Experiment 7

DML Commands IV

Aim:

Implementation of Group By & Having clause.

1 Find the number of staff working in each branch and the sum of their salaries.

Query:

select branchNo,count(staffNo),sum(salary) from Staff39 group by branchNo;

Output:

```
mysql> select branchNo,count(staffNo),sum(salary) from Staff39 group by branchNo
;
+----------+----------------+-------------+
| branchNo | count(staffNo) | sum(salary) |
+----------+----------------+-------------+
| B003     |              3 |       56316 |
| B005     |              2 |       41715 |
| B007     |              1 |        9270 |
+----------+----------------+-------------+
3 rows in set (0.01 sec)
```

2 For each branch office with more than one member of staff, find the number of staff working in each branch and the sum of their salaries.

Query:

select branchNo,count(stafffNo),sum(salary) from Staff39 group by branchNo having count(staffNo)>1;

Output:

```
mysql> select branchNo,count(staffNo),sum(salary) from Staff39 group by branchNo having count(staffNo)>1;
+----------+---------------+-------------+
| branchNo | count(staffNo) | sum(salary) |
+----------+---------------+-------------+
| B003     |             3 |       56316 |
| B005     |             2 |       41715 |
+----------+---------------+-------------+
2 rows in set (0.02 sec)
```

3 Find average salaries of staff at various positions.

Query:

select position,avg(salary) from Staff39 group by position;

Output:

```
mysql> select position,avg(salary) from Staff39 group by position;
+------------+--------------+
| position   | avg(salary) |
+------------+--------------+
| Assistant |  10300.0000 |
| Manager   |  25467.0000 |
+------------+--------------+
2 rows in set (0.00 sec)
```

4 Display the number of properties available at each city along with the city name.

Query:

select city,count(propertyNo) from PropertyForRent39 group by city;

Output:

```
mysql> select city,count(propertyNo) from PropertyForRent39 group by city;
+-----------+-------------------+
| city      | count(propertyNo) |
+-----------+-------------------+
| Alberdeen |                 1 |
| Glasgow   |                 4 |
| London    |                 1 |
+-----------+-------------------+
3 rows in set (0.00 sec)
```

5 Display the number of properties available at each city along with the city name if there exist more than 2 properties.

Query:

select city,count(propertyNo) from PropertyForRent39 group by city having count(propertyNo)>2;

Output:

```
mysql> select city,count(propertyNo) from PropertyForRent39 group by city having count(propertyNo)>2;
+---------+------------------+
| city    | count(propertyNo) |
+---------+------------------+
| Glasgow |                4 |
+---------+------------------+
1 row in set (0.02 sec)
```

6 Find the number of houses and flats available for rent.

Query:

select type,count(propertyNo) from PropertyForRent39 group by type;

Output:

```
mysql> select type,count(propertyNo) from PropertyForRent39 group by type;
+-------+------------------+
| type  | count(propertyNo) |
+-------+------------------+
| House |                2 |
| Flat  |                4 |
+-------+------------------+
2 rows in set (0.00 sec)
```

7 For each city with more than one property, find the number of properties within each city and average rent

Query:

select city,count(propertyNo),avg(rent) from PropertyForRent39

group by city having count(propertyNo)>1;

Output:

```
mysql> select city,count(propertyNo),avg(rent) from PropertyForRent39 group by city having count(propertyNo)>1;
+---------+-------------------+-----------+
| city    | count(propertyNo) | avg(rent) |
+---------+-------------------+-----------+
| Glasgow |                 4 |  387.5000 |
+---------+-------------------+-----------+
1 row in set (0.00 sec)
```

Experiment 8

DML Commands V

Aim:

Implementation of set operators and nested queries.

Set Operations

1 Construct a list of all cities where there is either a branch office or a property.

Query:

select city from PropertyForRent39 union select city from Branch39;

Output:

```
mysql> select city from PropertyForRent39 union select city from Branch39;
+-----------+
| city      |
+-----------+
| Alberdeen |
| Glasgow   |
| London    |
| Bristol   |
| Aberdeen  |
+-----------+
5 rows in set (0.00 sec)
```

2 Construct a list of all cities where there is both a branch office and a property.

Query:

select city from PropertyForRent39 intersect select city from Branch39;

Output:

```
mysql> select city from PropertyForRent39 intersect select city from Branch39;
+---------+
| city    |
+---------+
| Glasgow |
| London  |
+---------+
2 rows in set (0.00 sec)
```

3 Construct a list of all cities where there is a branch office but no properties.

Query:

select city from Branch39 except select city from PropertyForRent39 ;

Output:

```
mysql> select city from Branch39 except select city from PropertyForRent39;
+----------+
| city     |
+----------+
| Bristol  |
| Aberdeen |
+----------+
2 rows in set (0.00 sec)
```

Nested Queries

4 List the staffs who work in the branch at '163 Main St'.

Query:

select staffNo from Staff39 where branchNo in (select branchNo from Branch39 where street="163 Min St");

Output:

```
mysql> select staffNo from Staff39 where branchNo in (select branchNo from Branch39 where street="163 Main St");
+---------+
| staffNo |
+---------+
| SG14    |
| SG37    |
| SG5     |
+---------+
3 rows in set (0.04 sec)
```

5 List all staff whose salary is greater than the average salary, and show by how much their salary is greater than the average.

Query:

select staffNo,salary-(select avg(salary) from Staff39) as salarydiff from Staff39 where salary>(select avg(salary) from Staff39);

Output:

```
mysql> select staffNo,salary-(select avg(salary) from Staff39) as salarydiff from Staff39 where salary>(select avg(
salary) from Staff39);
+---------+------------+
| staffNo | salarydiff |
+---------+------------+
| SG14    |   116.5000 |
| SG5     |  8072.5000 |
| SL21    | 14561.5000 |
+---------+------------+
3 rows in set (0.00 sec)
```

6 List the properties that are handled by staff who work in the branch at '163 Main St'.

Query:

select propertyNo from PropertyForRent39 wher branchNo in (slect branchNo from Branch39 where street="163 Main St");

Output:

```
mysql> select propertyNo from PropertyForRent39 where branchNo in (select branchNo from Branch39 where street="163
Main St");
+------------+
| propertyNo |
+------------+
| PG16       |
| PG21       |
| PG36       |
| PG4        |
+------------+
4 rows in set (0.00 sec)
```

7 Find all staff whose salary is larger than the salary of at least one

member of staff at branch B003.

Query:

select staffNo from Staff39 where salary>some(select salary from Staff39 where branchNo=”B003”);

Output:

```
mysql> select staffNo from Staff39 where salary>some(select salary from Staff39 where branchNo="B003");
+---------+
| staffNo |
+---------+
| SG14    |
| SG5     |
| SL21    |
+---------+
3 rows in set (0.01 sec)
```

8 Find all staff whose salary is larger than the salary of every member of staff at branch B003.

Query:

select staffNo from Staff39 where salary>all(slect salary from Staff39 whre branchNo=”B003”);

9

Output:

```
mysql> select staffNo from Staff39 where salary>all(select salary from Staff39 where branchNo="B003");
+---------+
| staffNo |
+---------+
| SL21    |
+---------+
1 row in set (0.00 sec)
```

Submitted By,

Niranjan V Ram

39, S5 CSE