Department of Computer Science and Engineering

Lab Assignment 2

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THEORY SECTION: 11

LAB SECTION: 08

Proving yourself worthy of being able to handle more significant tasks, the tech lead has decided to give you a challenging job. However, this time, the data you would be handling is very sensitive and no one wants this data to be leaked. Therefore, instead of getting the entire table, the tech lead has given you the list of attributes that the table contains and the table name. The information given is as follows:

Table Name: ***Employee***	
Attribute Name	**Attribute type**
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)

Write down the queries to retrieve the following information: [7 X 2 =14]

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

ANSWER:

creating database, creating table with insertion of data:

```
MariaDB [(none)]>  create database CSE370Lab02_22301645;

MariaDB [(none)]> use CSE370Lab02_22301645;

MariaDB [CSE370Lab02_22301645]> 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 [CSE370Lab02_22301645]> insert into employee values
('EMP001','Nabonita','Saha','nabo.saha@g.bracu.ac.bd','01924739777','2023-01-
12','job002',50000,2.29,'MNG001','DPT001'), ('EMP002', 'Johnson', 'Roe', 'john.roe@example.com',
'01734567890', '2022-10-17', 'JOB001', 45800, 0.100, 'MNG002', 'DPT007'),('EMP003', 'Wane',
'griffith', 'wane.griffith@example.com', '01534567891', '2023-06-20', 'JOB003', 60000, 1.50, 'MNG003',
'DPT005'),('EMP004', 'Alice', 'kris', 'alice.kris@example.com', '01935560892', '2022-02-26', 'JOB004',
65000, 0.075, 'MNG001', 'DPT005'),('EMP005', 'Bob', 'Marley', 'bob.marley@example.com',
'01624580893', '2023-07-02', 'JOB005', 35000, 2.080, 'MNG002', 'DPT005'),('EMP006', 'Marie',
'Cooper', 'marie.cooper@example.com', '01533567893', '2021-04-21', 'JOB006', 28000, 1.120,
'MNG003', 'DPT001'),('EMP007', 'Danish', 'Micky', 'danish.micky@example.com', '01534567995',
'2020-07-30', 'JOB007', 52000, 3.070, 'MNG001', 'DPT007'),('EMP008', 'Edward', 'murphy',
'edward.murphy@example.com', '01634567392', '2021-07-09', 'JOB008', 71000, 0.280, 'MNG002',
'DPT001'),('EMP009', 'Nina', 'Kaur', 'nina.kaur@example.com', '01934567890', '2023-04-18', 'JOB009',
27000, 0.070, 'MNG003', 'DPT007'),('EMP010', 'George', 'Taylor', 'george.taylor@example.com',
'01764067998', '2022-06-12', 'JOB010', 49000, 2.060, 'MNG001', 'DPT005');

MariaDB [CSE370Lab02_22301645]> select * from employee;
```

command for task 01:

```
MariaDB [CSE370Lab02_22301645]> select first_name, last_name, email, phone_number, hire_date,
department_id from employee where hire_date=(select max(hire_date) from employee);
```

```
MariaDB [(none)]> create database CSE370Lab02_22301645;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use CSE370Lab02_22301645;
Database changed
MariaDB [CSE370Lab02_22301645]> 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));
Query OK, 0 rows affected (0.006 sec)

MariaDB [CSE370Lab02_22301645]> insert into employee values ('EMP001','Nabonita','Saha','nabo.saha@g.bracu.ac.bd','01924739777','2023-01-12','job002',50000,2.29,'MNG001','DPT001'), ('EMP002', 'Johnson', 'Roe', '
john.roe@example.com', '01734567890', '2022-10-17', 'JOB001', 45800, 0.100, 'MNG002', 'DPT007'),('EMP003', 'Wane', 'griffith', 'wane.griffith@example.com', '01534567891', '2023-06-20', 'JOB003', 60000, 1.50, 'MN
G003', 'DPT005'),('EMP004', 'Alice', 'kris', 'alice.kris@example.com', '01935560892', '2022-02-26', 'JOB004', 65000, 0.075, 'MNG001', 'DPT005'),('EMP005', 'Bob', 'Marley', 'bob.marley@example.com', '01624580893'
, '2023-07-02', 'JOB005', 35000, 2.080, 'MNG002', 'DPT005'),('EMP006', 'Marie', 'Cooper', 'marie.cooper@example.com', '01533567893', '2021-04-21', 'JOB006', 28000, 1.120, 'MNG003', 'DPT001'),('EMP007', 'Danish',
 'Micky', 'danish.micky@example.com', '01534567995', '2020-07-30', 'JOB007', 52000, 3.070, 'MNG001', 'DPT007'),('EMP008', 'Edward', 'murphy', 'edward.murphy@example.com', '01634567392', '2021-07-09', 'JOB008', 7
1000, 0.280, 'MNG002', 'DPT001'),('EMP009', 'Nina', 'Kaur', 'nina.kaur@example.com', '01934567890', '2023-04-18', 'JOB009', 27000, 0.070, 'MNG003', 'DPT007'),('EMP010', 'George', 'Taylor', 'george.taylor@example
.com', '01764067998', '2022-06-12', 'JOB010', 49000, 2.060, 'MNG001', 'DPT005');
Query OK, 10 rows affected (0.004 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

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```
MariaDB [CSE370Lab02_22301645]> select * from employee;
+------------+-----------+----------+-------------------------+-------------+-----------+--------+-------+---------------+-----------+---------------+| employee_id | First_name | Last_name | Email
              | Phone_number | Hire_date  | Job_id | Salary | Commission_pct | Manager_id | Department_id |+------------+-----------+----------+-------------------------+-------------+-----------+--------+-------+---------------+-----------+---------------+-
--+--------+---------------+-----------+--------------+| EMP001      | Nabonita   | Saha       | nabo.saha@g.bracu.ac.bd   | 01924739777  | 2023-01-12 | job002 |  50000 |         2.290 | MNG001      | DPT
      || EMP002      | Johnson    | Roe        | john.roe@example.com      | 01734567890  | 2022-10-17 | JOB001 |  45800 |         0.100 | MNG002      | DPT007        || EMP003      | Wane       | griffith
e.griffith@example.com | 01534567891  | 2023-06-20 | JOB003 |  60000 |         1.500 | MNG003      | DPT005        || EMP004      | Alice      | kris       | alice.kris@example.com    | 01935560892  | 2022-0
| JOB004 |  65000 |         0.075 | MNG001      | DPT005        || EMP005      | Bob        | Marley     | bob.marley@example.com    | 01624580893  | 2023-07-02 | JOB005 |  35000 |         2.080 | MNG002
DPT005        || EMP006      | Marie      | Cooper     | marie.cooper@example.com  | 01533567893  | 2021-04-21 | JOB006 |  28000 |         1.120 | MNG003      | DPT001        || EMP007      | Danish     | Mic
  | danish.micky@example.com  | 01534567995  | 2020-07-30 | JOB007 |  52000 |         3.070 | MNG001      | DPT007        || EMP008      | Edward     | murphy     | edward.murphy@example.com | 01634567392  |
-07-09 | JOB008 |  71000 |         0.280 | MNG002      | DPT001        || EMP009      | Nina       | Kaur       | nina.kaur@example.com     | 01934567890  | 2023-04-18 | JOB009 |  27000 |         0.070 | MN
    | DPT007        || EMP010      | George     | Taylor     | george.taylor@example.com | 01764067998  | 2022-06-12 | JOB010 |  49000 |         2.060 | MNG001      | DPT005        |+------------+----------
---------+--------------------------+-------------+-----------+--------+-------+---------------+-----------+---------------+10 rows in set (0.000 sec)

MariaDB [CSE370Lab02_22301645]> 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 |
+------------+-----------+-------------------------+-------------+-----------+---------------+
| Bob        | Marley    | bob.marley@example.com | 01624580893  | 2023-07-02 | DPT005        |
+------------+-----------+-------------------------+-------------+-----------+---------------+
1 row in set (0.001 sec)
```

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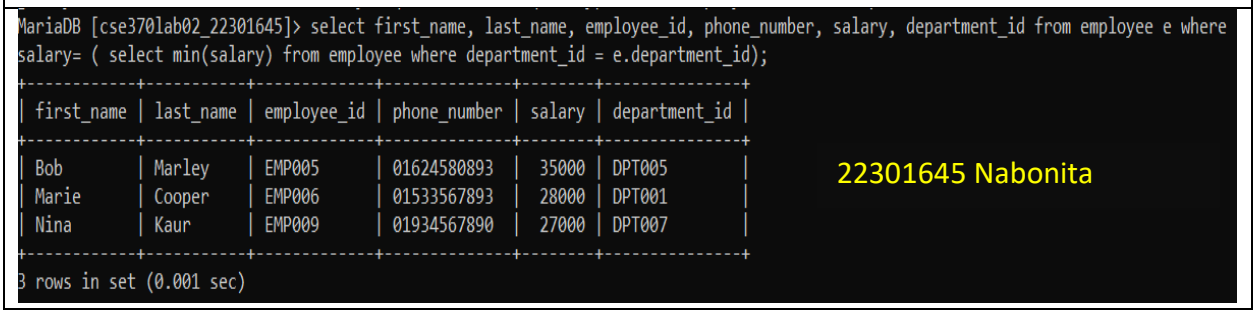
2. Find the first_name, last_name, employee_id, phone_number, salary and department_id of all the employees with the lowest salary in each department.

ANSWER:

```
MariaDB [cse370lab02_22301645]> select first_name, last_name, employee_id, phone_number, salary, department_id from employee e where salary= ( select min(salary) from employee where department_id = e.department_id);
```



```
MariaDB [cse370lab02_22301645]> select first_name, last_name, employee_id, phone_number, salary, department_id from employee e where salary= ( select min(salary) from employee where department_id = e.department_id);
+------------+-----------+-------------+--------------+--------+---------------+
| first_name | last_name | employee_id | phone_number | salary | department_id |
+------------+-----------+-------------+--------------+--------+---------------+
| Bob        | Marley    | EMP005      | 01624580893  |  35000 | DPT005        |
| Marie      | Cooper    | EMP006      | 01533567893  |  28000 | DPT001        |
| Nina       | Kaur      | EMP009      | 01934567890  |  27000 | DPT007        |
+------------+-----------+-------------+--------------+--------+---------------+
3 rows in set (0.001 sec)
```

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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 department 'DPT005' employees.

ANSWER:

```
MariaDB [CSE370Lab02_22301645]> 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 [CSE370Lab02_22301645]> 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
yee where department_id ='DPT005');
+------------+-----------+-------------+---------------+---------------+
| first_name | last_name | employee_id | commission_pct | department_id |
+------------+-----------+-------------+---------------+---------------+
| Nina       | Kaur      | EMP009      |         0.070 | DPT007        |
+------------+-----------+-------------+---------------+---------------+
1 row in set (0.001 sec)
```

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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.

ANSWER:

MariaDB [CSE370Lab02_22301645]> select department_id, count(*) as employee_count from employee where salary<=30000 group by department_id;

```
MariaDB [CSE370Lab02_22301645]> select department_id, count(*) as employee_count from employee where salary<=30000  group by department_id;
+---------------+----------------+
| department_id | employee_count |
+---------------+----------------+
| DPT001        |              1 |
| DPT007        |              1 |
+---------------+----------------+
2 rows in set (0.001 sec)
```

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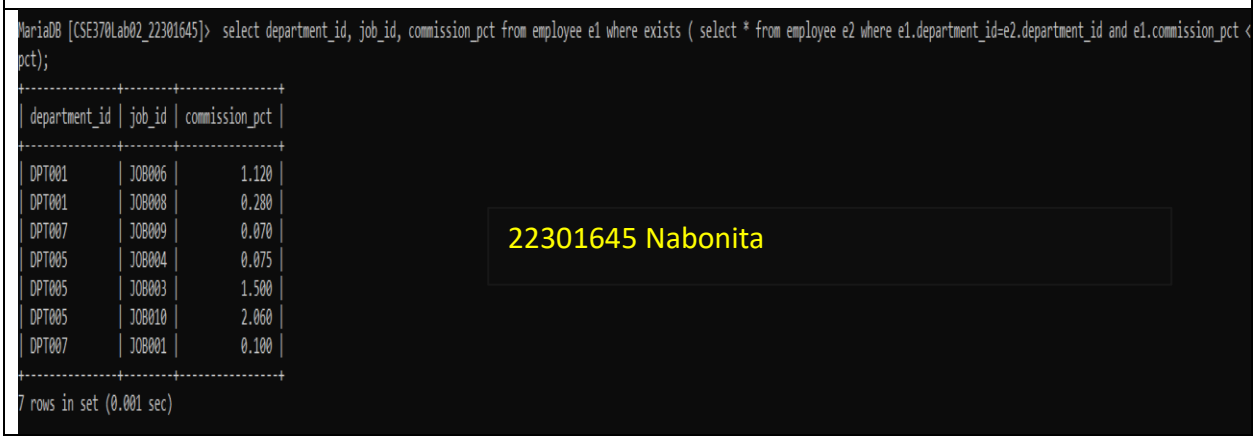
5. For each department, find the department_id, job_id and commission_pct with commission_pct less than at least one other job_id in that department.

ANSWER:

```
MariaDB [CSE370Lab02_22301645]> select department_id, job_id, commission_pct from
employee e1 where exists ( select * from employee e2 where
e1.department_id=e2.department_id and e1.commission_pct < commission_pct);
```



```
MariaDB [CSE370Lab02_22301645]> select department_id, job_id, commission_pct from employee e1 where exists ( select * from employee e2 where e1.department_id=e2.department_id and e1.commission_pct <
pct);
+---------------+--------+----------------+
| department_id | job_id | commission_pct |
+---------------+--------+----------------+
| DPT001        | JOB006 |          1.120 |
| DPT001        | JOB008 |          0.280 |
| DPT007        | JOB009 |          0.070 |
| DPT005        | JOB004 |          0.075 |
| DPT005        | JOB003 |          1.500 |
| DPT005        | JOB010 |          2.060 |
| DPT007        | JOB001 |          0.100 |
+---------------+--------+----------------+
7 rows in set (0.001 sec)
```

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

ANSWER:

```
MariaDB [CSE370Lab02_22301645]> select manager_id from employee where salary>=3500
group by manager_id;
```

```
MariaDB [CSE370Lab02_22301645]> select manager_id from employee where salary>=3500 group by manager_id;
+------------+
| manager_id |
+------------+
| MNG001     |
| MNG002     |
| MNG003     |
+------------+
3 rows in set (0.001 sec)
```

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7. Find the first_name, last_name, employee_id, email, salary, department_id and commission_pct of the employee with the lowest commission_pct under each manager.

ANSWER:

MariaDB [cse370lab02_22301645]> select first_name, last_name, employee_id, email, salary, department_id, commission_pct from employee e where commission_pct= (select min(commission_pct) from employee where manager_id= e.manager_id);

```
MariaDB [cse370lab02_22301645]> select first_name, last_name, employee_id, email, salary, department_id, commission_pct from employee e where commission_pct= ( select min(commission_pct
) from employee where manager_id= e.manager_id );
+------------+-----------+-------------+-----------------------+--------+---------------+----------------+
| first_name | last_name | employee_id | email                 | salary | department_id | commission_pct |
+------------+-----------+-------------+-----------------------+--------+---------------+----------------+
| Johnson    | Roe       | EMP002      | john.roe@example.com  |  45800 | DPT007        |          0.100 |
| Alice      | kris      | EMP004      | alice.kris@example.com |  65000 | DPT005        |          0.075 |
| Nina       | Kaur      | EMP009      | nina.kaur@example.com |  27000 | DPT007        |          0.070 |
+------------+-----------+-------------+-----------------------+--------+---------------+----------------+
3 rows in set (0.001 sec)
```

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