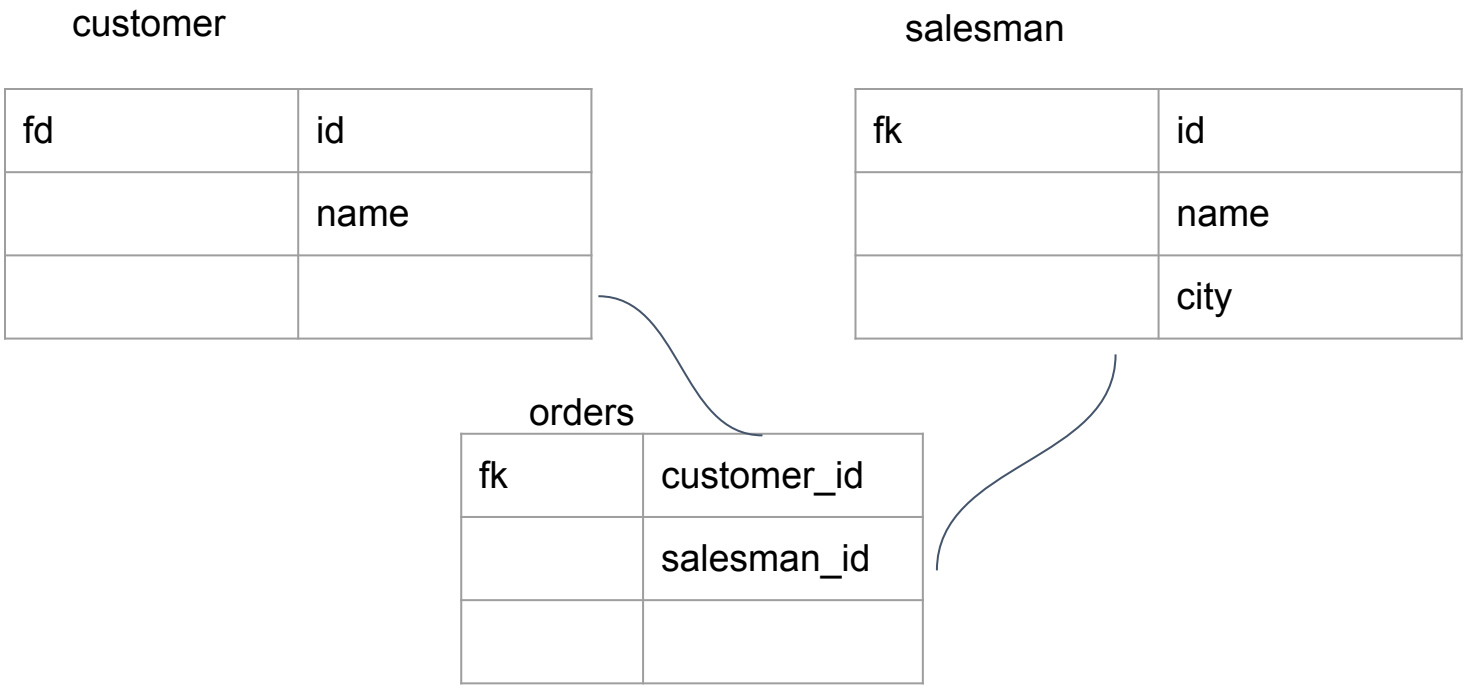
Introduction to Databases

by Nitin Kumar

1. Create Database

2. Design Schema



3. Create tables

```
nitin@u

ysql> create table customer(
    -> id int primary key auto_increment,
    -> name varchar(255)
    -> );
uery OK, 0 rows affected (1.90 sec)

ysql> create table salesman(
    -> id int primary key auto_increment,
    -> name varchar(255),
    -> city varchar(255)
    -> );
uery OK, 0 rows affected (0.08 sec)

ysql> create table orders(
    -> id int primary key auto_increment,
    -> customer_id int,
    -> salesman_id int,
    -> foregin key (customer_id) references customer(id),
    -> foregin key (salesman_id) references salesman(id)
    -> );
```

4.Insert sample data

```
mysql> insert into customer (name) values ('abc'),('bcd'),('xyz'),('pqr');
Query OK, 4 rows affected (0.65 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from customer;
+----+------+
| id | name |
+----+------+
|  1 | abc  |
|  2 | bcd  |
|  3 | xyz  |
|  4 | pqr  |
+----+------+
4 rows in set (0.01 sec)
```

```
mysql> insert into orders(customer_id, salesman_id) values(1,1),(2,3),(3,2),(4,3);
Query OK, 4 rows affected (0.00 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> insert into salesman (name,city) values ('sa1','q'),('sa2','r'),('sa3','d'),('sa4','p');
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

5. Find the sales person have multiple orders.

```
mysql> select *
    -> from salesman
    -> where id in(
    -> select salesman_id
    -> from orders
    -> group by salesman_id
    -> having count(salesman_id)>1
    -> );
+----+------+------+
| id | name | city |
+----+------+------+
|  3 | sa3  | d    |
+----+------+------+
1 row in set (0.14 sec)
```

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

```
mysql> select s.id as salesman_id,
    -> s.name as salesman_name,
    -> o.id as order_id,
    -> o.customer_id from salesman s
    -> inner join orders o
    -> on s.id=o.salesman_id;
+-------------+---------------+----------+-------------+
| salesman_id | salesman_name | order_id | customer_id |
+-------------+---------------+----------+-------------+
|           1 | sa1           |        1 |           1 |
|           2 | sa2           |        3 |           3 |
|           3 | sa3           |        2 |           2 |
|           3 | sa3           |        4 |           4 |
+-------------+---------------+----------+-------------+
4 rows in set (0.00 sec)
```

7. Create index

```
mysql> create index idc_salesman_name
    -> on salesman(name);
Query OK, 0 rows affected (0.22 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

8. How to show index on a table

```
mysql> show index from salesman;
+----------+------------+-----------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+
| Table    | Non_unique | Key_name        | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment | Visible | Expression |
+----------+------------+-----------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+
| salesman |          0 | PRIMARY         |            1 | id          | A         |           4 |     NULL |   NULL |      | BTREE      |         |               | YES     | NULL       |
| salesman |          1 | idc_salesman_name |            1 | name        | A         |           4 |     NULL |   NULL | YES  | BTREE      |         |               | YES     | NULL       |
+----------+------------+-----------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+
2 rows in set (0.11 sec)
```

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

```
mysql> select s.id as salesman_id,
    -> s.name as salesman_name,
    -> o.id as order_id,
    -> o.customer_id from salesman s
    -> inner join orders o
    -> on s.id=o.salesman_id;
+-------------+---------------+----------+-------------+
| salesman_id | salesman_name | order_id | customer_id |
+-------------+---------------+----------+-------------+
|           1 | sa1           |        1 |           1 |
|           2 | sa2           |        3 |           3 |
|           3 | sa3           |        2 |           2 |
|           3 | sa3           |        4 |           4 |
+-------------+---------------+----------+-------------+
4 rows in set (0.00 sec)
```