Task-6

```
mysql>
mysql> select eid,name,city
    -> from employee
    -> where eid in
    -> (select eid from salary
    -> where salary>30000);
+-----+-------+--------+
| eid | name  | city   |
+-----+-------+--------+
| e04 | Janvi | Mumbai |
| e05 | lukky | Delhi  |
| e06 | Umi   | Delhi  |
+-----+-------+--------+
3 rows in set (0.57 sec)

mysql>
```

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '' at line 4
mysql> select name from employee
    -> where departmentId=
    -> (select departmentId from department
    -> where departmentName='devloping');
+-------+
| name  |
+-------+
| lukky |
+-------+
1 row in set (0.14 sec)

mysql>
```

❖ Scalary subquery:

(it returns one row and one column)

```
mysql> use company;
Database changed
mysql> select * from employee;
+-----+---------+-----------+--------------+------------+--------+
| eid | name    | city      | departmentId | Mno        | salary |
+-----+---------+-----------+--------------+------------+--------+
| e01 | Khushi  | Rajkot    |            1 | 1234567890 | 15000  |
| e02 | Ram     | Ahemedabad|            4 | 1234567891 | 25000  |
| e03 | Krishna | Bangluru  |            4 | 1122333455 | 5000   |
| e04 | Janvi   | Mumbai    |            3 | 1234512345 | 35000  |
| e05 | lukky   | Delhi     |            2 | 1244668811 | 50000  |
| e06 | Umi     | Delhi     |            1 | 1234554321 | 60000  |
+-----+---------+-----------+--------------+------------+--------+
6 rows in set (1.70 sec)

mysql> select * from employee
    -> where salary > (select avg(salary) from employee);
+-----+-------+--------+--------------+------------+--------+
| eid | name  | city   | departmentId | Mno        | salary |
+-----+-------+--------+--------------+------------+--------+
| e04 | Janvi | Mumbai |            3 | 1234512345 | 35000  |
| e05 | lukky | Delhi  |            2 | 1244668811 | 50000  |
| e06 | Umi   | Delhi  |            1 | 1234554321 | 60000  |
+-----+-------+--------+--------------+------------+--------+
3 rows in set (0.51 sec)

mysql>
```

```
on e.salary ' at line 1
mysql> select e.* from employee
    -> e
    -> join
    -> (select avg(salary) sal from employee) avg_sal
    -> on e.salary > avg_sal.sal;
+-----+-------+--------+--------------+------------+--------+
| eid | name  | city   | departmentId | Mno        | salary |
+-----+-------+--------+--------------+------------+--------+
| e04 | Janvi | Mumbai |            3 | 1234512345 | 35000  |
| e05 | lukky | Delhi  |            2 | 1244668811 | 50000  |
| e06 | Umi   | Delhi  |            1 | 1234554321 | 60000  |
+-----+-------+--------+--------------+------------+--------+
3 rows in set (1.35 sec)

mysql>
```

Task-6

❖   Multiple row subquery

1.Subquery which return multiple columns and multiple rows

```
ERROR 1054 (42S22): Unknown column 'sal' in 'field list'
mysql> select * from employee
    -> where salary in
    -> (select max(salary) from employee
    -> group by departmentId);
+-----+-------+-----------+--------------+------------+--------+
| eid | name  | city      | departmentId | Mno        | salary |
+-----+-------+-----------+--------------+------------+--------+
| e02 | Ram   | Ahemedabad|            4 | 1234567891 | 25000  |
| e04 | Janvi | Mumbai    |            3 | 1234512345 | 35000  |
| e05 | lukky | Delhi     |            2 | 1244668811 | 50000  |
| e06 | Umi   | Delhi     |            1 | 1234554321 | 60000  |
+-----+-------+-----------+--------------+------------+--------+
4 rows in set (0.33 sec)

mysql>
```

❖   Using join

```
4 rows in set (0.33 sec)
mysql> select employee.eid,employee.name,employee.departmentId,department.departmentName
    -> from employee
    -> join department on employee.departmentId=department.departmentId
    -> where salary in
    -> (select max(salary) from employee
    -> group by departmentId);
+-----+-------+--------------+----------------+
| eid | name  | departmentId | departmentName |
+-----+-------+--------------+----------------+
| e02 | Ram   |            4 | sales          |
| e04 | Janvi |            3 | testing        |
| e05 | lukky |            2 | devloping      |
| e06 | Umi   |            1 | marketing      |
+-----+-------+--------------+----------------+
4 rows in set (1.37 sec)

mysql>
```

2.Subquery which returns only 1 columns and multiple rows

```
mysql> select departmentId,departmentName
    -> from department
    -> where departmentId not in
    -> (
    -> select distinct departmentId from employee);
+--------------+----------------+
| departmentId | departmentName |
+--------------+----------------+
|            5 | management     |
+--------------+----------------+
1 row in set (0.08 sec)

mysql> (
```

Task-6

❖ Coreleted subquery
(A subquery that is releted to outer query)

Q. find department which doesn't have employee

```
mysql> use company;
Database changed
mysql> select * from employee e1
    -> where salary >
    -> (select avg(salary) from
    -> employee e2
    -> where e2.departmentId=e1.departmentId);
+-----+------+------------+--------------+------------+--------+
| eid | name | city       | departmentId | Mno        | salary |
+-----+------+------------+--------------+------------+--------+
| e02 | Ram  | Ahemedabad |            4 | 1234567891 |  25000 |
| e06 | Umi  | Delhi      |            1 | 1234554321 |  60000 |
+-----+------+------------+--------------+------------+--------+
2 rows in set (0.66 sec)

mysql>
```

❖Using join

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'on' at line 3
mysql> select employee.eid,employee.name,employee.salary,employee.departmentId,department.departmentName
    -> from employee
    -> join department
    -> on employee.departmentId=department.departmentId
    -> where salary>
    -> (select avg(salary) from
    -> employee e2
    -> where e2.departmentId=employee.departmentId);
+-----+------+--------+--------------+----------------+
| eid | name | salary | departmentId | departmentName |
+-----+------+--------+--------------+----------------+
| e02 | Ram  |  25000 |            4 | sales          |
| e06 | Umi  |  60000 |            1 | marketing      |
+-----+------+--------+--------------+----------------+
2 rows in set (0.34 sec)

mysql>
```

Task-6

❖   Subquery inside subquery

Q. Find department which has better average salary than other department

```
1 row in set (0.39 sec)

mysql> with DepartmentAverages as (
    -> select
    -> departmentId ,avg(salary) as avg_sal
    -> from employee
    -> group by departmentId
    -> )
    -> select departmentId from
    -> DepartmentAverages
    -> where avg_sal = (select max(avg_sal) from DepartmentAverages);
+--------------+
| departmentId |
+--------------+
|            2 |
+--------------+
1 row in set (0.03 sec)

mysql>
```

❖ Subquery using select

Q. Fetching employee details and department's avg salary

```
6 rows in set (0.61 sec)

mysql> select eid,name,salary,departmentId
    -> ,(select avg(Salary) from employee where departmentId = E.departmentId) as DepartmentAverageSalary
    -> from
    -> employee as E;
+-----+---------+--------+--------------+-------------------------+
| eid | name    | salary | departmentId | DepartmentAverageSalary |
+-----+---------+--------+--------------+-------------------------+
| e01 | Khushi  |  15000 |            1 |              37500.0000 |
| e02 | Ram     |  25000 |            4 |              15000.0000 |
| e03 | Krishna |   5000 |            4 |              15000.0000 |
| e04 | Janvi   |  35000 |            3 |              35000.0000 |
| e05 | lukky   |  50000 |            2 |              50000.0000 |
| e06 | Umi     |  60000 |            1 |              37500.0000 |
+-----+---------+--------+--------------+-------------------------+
6 rows in set (0.07 sec)

mysql>
```

Task-6

❖Subquery using having

Q. Find departments where the average salary is greater than the company's overall average salary.

```
ERROR 1052 (23000): Column 'departmentId' in field list is ambiguous
mysql> select employee.departmentId,department.departmentName,avg(salary) as avg_sal
    -> from employee join
    -> department on employee.departmentId=department.departmentId
    -> group by employee.departmentId
    -> having avg(salary) > (select avg(salary) from employee);
+--------------+----------------+------------+
| departmentId | departmentName | avg_sal    |
+--------------+----------------+------------+
|            1 | marketing      | 37500.0000 |
|            3 | testing        | 35000.0000 |
|            2 | devloping      | 50000.0000 |
+--------------+----------------+------------+
3 rows in set (0.60 sec)

mysql>
```

❖   Insert using subquery

```
Command Prompt - mysql -u root -p
mysql> select  *  from emploc;
+------+----------+
| eid  | city     |
+------+----------+
| 1    | Rajkot   |
| 2    | Delhi    |
| 3    | Mumbai   |
| 4    | Bangluru |
+------+----------+
4 rows in set (0.14 sec)

mysql> select * from emp;
+------+---------+-----------+--------+-----------+
| eid  | name    | city      | deptId | Mno       |
+------+---------+-----------+--------+-----------+
| e01  | Khushi  | Rajkot    |      1 |  59786321 |
| e02  | ram     | NULL      |      4 |  48562862 |
| e03  | Krishna | Banguluru |      4 | 123456789 |
| e04  | Janvi   | Bombay    |      3 | 234567891 |
| e06  | Umi     | Delhi     |      1 | 456789123 |
| e07  | Radhika | Barsana   |   NULL |      NULL |
+------+---------+-----------+--------+-----------+
6 rows in set (0.03 sec)

mysql> desc emploc;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| eid   | varchar(5)  | YES  |     | NULL    |       |
| city  | varchar(45) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.15 sec)
```

```
ERROR 1292 (22007): Truncated incorrect DOUBLE value: 'e01'
mysql> insert into emploc(eid)
    -> select eid from emp;
Query OK, 6 rows affected (0.76 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql>
mysql>
```

```
mysql>
mysql> select * from emploc;
+------+----------+
| eid  | city     |
+------+----------+
| 1    | Rajkot   |
| 2    | Delhi    |
| 3    | Mumbai   |
| 4    | Bangluru |
| e01  | NULL     |
| e02  | NULL     |
| e03  | NULL     |
| e04  | NULL     |
| e06  | NULL     |
| e07  | NULL     |
+------+----------+
10 rows in set (0.00 sec)

mysql>
```

Task-6

❖ Update using subquery

(With join)

(without join)

Task-6

❖　Delete using subquery

❖　Subquery in where

❖　Subquery in from

Task-6

❖   Subquery inside in

```
ERROR 1241 (21000): Operand should contain 1 column(s)
mysql> select eid,salary
    -> from salary
    -> where eid in(select eid
    ->              from employee
    ->              where city='Delhi'
    -> );
+------+--------+
| eid  | salary |
+------+--------+
| e05  |  66125 |
| e06  |  79350 |
+------+--------+
2 rows in set (0.04 sec)

mysql>
```

❖   Subquery inside exists

```
Command Prompt - mysql -u root -p                                         _  □  ×
| departmentId | departmentName |
+--------------+----------------+
|            1 | marketing      |
|            2 | devloping      |
|            3 | testing        |
|            4 | sales          |
|            5 | management     |
+--------------+----------------+
5 rows in set (0.02 sec)

mysql> select departmentName
    -> from department
    -> where exists(
    -> select name
    -> from employee
    -> where employee.departmentId=department.departmentId);
+----------------+
| departmentName |
+----------------+
| marketing      |
| devloping      |
| testing        |
| sales          |
+----------------+
4 rows in set (0.13 sec)

mysql> select departmentName
    -> from department
    -> where exists(
    -> select 1
    -> from employee
    ->
    -> where employee.departmentId=department.departmentId);
+----------------+
| departmentName |
+----------------+
| marketing      |
| devloping      |
| testing        |
| sales          |
+----------------+
4 rows in set (0.03 sec)

mysql>
```

❖   Subquery inside =

```
mysql> select * from salary
    -> where eid=
    -> (select eid from employee
    -> where city='Rajkot');
+------+--------------+--------+
| eid  | departmentId | salary |
+------+--------------+--------+
| e01  |            1 |  19838 |
+------+--------------+--------+
1 row in set (0.06 sec)

mysql>
```