

## MySQL - Alter Table + Logical Operators - Lecture 19

---

### ALTER TABLE

```
ALTER TABLE companies
ADD COLUMN city VARCHAR(25)
```

Use ALTER TABLE to add a new column to an existing table

```
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 (0.02 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 (0.01 sec)
```

```
mysql> ALTER TABLE Companies
-> ADD COLUMN City varchar(50);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

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    |
| City       | varchar(50)  | YES  |       | NULL    |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

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

Use Update command to fill it.

```

mysql> INSERT INTO Companies(name,phone,address,City)
-> VALUES("Karan","99832823982","ZDEW-13/Main Street Delhi,India","New Delhi");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Companies;
+-----+-----+-----+-----+
| supplier_id | name | phone | address | City |
+-----+-----+-----+-----+
| 1 | Ankit | 9876543210 | XYZ 123/Street Berlin, Germany | NULL |
| 3 | Sahil | 9876543212 | XYZ 123/Street Berlin, Germany | NULL |
| 4 | Karan | 99832823982 | ZDEW-13/Main Street Delhi,India | New Delhi |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

`ALTER TABLE suppliers  
DROP COLUMN city;`

Use `ALTER TABLE` to remove columns from a table

```

mysql> ALTER TABLE Companies
-> DROP COLUMN City;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

```

```

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 (0.00 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 |
| 4 | Karan | 99832823982 | ZDEW-13/Main Street Delhi,India |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

## Renaming Tables

`RENAME TABLE companies TO suppliers;`

Use `RENAME` to...rename a table

```

mysql> RENAME TABLE Companies TO Suppliers;
Query OK, 0 rows affected (0.03 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_books_db |
+-----+
| books
| comments
| dogs
| items
| partiers
| partiers2
| people
| suppliers
| thing
| things
| tweets
+-----+
11 rows in set (0.00 sec)

mysql> DESC Suppliers;
+-----+-----+-----+-----+-----+-----+
| 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 (0.00 sec)

```

## Renaming Columns

`ALTER TABLE suppliers  
RENAME COLUMN name TO biz_name;`

Use `RENAME COLUMN` to rename a column

```

mysql> ALTER TABLE Suppliers
-> RENAME COLUMN name TO biz_name;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESC Suppliers;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| supplier_id | int | NO | PRI | NULL | auto_increment |
| biz_name | varchar(255) | NO | MUL | NULL |
| phone | varchar(15) | NO | UNI | NULL |
| address | varchar(255) | NO | | NULL |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> SELECT * FROM Suppliers;
+-----+-----+-----+-----+
| supplier_id | biz_name | phone | address |
+-----+-----+-----+-----+
| 1 | Ankit | 9876543210 | XYZ 123/Street Berlin, Germany |
| 3 | Sahil | 9876543212 | XYZ 123/Street Berlin, Germany |
| 4 | Karan | 99832823982 | ZDEW-13/Main Street Delhi,India |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

## Changing Columns

```
old column name      new column name      Changing the data type.  
mysql> ALTER TABLE Suppliers  
-> CHANGE biz_name bussiness_name varchar(50);  
Query OK, 3 rows affected (0.06 sec)  
Records: 3  Duplicates: 0  Warnings: 0  
  
mysql> DESC Suppliers;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| supplier_id | int | NO | PRI | NULL | auto_increment |  
| bussiness_name | varchar(50) | YES | MUL | NULL | |  
| phone | varchar(15) | NO | UNI | NULL | |  
| address | varchar(255) | NO | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)
```

## Modify

Use **MODIFY** to change an existing column's type

```
ALTER TABLE Suppliers  
MODIFY COLUMN bussiness_name varchar(100);
```

```
mysql> DESC Suppliers;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| supplier_id | int | NO | PRI | NULL | auto_increment |  
| bussiness_name | varchar(100) | YES | MUL | NULL | |  
| phone | varchar(15) | NO | UNI | NULL | |  
| address | varchar(255) | NO | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)
```

## Comparison Operators

### 1. Select books released after the year 2000

```
mysql> SELECT * FROM Books WHERE released_year > 2000;  
+-----+-----+-----+-----+-----+-----+  
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |  
+-----+-----+-----+-----+-----+-----+  
| 1 | The Namesake | Jhumpa | Lahiri | 2003 | 32 | 291 |  
| 2 | Norse Mythology | Neil | Gaiman | 2016 | 43 | 304 |  
| 3 | American Gods | Neil | Gaiman | 2001 | 12 | 465 |  
| 5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |  
| 6 | The Circle | Dave | Eggers | 2013 | 26 | 504 |  
| 8 | Just Kids | Patti | Smith | 2010 | 55 | 304 |  
| 9 | A Heartbreaking Work of Staggering Genius | Dave | Eggers | 2001 | 104 | 437 |  
| 10 | Coraline | Neil | Gaiman | 2003 | 100 | 208 |  
| 15 | Oblivion: Stories | David | Foster Wallace | 2004 | 172 | 329 |  
| 16 | Consider the Lobster | David | Foster Wallace | 2005 | 92 | 343 |  
| 17 | 10% Happier | Dan | Harris | 2014 | 29 | 256 |  
| 18 | fake_book | Freida | Harris | 2001 | 287 | 428 |  
| 19 | Lincoln In The Bardo | George | Saunders | 2017 | 1000 | 367 |  
+-----+-----+-----+-----+-----+-----+  
13 rows in set (0.02 sec)
```

## 2. Select books released before the year 2000

```
mysql> SELECT * FROM Books WHERE released_year < 2000;
+-----+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+-----+
| 4 | Interpreter of Maladies | Jhumpa | Lahiri | 1996 | 97 | 198 |
| 11 | What We Talk About When We Talk About Love: Stories | Raymond | Carver | 1981 | 23 | 176 |
| 12 | Where I'm Calling From: Selected Stories | Raymond | Carver | 1989 | 12 | 526 |
| 13 | White Noise | Don | DeLillo | 1985 | 49 | 320 |
| 14 | Cannery Row | John | Steinbeck | 1945 | 95 | 181 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

## && Logic Operator: AND Logic

- SELECT books written by Dave Eggers, published after the year 2010

```
mysql> SELECT * FROM Books WHERE author_lname = "Eggers" AND released_year > 2010;
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
| 5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
| 6 | The Circle | Dave | Eggers | 2013 | 26 | 504 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM books
-> WHERE author_lname='Eggers' AND
-> released_year > 2010 AND
-> title LIKE '%novel%';
+-----+-----+-----+-----+-----+-----+
| book_id | title | author_fname | author_lname | released_year | stock_quantity | pages |
+-----+-----+-----+-----+-----+-----+
| 5 | A Hologram for the King: A Novel | Dave | Eggers | 2012 | 154 | 352 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```