# SQL ALTER TABLE Queries

The ALTER TABLE command in MySQL enables you to make changes to the structure of an existing database table. This includes:

- Adding columns
- Removing columns
- Modifying column properties (data type, default value, etc.)
- Adding or removing constraints (foreign keys, etc.)
- Renaming columns
- Renaming the table itself.

1. Adding a New Column

   If you need to add a new column to a table, you should use the ADD COLUMN option along with ALTER TABLE statement as shown below

   Syntax :

       ALTER TABLE table_name
       ADD COLUMN new_column_name data_type;

   Example 01 :

       ALTER TABLE employees
       ADD COLUMN address VARCHAR(100);

2. Deleting a Column

   If you need to drop an existing column from a table, you should use the DROP COLUMN option along with ALTER TABLE statement as shown below.

Syntax :

ALTER TABLE table_name

DROP COLUMN column_name;

Example 02 :

ALTER TABLE employees

DROP address;

3. **Modifying column properties (data type, default value, etc.)**

If you need to change the datatype an existing column from a table, you should use the MODIFY COLUMN option along with ALTER TABLE statement as shown below:

Syntax :

ALTER TABLE table_name

MODIFY COLUMN column_name new_datatype;

Example 03 :

ALTER TABLE employees

MODIFY COLUMN salary DECIMAL(10,2);

Note : If you are having columns with VARCHAR datatype, it cannot be converted into INT.

4. **Adding or removing constraints (foreign keys, etc.)**

Here's how you can use the ALTER command to add or remove constraints, along with syntax and examples:

Syntax :

```
ALTER TABLE table_name
ADD CONSTRAINT constraint_name constraint_type
(column1, column2..)
```

Example 04:

```
ALTER TABLE employees
ADD CONSTRAINT pk_emp_id PRIMARY KEY (emp_id);
```

For deleting the constraint :

Syntax :

```
ALTER TABLE table_name
DROP CONSTRAINT constraint_name;
```

Example 05:

```
ALTER TABLE employees
DROP CONSTRAINT PRIMARY KEY ;
```

5. Renaming columns

Following is the syntax to rename a column name of an existing table:

Syntax :

```
ALTER TABLE employees
CHANGE COLUMN old_column_name new_column_name data_type;
```

Example 06 :

```
ALTER TABLE employees
CHANGE COLUMN joining_date hire_date DATE;
```

6. **Renaming the table itself**

   ALTER TABLE command to rename a table. Here's the syntax for renaming a table:

   Syntax :

   ALTER TABLE current_table_name
   RENAME TO new_table_name;

   Example 07 :

   ALTER TABLE employees
   RENAME TO staff;