

MySQL - CRUD Operation - Lecture 7

MySQL - CRUD Operation

C - Create Command

R - Read Command - Select Keyword

U - Update Command - Update - SET command - "Where" location.

D - Delete Command - "Where" Clause - will specify the location,

```
mysql> CREATE TABLE Cats(
->   cat_id int auto_increment,
->   name varchar(100),
->   breed varchar(100),
->   age int,
->   PRIMARY KEY(cat_id)
-> );
Query OK, 0 rows affected (0.09 sec)

mysql> DESC Cats;
+-----+-----+-----+-----+-----+-----+
| Field | Type    | Null | Key  | Default | Extra       |
+-----+-----+-----+-----+-----+-----+
| cat_id | int     | NO   | PRI  | NULL    | auto_increment |
| name   | varchar(100) | YES  |      | NULL    |              |
| breed  | varchar(100) | YES  |      | NULL    |              |
| age    | int     | YES  |      | NULL    |              |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.08 sec)
```

```
INSERT INTO cats(name, breed, age)
VALUES ('Ringo', 'Tabby', 4),
       ('Cindy', 'Maine Coon', 10),
       ('Dumbledore', 'Maine Coon', 11),
       ('Egg', 'Persian', 4),
       ('Misty', 'Tabby', 13),
       ('George Michael', 'Ragdoll', 9),
       ('Jackson', 'Sphynx', 7);
```

```
mysql> INSERT INTO cats(name, breed, age)
-> VALUES ('Ringo', 'Tabby', 4),
->          ('Cindy', 'Maine Coon', 10),
->          ('Dumbledore', 'Maine Coon', 11),
->          ('Egg', 'Persian', 4),
->          ('Misty', 'Tabby', 13),
->          ('George Michael', 'Ragdoll', 9),
->          ('Jackson', 'Sphynx', 7);
Query OK, 7 rows affected (0.01 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+-----+
| 1     | Ringo     | Tabby    | 4    |
| 2     | Cindy      | Maine Coon | 10   |
| 3     | Dumbledore | Maine Coon | 11   |
| 4     | Egg        | Persian   | 4    |
| 5     | Misty      | Tabby    | 13   |
| 6     | George Michael | Ragdoll | 9    |
| 7     | Jackson    | Sphynx   | 7    |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

Read - Select Keyword - We are fetching the specific information from a particular table.

```
mysql> SELECT * FROM Cats Where age = 4;
+-----+-----+-----+-----+
| cat_id | name   | breed  | age   |
+-----+-----+-----+-----+
|      1 | Ringo  | Tabby  |     4 |
|      4 | Egg    | Persian |     4 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT * FROM Cats Where name = "Egg";
+-----+-----+-----+-----+
| cat_id | name   | breed  | age   |
+-----+-----+-----+-----+
|      4 | Egg    | Persian |     4 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

It creates the temporary view.

Write the SQL that selects the following:

cat_id
1
2
3
4
5
6
7

```
mysql> SELECT cat_id FROM Cats;
```

cat_id
1
2
3
4
5
6
7

Write the SQL that selects the following:

name	breed
Ringo	Tabby
Cindy	Maine Coon
Dumbledore	Maine Coon
Egg	Persian
Misty	Tabby
George Michael	Ragdoll
Jackson	Sphynx

```
mysql> SELECT name , breed FROM Cats;
```

name	breed
Ringo	Tabby
Cindy	Maine Coon
Dumbledore	Maine Coon
Egg	Persian
Misty	Tabby
George Michael	Ragdoll
Jackson	Sphynx

7 rows in set (0.00 sec)

Write the SQL that selects the following:

(Just the Tabby cats)

name	age
Ringo	4
Misty	13

```
mysql> SELECT Name, Age FROM cats WHERE Breed = "Tabby";  
+-----+-----+  
| Name | Age |  
+-----+-----+  
| Ringo | 4 |  
| Misty | 13 |  
+-----+-----+  
2 rows in set (0.00 sec)
```

Write the SQL that selects the following:

cat_id is same as age

cat_id	age
4	4
7	7

cat_id = age.

```
mysql> SELECT cat_id , age FROM Cats WHERE cat_id = age;  
+-----+-----+  
| cat_id | age |  
+-----+-----+  
| 4 | 4 |  
| 7 | 7 |  
+-----+-----+  
2 rows in set (0.00 sec)
```

```
mysql> SELECT cat_id , age FROM Cats WHERE cat_id = 4 AND cat_id = 7;  
Empty set (0.00 sec)
```

Both the condition needs to be true.

```
mysql> SELECT cat_id , age FROM Cats WHERE cat_id = 4 OR cat_id = 7;  
+-----+-----+  
| cat_id | age |  
+-----+-----+  
| 4 | 4 |  
| 7 | 7 |  
+-----+-----+  
2 rows in set (0.00 sec)
```

Either one Statement needs to be true.

```
mysql> SELECT cat_id , age FROM Cats WHERE cat_id IN (4,7);  
+-----+-----+  
| cat_id | age |  
+-----+-----+  
| 4 | 4 |  
| 7 | 7 |  
+-----+-----+  
2 rows in set (0.00 sec)
```

Multiple "OR" logic can be replace with "IN" Operators.

ALIASES : Use for Renaming the column Name or Table Name.

```
mysql> SELECT cat_id as id , age FROM Cats;
+---+-----+
| id | age |
+---+-----+
| 1  | 4   |
| 2  | 10  |
| 3  | 11  |
| 4  | 4   |
| 5  | 13  |
| 6  | 9   |
| 7  | 7   |
+---+-----+
7 rows in set (0.00 sec)
```

Update : Its being used to update the existing record which might fill up incorrect previously.

Syntax : Update <TableName> SET Col_name = "Updated data"
WHERE <location>;

```
mysql> SELECT * FROM Cats;
+---+-----+-----+-----+
| cat_id | name      | breed    | age   |
+---+-----+-----+-----+
| 1  | Ringo     | Tabby    | 4    |
| 2  | Cindy      | Maine Coon | 10   |
| 3  | Dumbledore | Maine Coon | 11   |
| 4  | Egg        | Persian   | 4    |
| 5  | Misty      | Tabby    | 13   |
| 6  | George Michael | Ragdoll | 9    |
| 7  | Jackson    | Sphynx   | 7    |
+---+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> UPDATE Cats SET Breed = "Short Hair" WHERE Breed = "Tabby";
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> SELECT * FROM Cats;
+---+-----+-----+-----+
| cat_id | name      | breed    | age   |
+---+-----+-----+-----+
| 1  | Ringo     | Short Hair | 4    |
| 2  | Cindy      | Maine Coon | 10   |
| 3  | Dumbledore | Maine Coon | 11   |
| 4  | Egg        | Persian   | 4    |
| 5  | Misty      | Short Hair | 13   |
| 6  | George Michael | Ragdoll | 9    |
| 7  | Jackson    | Sphynx   | 7    |
+---+-----+-----+-----+
7 rows in set (0.00 sec)
```

```

mysql> UPDATE Cats SET Age = 14 WHERE Name = "Misty";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+-----+
| 1     | Ringo     | Short Hair | 4    |
| 2     | Cindy      | Maine Coon | 10   |
| 3     | Dumbledore | Maine Coon | 11   |
| 4     | Egg        | Persian    | 4    |
| 5     | Misty      | Short Hair | 14   |
| 6     | George Michael | Ragdoll | 9    |
| 7     | Jackson    | Sphynx    | 7    |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

```

Thumb Rule - Before doing any update or deletion first try to read the content.
Using "Select Keyword".

1. Change Jackson's name to "Jack"

```

mysql> UPDATE Cats SET Name = "Jack" WHERE Name = "Jackson";
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+-----+
| 1     | Ringo     | Short Hair | 4    |
| 2     | Cindy      | Maine Coon | 10   |
| 3     | Dumbledore | Maine Coon | 11   |
| 4     | Egg        | Persian    | 4    |
| 5     | Misty      | Short Hair | 14   |
| 6     | George Michael | Ragdoll | 9    |
| 7     | Jack       | Sphynx    | 7    |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

```

2. Change Ringo's breed to "British Shorthair"

```

mysql> UPDATE Cats SET Breed = "British Shorthair" WHERE name = "Ringo";
Query OK, 1 row affected (0.09 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+-----+
| 1     | Ringo     | British Shorthair | 4    |
| 2     | Cindy      | Maine Coon | 10   |
| 3     | Dumbledore | Maine Coon | 11   |
| 4     | Egg        | Persian    | 4    |
| 5     | Misty      | Short Hair | 14   |
| 6     | George Michael | Ragdoll | 9    |
| 7     | Jack       | Sphynx    | 7    |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

```

3. Update both Maine Coons' ages to be 12

```
mysql> UPDATE Cats SET age = 12 WHERE breed = "Maine Coon";
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2    Changed: 2    Warnings: 0

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed        | age   |
+-----+-----+-----+-----+
|      1 | Ringo     | British Shorthair |    4 |
|      2 | Cindy      | Maine Coon    |   12 |
|      3 | Dumbledore | Maine Coon    |   12 |
|      4 | Egg        | Persian       |    4 |
|      5 | Misty     | Short Hair   |   14 |
|      6 | George Michael | Ragdoll     |    9 |
|      7 | Jack       | Sphynx       |    7 |
+-----+-----+-----+-----+
7 rows in set (0.01 sec)
```

DELETE - It is useful to remove unnecessary records. But it should use with caution that, if you won't provide the "where" clause it would delete the complete record.

Syntax : **DELETE FROM <table Name> WHERE <Condition>**.

```
mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed        | age   |
+-----+-----+-----+-----+
|      1 | Ringo     | British Shorthair |    4 |
|      2 | Cindy      | Maine Coon    |   12 |
|      3 | Dumbledore | Maine Coon    |   12 |
|      4 | Egg        | Persian       |    4 |
|      5 | Misty     | Short Hair   |   14 |
|      6 | George Michael | Ragdoll     |    9 |
|      7 | Jack       | Sphynx       |    7 |
+-----+-----+-----+-----+
7 rows in set (0.01 sec)

mysql> DELETE FROM Cats WHERE name = "Egg";
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Cats;
+-----+-----+-----+-----+
| cat_id | name      | breed        | age   |
+-----+-----+-----+-----+
|      1 | Ringo     | British Shorthair |    4 |
|      2 | Cindy      | Maine Coon    |   12 |
|      3 | Dumbledore | Maine Coon    |   12 |
|      5 | Misty     | Short Hair   |   14 |
|      6 | George Michael | Ragdoll     |    9 |
|      7 | Jack       | Sphynx       |    7 |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

1. DELETE all 4 year old cats

```
mysql> DELETE FROM Cats WHERE age = 4;
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM Cats;
+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+
|    2  | Cindy      | Maine Coon | 12   |
|    3  | Dumbledore | Maine Coon | 12   |
|    5  | Misty      | Short Hair | 14   |
|    6  | George Michael | Ragdoll | 9    |
|    7  | Jack       | Sphynx    | 7    |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

2. DELETE cats whose age is the same as their cat_id

```
mysql> DELETE FROM Cats WHERE cat_id = age;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Cats;
+-----+-----+-----+
| cat_id | name      | breed     | age   |
+-----+-----+-----+
|    2  | Cindy      | Maine Coon | 12   |
|    3  | Dumbledore | Maine Coon | 12   |
|    5  | Misty      | Short Hair | 14   |
|    6  | George Michael | Ragdoll | 9    |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

3. DELETE all cats

```
mysql> DELETE FROM Cats;
Query OK, 4 rows affected (0.01 sec)

mysql> SELECT * FROM Cats;
Empty set (0.00 sec)
```

Delete command will "Delete" the record of the table. But your structure is still intact.

```
mysql> DESC Cats;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra       |
+-----+-----+-----+-----+-----+
| cat_id | int    | NO   | PRI  | NULL    | auto_increment |
| name   | varchar(100) | YES  |      | NULL    |               |
| breed  | varchar(100) | YES  |      | NULL    |               |
| age    | int    | YES  |      | NULL    |               |
+-----+-----+-----+-----+-----+
4 rows in set (0.07 sec)
```

In order to delete the structure as well ? -- We have to use "DROP" Command. It will remove the structure and table from database.

DROP TABLE <TableName>.

```
mysql> DROP TABLE Cats;
Query OK, 0 rows affected (0.11 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_employeedetail |
+-----+
| employees
| personalinfo
| personalinfo1
| personalinfo2
| unique_personalinfo
| unique_personalinfo2
+-----+
6 rows in set (0.01 sec)

mysql> DESC Cats;
ERROR 1146 (42S02): Table 'employeedetail.cats' doesn't exist
mysql>
```

DELETE VS TRUNCATE VS DROP

Delete the record one by one , else delete the whole record at once.
Without impacting the structure.

- Truncate command use to remove all records once. It also won't impact the structure of Table.
- On the other hand, DROP command will drop the table along with its structure.