

```
Setting environment for using XAMPP for Windows.
rauf@RAUFBISWAS c:\xampp
# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.4.32-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

Command:

```
mysql -u root -p
```

```
show databases;
```

```
create database cse370_assignment_2;
```

```
use cse370_assignment_2;
```

```
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,
commission_pct decimal(5,3),
manager_id char(10),
department_id char(10)
);
```

```
MariaDB [cse370_assignment_2]> show tables;
```

```
+-----+
| Tables_in_cse370_assignment_2 |
+-----+
| employee                       |
+-----+
1 row in set (0.001 sec)
```

```
INSERT INTO Employee (employee_id, first_name, last_name, email, phone_number,
hire_date, job_id, salary, commission_pct, manager_id, department_id) VALUES
('EMP001', 'Ani', 'Otwell', 'aniot@laravel.com', '1234569360', '2015-06-10', 'JOB002', 30000,
2.000, 'MNG001', 'DPT003'),
('EMP002', 'Ryan', 'Rauf', 'rauf@nodejs.org', '87321633632', '2021-04-22', 'JOB008', 20000,
0.000, 'MNG002', 'DPT001'),
('EMP003', 'Rafi', 'Resig', 'john@jquery.com', '6546546543', '2022-06-12', 'JOB018', 5000,
0.002, 'MNG002', 'DPT005'),
('EMP004', 'Khaled', 'Eich', 'eich@javascript.com', '43278939570', '2021-05-07', 'JOB009',
30000, 0.000, 'MNG001', 'DPT002'),
('EMP005', 'Linus', 'Biswas', 'linus@linux.com', '9879879876', '2021-08-08', 'JOB015', 2000,
0.050, 'MNG002', 'DPT006'),
('EMP006', 'Evan', 'Me', 'mEe@vuejs.org', '4321876530', '2016-06-11', 'JOB003', 40000, 8.245,
'MNG002', 'DPT005'),
('EMP007', 'Anymos', 'Lerdorf', 'lerdorf@php.net', '9876637927', '2020-06-03', 'JOB006', 25000,
0.852, 'MNG001', 'DPT001'),
('EMP008', 'Guido', 'Vanule', 'guido@python.org', '88765438827', '2020-07-18', 'JOB007', 25000,
1.000, 'MNG002', 'DPT001'),
('EMP009', 'Madroni', 'Holovaty', 'madroni@djangoproject.com', '12269570724', '2019-05-07',
'JOB004', 50000, 4.205, 'MNG001', 'DPT002'),
('EMP010', 'Simpson', 'Willison', 'simpson@djangoproject.com', '87432864615', '2015-04-30',
'JOB001', 50000, 12.500, 'MNG002', 'DPT001'),
('EMP011', 'James', 'Gosl', 'james@java.com', '7896549491', '2020-05-18', 'JOB005', 7000,
0.000, 'MNG002', 'DPT004'),
('EMP012', 'Kenoi', 'Thomps', 'kenoi@unix.com', '1231231234', '2021-06-18', 'JOB013', 7000,
0.023, 'MNG002', 'DPT005'),
('EMP013', 'Roddil', 'Johnson', 'roddil@spring.io', '4543601744', '2021-05-18', 'JOB012', 2000,
0.000, 'MNG002', 'DPT003'),
('EMP014', 'Anderson', 'Hejls', 'anderson@csharp.com', '7657657654', '2022-05-18', 'JOB017',
1200, 0.230, 'MNG002', 'DPT007'),
('EMP015', 'Faltu', 'Nakami', 'nakami@blockchain.com', '98165630488', '2021-05-10', 'JOB011',
1500, 0.234, 'MNG001', 'DPT004'),
('EMP016', 'Dennis', 'Rich', 'dennis69@unix.com', '4324324324', '2021-08-08', 'JOB014', 1000,
0.023, 'MNG002', 'DPT007'),
```

('EMP017', 'Bjarne', 'Poor', 'bjarne@cpp.com', '8768768765', '2021-12-25', 'JOB016', 1500, 0.500, 'MNG002', 'DPT007'),
('EMP018', 'Richie', 'Hockey', 'rich@clojure.com', '5435435432', '2023-10-08', 'JOB019', 1000, 0.009, 'MNG002', 'DPT007'),
('EMP019', 'Yukini', 'Natonumi', 'yukinato690@gmail.com', '98488840488', '2020-12-10', 'JOB010', 10000, 0.234, 'MNG001', 'DPT005'),
('EMP020', 'Marga', 'Ton', 'marga@apollo.com', '7767767768', '2023-11-17', 'JOB020', 35000, 0.001, 'MNG002', 'DPT007');

select*from employee;

```
MariaDB [cse370_assignment_2]> select*from employee;
```

| employee_id | first_name | last_name | email | phone_number | hire_date | job_id | salary | commission_pct | manager_id | department_id |
|-------------|------------|-----------|---------------------------|--------------|------------|--------|--------|----------------|------------|---------------|
| EMP001 | Ani | Otwell | aniot@laravel.com | 1234569360 | 2015-06-10 | JOB002 | 30000 | 2.000 | MNG001 | DPT003 |
| EMP002 | Ryan | Rauf | rauf@nodejs.org | 87321633632 | 2021-04-22 | JOB008 | 20000 | 0.000 | MNG002 | DPT001 |
| EMP003 | Rafi | Resig | john@jquery.com | 6546546543 | 2022-06-12 | JOB018 | 5000 | 0.002 | MNG002 | DPT005 |
| EMP004 | Khaled | Eich | eich@javascript.com | 43278939570 | 2021-05-07 | JOB009 | 30000 | 0.000 | MNG001 | DPT002 |
| EMP005 | Linus | Biswas | linus@linux.com | 9879879876 | 2021-08-08 | JOB015 | 2000 | 0.050 | MNG002 | DPT006 |
| EMP006 | Evan | Me | mEe@vuejs.org | 4321876530 | 2016-06-11 | JOB003 | 40000 | 8.245 | MNG002 | DPT005 |
| EMP007 | Anymos | Lerdorf | lerdorf@php.net | 9876637927 | 2020-06-03 | JOB006 | 25000 | 0.852 | MNG001 | DPT001 |
| EMP008 | Guido | Vanule | guido@python.org | 88765438827 | 2020-07-18 | JOB007 | 25000 | 1.000 | MNG002 | DPT001 |
| EMP009 | Madroni | Holovaty | madroni@djangoproject.com | 12269570724 | 2019-05-07 | JOB004 | 50000 | 4.285 | MNG001 | DPT002 |
| EMP010 | Simpson | Willison | simpson@djangoproject.com | 87432864615 | 2015-04-30 | JOB001 | 50000 | 12.500 | MNG002 | DPT001 |
| EMP011 | James | Gosl | james@java.com | 7896549491 | 2020-05-18 | JOB005 | 7000 | 0.000 | MNG002 | DPT004 |
| EMP012 | Kenoi | Thomps | kenoi@unix.com | 1231231234 | 2021-06-18 | JOB013 | 7000 | 0.023 | MNG002 | DPT005 |
| EMP013 | Roddil | Johnson | roddil@spring.io | 4543601744 | 2021-05-18 | JOB012 | 2000 | 0.000 | MNG002 | DPT003 |
| EMP014 | Anderson | Hejls | anderson@csharp.com | 7657657654 | 2022-05-18 | JOB017 | 1200 | 0.230 | MNG002 | DPT007 |
| EMP015 | Faltu | Nakami | nakami@blockchain.com | 98165630488 | 2021-05-10 | JOB011 | 1500 | 0.234 | MNG001 | DPT004 |
| EMP016 | Dennis | Rich | dennis@unix.com | 4324324324 | 2021-08-08 | JOB014 | 1000 | 0.023 | MNG002 | DPT007 |
| EMP017 | Bjarne | Poor | bjarne@cpp.com | 8768768765 | 2021-12-25 | JOB016 | 1500 | 0.500 | MNG002 | DPT007 |
| EMP018 | Richie | Hockey | rich@clojure.com | 5435435432 | 2023-10-08 | JOB019 | 1000 | 0.009 | MNG002 | DPT007 |
| EMP019 | Yukini | Natonumi | yukinato690@gmail.com | 98488840488 | 2020-12-10 | JOB010 | 10000 | 0.234 | MNG001 | DPT005 |
| EMP020 | Marga | Ton | marga@apollo.com | 7767767768 | 2023-11-17 | JOB020 | 35000 | 0.001 | MNG002 | DPT007 |

20 rows in set (0.001 sec)

Answers of the queries:

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

```
MariaDB [cse370_assignment_2]> 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 |
|------------|-----------|------------------|--------------|------------|---------------|
| Marga | Ton | marga@apollo.com | 7767767768 | 2023-11-17 | DPT007 |

1 row in set (0.000 sec)

SELECT first_name, last_name, employee_id, phone_number, salary, department_id FROM employee e1 WHERE salary = (SELECT MIN(salary) FROM employee WHERE department_id = e1.department_id);

```
MariaDB [cse370_assignment_2]> SELECT first_name, last_name, employee_id, phone_number, salary, department_id FROM
employee e1 WHERE salary = ( SELECT MIN(salary) FROM employee WHERE department_id = e1.department_id );
```

| first_name | last_name | employee_id | phone_number | salary | department_id |
|------------|-----------|-------------|--------------|--------|---------------|
| Ryan | Rauf | EMP002 | 87321633632 | 20000 | DPT001 |
| Rafi | Resig | EMP003 | 6546546543 | 5000 | DPT005 |
| Khaled | Eich | EMP004 | 43278939570 | 30000 | DPT002 |
| Linus | Biswas | EMP005 | 9879879876 | 2000 | DPT006 |
| Roddil | Johnson | EMP013 | 4543601744 | 2000 | DPT003 |
| Faltu | Nakami | EMP015 | 98165630488 | 1500 | DPT004 |
| Dennis | Rich | EMP016 | 4324324324 | 1000 | DPT007 |
| Richie | Hockey | EMP018 | 5435435432 | 1000 | DPT007 |

8 rows in set (0.001 sec)

SELECT first_name, last_name, employee_id, commission_pct, department_id FROM Employee WHERE department_id = 'DPT007' AND commission_pct < (SELECT MIN(commission_pct) FROM Employee WHERE department_id = 'DPT005');

```
MariaDB [cse370_assignment_2]> SELECT first_name, last_name, employee_id, commission_pct, department_id FROM Employee WHERE department_id = 'DPT007' AND commission_pct < ( SELECT MIN(commission_pct) FROM Employee WHERE department_id = 'DPT005' );
```

| first_name | last_name | employee_id | commission_pct | department_id |
|------------|-----------|-------------|----------------|---------------|
| Marga | Ton | EMP020 | 0.001 | DPT007 |

1 row in set (0.003 sec)

SELECT department_id, COUNT(employee_id) AS total_employee FROM Employee GROUP BY department_id HAVING MAX(salary) <= 30000;

```
MariaDB [cse370_assignment_2]> SELECT department_id, COUNT(employee_id) AS total_employee FROM Employee GROUP BY department_id HAVING MAX(salary) <= 30000;
```

| department_id | total_employee |
|---------------|----------------|
| DPT003 | 2 |
| DPT004 | 2 |
| DPT006 | 1 |

3 rows in set (0.001 sec)

SELECT e1.department_id, e1.job_id, e1.commission_pct FROM Employee e1 JOIN Employee e2 ON e1.department_id = e2.department_id AND e1.commission_pct < e2.commission_pct;

```
MariaDB [cse370_assignment_2]> SELECT e1.department_id, e1.job_id, e1.commission_pct FROM Employee e1 JOIN Employee e2 ON e1.department_id = e2.department_id AND e1.commission_pct < e2.commission_pct;
```

| department_id | job_id | commission_pct |
|---------------|--------|----------------|
| DPT003 | JOB012 | 0.000 |
| DPT005 | JOB018 | 0.002 |
| DPT005 | JOB013 | 0.023 |
| DPT005 | JOB010 | 0.234 |
| DPT001 | JOB008 | 0.000 |
| DPT001 | JOB008 | 0.000 |
| DPT001 | JOB006 | 0.852 |
| DPT002 | JOB009 | 0.000 |
| DPT001 | JOB008 | 0.000 |
| DPT001 | JOB006 | 0.852 |
| DPT001 | JOB007 | 1.000 |
| DPT005 | JOB018 | 0.002 |
| DPT007 | JOB014 | 0.023 |
| DPT007 | JOB019 | 0.009 |
| DPT007 | JOB020 | 0.001 |
| DPT004 | JOB005 | 0.000 |
| DPT007 | JOB019 | 0.009 |
| DPT007 | JOB020 | 0.001 |
| DPT007 | JOB017 | 0.230 |
| DPT007 | JOB014 | 0.023 |
| DPT007 | JOB019 | 0.009 |
| DPT007 | JOB020 | 0.001 |
| DPT007 | JOB020 | 0.001 |
| DPT005 | JOB018 | 0.002 |
| DPT005 | JOB013 | 0.023 |

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

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

```
MariaDB [cse370_assignment_2]> SELECT DISTINCT manager_id FROM Employee WHERE manager_id NOT IN ( SELECT DISTINCT manager_id FROM Employee WHERE salary < 3500 );
Empty set (0.000 sec)
```

SELECT e.first_name, e.last_name, e.employee_id, e.email, e.salary, e.department_id, e.commission_pct FROM Employee e JOIN (SELECT manager_id, MIN(commission_pct) AS min_commission_pct FROM Employee GROUP BY manager_id) subquery ON e.manager_id = subquery.manager_id AND e.commission_pct = subquery.min_commission_pct;

```
MariaDB [cse370_assignment_2]> SELECT e.first_name, e.last_name, e.employee_id, e.email, e.salary, e.department_id, e.commission_pct FROM Employee e JOIN ( SELECT manager_id, MIN(commission_pct) AS min_commission_pct FROM Employee GROUP BY manager_id ) subquery ON e.manager_id = subquery.manager_id AND e.commission_pct = subquery.min_commission_pct;
```

| first_name | last_name | employee_id | email | salary | department_id | commission_pct |
|------------|-----------|-------------|---------------------|--------|---------------|----------------|
| Ryan | Rauf | EMP002 | rauf@nodejs.org | 20000 | DPT001 | 0.000 |
| Khaled | Eich | EMP004 | eich@javascript.com | 30000 | DPT002 | 0.000 |
| James | Gosl | EMP011 | james@java.com | 7000 | DPT004 | 0.000 |
| Roddil | Johnson | EMP013 | roddil@spring.io | 2000 | DPT003 | 0.000 |

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