CSE370

Database Systems

Lab Homework-3

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Section: 06

MariaDB [project]> 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 [project]> 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 (0.022 sec)
```

```
MariaDB [project]> 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 (0.009 sec)
```

MariaDB [project]> INSERT INTO Employees VALUES

   -> ("EMP001", "Michael", "Scott", "scott@gmail.com", "01565637846782", "1999-09-20","JOB001", 100000,12.678,"MNG001","DPT001"),

   -> ("EMP002", "Jim", "Harper","harper@gmail.com", "01945637846782", "2004-09-30","JOB002", 6000,13.898,"MNG002" ,"DPT002"),

   -> ("EMP003", "Pam", "Beesly","pam@gmail.com", "01789657846782", "2005-09-28","JOB003", 250,15.163,"MNG003" ,"DPT003"),

   -> ("EMP004", "Angela", "Martin","martin@gmail.com", "04589637846782", "2004-09-28","JOB004",6500,17.231,"MNG004" ,"DPT004"),

   -> ("EMP005", "Dwight", "Shrute","Shrute@gmail.com", "01945637846782", "2003-09-30","JOB001", 600,18.929,"MNG005" ,"DPT005"),

   -> ("EMP006", "Kelly", "Kapoor","Kelly@gmail.com", "01945637567782", "2003-09-30" , "JOB001", 45000,17.636,"MNG006" ,"DPT006"),

   -> ("EMP007", "Andrew", "Bernard","Andrew@gmail.com", "01945637846782", "2007-05-10","JOB002",500,13.585,"MNG007","DPT007"),

   -> ("EMP008", "Kevin", "Malone","Kevin@gmail.com", "01789637846782", "2004-10-30","JOB003", 65000,13.585,"MNG003" ,"DPT003"),

   -> ("EMP009", "Toby", "Flender","Toby@gmail.com", "019456378464567", "2004-09-30" , "JOB004",70,15.163,"MNG009","DPT002"),

   -> ("EMP010", "Phyllis", "Vance","Vance@gmail.com", "01945645646782", "1999-09-20","JOB005", 61000,18.216,"MNG004","DPT001");

```
MariaDB [project]> INSERT INTO Employees VALUES
    -> ("EMP001", "Michael", "Scott", "scott@gmail.com", "01565637846782", "1999-09-20","JOB001", 100000,12.678,"MNG001","DPT001"),
    -> ("EMP002", "Jim", "Harper","harper@gmail.com", "01945637846782", "2004-09-30","JOB002",  6000,13.898,"MNG002" ,"DPT002"),
    -> ("EMP003", "Pam", "Beesly","pam@gmail.com", "01789657846782", "2005-09-28","JOB003",  250,15.163,"MNG003" ,"DPT003"),
    -> ("EMP004", "Angela", "Martin","martin@gmail.com", "04589637846782", "2004-09-28","JOB004",6500,17.231,"MNG004" ,"DPT004"),
    -> ("EMP005", "Dwight", "Shrute","Shrute@gmail.com", "01945637846782", "2003-09-30","JOB001", 600,18.929,"MNG005" ,"DPT005"),
    -> ("EMP006", "Kelly", "Kapoor","Kelly@gmail.com", "01945637567782", "2003-09-30" , "JOB001",  45000,17.636,"MNG006" ,"DPT006"),
    -> ("EMP007", "Andrew", "Bernard","Andrew@gmail.com", "01945637846782", "2007-05-10","JOB002",500,13.585,"MNG007","DPT007"),
    -> ("EMP008", "Kevin", "Malone","Kevin@gmail.com", "01789637846782", "2004-10-30","JOB003", 65000,13.585,"MNG003" ,"DPT003"),
    -> ("EMP009", "Toby", "Flender","Toby@gmail.com", "019456378464567", "2004-09-30" , "JOB004",70,15.163,"MNG009","DPT002"),
    -> ("EMP010", "Phyllis", "Vance","Vance@gmail.com", "01945645646782", "1999-09-20","JOB005", 61000,18.216,"MNG004","DPT001");
Query OK, 10 rows affected, 1 warning (0.004 sec)
Records: 10  Duplicates: 0  Warnings: 1
```

```
MariaDB [project]>
MariaDB [project]> Select * from employees;
+-------------+------------+-----------+-------------------+----------------+------------+--------+--------+----------------+------------+---------------+
| employee_id | first_name | last_name | email             | phone_number   | hire_date  | job_id | salary | commission_pct | manager_id | department_id |
+-------------+------------+-----------+-------------------+----------------+------------+--------+--------+----------------+------------+---------------+
| EMP001      | Michael    | Scott     | scott@gmail.com   | 01565637846782 | 1999-09-20 | JOB001 | 100000 |         12.678 | MNG001     | DPT001        |
| EMP002      | Jim        | Harper    | harper@gmail.com  | 01945637846782 | 2004-09-30 | JOB002 |   6000 |         13.898 | MNG002     | DPT002        |
| EMP003      | Pam        | Beesly    | pam@gmail.com     | 01789657846782 | 2005-09-28 | JOB003 |    250 |         15.163 | MNG003     | DPT003        |
| EMP004      | Angela     | Martin    | martin@gmail.com  | 04589637846782 | 2004-09-28 | JOB004 |   6500 |         17.231 | MNG004     | DPT004        |
| EMP005      | Dwight     | Shrute    | Shrute@gmail.com  | 01945637846782 | 2003-09-30 | JOB001 |    600 |         18.929 | MNG005     | DPT005        |
| EMP006      | Kelly      | Kapoor    | Kelly@gmail.com   | 01945637567782 | 2003-09-30 | JOB001 |  45000 |         17.636 | MNG006     | DPT006        |
| EMP007      | Andrew     | Bernard   | Andrew@gmail.com  | 01945637846782 | 2007-05-10 | JOB002 |    500 |         13.585 | MNG007     | DPT007        |
| EMP008      | Kevin      | Malone    | Kevin@gmail.com   | 01789637846782 | 2004-10-30 | JOB003 |  65000 |         13.585 | MNG003     | DPT003        |
| EMP009      | Toby       | Flender   | Toby@gmail.com    | 01945637846456 | 2004-09-30 | JOB004 |     70 |         15.163 | MNG009     | DPT002        |
| EMP010      | Phyllis    | Vance     | Vance@gmail.com   | 01945645646782 | 1999-09-20 | JOB005 |  61000 |         18.216 | MNG004     | DPT001        |
+-------------+------------+-----------+-------------------+----------------+------------+--------+--------+----------------+------------+---------------+
10 rows in set (0.000 sec)
```

Answer of question 1:

MariaDB [project]> select first_name, last_name, email, phone_number, hire_date, department_id from employees where hire_date=(select max(hire_date) from employees);

```
MariaDB [project]> select first_name, last_name, email, phone_number, hire_date, department_id from employees where hire_date=(select max(hire_date) from emp
loyees);

+------------+-----------+------------------+----------------+------------+---------------+
| first_name | last_name | email            | phone_number   | hire_date  | department_id |
+------------+-----------+------------------+----------------+------------+---------------+
| Andrew     | Bernard   | Andrew@gmail.com | 01945637846782 | 2007-05-10 | DPT007        |
+------------+-----------+------------------+----------------+------------+---------------+
1 row in set (0.011 sec)
```

Answer of question 2:

MariaDB [project]> select first_name, last_name, employee_id, phone_number, salary, department_id from employees where salary in (select min(salary) from employees group by department_id);

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

```
+------------+-----------+-------------+----------------+--------+---------------+
| first_name | last_name | employee_id | phone_number   | salary | department_id |
+------------+-----------+-------------+----------------+--------+---------------+
| Pam        | Beesly    | EMP003      | 01789657846782 |    250 | DPT003        |
| Angela     | Martin    | EMP004      | 04589637846782 |   6500 | DPT004        |
| Dwight     | Shrute    | EMP005      | 01945637846782 |    600 | DPT005        |
| Kelly      | Kapoor    | EMP006      | 01945637567782 |  45000 | DPT006        |
| Andrew     | Bernard   | EMP007      | 01945637846782 |    500 | DPT007        |
| Toby       | Flender   | EMP009      | 01945637846456 |     70 | DPT002        |
| Phyllis    | Vance     | EMP010      | 01945645646782 |  61000 | DPT001        |
+------------+-----------+-------------+----------------+--------+---------------+
7 rows in set (0.003 sec)
```

Answer of question 3:

MariaDB [project]> select first_name, last_name, employee_id, commission_pct, department_id from employees where department_id="DPT007" and commission_pct< (select max(commission_pct) from employees where department_id="DPT005");

```
MariaDB [project]> select first_name, last_name, employee_id, commission_pct, department_id from employees where department_id="DPT007" and commission_pct< (
select max(commission_pct) from employees where department_id="DPT005");
```

```
+------------+-----------+-------------+----------------+---------------+
| first_name | last_name | employee_id | commission_pct | department_id |
+------------+-----------+-------------+----------------+---------------+
| Andrew     | Bernard   | EMP007      |         13.585 | DPT007        |
+------------+-----------+-------------+----------------+---------------+
1 row in set (0.008 sec)
```

Answer of question 4:

MariaDB [project]> select distinct department_id from employees where salary in (select max(salary) from employees group by department_id) and salary<30000;

```
MariaDB [project]> select distinct department_id from employees where salary in (select max(salary) from employees group by department_id) and salary<30000;
+---------------+
| department_id |
+---------------+
| DPT002        |
| DPT004        |
| DPT005        |
| DPT007        |
+---------------+
4 rows in set (0.059 sec)
```

Answer of question 5:

MariaDB [project]> select department_id, job_id, commission_pct from

   -> employees L1 where exists(select * from employees L2 where

    -> L1.department_id=L2.department_id and L1.job_id!=L2.job_id and

    -> L1.commission_pct < L2.commission_pct)group by department_id;

```
MariaDB [project]> select department_id, job_id, commission_pct from
    -> employees L1 where exists(select * from employees L2 where
    -> L1.department_id=L2.department_id and L1.job_id!=L2.job_id and
    -> L1.commission_pct < L2.commission_pct)group by department_id;
```

```
+---------------+---------+----------------+
| department_id | job_id  | commission_pct |
+---------------+---------+----------------+
| DPT001        | JOB001  |         12.678 |
| DPT002        | JOB002  |         13.898 |
+---------------+---------+----------------+
2 rows in set (0.023 sec)
```

Answer of question 6

MariaDB [project]> select distinct manager_id from employees where salary>3500;

```
MariaDB [project]> select distinct manager_id from employees where salary>3500;
+------------+
| manager_id |
+------------+
| MNG001     |
| MNG002     |
| MNG004     |
| MNG006     |
| MNG003     |
+------------+
```

Answer of Question 7:

MariaDB [project]> select first_name, last_name, employee_id, email, salary, department_id , commission_pct

    -> from employees where (manager_id,commission_pct) in (select manager_id,min(commission_pct) from employees group

    -> by manager_id);

```
MariaDB [project]> select first_name, last_name, employee_id, email, salary, department_id , commission_pct
    -> from employees where (manager_id,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	EMP001	scott@gmail.com	100000	DPT001	12.678
Jim	Harper	EMP002	harper@gmail.com	6000	DPT002	13.898
Angela	Martin	EMP004	martin@gmail.com	6500	DPT004	17.231
Dwight	Shrute	EMP005	Shrute@gmail.com	600	DPT005	18.929
Kelly	Kapoor	EMP006	Kelly@gmail.com	45000	DPT006	17.636
Andrew	Bernard	EMP007	Andrew@gmail.com	500	DPT007	13.585
Kevin	Malone	EMP008	Kevin@gmail.com	65000	DPT003	13.585
Toby	Flender	EMP009	Toby@gmail.com	70	DPT002	15.163

8 rows in set (0.004 sec)