

1) Primary, key, foreign key, Unique, check, not null, default

```
mysql> create table customer
-> (
->
-> customer_id integer not null auto_increment,
-> first_name varchar(50) not null,
-> last_name varchar(50) not null,
->
-> email varchar(255) unique,
->
->
-> phone_number varchar(20),
-> primary key(customer_id)
-> );
Query OK, 0 rows affected (0.04 sec)

mysql> insert into customer (customer_id) values (4);
ERROR 1364 (HY000): Field 'first_name' doesn't have a default value
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (4);
ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (4,"","","86537654");
Query OK, 1 row affected (0.01 sec)
```

```
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (4,"","","86537654");
Query OK, 1 row affected (0.01 sec)

mysql> select * from customer;
+-----+-----+-----+-----+-----+
| customer_id | first_name | last_name | email | phone_number |
+-----+-----+-----+-----+-----+
| 4 | | | | 86537654 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (5,"fish","farms","fish@xyz.com",86537654);
Query OK, 1 row affected (0.00 sec)

mysql> select * from customer;
+-----+-----+-----+-----+-----+
| customer_id | first_name | last_name | email | phone_number |
+-----+-----+-----+-----+-----+
| 4 | | | | 86537654 |
| 5 | fish | farms | fish@xyz.com | 86537654 |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (5,"hello","world","fish@xyz.com",86537654);
ERROR 1062 (23000): Duplicate entry '5' for key 'customer.PRIMARY'
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (6,"hello","world","fish@xyz.com",86537654);
ERROR 1062 (23000): Duplicate entry 'fish@xyz.com' for key 'customer.email'
mysql>
```

```
mysql> insert into orders (order_id,order_date,total_amount) values (101,null,1000);
Query OK, 1 row affected (0.01 sec)

mysql> select * from orders;
+-----+-----+-----+-----+
| order_id | customer_id | order_date | total_amount |
+-----+-----+-----+-----+
| 101 | NULL | NULL | 1000.00 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into orders (order_id,order_date,total_amount) values (102,null,1000.40);
Query OK, 1 row affected (0.00 sec)

mysql> select * from orders;
+-----+-----+-----+-----+
| order_id | customer_id | order_date | total_amount |
+-----+-----+-----+-----+
| 101 | NULL | NULL | 1000.00 |
| 102 | NULL | NULL | 1000.40 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> insert into orders (order_id,customer_id,order_date,total_amount) values (103,1,null,1000);
Query OK, 1 row affected (0.01 sec)

mysql> select * from orders;
+-----+-----+-----+-----+
| order_id | customer_id | order_date | total_amount |
+-----+-----+-----+-----+
| 101 | NULL | NULL | 1000.00 |
| 102 | NULL | NULL | 1000.40 |
| 103 | 1 | NULL | 1000.00 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

```
mysql> create table customer
-> (
->
-> customer_id integer not null auto_increment,
-> first_name varchar(50) not null,
-> last_name varchar(50) not null,
->
-> email varchar(255) unique,
->
->
-> phone_number varchar(20),
-> primary key(customer_id)
-> );
Query OK, 0 rows affected (0.04 sec)

mysql> insert into customer (customer_id) values (4);
ERROR 1364 (HY000): Field 'first_name' doesn't have a default value
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (4);
ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> insert into customer (customer_id,first_name,last_name,email,phone_number) values (4,"","","",86537654);
Query OK, 1 row affected (0.01 sec)
```

## 2) JOINS

```
mysql> SELECT
-> c.Country,
-> COUNT(o.OrderNumber) AS OrderCount
-> FROM
-> Customers c
-> JOIN
-> Orders o ON c.CustomerNumber = o.CustomerNumber
-> GROUP BY
-> c.Country
-> ORDER BY
-> OrderCount DESC
-> LIMIT 5;
+-----+-----+
| Country | OrderCount |
+-----+-----+
| USA | 112 |
| France | 37 |
| Spain | 36 |
| Australia | 19 |
| New Zealand | 15 |
+-----+-----+
5 rows in set (0.01 sec)
```

### 3) Self join

```
mysql> create table project
-> (
-> employeeid integer auto_increment,
-> fullname varchar(50) not null,
-> Gender enum('male','female') not null,
-> managerid integer,
-> primary key(employeeid));
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> insert into project (employeeid,fullname,gender,managerid) values (3,"preety","female",null),(4,"Anurag","male",1);
Query OK, 2 rows affected (0.04 sec)
Records: 2 Duplicates: 0 Warnings: 0
```

```
mysql> select * from project;
+-----+-----+-----+-----+
| employeeid | fullname | Gender | managerid |
+-----+-----+-----+-----+
| 1 | pranaya | male | 3 |
| 2 | priyanka | female | 1 |
| 3 | preety | female | NULL |
| 4 | Anurag | male | 1 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```