

CSE370: Database Systems

Assignment 02 | Fall 2024

ID : 22301076 | Name : Md. Fardeen Islam

Table Output :

```
MariaDB [Company_22301076]> select * from employee;
```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
EMP001	Taylor	Otwell	otwell@laravel.com	1517999408	2020-06-10	JOB001	100000	25.220	MNG001	DPT001
EMP002	Ryan	Dahl	ryan@nodejs.org	1517999409	2020-04-22	JOB002	10500	23.220	MNG001	DPT002
EMP003	Brendan	Eich	eich@javascript.com	1972451108	2020-05-07	JOB003	200	32.220	MNG001	DPT001
EMP004	Evan	You	you@vuejs.org	1517999400	2020-06-11	JOB004	105500	13.220	MNG002	DPT007
EMP005	Rasmus	Lerdorf	lerdorf@php.net	1972451100	2020-06-03	JOB005	135500	20.220	MNG002	DPT004
EMP006	Guido	van Rossum	guido@python.org	1972461109	2020-07-18	JOB006	14000	10.150	MNG003	DPT007
EMP007	Adrian	Holovaty	adrian@django-project.com	1517999402	2020-05-07	JOB007	21000	15.260	MNG001	DPT005
EMP008	Simon	Willison	simon@django-project.com	1517799940	2020-04-30	JOB008	190000	16.020	MNG002	DPT007
EMP009	James	Gosling	james@java.com	1972451103	2020-05-18	JOB009	33000	15.220	MNG003	DPT005
EMP010	Rod	Johnson	rod@spring.io	1922451108	2020-05-18	JOB010	19500	15.550	MNG002	DPT005
EMP011	Satoshi	Nakamoto	nakamoto@blockchain.com	1537999408	2020-05-10	JOB011	500	11.220	MNG003	DPT007

11 rows in set (0.000 sec)

Question 1 : Find the **first_name**, **last_name**, **email**, **phone_number**, **hire_date** and **department_id** of all the employees with the latest **hire_date**.

Query : select first_name, last_name, email, phone_number, hire_date, department_id from employee where hire_date=(select max(hire_date) from employee);

```
MariaDB [Company_22301076]> select first_name, last_name, email, phone_number, hire_date, department_id from employee where hire_date=(select max(hire_date) from employee);
```

first_name	last_name	email	phone_number	hire_date	department_id
Guido	van Rossum	guido@python.org	1972461109	2020-07-18	DPT007

1 row in set (0.001 sec)

Question 02 : Find the *first_name*, *last_name*, *employee_id*, *phone_number*, *salary* and *department_id* of all the employees with the lowest **salary** in each department.

Query : select first_name, last_name, email, phone_number, min(salary), department_id from employee group by department_id;

```
MariaDB [Company_22301076]> select first_name, last_name, email, phone_number, min(salary), department_id from employee group by department_id;
```

first_name	last_name	email	phone_number	min(salary)	department_id
Taylor	Otwell	otwell@laravel.com	1517999408	200	DPT001
Ryan	Dahl	ryan@nodejs.org	1517999409	10500	DPT002
Rasmus	Lerdorf	lerdorf@php.net	1972451100	135500	DPT004
Adrian	Holovaty	adrian@django-project.com	1517999402	19500	DPT005
Evan	You	you@vuejs.org	1517999400	500	DPT007

```
5 rows in set (0.000 sec)
```

Question 03 : Find the *first_name*, *last_name*, *employee_id*, *commission_pct* and *department_id* of all the employees in the department 'DPT007' who have a lower commission_pct than all of the department 'DPT005' employees.

Query : select first_name, last_name, employee_id, commission_pct, department_id from employee where department_id = 'DPT007' and commission_pct < all(select commission_pct from employee where department_id = 'DPT005');

```
MariaDB [Company_22301076]> select first_name, last_name, employee_id, commission_pct, department_id from employee where department_id = 'DPT007' and commission_pct < all(select commission_pct from employee where department_id = 'DPT005');
```

first_name	last_name	employee_id	commission_pct	department_id
Evan	You	EMP004	13.220	DPT007
Guido	van Rossum	EMP006	10.150	DPT007
Satoshi	Nakamoto	EMP011	11.220	DPT007

```
3 rows in set (0.001 sec)
```

Question 4 : Find the **department_id** and total number of employees of each department which does not have a single employee under it with a **salary** more than 30,000.

Query : select distinct department_id, count(*) as total_employees from employee where salary < 30000 group by department_id;

```
MariaDB [Company_22301076]> select distinct department_id, count(*) as total_employees from employee where salary < 30000 group by department_id;
```

department_id	total_employees
DPT001	1
DPT002	1
DPT005	2
DPT007	2

4 rows in set (0.000 sec)

Question 05 : For each department, find the **department_id**, **job_id** and **commission_pct** with **commission_pct** less than at least one other **job_id** in that department.

Query : select department_id, job_id, commission_pct from employee L1 where exists(select * from employee L2 where L1.department_id=L2.department_id and L1.job_id != L2.job_id and L1.commission_pct < L2.commission_pct);

```
MariaDB [Company_22301076]> select department_id, job_id, commission_pct from employee L1 where exists(select * from employee L2 where L1.department_id=L2.department_id and L1.job_id != L2.job_id and L1.commission_pct < L2.commission_pct);
```

department_id	job_id	commission_pct
DPT001	JOB001	25.220
DPT007	JOB006	10.150
DPT007	JOB011	11.220
DPT005	JOB009	15.220
DPT007	JOB004	13.220
DPT005	JOB007	15.260

6 rows in set (0.000 sec)

Question 06 : Find the ***manager_id*** who does not have any employee under them with a ***salary*** less than 3500.

Query : select distinct manager_id from employee where salary > 3500;

```
MariaDB [Company_22301076]> select distinct manager_id from employee where salary > 3500;
+-----+
| manager_id |
+-----+
| MNG001     |
| MNG002     |
| MNG003     |
+-----+
3 rows in set (0.000 sec)
```

Question 07 : Find the ***first_name***, ***last_name***, ***employee_id***, ***email***, ***salary***, ***department_id*** and ***commission_pct*** of the employee with the lowest ***commission_pct*** under each manager.

Query : select first_name, last_name, employee_id, email, salary, department_id, commission_pct from employee where (manager_id, commission_pct) in (select manager_id, min(commission_pct) from employee group by manager_id);

```
MariaDB [company_22301076]> select first_name, last_name, employee_id, email, salary, department_id, commission_pct from employee where (manager_id, commission_pct) in (select manager_id, min(commission_pct) from employee group by manager_id);
+-----+-----+-----+-----+-----+-----+-----+
| first_name | last_name | employee_id | email                | salary | department_id | commission_pct |
+-----+-----+-----+-----+-----+-----+-----+
| Evan      | You      | EMP004      | you@vuejs.org        | 105500 | DPT007        | 13.220         |
| Guido     | van Rossum | EMP006      | guido@python.org     | 14000  | DPT007        | 10.150         |
| Adrian   | Holovaty | EMP007      | adrian@django-project.com | 21000  | DPT005        | 15.260         |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.001 sec)
```