

BRAC UNIVERSITY

Assignment-02

Submitted by:

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Section: 05

Course code: CSE370

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Assignment

At first we have to create table and insert the values:

```
MariaDB [11301423_ramisa]: create table employees(employee_id char(10), first_name varchar(20), last_name varchar(20), email varchar(60), phone_number char(14), hire_date date, job_id char(10), salary int, commission_pct decimal(5,3), manager_id char(10), department_id char(10));
Query OK, 0 rows affected (0.011 sec)
```

```
MariaDB [11301423_ramisa]: describe employees;
```

Field	Type	Null	Key	Default	Extra
employee_id	char(10)	YES		NULL	
first_name	varchar(20)	YES		NULL	
last_name	varchar(20)	YES		NULL	
email	varchar(60)	YES		NULL	
phone_number	char(14)	YES		NULL	
hire_date	date	YES		NULL	
job_id	char(10)	YES		NULL	
salary	int(11)	YES		NULL	
commission_pct	decimal(5,3)	YES		NULL	
manager_id	char(10)	YES		NULL	
department_id	char(10)	YES		NULL	

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

```
MariaDB [11301423_ramisa]: insert into employees (employee_id, first_name, last_name, email, phone_number, hire_date, job_id, salary, commission_pct, manager_id, department_id) values
-> ('EMP001', 'Ramisa', 'Shahar', 'ramisa.shahar@gmail.com', '01747275978', '2020-01-18', 'JOB001', 35000, 0.200, 'MGR001', 'DEPT001'),
-> ('EMP002', 'Farhana', 'Yasmin', 'farhana.yasmin@gmail.com', '01706364448', '2021-01-31', 'JOB002', 40000, 0.150, 'MGR002', 'DEPT005'),
-> ('EMP003', 'Tahsin', 'Rahman', 'tahsin.rahman@gmail.com', '01706060000', '2021-02-12', 'JOB003', 25000, 0.200, 'MGR003', 'DEPT001'),
-> ('EMP004', 'Mujibur', 'Rahman', 'mujib.rahman@gmail.com', '01716274026', '2022-03-10', 'JOB001', 35000, 0.050, 'MGR001', 'DEPT007'),
-> ('EMP005', 'Nusyba', 'Neha', 'nusyba.neha@gmail.com', '01706364448', '2021-01-31', 'JOB002', 30000, 0.120, 'MGR002', 'DEPT002'),
-> ('EMP006', 'Tahmina', 'Choudhury', 'tahmina.choudhury@gmail.com', '01711111118', '2022-08-04', 'JOB001', 55000, 0.230, 'MGR007', 'DEPT005'),
-> ('EMP007', 'Walid', 'Jahin', 'walid.jahin@yahoo.com', '01733333338', '2020-12-25', 'JOB001', 25000, 0.050, 'MGR001', 'DEPT003'),
-> ('EMP008', 'Refayet', 'Fariq', 'refayet.fariq@yahoo.com', '01744444448', '2023-10-09', 'JOB002', 90000, 0.235, 'MGR001', 'DEPT001'),
-> ('EMP009', 'Rehnuma', 'Islam', 'rehnuma.islam@yahoo.com', '01755554448', '2020-07-01', 'JOB007', 55000, 0.120, 'MGR003', 'DEPT001'),
-> ('EMP010', 'Sharif', 'Shaikat', 'sharif.shaikat@yahoo.com', '017333334448', '2020-10-26', 'JOB001', 60000, 0.52, 'MGR001', 'DEPT004'),
-> ('EMP011', 'Saifullah', 'Anjar', 'saifullah.anjar@gmail.com', '01766664448', '2021-12-31', 'JOB002', 95000, 0.785, 'MGR002', 'DEPT004'),
-> ('EMP012', 'Mashrura', 'Ahmed', 'mashrura.ahmed@gmail.com', '01788884448', '2020-07-23', 'JOB003', 70000, 0.257, 'MGR003', 'DEPT004');
Query OK, 12 rows affected (0.000 sec)
Records: 12 Duplicates: 0 Warnings: 0
```

```
MariaDB [11301423_ramisa]: select * from employees;
```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
EMP001	Ramisa	Shahar	ramisa.shahar@gmail.com	01747275978	2020-01-18	JOB001	35000	0.200	MGR001	DEPT001
EMP002	Farhana	Yasmin	farhana.yasmin@gmail.com	01706364448	2021-01-31	JOB002	40000	0.150	MGR002	DEPT005
EMP003	Tahsin	Rahman	tahsin.rahman@gmail.com	01706060000	2021-02-12	JOB003	25000	0.200	MGR003	DEPT001
EMP004	Mujibur	Rahman	mujib.rahman@gmail.com	01716274026	2022-03-10	JOB001	35000	0.050	MGR001	DEPT007
EMP005	Nusyba	Neha	nusyba.neha@gmail.com	01706364448	2021-01-31	JOB002	30000	0.120	MGR002	DEPT002
EMP006	Tahmina	Choudhury	tahmina.choudhury@gmail.com	01711111118	2022-08-04	JOB003	55000	0.230	MGR007	DEPT005
EMP007	Walid	Jahin	walid.jahin@yahoo.com	01733333338	2020-12-25	JOB001	25000	0.050	MGR001	DEPT003
EMP008	Refayet	Fariq	refayet.fariq@yahoo.com	01744444448	2023-10-09	JOB002	90000	0.235	MGR002	DEPT001
EMP009	Rehnuma	Islam	rehnuma.islam@yahoo.com	01755554448	2020-07-01	JOB007	55000	0.120	MGR003	DEPT001
EMP010	Sharif	Shaikat	sharif.shaikat@yahoo.com	017333334448	2020-10-26	JOB001	60000	0.520	MGR001	DEPT004
EMP011	Saifullah	Anjar	saifullah.anjar@gmail.com	01766664448	2021-12-31	JOB002	95000	0.785	MGR002	DEPT004
EMP012	Mashrura	Ahmed	mashrura.ahmed@gmail.com	01788884448	2020-07-23	JOB003	70000	0.257	MGR003	DEPT004

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

Task1: Find the first_name, last_name, email, phone_number, hire_date and department_id of all the employees with the latest hire_date.

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

```
VariaDB [21301423_ranisa]> select first_name, last_name, email, phone_number, hire_date, department_id from employees where hire_date=(select max(hire_date) from employees);
```

first_name	last_name	email	phone_number	hire_date	department_id
Refayet	Tariq	refayet.tariq@yahoo.com	01744444448	2023-10-09	DPT003

1 row in set (0.013 sec)

Task2: 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.

Command: select first_name, last_name, employee_id, phone_number, salary, department_id from employees where (department_id, salary) in (select department_id, min(salary) from employees group by department_id);

```
MarisaDB [21301423_ranisa]> select first_name, last_name, employee_id, phone_number, salary, department_id from employees where (department_id, salary) in (select department_id, min(salary) from employees group by department_id);
```

first_name	last_name	employee_id	phone_number	salary	department_id
Farhana	Yasmin	EMP002	01706364448	40000	DPT005
Tahsin	Rahman	EMP003	01700000008	25000	DPT001
Mujibur	Rahman	EMP004	01716274626	35000	DPT007
Nusyba	Neha	EMP005	01706364448	30000	DPT002
Walid	Jahin	EMP007	01733333338	25000	DPT003
Shariar	Shaikat	EMP010	01733333448	60000	DPT004

```
6 rows in set (0.007 sec)
```

Task3: 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 employees of the department 'DPT005'.

Command: select e1.first_name, e1.last_name, e1.employee_id, e1.commission_pct, e1.department_id from employees e1 where e1.department_id = 'DPT007' and e1.commission_pct < (select min(e2.commission_pct) from employees e2 where e2.department_id = 'DPT005');

```
VariaDB [21301423_ranisa]> select e1.first_name, e1.last_name, e1.employee_id, e1.commission_pct, e1.department_id from employees e1 where e1.department_id = 'DPT007' and e1.commission_pct < (select min(e2.commission_pct) from employees e2 where e2.department_id = 'DPT005');
```

first_name	last_name	employee_id	commission_pct	department_id
Nujibur	Rahman	EMP004	0.090	DPT007

1 row in set (0.006 sec)

Task4: 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.

Command: select department_id, count(employee_id) as total_employees from employees group by department_id having max(salary) <= 30000;

```
Marla08 [21301423_ramisa]> select department_id, count(employee_id) as total_employees from employees group by department_id having max(salary) <= 30000;
```

department_id	total_employees
OPT002	1

1 row in set (0.003 sec)

Task5: For each of the departments, find the department_id, job_id and commission_pct with commission_pct less than at least one other job_id in that department.

Command: select e1.department_id, e1.job_id, e1.commission_pct from employees e1 where e1.commission_pct < any(select e2.commission_pct from employees e2 where e2.department_id = e1.department_id and e2.job_id <> e1.job_id);

```
MariaDB [21301423_ramisa]> select e1.department_id, e1.job_id, e1.commission_pct from employees e1 where e1.commission_pct < any(select e2.commission_pct from employees e2 where e2.department_id = e1.department_id and e2.job_id <> e1.job_id);
```

department_id	job_id	commission_pct
DPT005	J00002	0.130
DPT001	J00003	0.200
DPT003	J00001	0.050
DPT003	J00007	0.120
DPT004	J00001	0.520
DPT004	J00003	0.257

6 rows in set (0.003 sec)

Task6: Find the *manager_id* who does not have any employee under them with a *salary* less than 3500.

Command: select manager_id from
employees group by manager_id having
min(salary) >= 3500;

```
MariaDB [21301423_ramisa]> select manager_id from employees group by manager_id having min(salary) >= 3500;
+-----+
| manager_id |
+-----+
| MING001    |
| MING002    |
| MING003    |
| MING007    |
+-----+
4 rows in set (0.001 sec)
```


Task7: Find the first_name, last_name, employee_id, email, salary, department_id and commission_pct of the employee who has the lowest commission_pct under each manager.

Command: select e.first_name, e.last_name, e.employee_id, e.email, e.salary, e.department_id, e.commission_pct from employees e where (e.manager_id, e.commission_pct) in (select manager_id, min(commission_pct) from employees group by manager_id);

```
MariaDB [21301423_ramisa]> select e.first_name, e.last_name, e.employee_id, e.email, e.salary, e.department_id, e.commission_pct from employees e where (e.manager_id, e.commission_pct) in (select manager_id, min(commission_pct) from employees group by manager_id);
```

first_name	last_name	employee_id	email	salary	department_id	commission_pct
Musyba	Neha	EMP005	musyba.neha@gmail.com	30000	DPT002	0.120
Tahmina	Chowdhury	EMP006	tahmina.chowdhury@gmail.com	55000	DPT005	0.230
Walid	Tahin	EMP007	walid.tahin@yahoo.com	25000	DPT003	0.050
Rehnuma	Islam	EMP009	rehnuma.islam@yahoo.com	55000	DPT003	0.120

```
4 rows in set (0.002 sec)
```