

Home Work 3

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First we need to create a table

Query:

```
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) );
```

```
MariaDB [(none)]> use hw03;
Database changed
MariaDB [hw03]> 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 (0.276 sec)

MariaDB [hw03]> 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 (0.016 sec)
```

INSERT INTO employees VALUES

("E001", "Michael", "Scott", "michalesscott@gmail.com", "21301501", "1999-09-20",

"JOB001", 100000, 0.05, "MNG001", "DPT001"),

("E002", "Jim", "Harper", "jimharper@gmail.com", "21301502", "2004-09-30",

"JOB002", 60000, 0.05, "MNG002", "DPT002"),

("E003", "Pam", "Beesly", "pambeesly@gmail.com", "21301503", "2003-09-30",

"JOB003", 25000, 0.3, "MNG003", "DPT003"),

("E004", "Angela", "Martin", "angelamartin@gmail.com", "21301504", "2005-09-28",

"JOB004", 65000, 0.08, "MNG004", "DPT005"),

("E005", "Dwight", "Shrute", "dwightshrute@gmail.com", "21301505", "2003-09-30",

"JOB005", 60000, 0.32, "MNG001", "DPT007"),
("E006", "Kelly", "Kapoor", "kellykapoor@gmail.com", "21301506", "2003-09-30",
"JOB006", 45000, 0.25, "MNG002", "DPT002"),
("E007", "Andrew", "Bernard", "andrewbernard@gmail.com", "21301507", "2007-05-10",
"JOB002", 3000, 0.45, "MNG003", "DPT007"),
("E008", "Kevin", "Malone", "kevinmalone@gmail.com", "21301508", "2004-10-30",
"JOB004", 20000, 0.025, "MNG004", "DPT005"),
("E009", "Toby", "Flender", "tobyflender@gmail.com", "21301509", "2004-09-30",
"JOB007", 30000, 0.3, "MNG001", "DPT007"),
("E010", "Phyllis", "Vance", "phyllisvance@gmail.com", "21301510", "1999-09-20",
"JOB002", 2110, 0.5, "MNG002", "DPT002"),
("E011", "Creed", "Bratton", "creedbratton@gmail.com", "21301511", "1980-06-01",
"JOB002", 18000, 0.35, "MNG003", "DPT005");

```
MariaDB [hw03]: mysql> select * from employees;
```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
E001	Michael	Scott	michaescott@gmail.com	21301501	1999-09-28	JOB001	100000	0.050	MNG001	DPT001
E002	James	Clark	jamesc@gmail.com	21301502	1999-09-28	JOB002	60000	0.050	MNG001	DPT002
E003	Pam	Beesly	pambeesly@gmail.com	21301503	2003-09-30	JOB003	25000	0.300	MNG003	DPT003
E004	Angela	Martin	angelamartin@gmail.com	21301504	2005-09-28	JOB004	65000	0.080	MNG004	DPT005
E005	Dwight	Shrute	dwithgshrute@gmail.com	21301505	2003-09-30	JOB005	60000	0.320	MNG001	DPT007
E006	Kelly	Kapoor	kellykapoor@gmail.com	21301506	2003-09-30	JOB006	45000	0.250	MNG002	DPT002
E007	Andrew	Bernard	andrewbernard@gmail.com	21301507	2007-05-10	JOB002	3000	0.450	MNG003	DPT007
E008	Kevin	Malone	kevinmalone@gmail.com	21301508	2004-10-30	JOB004	20000	0.025	MNG004	DPT005
E009	Toby	Fleander	tobylfender@gmail.com	21301509	2004-09-30	JOB007	30000	0.300	MNG001	DPT007
E010	Phyllis	Vance	phyllisvance@gmail.com	21301510	1999-09-28	JOB002	2100	0.500	MNG002	DPT002
E011	Creed	Bratton	creedbratton@gmail.com	21301511	1990-06-01	JOB002	15000	0.350	MNG003	DPT005

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

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

Ans:

Query:

```
SELECT first_name, last_name, email, phone_number, hire_date,
department_id FROM employees WHERE hire_date = (SELECT
MAX(hire_date) FROM employees);
```

```
MariaDB [hw03]> 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 |
+-----+-----+-----+-----+-----+-----+
| Andrew | Bernard | andrewbernard@gmail.com | 21301507 | 2007-05-10 | DPT007 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)
```

2. 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.

Ans:

Query:

```
SELECT e.first_name, e.last_name, e.employee_id, e.phone_number, e.salary,
e.department_id FROM employees e INNER JOIN (SELECT department_id,
MIN(salary) AS min_salary FROM employees GROUP BY department_id) m
ON e.department_id = m.department_id AND e.salary = m.min_salary;
```

```
MariaDB [hw03]> SELECT e.first_name, e.last_name, e.employee_id, e.phone_number, e.salary, e.department_id FROM employees e INNER JOIN (SELECT department_id, MIN(salary) AS min_salary FROM employees GROUP BY department_id) m ON e.department_id = m.department_id AND e.salary = m.min_salary;
+-----+-----+-----+-----+-----+-----+
| first_name | last_name | employee_id | phone_number | salary | department_id |
+-----+-----+-----+-----+-----+-----+
| Michael | Scott | E001 | 21301501 | 100000 | DPT001 |
| Pam | Beesly | E003 | 21301503 | 25000 | DPT003 |
| Andrew | Bernard | E007 | 21301507 | 3000 | DPT007 |
| Phyllis | Vance | E010 | 21301510 | 2110 | DPT002 |
| Creed | Bratton | E011 | 21301511 | 18000 | DPT005 |
+-----+-----+-----+-----+-----+-----+
```

3. 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'.

Ans:

Query:

```
SELECT e.first_name, e.last_name, e.employee_id, e.commission_pct,
e.department_id FROM employees e WHERE e.department_id = 'DPT007'
AND e.commission_pct < ALL (SELECT commission_pct FROM employees
WHERE department_id = 'DPT005');
```

```

MariaDB [hw03]> SELECT e.first_name, e.last_name, e.employee_id, e.commission_pct, e.department_id FROM employees WHERE e.department_id = 'DPT007' AND e.commission_pct < ALL (SELECT commission_pct FROM employees WHERE department_id = 'DPT005');
ERROR 1054 (42S22): Unknown column 'e.first_name' in 'field list'
MariaDB [hw03]> SELECT e.first_name, e.last_name, e.employee_id, e.commission_pct, e.department_id FROM employees e WHERE e.department_id = 'DPT007' AND e.commission_pct < ALL (SELECT commission_pct FROM employees WHERE department_id = 'DPT005');
Empty set (0.000 sec)
MariaDB [hw03]>

```

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.

Ans:

Query:

```

SELECT department_id, COUNT(*) AS
total_employees FROM employees WHERE
department_id NOT IN ( SELECT
department_id FROM employees WHERE
salary > 30000) GROUP BY department_id;

```

```

MariaDB [hw03]> SELECT department_id, COUNT(*) AS total_employees FROM employees WHERE department_id NOT IN ( SELECT department_id FROM employees WHERE salary > 30000) GROUP BY department_id;
+-----+-----+
| department_id | total_employees |
+-----+-----+
| DPT003        | 1               |
+-----+-----+
1 row in set (0.001 sec)

```

5. 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.

Ans:

Query:

```

SELECT e.department_id, e.job_id, e.commission_pct FROM employees e WHERE
e.commission_pct < ANY ( SELECT commission_pct FROM employees WHERE
department_id = e.department_id AND job_id != e.job_id );

```

```

MariaDB [hw03]> SELECT e.department_id, e.job_id, e.commission_pct FROM employees e WHERE e.commission_pct < ANY ( SELECT commission_pct FROM employees WHERE department_id = e.department_id AND job_id != e.job_id );
+-----+-----+-----+
| department_id | job_id | commission_pct |
+-----+-----+-----+
| DPT002        | JOB002 | 0.050          |
| DPT005        | JOB004 | 0.080          |
| DPT007        | JOB005 | 0.320          |
| DPT002        | JOB006 | 0.250          |
| DPT005        | JOB004 | 0.025          |
| DPT007        | JOB007 | 0.300          |
+-----+-----+-----+
6 rows in set (0.001 sec)

```

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

Ans:

Query:

```

SELECT DISTINCT manager_id FROM employees WHERE manager_id NOT IN (
SELECT DISTINCT manager_id FROM employees WHERE salary < 3500 );

```

```

MariaDB [hw03]> SELECT DISTINCT manager_id FROM employees WHERE manager_id NOT IN ( SELECT DISTINCT manager_id FROM employees WHERE salary < 3500 );
+-----+
| manager_id |
+-----+
| MNG001     |
| MNG004     |
+-----+
2 rows in set (0.001 sec)

```

7. 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.

Ans:

Query:

```

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 [hw03]> 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 |
+-----+-----+-----+-----+-----+-----+-----+
| Michael | Scott | E001 | michalescott@gmail.com | 100000 | DPT001 | 0.050 |
| Jim | Harper | E002 | jimharper@gmail.com | 60000 | DPT002 | 0.050 |
| Pam | Beesly | E003 | pambeesly@gmail.com | 25000 | DPT003 | 0.300 |
| Kevin | Malone | E008 | kevinmalone@gmail.com | 20000 | DPT005 | 0.025 |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.001 sec)
```