

Problem Statement : There can be multiple customers, who can place multiple orders on the site. Now a sales person can handle these orders will distribute into multiple sales persons (One order will be assign to one salesperson only). So a sales person can have multiple orders of multiple customers.

1.Create Database

```
mysql> create database db_exercise
-> ;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| db_exercise |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.00 sec)
```

2.-Design Schema

The screenshot shows a Linux desktop environment with a dark theme. The top panel displays the date and time as 'Thu 14:46' and the system status icons. The left sidebar contains several application icons, including a web browser, a file manager, and a terminal. The terminal window is open, showing the MySQL command prompt and the execution of two SQL queries.

The first query is `mysql> DESC orders;`, which returns the following table structure:

Field	Type	Null	Key	Default	Extra
order_no	int(11)	NO	PRI	NULL	
order_amt	int(11)	YES		NULL	
customer_name	varchar(40)	YES		NULL	
customer_id	int(11)	NO		NULL	

The second query is `mysql> DESC sales;`, which returns the following table structure:

Field	Type	Null	Key	Default	Extra
order_no	int(11)	NO	MUL	NULL	
salesperson_id	int(11)	NO		NULL	
salesperson_name	varchar(30)	YES		NULL	

3.-Create tables

```
mysql> USE db_exercise
Database changed
mysql> CREATE TABLE orders(
-> order_no INT NOT NULL PRIMARY KEY,
-> order_amt INT,
-> customer_name VARCHAR(40),
-> customer_id INT NOT NULL
-> );
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> CREATE TABLE sales(
-> order_no INT NOT NULL,
-> salesperson_id INT NOT NULL,
-> salesperson_name VARCHAR(30),
-> FOREIGN KEY order_no REFERENCES orders(order_no)
-> );
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 'REFERENCES orders(order_no)' at line 5
mysql> CREATE TABLE sales( order_no INT NOT NULL, salesperson_id INT NOT NULL, salesperson_name VARCHAR(30), FOREIGN KEY(order_no) REFERENCES
orders(order_no) );
Query OK, 0 rows affected (0.03 sec)
```

4.Insert sample data

A screenshot of a Linux desktop environment. At the top, there's a panel with system status icons (Wi-Fi, sound, battery) and the time "Thu 14:49". Below this is a dark-themed terminal window titled "Terminal". The terminal shows a series of MySQL commands being executed. On the left side of the terminal window, there's a vertical sidebar containing various application icons: a person icon, a folder icon, a document icon, a Firefox browser icon, a LibreOffice Writer icon, a terminal icon (which is highlighted), a file manager icon, a shopping bag icon, a question mark icon, and an Amazon logo icon. The terminal output shows multiple "mysql>" prompts followed by an "INSERT INTO orders VALUES" command with seven rows of data. This is followed by the message "Query OK, 7 rows affected (0.01 sec)" and "Records: 7 Duplicates: 0 Warnings: 0". Then another "INSERT INTO sales VALUES" command with five rows of data is shown, followed by another "Query OK, 7 rows affected (0.01 sec)" and "Records: 7 Duplicates: 0 Warnings: 0". Note that the second query says 7 rows affected despite only 5 rows being inserted.

```
Activities Terminal Thu 14:51
Terminal
File Edit View Search Terminal Help
-> (5,104,'dinesh'),(6,109,'suresh'),
-> (7,103,'mahesh');
Query OK, 7 rows affected (0.01 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> show orders
-> ;
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 'orders' at line 1
mysql> Select * from orders;
+-----+-----+-----+-----+
| order_no | order_amt | customer_name | customer_id |
+-----+-----+-----+-----+
| 1 | 1200 | prashant | 32 |
| 2 | 4000 | shubham | 8 |
| 3 | 3400 | vishal | 71 |
| 4 | 5542 | ankit | 9 |
| 5 | 8000 | ujjwal | 98 |
| 6 | 3123 | prashant | 32 |
| 7 | 6740 | shubham | 8 |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> Select * from sales
-> ;
+-----+-----+-----+
| order_no | salesperson_id | salesperson_name |
+-----+-----+-----+
| 1 | 101 | ramesh |
| 2 | 109 | suresh |
| 3 | 101 | ramesh |
| 4 | 103 | mahesh |
| 5 | 104 | dinesh |
| 6 | 109 | suresh |
| 7 | 103 | mahesh |
+-----+-----+-----+
7 rows in set (0.01 sec)
```

5.Find the sales person having multiple orders.

```
7 rows in set (0.01 sec)

mysql> SELECT salesperson_name,COUNT(salesperson_id) as count FROM sales GROUP BY salesperson_name HAVING COUNT(*) > 1;
+-----+-----+
| salesperson_name | count |
+-----+-----+
| mahesh | 2 |
| ramesh | 2 |
| suresh | 2 |
+-----+-----+
3 rows in set (0.00 sec)
```

6.Find all sales person details along with order details.

```
mysql> SELECT salesperson_id,salesperson_name,sales.order_no,order_amt FROM sales INNER JOIN orders ON sales.order_no=orders.order_no;
+-----+-----+-----+-----+
| salesperson_id | salesperson_name | order_no | order_amt |
+-----+-----+-----+-----+
| 101 | ramesh | 1 | 1200 |
| 109 | suresh | 2 | 4000 |
| 101 | ramesh | 3 | 3400 |
| 103 | mahesh | 4 | 5542 |
| 104 | dinesh | 5 | 8000 |
| 109 | suresh | 6 | 3123 |
| 103 | mahesh | 7 | 6740 |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

7. Create index

```
mysql> CREATE INDEX index1_sales ON sales(salesperson_id);
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX index2_orders ON orders(order_amt);
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

8.How to show index on a table

```
mysql> SHOW INDEX FROM sales;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment
sales	1	order_no	1	order_no	A	7	NULL	NULL		BTREE	
sales	1	index1_sales	1	salesperson_id	A	4	NULL	NULL		BTREE	

2 rows in set (0.01 sec)

```
mysql> SHOW INDEX FROM orders;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment
orders	0	PRIMARY	1	order_no	A	7	NULL	NULL		BTREE	
orders	1	index2_orders	1	order_amt	A	7	NULL	NULL	YES	BTREE	

2 rows in set (0.00 sec)

9. Find the order number, sales person name, along with the customer to whom that order belongs to

```
mysql> SELECT sales.order_no, salesperson_name, customer_name FROM sales
-> INNER JOIN orders
-> ON sales.order_no=orders.order_no;
+-----+-----+-----+
| order_no | salesperson_name | customer_name |
+-----+-----+-----+
| 1 | ramesh | prashant |
| 2 | suresh | shubham |
| 3 | ramesh | vishal |
| 4 | mahesh | ankit |
| 5 | dinesh | ujjwal |
| 6 | suresh | prashant |
| 7 | mahesh | shubham |
+-----+-----+-----+
7 rows in set (0.00 sec)

mysql>
```

