Assignment 4

Order by and Group by Clause

DBMS LAB

NAME-Ashish Goyal

ID-2016ucp1100

BATCH –A 1, 2

1. **Schema:** custom (ID, NAME, AGE, ADDRESS, SALARY);

Describe table:

```
MariaDB [ashish]> desc custom;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| id      | int(11)     | NO   | PRI | NULL    |       |
| name    | varchar(20) | YES  |     | NULL    |       |
| age     | int(11)     | YES  |     | NULL    |       |
| address | varchar(20) | YES  |     | NULL    |       |
| salary  | int(11)     | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
5 rows in set (0.03 sec)
```

Content of table:

```
MariaDB [ashish]> select * from custom;
+----+---------+------+-----------+--------+
| id | name    | age  | address   | salary |
+----+---------+------+-----------+--------+
|  1 | Ram     |   32 | ahmedabad |   2000 |
|  2 | kamal   |   21 | jhunjhunu |   1500 |
|  3 | kashyap |   34 | jaipur    |   2000 |
|  4 | chetan  |   23 | chennai   |   6500 |
|  5 | harsh   |   30 | mumbai    |   8500 |
|  6 | kartik  |   22 | kota      |   4500 |
+----+---------+------+-----------+--------+
6 rows in set (0.00 sec)
```

Query 1: Find the total amount of the salary on each customer;

```
MariaDB [ashish]> select name,sum(salary) as total_sal from custom
    -> group by id;
+---------+-----------+
| name    | total_sal |
+---------+-----------+
| Ram     |      2000 |
| kamal   |      1500 |
| kashyap |      2000 |
| chetan  |      6500 |
| harsh   |      8500 |
| kartik  |      4500 |
+---------+-----------+
6 rows in set (0.00 sec)
```

Query 2: Find the list of customers in chronological order by the NAME and the SALARY;

```
MariaDB [ashish]> select * from custom
    -> order by name,salary;
+----+---------+------+-----------+--------+
| id | name    | age  | address   | salary |
+----+---------+------+-----------+--------+
|  4 | chetan  |   23 | chennai   |   6500 |
|  5 | harsh   |   30 | mumbai    |   8500 |
|  2 | kamal   |   21 | jhunjhunu |   1500 |
|  6 | kartik  |   22 | kota      |   4500 |
|  3 | kashyap |   34 | jaipur    |   2000 |
|  1 | Ram     |   32 | ahmedabad |   2000 |
+----+---------+------+-----------+--------+
6 rows in set (0.00 sec)
```

2. Schema:

Salesman (id,name,city,commission);

Customer (srno,name,city,grade,sales_id);

Orders (no,amount,date,cust_id,sales_id);

Here sales_id is a foreign key and refers to primary key "id" in Salesman table.

cust_id is a foreign key and refers to primary key "srno" in Customer table.

no is a primary key in Orders table.

Describe table:

```
MariaDB [ashish]> desc salesman;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| id         | int(11)     | NO   | PRI | NULL    |       |
| name       | varchar(20) | YES  |     | NULL    |       |
| city       | varchar(20) | YES  |     | NULL    |       |
| commission | int(11)     | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)

MariaDB [ashish]> desc customer;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| srno     | int(11)     | NO   | PRI | NULL    |       |
| name     | varchar(20) | YES  |     | NULL    |       |
| city     | varchar(20) | YES  |     | NULL    |       |
| grade    | int(11)     | YES  |     | NULL    |       |
| sales_id | int(11)     | YES  | MUL | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.03 sec)

MariaDB [ashish]> desc orders;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| no       | int(11)     | NO   | PRI | NULL    |       |
| amount   | float(11,2) | YES  |     | NULL    |       |
| date     | date        | YES  |     | NULL    |       |
| cust_id  | int(11)     | YES  | MUL | NULL    |       |
| sales_id | int(11)     | YES  | MUL | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)
```

Content of table:

```
MariaDB [ashish]> select * from salesman;
+------+----------+-----------+------------+
| id   | name     | city      | commission |
+------+----------+-----------+------------+
| 5001 | Ashish   | jhunjhunu |         15 |
| 5002 | abhishek | jaipur    |         13 |
| 5003 | satish   | jhunjhunu |         12 |
| 5005 | swaraj   | mumbai    |         11 |
| 5006 | himanshu | jaipur    |         14 |
| 5007 | ajay     | delhi     |         13 |
+------+----------+-----------+------------+
6 rows in set (0.00 sec)
```

```
MariaDB [ashish]> select * from customer;
+------+----------+-----------+-------+----------+
| srno | name     | city      | grade | sales_id |
+------+----------+-----------+-------+----------+
| 3001 | bharat   | mumbai    |     0 |     5005 |
| 3002 | nitesh   | jhunjhunu |   100 |     5001 |
| 3003 | jolie    | jammu     |   200 |     5007 |
| 3004 | farukh   | jaipur    |   300 |     5006 |
| 3005 | goyal    | punjab    |   200 |     5002 |
| 3007 | badshaah | jhunjhunu |   200 |     5001 |
| 3008 | jayant   | mumbai    |   300 |     5002 |
| 3009 | gaurav   | kerala    |   100 |     5003 |
+------+----------+-----------+-------+----------+
8 rows in set (0.00 sec)
```

```
MariaDB [ashish]> select * from orders;
+-------+---------+------------+---------+----------+
| no    | amount  | date       | cust_id | sales_id |
+-------+---------+------------+---------+----------+
| 70001 |  150.50 | 2012-10-05 |    3005 |     5002 |
| 70002 |   65.26 | 2012-10-05 |    3002 |     5001 |
| 70003 | 2480.40 | 2012-10-10 |    3009 |     5003 |
| 70004 |  110.50 | 2012-08-17 |    3009 |     5003 |
| 70005 | 2400.60 | 2012-07-27 |    3007 |     5001 |
| 70007 |  948.50 | 2012-09-10 |    3005 |     5002 |
| 70008 | 5760.00 | 2012-09-10 |    3002 |     5001 |
| 70009 |  270.65 | 2012-09-10 |    3001 |     5005 |
| 70010 | 1983.43 | 2012-10-10 |    3004 |     5006 |
| 70011 |   75.29 | 2012-08-17 |    3003 |     5007 |
| 70012 |  250.45 | 2012-06-27 |    3008 |     5002 |
| 70013 | 3045.60 | 2012-04-25 |    3002 |     5001 |
+-------+---------+------------+---------+----------+
12 rows in set (0.00 sec)
```

Query 1: Find the total no of orders served by all the salesman belonging to the same city.

```
MariaDB [ashish]> select count(orders.no) as total_orders,salesman.city from salesman
    -> inner join orders on salesman.id=orders.sales_id
    -> group by salesman.city;
+--------------+-----------+
| total_orders | city      |
+--------------+-----------+
|            1 | delhi     |
|            4 | jaipur    |
|            6 | jhunjhunu |
|            1 | mumbai    |
+--------------+-----------+
4 rows in set (0.00 sec)
```

Query 2: Write a SQL statement to find the details of commission the salesman gets provided that his commission is more than or equal to the average commission in the city.

```
MariaDB [ashish]> select s.* from salesman s
    -> where commission>=
    -> (
    -> select avg(commission) from salesman
    -> where city=s.city group by city
    -> );
+------+----------+-----------+------------+
| id   | name     | city      | commission |
+------+----------+-----------+------------+
| 5001 | Ashish   | jhunjhunu |         15 |
| 5005 | swaraj   | mumbai    |         11 |
| 5006 | himanshu | jaipur    |         14 |
| 5007 | ajay     | delhi     |         13 |
+------+----------+-----------+------------+
4 rows in set (0.00 sec)
```

3. Schema: bookstore(bookid,year,month,volume,author,price);

Describe table:

```
MariaDB [ashish]> desc bookstore;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| bookid | int(11)     | YES  |     | NULL    |       |
| year   | int(11)     | YES  |     | NULL    |       |
| month  | int(11)     | YES  |     | NULL    |       |
| volume | int(11)     | YES  |     | NULL    |       |
| author | varchar(20) | YES  |     | NULL    |       |
| price  | int(11)     | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
6 rows in set (0.01 sec)
```

Content of table:

```
MariaDB [ashish]> select * from bookstore;
+--------+------+-------+--------+--------+-------+
| bookid | year | month | volume | author | price |
+--------+------+-------+--------+--------+-------+
|      1 | 2001 |     4 |      2 | lord   |   400 |
|      1 | 2001 |     5 |      1 | lord   |   400 |
|      1 | 2002 |     1 |      3 | lord   |   400 |
|      2 | 2001 |     3 |      6 | ashish |   350 |
|      2 | 2005 |    11 |      6 | ashish |   350 |
|      3 | 1999 |     7 |      7 | param  |   530 |
|      4 | 1999 |    12 |      4 | mohan  |   450 |
|      4 | 2000 |     5 |      4 | mohan  |   450 |
|      3 | 2002 |     3 |      7 | param  |   530 |
|      2 | 2001 |     1 |      6 | ashish |   350 |
+--------+------+-------+--------+--------+-------+
10 rows in set (0.00 sec)
```

Query 1 : Calculate the total number of books sold each month. Order your results chronologically.

```
MariaDB [ashish]> select count(bookid) as total_books,year,month from bookstore
    -> group by month
    -> order by year,month;
+-------------+------+-------+
| total_books | year | month |
+-------------+------+-------+
|           1 | 1999 |     7 |
|           1 | 1999 |    12 |
|           2 | 2001 |     3 |
|           1 | 2001 |     4 |
|           2 | 2001 |     5 |
|           2 | 2002 |     1 |
|           1 | 2005 |    11 |
+-------------+------+-------+
7 rows in set (0.00 sec)
```

Query 2: Write a query that calculates the lowest and highest prices that store achieved each month.

```
MariaDB [ashish]> select min(price) as lowest_price,max(price) as highest_price,month
    -> from bookstore
    -> group by month;
+--------------+---------------+-------+
| lowest_price | highest_price | month |
+--------------+---------------+-------+
|          350 |           400 |     1 |
|          350 |           530 |     3 |
|          400 |           400 |     4 |
|          400 |           450 |     5 |
|          530 |           530 |     7 |
|          350 |           350 |    11 |
|          450 |           450 |    12 |
+--------------+---------------+-------+
7 rows in set (0.00 sec)
```