# PRACTICAL 1 : DDL Operations

## MSC DSAI ROLL NO:L-09

```
mysql> create database msds;
Query OK, 1 row affected (0.04 sec)

mysql> use msds;
Database changed
mysql> create table salesman(salesman_id int PRIMARY KEY,name varchar(50),city varchar(50),commission decimal(4,2));
Query OK, 0 rows affected (0.04 sec)
```

**CREATING TABLES**

```
mysql> create table customer(customer_id int PRIMARY KEY,customer_name varchar(50),city varchar(50),grade int,salesman_id int,FOREIGN KEY(salesman_id) REFERENCES salesman(salesman_id));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE orders (
    ->     order_no INT PRIMARY KEY,
    ->     purch_amt DECIMAL(10, 2),
    ->     order_date DATE,
```

```
    ->     customer_id INT,
    ->     salesman_id INT,
    ->     FOREIGN KEY (customer_id) REFERENCES
customer(customer_id),
    ->     FOREIGN KEY (salesman_id) REFERENCES
salesman(salesman_id)
    -> );
Query OK, 0 rows affected (0.03 sec)
mysql> desc salesman
    -> ;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| salesman_id | int         | NO   | PRI | NULL    |       |
| name        | varchar(50) | YES  |     | NULL    |       |
| city        | varchar(50) | YES  |     | NULL    |       |
| commission  | decimal(4,2) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.03 sec)

mysql> desc customer
    -> ;
```

```
+--------------+------------+------+-----+---------+-------+
| Field        | Type       | Null | Key | Default | Extra |
+--------------+------------+------+-----+---------+-------+
| customer_id   | int        | NO   | PRI | NULL    |       |
| customer_name | varchar(50) | YES  |     | NULL    |       |
| city         | varchar(50) | YES  |     | NULL    |       |
| grade        | int        | YES  |     | NULL    |       |
| salesman_id   | int        | YES  | MUL | NULL    |       |
+--------------+------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> desc orders
   -> ;
+------------+--------------+------+-----+---------+-------+
| Field      | Type         | Null | Key | Default | Extra |
+------------+--------------+------+-----+---------+-------+
| order_no    | int          | NO   | PRI | NULL    |       |
| purch_amt   | decimal(10,2) | YES  |     | NULL    |       |
| order_date  | date         | YES  |     | NULL    |       |
| customer_id | int          | YES  | MUL | NULL    |       |
| salesman_id | int          | YES  | MUL | NULL    |       |
+------------+--------------+------+-----+---------+-------+
```

5 rows in set (0.00 sec)

**INSERTING VALUES**

```
mysql> INSERT INTO salesman (salesman_id, name, city,
commission) VALUES
    -> (5001, 'James Hoog', 'New York', 0.15),
    -> (5002, 'Nail Knite', 'Paris', 0.13),
    -> (5005, 'Pit Alex', 'London', 0.11),
    -> (5006, 'Mc Lyon', 'Paris', 0.14),
    -> (5003, 'Lawson Hen',' ', 0.12),
    -> (5007, 'Paul Adam', 'Rome', 0.13);
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0


mysql> select * from salesman;
+-------------+------------+----------+------------+
| salesman_id | name       | city     | commission |
+-------------+------------+----------+------------+
|        5001 | James Hoog | New York |       0.15 |
|        5002 | Nail Knite | Paris    |       0.13 |
|        5003 | Lawson Hen |          |       0.12 |
|        5005 | Pit Alex   | London   |       0.11 |
|        5006 | Mc Lyon    | Paris    |       0.14 |
```

```
|       5007 | Paul Adam  | Rome     |       0.13 |
+------------+------------+----------+------------+
6 rows in set (0.00 sec)

mysql> INSERT INTO customer (customer_id,
customer_name, city, grade, salesman_id) VALUES
   -> (3002, 'Nick Rimando', 'New York', 100, 5001),
   -> (3005, 'Graham Rush', 'California', 200, 5002),
   -> (3001, 'Brad Guzan', 'London', NULL, NULL),
   -> (3004, 'Fabian Johns', 'Paris' , 300,5006),
   -> (3007, 'Brad Davis' , 'New York' ,200,5001),
   -> (3009, 'Geoff Camero' , 'Berlin' ,100, NULL),
   -> (3003, 'Julian Green', 'London', 300, 5002),
   -> (3008, 'Joey Altidore', 'Moscow', 200, 5007);
Query OK, 8 rows affected (0.01 sec)
Records: 8  Duplicates: 0  Warnings: 0

mysql> select * from customer;
+-------------+---------------+------------+-------+-------------+
| customer_id | customer_name | city       | grade |
salesman_id |
+-------------+---------------+------------+-------+-------------+
```

```
|       3001 | Brad Guzan    | London     |  NULL |       NULL |
|       3002 | Nick Rimando  | New York   |   100 |       5001 |
|       3003 | Julian Green  | London     |   300 |       5002 |
|       3004 | Fabian Johns  | Paris      |   300 |       5006 |
|       3005 | Graham Rush   | California |   200 |       5002 |
|       3007 | Brad Davis    | New York   |   200 |       5001 |
|       3008 | Joey Altidore | Moscow     |   200 |       5007 |
|       3009 | Geoff Camero  | Berlin     |   100 |       NULL |
+------------+---------------+------------+-------+------------+
8 rows in set (0.00 sec)

mysql> INSERT INTO orders (order_no, purch_amt,
order_date, customer_id, salesman_id) VALUES
   -> (70001, 150.50, '2016-10-05', 3005, 5002),
   -> (70009, 270.65, '2016-09-10', 3001, NULL),
   -> (70002, 65.26, '2016-10-05' , 3002, 5001),
   -> (70004, 110.50, '2016-08-17' , 3009, NULL),
   -> (70007, 948.5, '2016-09-10' ,3005, 5002),
   -> (70005, 2400.6, '2016-07-27' ,3007, 5001),
   -> (70008, 5760, '2016-09-10' ,3002, 5001),
   -> (70010, 1983.43, '2016-10-10' ,3004, 5006),
   -> (70003, 2480.4, '2016-10-10' ,3009, NULL),
```

```
    -> (70012, 250.45, '2016-06-27', 3008, 5002),
    -> (70011, 75.29, '2016-08-17', 3003, 5007);
Query OK, 11 rows affected (0.01 sec)
Records: 11  Duplicates: 0  Warnings: 0

mysql> select * from orders;
+----------+-----------+------------+-------------+-------------+
| order_no | purch_amt | order_date | customer_id | salesman_id |
+----------+-----------+------------+-------------+-------------+
|    70001 |    150.50 | 2016-10-05 |        3005 |        5002 |
|    70002 |     65.26 | 2016-10-05 |        3002 |        5001 |
|    70003 |   2480.40 | 2016-10-10 |        3009 |        NULL |
|    70004 |    110.50 | 2016-08-17 |        3009 |        NULL |
|    70005 |   2400.60 | 2016-07-27 |        3007 |        5001 |
|    70007 |    948.50 | 2016-09-10 |        3005 |        5002 |
|    70008 |   5760.00 | 2016-09-10 |        3002 |        5001 |
|    70009 |    270.65 | 2016-09-10 |        3001 |        NULL |
|    70010 |   1983.43 | 2016-10-10 |        3004 |        5006 |
|    70011 |     75.29 | 2016-08-17 |        3003 |        5007 |
|    70012 |    250.45 | 2016-06-27 |        3008 |        5002 |
+----------+-----------+------------+-------------+-------------+
```

11 rows in set (0.00 sec)

## 1.Display name and commission for all the salesmen.

```
mysql> select name,commission from salesman;
+------------+------------+
| name       | commission |
+------------+------------+
| James Hoog |       0.15 |
| Nail Knite |       0.13 |
| Lawson Hen |       0.12 |
| Pit Alex   |       0.11 |
| Mc Lyon    |       0.14 |
| Paul Adam  |       0.13 |
+------------+------------+
6 rows in set (0.00 sec)
```

## 2.Retrieve salesman id of all salesmen from orders table without any repeats.

```
mysql> select distinct salesman_id from orders;
+-------------+
| salesman_id |
+-------------+
|        NULL |
```

| 5001 |

| 5002 |

| 5006 |

| 5007 |

+-------------+

5 rows in set (0.00 sec)

**3.Display names and city of salesman, who belongs to the city of Paris.**

mysql> select name,city from salesman where city = 'Paris';

+------------+-------+

| name | city |

+------------+-------+

| Nail Knite | Paris |

| Mc Lyon | Paris |

+------------+-------+

2 rows in set (0.00 sec)

**4.Display all the information for those customers with a grade of 200**.

mysql> SELECT * FROM customer where grade =200;

+-------------+--------------+------------+-------+-------------+

| customer_id | customer_name | city | grade | salesman_id |

+-------------+---------------+------------+-------+-------------+

| 3005 | Graham Rush | California | 200 | 5002 |

| 3007 | Brad Davis | New York | 200 | 5001 |

| 3008 | Joey Altidore | Moscow | 200 | 5007 |

+-------------+---------------+------------+-------+-------------+

3 rows in set (0.00 sec)

**5.Display the order number, order date and the purchase amount for order(s) which will be delivered by the salesman with ID 5001**

mysql> select order_no,order_date,purch_amt from orders where salesman_id = 5001;

+----------+------------+-----------+

| order_no | order_date | purch_amt |

+----------+------------+-----------+

| 70002 | 2016-10-05 | 65.26 |

| 70005 | 2016-07-27 | 2400.60 |

| 70008 | 2016-09-10 | 5760.00 |

+----------+------------+-----------+

3 rows in set (0.00 sec)

**6.Display all the customers, who are either belongs to the**

**city New York or not had a grade above 100.**

```
mysql> SELECT * FROM customer
   -> WHERE city = 'New York' OR grade <= 100;
+-------------+---------------+----------+-------+-------------+
| customer_id | customer_name | city     | grade | salesman_id |
+-------------+---------------+----------+-------+-------------+
|        3002 | Nick Rimando  | New York |   100 |        5001 |
|        3007 | Brad Davis    | New York |   200 |        5001 |
|        3009 | Geoff Camero  | Berlin   |   100 |        NULL |
+-------------+---------------+----------+-------+-------------+
   4  rows in set (0.00 sec)
```

**7.Find those salesmen with all information who gets the commission within a range of 0.12 and 0.14.**

```
mysql> SELECT * FROM salesman
   -> WHERE commission BETWEEN 0.12 AND 0.14;
+-------------+------------+-------+------------+
| salesman_id | name       | city  | commission |
+-------------+------------+-------+------------+
|        5002 | Nail Knite | Paris |       0.13 |
|        5003 | Lawson Hen |       |       0.12 |
|        5006 | Mc Lyon    | Paris |       0.14 |
```

```
|       5007 | Paul Adam  | Rome  |      0.13 |
+------------+------------+-------+-----------+
   5  rows in set (0.00 sec)
```

**8.Find all those customers with all information whose names are ending with the letter 'n'.**

```
mysql>  SELECT * FROM customer
   -> WHERE customer_name LIKE '%n';
+------------+--------------+--------+-------+------------+
| customer_id | customer_name | city   | grade |
salesman_id |
+------------+--------------+--------+-------+------------+
|       3001 | Brad Guzan    | London |  NULL |       NULL |
|       3003 | Julian Green  | London |   300 |       5002 |
+------------+--------------+--------+-------+------------+
   2  rows in set (0.00 sec)
```

**9.Find those salesmen with all information whose name containing the 1st character is 'N' and the 4$^{th}$ character is 'l' and rests may be any character**.

```
mysql> SELECT * FROM salesman
   -> WHERE name LIKE 'N__l%';
+------------+-----------+-------+-----------+
| salesman_id | name      | city  | commission |
```

```
+-------------+------------+-------+------------+
|       5002 | Nail Knite | Paris |       0.13 |
+-------------+------------+-------+------------+
   1  row in set (0.00 sec)
```

**10.Find that customer with all information who does not get any grade except NULL**.

```
mysql> SELECT * FROM customer
   -> WHERE grade is NULL;
+-------------+--------------+--------+-------+-------------+
| customer_id | customer_name | city   | grade |
salesman_id |
+-------------+--------------+--------+-------+-------------+
|       3001 | Brad Guzan    | London |  NULL |       NULL |
+-------------+--------------+--------+-------+-------------+
   1  row in set (0.00 sec)
```

**11.Find the total purchase amount of all orders.**

```
mysql> select sum(purch_amt) from orders;
+---------------+
| sum(purch_amt) |
+---------------+
|      14495.58 |
+---------------+
1 row in set (0.04 sec)
```

**12.Find the number of salesman currently listing for all of their customers.**

```
mysql> select count(distinct salesman_id) from salesman;
+----------------------------+
| count(distinct salesman_id) |
+----------------------------+
|                          6 |
+----------------------------+
   1  row in set (0.01 sec)
```

**13.Find the highest grade for each of the cities of the customers.**

```
mysql> select city,max(grade) from customer group by city;
+------------+------------+
| city       | max(grade) |
+------------+------------+
| London     |        300 |
| New York   |        200 |
| Paris      |        300 |
| California |        200 |
| Moscow     |        200 |
| Berlin     |        100 |
+------------+------------+
   6  rows in set (0.01 sec)
```

**14.Find the highest purchase amount ordered by each customer with their ID and highest purchase amount.**

mysql> select customer_id,max(purch_amt) from orders group by customer_id;

```
+-------------+---------------+
| customer_id | max(purch_amt) |
+-------------+---------------+
|        3001 |         270.65 |
|        3002 |        5760.00 |
|        3003 |          75.29 |
|        3004 |        1983.43 |
|        3005 |         948.50 |
|        3007 |        2400.60 |
|        3008 |         250.45 |
|        3009 |        2480.40 |
+-------------+---------------+
```

7 rows in set (0.00 sec)

**15.Find the highest purchase amount ordered by each customer on a particular date with their ID, order date and highest purchase amount**.

mysql> select customer_id,order_date,max(purch_amt) from orders group by customer_id,order_date;

```
+-------------+------------+---------------+
| customer_id | order_date | max(purch_amt) |
+-------------+------------+---------------+
|       3005 | 2016-10-05 |        150.50 |
|       3002 | 2016-10-05 |         65.26 |
|       3009 | 2016-10-10 |       2480.40 |
|       3009 | 2016-08-17 |        110.50 |
|       3007 | 2016-07-27 |       2400.60 |
|       3005 | 2016-09-10 |        948.50 |
|       3002 | 2016-09-10 |       5760.00 |
|       3001 | 2016-09-10 |        270.65 |
|       3004 | 2016-10-10 |       1983.43 |
|       3003 | 2016-08-17 |         75.29 |
|       3008 | 2016-06-27 |        250.45 |
+-------------+------------+---------------+
   11        ows in set (0.00 sec)
```

**16.Find the highest purchase amount on a date '2016-08-17' for each salesman with their ID.**

```
mysql> select salesman_id,max(purch_amt) from orders
where order_date='2016-08
-17' group by salesman_id;
```

```
+-------------+---------------+
| salesman_id | max(purch_amt) |
+-------------+---------------+
|        NULL |        110.50 |
|        5007 |         75.29 |
+-------------+---------------+
    2  rows in set (0.00 sec)
```

**17.Find the highest purchase amount with their customer ID and order date, for only those customers who have the highest purchase amount in a day is more than 2000.**

```
mysql> select customer_id,order_date,max(purch_amt) from
orders
    -> group by customer_id,order_date
    -> having max(purch_amt)>2000;
+-------------+------------+---------------+
| customer_id | order_date | max(purch_amt) |
+-------------+------------+---------------+
|        3009 | 2016-10-10 |       2480.40 |
|        3007 | 2016-07-27 |       2400.60 |
|        3002 | 2016-09-10 |       5760.00 |
+-------------+------------+---------------+
    3  rows in set (0.00 sec)
```

**18.Write a SQL statement that counts all orders for a date August 17th, 2016.**

```
mysql> select count(*) from orders where order_date =
'2016-08-17';
+----------+
| count(*) |
+----------+
|        2 |
+----------+
1 row in set (0.00 sec)
```