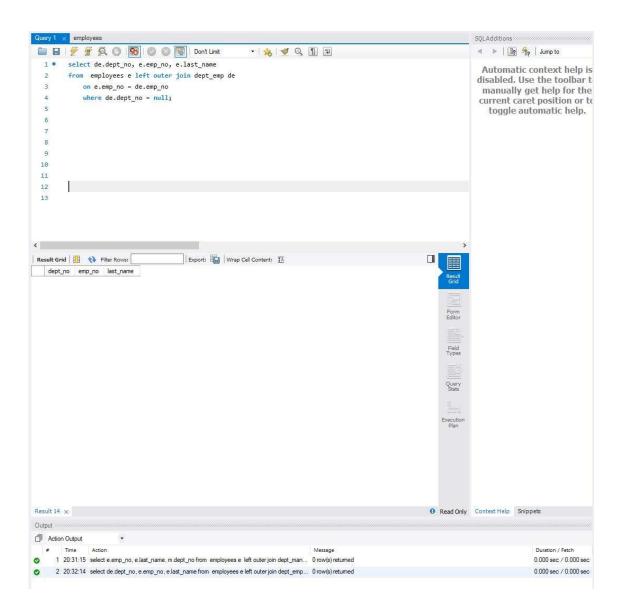
order by d.dept_no asc;

```
select d.dept_no, d.dept_name, e.emp_no, e.last_name
from employees e, dept_manager m, departments d
where d.dept_no = m.dept_no and m.emp_no = e.emp_no
order by d.dept_no asc;
```

dept_no	dept_name	emp_no	last_name
d001	Marketing	110022	Markovitch
d001	Marketing	110039	Minakawa
d002	Finance	110085	Alpin
d002	Finance	110114	Legleitner
d003	Human Resources	110183	Ossenbru...
d003	Human Resources	110228	Sigstam
d004	Production	110303	Wegerle
d004	Production	110344	Cools
d004	Production	110386	Kieras
d004	Production	110420	Ghazalie
d005	Development	110511	Hagimont
d005	Development	110567	DasSarma
d006	Quality Managem...	110725	Onuegbe
d006	Quality Managem...	110765	Hofmeyr
d006	Quality Managem...	110800	Quadeer
d006	Quality Managem...	110854	Pesch
d007	Sales	111035	Kaelbling
d007	Sales	111133	Zhang
d008	Research	111400	Staelin
d008	Research	111534	Kambil
d009	Customer Service	111692	Butterworth
d009	Customer Service	111784	Giarratana
d009	Customer Service	111877	Spinelli
d009	Customer Service	111939	Weedman

26.

select de.dept_no, e.emp_no, e.last_name

from   employees e left outer join dept_emp de

        on e.emp_no = de.emp_no

    where de.dept_no = null;

27.

select de.dept_no, e.emp_no, e.last_name

from   employees e left outer join dept_emp de

        on e.emp_no = de.emp_no

    where de.dept_no = null;

28.

select e.emp_no, e.last_name, m.dept_no

from   employees e   left outer join dept_manager m

        on e.emp_no = m.emp_no

    where m.dept_no = null;

29.

17346 employees

select count(de.emp_no)

from dept_emp de

where de.dept_no = "d002";

```sql
1 • select count(de.emp_no)
2   from dept_emp de
3   where de.dept_no = "d002";
4
5
6
7
8
9
10
11
12
```

count(de.emp_no)
17346

#	Time	Action	Message	Duration / Fetch
1	20:31:15	select e.emp_no, e.last_name, m.dept_no from employees e left outer join dept_man...	0 row(s) returned	0.000 sec / 0.000 sec
2	20:32:14	select de.dept_no, e.emp_no, e.last_name from employees e left outer join dept_emp...	0 row(s) returned	0.000 sec / 0.000 sec
3	20:36:29	select count(de.emp_no) from dept_emp de where de.dept_no = "d002"	1 row(s) returned	0.015 sec / 0.000 sec

30.

Customer Service
Development
Finance
Human Resources
Marketing
Production
Quality Management
Research
Sales

select distinct d.dept_name

from departments d;

31

Supot	Remmele	1952-02-01
Kiyokazu	Whitcomb	1952-02-01
Eishiro	Kuzuoka	1952-02-01
Ronghao	Schaad	1952-02-01

Moni   Decaestecker 1952-02-01
Jouni   Pocchiola   1952-02-01

select e.first_name, e.last_name, e.birth_date

from employees e

order by e.birth_date asc;

32.

There are a lot of same the oldest employees

select e.first_name, e.last_name, e.birth_date

from employees e

order by e.birth_date desc;

33

alter table employees add SSN int not null;

the screenshot displays SSN attribute is in employees table.

34.

insert into employees (emp_no, birth_date, first_name, last_name, gender, hire_date, SSN)

values (500000, "1980-01-01", "Steve", "Smith", "M", "2021-02-21", 0);

the screenshot displays the employee in the employees table.

35.

d005 has highest number of employees

select dept_no as deptno, count(*) as setcount

from dept_emp

group by dept_no

order by setcount desc;

36.

d002 has the least number of employees

select dept_no as deptno, count(*) as setcount

from dept_emp

group by dept_no

order by setcount asc;

37

Find the employee who met the condition

select de.dept_no, e.*, s.salary

from employees e, salaries s, dept_emp de

where de.dept_no = "d001" and de.emp_no = s.emp_no and s.emp_no = e.emp_no

order by s.salary desc;

the employees's emp_no is 466852

delete

from employees

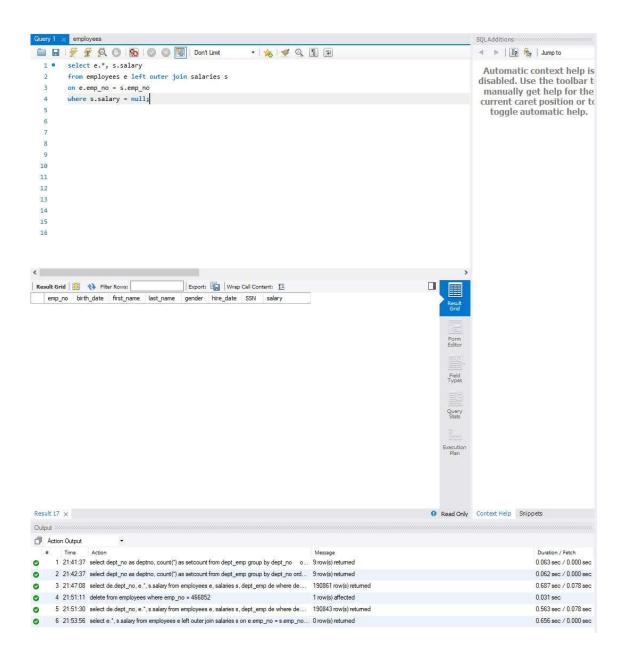where emp_no = 466852;

the person does not show up anymore

38.

No

select e.*, s.salary

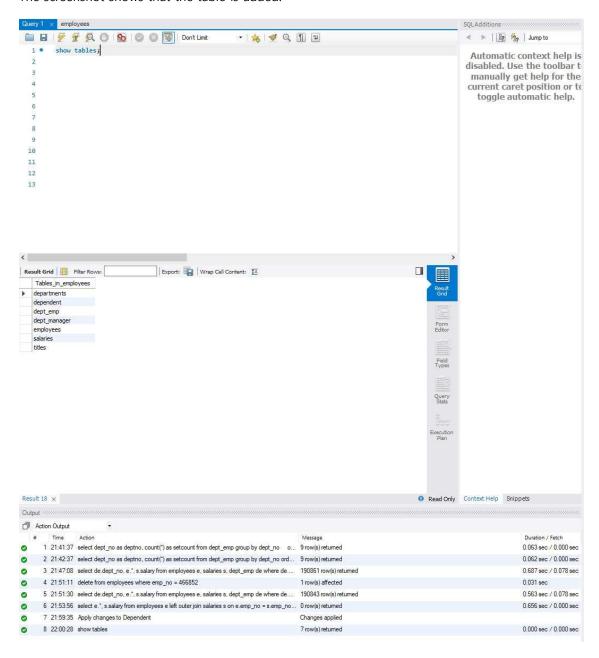from employees e left outer join salaries s

on e.emp_no = s.emp_no

where s.salary = null;

39.

CREATE TABLE `employees`.`dependent` (

  `name` VARCHAR(45) NOT NULL,

  `birth_date` DATE NULL,

  `parent_name` VARCHAR(45) NULL,

  `phone_number` VARCHAR(45) NULL,

PRIMARY KEY (`name`));

The screenshot shows that the table is added.

40.

Drop database employees;