The **ALTER TABLE** statement in SQL is used to modify the structure of an existing table in a database. This statement allows you to add, delete, or modify columns, as well as define or remove constraints. It provides flexibility to adapt the schema of a table as your requirements change.

**Syntax**

ALTER TABLE table\_name

{ ADD column\_definition | DROP COLUMN column\_name | MODIFY column\_definition | ALTER COLUMN column\_definition | ADD CONSTRAINT constraint\_definition | DROP CONSTRAINT constraint\_name };

**Common Use Cases**

**1. Adding a Column**

You can add a new column to an existing table.

ALTER TABLE table\_name

ADD column\_name data\_type [constraint];

**Example:**

ALTER TABLE employees

ADD date\_of\_birth DATE;

**2. Deleting a Column**

You can remove a column from a table.

ALTER TABLE table\_name

DROP COLUMN column\_name;

**Example:**

ALTER TABLE employees

DROP COLUMN date\_of\_birth;

**3. Modifying a Column**

You can change the data type or properties of an existing column.

ALTER TABLE table\_name

MODIFY column\_name new\_data\_type [constraint];

**Example:**

ALTER TABLE employees

MODIFY salary DECIMAL(10, 2);

**4. Renaming a Column (Supported in some databases like MySQL, SQL Server, and PostgreSQL)**

ALTER TABLE table\_name

RENAME COLUMN old\_name TO new\_name;

**Example:**

ALTER TABLE employees

RENAME COLUMN full\_name TO name;

**5. Adding a Constraint**

You can add a constraint like PRIMARY KEY, FOREIGN KEY, or UNIQUE to a table.

ALTER TABLE table\_name

ADD CONSTRAINT constraint\_name constraint\_type (column\_name);

**Example:**

ALTER TABLE employees

ADD CONSTRAINT pk\_employee\_id PRIMARY KEY (employee\_id);

**6. Dropping a Constraint**

You can remove a constraint from a table.

ALTER TABLE table\_name

DROP CONSTRAINT constraint\_name;

**Example:**

ALTER TABLE employees

DROP CONSTRAINT pk\_employee\_id;

**7. Renaming a Table**

In some databases, you can rename the table itself.

ALTER TABLE old\_table\_name

RENAME TO new\_table\_name;

**Example:**

ALTER TABLE employees

RENAME TO staff;

**Notes:**

* The exact syntax and options for ALTER TABLE may vary depending on the database management system (DBMS) you are using (e.g., MySQL, PostgreSQL, SQL Server, or Oracle).
* Some modifications (like dropping a column or renaming) might not be supported in older database versions.
* Modifying a table structure in a production environment should be done carefully, as it may affect existing data and application functionality.