

CSE370 : Database Systems

Assignment 02 | Fall 2024

ID : <22201054> | Name : Amit Sutradhar

No 1 Query (as Plain Text)

Create database Company_21301341:

Use Company_21301341;

```
create Table Employee (  
  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,  
  comission_pct DECIMAL(5,3),  
  manager_id CHAR(10),  
  department_id CHAR(10)  
);
```

insert into Employee values

```
('EMP001', 'Taylor', 'Otwell', 'otwell@laravel.com', '+98739360', '2020-06-10', 'JOB001', 50000, 0.030, 'MNG001',  
'DPT001'),  
( 'EMP002', 'Ryan', 'Dahl', 'ryan@nodejs.org', '+98633632', '2020-04-22', 'JOB002', 60000, 0.400, 'MNG002',  
'DPT002'),  
( 'EMP003', 'Brendan', 'Eich', 'eich@javascript.com', '+98939570', '2020-05-07', 'JOB003', 40000, 0.400, 'MNG003',  
'DPT003'),  
( 'EMP004', 'Evan', 'You', 'you@vuejs.org', '+98234630', '2020-06-11', 'JOB004', 30000, 0.015, 'MNG004',  
'DPT004'),  
( 'EMP005', 'Rasmus', 'Lerdorf', 'lerdorf@php.net', '+98937927', '2020-06-03', 'JOB005', 40000, 0.300, 'MNG005',  
'DPT005'),  
( 'EMP006', 'Guido', 'Rossum', 'guido@python.org', '+98968827', '2020-07-18', 'JOB006', 25000, 0.025, 'MNG006',
```

```
'DPT006'),  
(('EMP007', 'Adrian', 'Holovaty', 'adrian@django project.com', '+98570724', '2020-05-07', 'JOB007', 45000, 0.250,  
'MNG007', 'DPT007'),  
(('EMP008', 'Simon', 'Willison', 'simon@django project.com', '+98864615', '2020-04-30', 'JOB008', 40000, 0.400,  
'MNG008', 'DPT008'),  
(('EMP009', 'James', 'Gosling', 'james@java.com', '+98719491', '2020-05-18', 'JOB009', 30000, 0.300, 'MNG009',  
'DPT009'),  
(('EMP010', 'Rod', 'Johnson', 'rod@spring.io', '+98601744', '2020-05-18', 'JOB010', 40000, 0.350, 'MNG010',  
'DPT010'),  
(('EMP011', 'Satoshi', 'Nakamoto', 'nakamoto@blockchain.com', '+98630488', '2020-05-10', 'JOB011', 50000, 0.350,  
'MNG011', 'DPT011'));
```

```
select first_name, last_name, email, phone_number, hire_date, department_id from Employee where hire_date = (select  
max(hire_date) from Employee);
```

No 1 SS (of Query & Output in Shell)

```
MariaDB [(none)]> create database company_22201054;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use company_22201054;
Database changed
MariaDB [company_22201054]> create Table Employee (
  -> 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,
  -> comission_pct DECIMAL(5,3),
  -> manager_id CHAR(10),
  -> department_id CHAR(10)
  -> );
Query OK, 0 rows affected (0.007 sec)

MariaDB [company_22201054]> insert into Employee values
  -> ('EMP001', 'Taylor', 'Otwell', 'otwell@laravel.com', '+98739360', '2020-06-10', 'JOB001', 50000, 0.030, 'MNG001',
  -> 'DPT001'),
  -> ('EMP002', 'Ryan', 'Dahl', 'ryan@nodejs.org', '+98633632', '2020-04-22', 'JOB002', 60000, 0.400, 'MNG002',
  -> 'DPT002'),
  -> ('EMP003', 'Brendan', 'Eich', 'eich@javascript.com', '+98939570', '2020-05-07', 'JOB003', 40000, 0.400, 'MNG003',
  -> 'DPT003'),
  -> ('EMP004', 'Evan', 'You', 'you@vuejs.org', '+98234630', '2020-06-11', 'JOB004', 30000, 0.015, 'MNG004',
  -> 'DPT004'),
  -> ('EMP005', 'Rasmus', 'Lerdorf', 'lerdorf@php.net', '+98937927', '2020-06-03', 'JOB005', 40000, 0.300, 'MNG005',
  -> 'DPT005'),
  -> ('EMP006', 'Guido', 'Rossum', 'guido@python.org', '+98968827', '2020-07-18', 'JOB006', 25000, 0.025, 'MNG006',
  -> 'DPT006'),
  -> ('EMP007', 'Adrian', 'Holovaty', 'adrian@djangoproject.com', '+98570724', '2020-05-07', 'JOB007', 45000, 0.250,
  -> 'MNG007', 'DPT007'),
  -> ('EMP008', 'Simon', 'Willison', 'simon@djangoproject.com', '+98864615', '2020-04-30', 'JOB008', 40000, 0.400,
  -> 'MNG008', 'DPT008'),
  -> ('EMP009', 'James', 'Gosling', 'james@java.com', '+98719491', '2020-05-18', 'JOB009', 30000, 0.300, 'MNG009',
  -> 'DPT009'),
  -> ('EMP010', 'Rod', 'Johnson', 'rod@spring.io', '+98601744', '2020-05-18', 'JOB010', 40000, 0.350, 'MNG010',
  -> 'DPT010'),
  -> ('EMP011', 'Satoshi', 'Nakamoto', 'nakamoto@blockchain.com', '+98630488', '2020-05-10', 'JOB011', 50000, 0.350,
  -> 'MNG011', 'DPT011');
Query OK, 11 rows affected (0.013 sec)
Records: 11 Duplicates: 0 Warnings: 0

MariaDB [company_22201054]> select*from employee;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| employee_id | first_name | last_name | email | phone_number | hire_date | job_id | salary | comission_pct | manager_id | department_id |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| EMP001 | Taylor | Otwell | otwell@laravel.com | +98739360 | 2020-06-10 | JOB001 | 50000 | 0.030 | MNG001 | DPT001 |
| EMP002 | Ryan | Dahl | ryan@nodejs.org | +98633632 | 2020-04-22 | JOB002 | 60000 | 0.400 | MNG002 | DPT002 |
| EMP003 | Brendan | Eich | eich@javascript.com | +98939570 | 2020-05-07 | JOB003 | 40000 | 0.400 | MNG003 | DPT003 |
| EMP004 | Evan | You | you@vuejs.org | +98234630 | 2020-06-11 | JOB004 | 30000 | 0.015 | MNG004 | DPT004 |
| EMP005 | Rasmus | Lerdorf | lerdorf@php.net | +98937927 | 2020-06-03 | JOB005 | 40000 | 0.300 | MNG005 | DPT005 |
| EMP006 | Guido | Rossum | guido@python.org | +98968827 | 2020-07-18 | JOB006 | 25000 | 0.025 | MNG006 | DPT006 |
| EMP007 | Adrian | Holovaty | adrian@djangoproject.com | +98570724 | 2020-05-07 | JOB007 | 45000 | 0.250 | MNG007 | DPT007 |
| EMP008 | Simon | Willison | simon@djangoproject.com | +98864615 | 2020-04-30 | JOB008 | 40000 | 0.400 | MNG008 | DPT008 |
| EMP009 | James | Gosling | james@java.com | +98719491 | 2020-05-18 | JOB009 | 30000 | 0.300 | MNG009 | DPT009 |
| EMP010 | Rod | Johnson | rod@spring.io | +98601744 | 2020-05-18 | JOB010 | 40000 | 0.350 | MNG010 | DPT010 |
| EMP011 | Satoshi | Nakamoto | nakamoto@blockchain.com | +98630488 | 2020-05-10 | JOB011 | 50000 | 0.350 | MNG011 | DPT011 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
11 rows in set (0.000 sec)

MariaDB [company_22201054]> 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 | Rossum | guido@python.org | +98968827 | 2020-07-18 | DPT006 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.001 sec)
```

| | |
|---|--|
| | |
| No 2 Query (as Plain Text) | select first_name, last_name, employee_id, phone_number, salary, department_id from Employee e1 where salary = (select min(salary) from Employee e2 where e1.department_id = e2.department_id); |
| No 2 SS (of Query & Output in Shell) | <pre> MariaDB [company_22201054]> select first_name, last_name, employee_id, phone_number, salary, department_id from Employee e1 where salary = (select min(salary) from Employee e2 where e1.department_id = e2.department_id); +-----+-----+-----+-----+-----+-----+ first_name last_name employee_id phone_number salary department_id +-----+-----+-----+-----+-----+-----+ Taylor Otwell EMP001 +98739360 50000 DPT001 Ryan Dahl EMP002 +98633632 60000 DPT002 Brendan Eich EMP003 +98939570 40000 DPT003 Evan You EMP004 +98234630 30000 DPT004 Rasmus Lerdorf EMP005 +98937927 40000 DPT005 Guido Rossum EMP006 +98968827 25000 DPT006 Adrian Holovaty EMP007 +98570724 45000 DPT007 Simon Willison EMP008 +98864615 40000 DPT008 James Gosling EMP009 +98719491 30000 DPT009 Rod Johnson EMP010 +98601744 40000 DPT010 Satoshi Nakamoto EMP011 +98630488 50000 DPT011 +-----+-----+-----+-----+-----+-----+ 11 rows in set (0.001 sec) </pre> |
| | |
| No 3 Query (as Plain Text) | select first_name, last_name, employee_id, comission_pct, department_id from Employee where department_id = 'DPT007' and comission_pct < all (select comission_pct from Employee where department_id = 'DPT005'); |
| No 3 SS (of Query & Output in Shell) | <pre> MariaDB [company_22201054]> select first_name, last_name, employee_id, comission_pct, department_id from Employee where department _id = 'DPT007' and comission_pct < all (select comission_pct from Employee where department_id = 'DPT005'); +-----+-----+-----+-----+-----+ first_name last_name employee_id comission_pct department_id +-----+-----+-----+-----+-----+ Adrian Holovaty EMP007 0.250 DPT007 +-----+-----+-----+-----+-----+ 1 row in set (0.001 sec) </pre> |
| | |
| No 4 Query | select department_id, count(*) as total_employees from Employee where department_id not in (select distinct |

| | |
|---|---|
| (as Plain Text) | department_id from Employee where salary > 30000)group by department_id; |
| No 4 SS (of Query & Output in Shell) | <pre> MariaDB [company_22201054]> select department_id, count(*) as total_employees from Employee where department_id not in (select distinct department_id from Employee where salary > 30000)group by department_id; +-----+-----+ department_id total_employees +-----+-----+ DPT004 1 DPT006 1 DPT009 1 +-----+-----+ 3 rows in set (0.001 sec) </pre> |
| | |
| No 5 Query (as Plain Text) | select e1.department_id, e1.job_id, e1.comission_pct from Employee e1 where exists (select 1 from Employee e2 where e1.department_id = e2.department_id and e1.comission_pct < e2.comission_pct); |
| No 5 SS (of Query & Output in Shell) | <pre> MariaDB [company_22201054]> select e1.department_id, e1.job_id, e1.comission_pct from Employee e1 where exists (select 1 from Employee e2 where e1.department_id = e2.department_id and e1.comission_pct < e2.comission_pct); Empty set (0.000 sec) </pre> |
| | |
| No 6 Query (as Plain Text) | select manager_id from Employee where manager_id not in (select distinct manager_id from Employee where salary < 3500); |

No 6 SS
(of Query & Output
in Shell)

```
MariaDB [company_22201054]> select manager_id from Employee where manager_id not in (select distinct manager_id from Employee wher
e salary < 3500);
+-----+
| manager_id |
+-----+
| MNG001     |
| MNG002     |
| MNG003     |
| MNG004     |
| MNG005     |
| MNG006     |
| MNG007     |
| MNG008     |
| MNG009     |
| MNG010     |
| MNG011     |
+-----+
11 rows in set (0.001 sec)
```

No 7 Query
(as Plain Text)

select first_name, last_name, employee_id, email, salary, department_id, comission_pct from Employee e1 where
comission_pct = (select min(comission_pct) from Employee e2 where e1.manager_id = e2.manager_id);

No 7 SS
(of Query & Output
in Shell)

```
MariaDB [company_22201054]> select first_name, last_name, employee_id, email, salary, department_id, comission_pct from Employee e
1 where comission_pct = (select min(comission_pct) from Employee e2 where e1.manager_id = e2.manager_id);
+-----+-----+-----+-----+-----+-----+-----+
| first_name | last_name | employee_id | email | salary | department_id | comission_pct |
+-----+-----+-----+-----+-----+-----+-----+
| Taylor     | Otwell    | EMP001      | otwell@laravel.com | 50000 | DPT001         | 0.030         |
| Ryan       | Dahl      | EMP002      | ryan@nodejs.org    | 60000 | DPT002         | 0.400         |
| Brendan    | Eich      | EMP003      | eich@javascript.com | 40000 | DPT003         | 0.400         |
| Evan       | You       | EMP004      | you@vuejs.org      | 30000 | DPT004         | 0.015         |
| Rasmus     | Lerdorf   | EMP005      | lerdorf@php.net    | 40000 | DPT005         | 0.300         |
| Guido      | Rossum    | EMP006      | guido@python.org   | 25000 | DPT006         | 0.025         |
| Adrian     | Holovaty  | EMP007      | adrian@djangoproject.com | 45000 | DPT007         | 0.250         |
| Simon      | Willison  | EMP008      | simon@djangoproject.com | 40000 | DPT008         | 0.400         |
| James      | Gosling   | EMP009      | james@java.com     | 30000 | DPT009         | 0.300         |
| Rod        | Johnson   | EMP010      | rod@spring.io      | 40000 | DPT010         | 0.350         |
| Satoshi    | Nakamoto  | EMP011      | nakamoto@blockchain.com | 50000 | DPT011         | 0.350         |
+-----+-----+-----+-----+-----+-----+-----+
11 rows in set (0.001 sec)
```

