

MySQL - All about Constraints + Alter Command - Lecture 18

→ Constraints are useful to provide the validation check & restrict the user to provide the input correctly.

UNIQUE constraint

```
CREATE TABLE companies (
    supplier_id INT AUTO_INCREMENT,
    name VARCHAR(255) NOT NULL,
    phone VARCHAR(15) NOT NULL UNIQUE,
    address VARCHAR(255) NOT NULL,
    PRIMARY KEY (supplier_id)
);
```

```
mysql> CREATE TABLE companies (
->     supplier_id INT AUTO_INCREMENT,
->     name VARCHAR(255) NOT NULL,
->     phone VARCHAR(15) NOT NULL UNIQUE,
->     address VARCHAR(255) NOT NULL,
->     PRIMARY KEY (supplier_id)
-> );
Query OK, 0 rows affected (0.11 sec)
```

```
mysql> DESC companies;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| supplier_id | int | NO | PRI | NULL | auto_increment |
| name | varchar(255) | NO | | NULL | |
| phone | varchar(15) | NO | UNI | NULL | |
| address | varchar(255) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

```
mysql> INSERT INTO Companies(name,phone,address)
-> VALUES("Ankit","9898989898","XYZ-123 Berlin,Germany");
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT * FROM Companies;
+-----+-----+-----+
| supplier_id | name | phone | address |
+-----+-----+-----+
| 1 | Ankit | 9898989898 | XYZ-123 Berlin,Germany |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> INSERT INTO Companies(name,phone,address)
-> VALUES("Sahil","9898989121","XYZ-123 Berlin,Germany");
Query OK, 1 row affected (0.63 sec)
```

```
mysql> INSERT INTO Companies(name,phone,address)
-> VALUES("Abhishek","9898989121","XYZ-123 Berlin,Germany");
ERROR 1062 (23000): Duplicate entry '9898989121' for key 'companies.phone'
```

CHECK constraints

```
CREATE TABLE partiers (
    name VARCHAR(50),
    age INT CHECK (age > 18)
);
```

```
mysql> CREATE TABLE partiers (
->     name VARCHAR(50),
->     age INT CHECK (age > 18)
-> );
Query OK, 0 rows affected (0.02 sec)

mysql> DESC Partiers;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| name  | varchar(50) | YES |   | NULL    |       |
| age   | int      | YES |   | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> INSERT INTO Partiers(name,age) VALUES("Kartik",19);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Partiers(name,age) VALUES("Karan",17);
ERROR 3819 (HY000): Check constraint 'partiers_chk_1' is violated.
```

Named Constraints

```
CREATE TABLE partiers2 (
    name VARCHAR(50),
    age INT,
    CONSTRAINT age_over_18 CHECK (age > 18)
);
```

```
ERROR 3819 (HY000): Check constraint 'partiers_chk_1' is violated.
mysql> CREATE TABLE partiers2 (
->     name VARCHAR(50),
->     age INT,
->     CONSTRAINT age_over_18 CHECK (age > 18)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> DESC Partiers2;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| name  | varchar(50) | YES |   | NULL    |       |
| age   | int      | YES |   | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> INSERT INTO Partiers2(name,age) VALUES("Kartik",19);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Partiers2(name,age) VALUES("Karan",17);
ERROR 3819 (HY000): Check constraint 'age_over_18' is violated.
mysql> INSERT INTO Partiers2(name,age) VALUES("Karan",17);
ERROR 3819 (HY000): Check constraint 'age_over_18' is violated.
mysql>
```

Multi-Column Checks

The combination of name and address must be unique for each row

```
CREATE TABLE companies (
    supplier_id INT AUTO_INCREMENT,
    name VARCHAR(255) NOT NULL,
    phone VARCHAR(15) NOT NULL UNIQUE,
    address VARCHAR(255) NOT NULL,
    PRIMARY KEY (supplier_id),
    CONSTRAINT name_address UNIQUE (name , address)
);
```

```
mysql> CREATE TABLE companies (
->     supplier_id INT AUTO_INCREMENT,
->     name VARCHAR(255) NOT NULL,
->     phone VARCHAR(15) NOT NULL UNIQUE,
->     address VARCHAR(255) NOT NULL,
->     PRIMARY KEY (supplier_id),
->     CONSTRAINT name_address UNIQUE (name , address)
-> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> DESC Companies;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| supplier_id | int | NO | PRI | NULL | auto_increment |
| name | varchar(255) | NO | MUL | NULL | |
| phone | varchar(15) | NO | UNI | NULL | |
| address | varchar(255) | NO | | NULL | |
+-----+-----+-----+-----+-----+
4 rows in set (0.06 sec)
```

```
mysql> INSERT INTO Companies(name, phone, address)
-> VALUES("Ankit", "9876543210", "XYZ 123/Street Berlin, Germany");
Query OK, 1 row affected (0.08 sec)
```

```
mysql> SELECT * FROM Companies;
+-----+-----+-----+
| supplier_id | name | phone | address |
+-----+-----+-----+
| 1 | Ankit | 9876543210 | XYZ 123/Street Berlin, Germany |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> INSERT INTO Companies(name, phone, address)
-> VALUES("Ankit", "9876543212", "XYZ 123/Street Berlin, Germany");
ERROR 1062 (23000): Duplicate entry 'Ankit-XYZ 123/Street Berlin, Germany' for key 'companies.name_address'
mysql>
```

```
mysql> INSERT INTO Companies(name, phone, address)
-> VALUES("Sahil", "9876543212", "XYZ 123/Street Berlin, Germany");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Companies;
+-----+-----+-----+-----+
| supplier_id | name   | phone    | address          |
+-----+-----+-----+-----+
|      1 | Ankit | 9876543210 | XYZ 123/Street Berlin, Germany |
|      3 | Sahil | 9876543212 | XYZ 123/Street Berlin, Germany |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```