SQL - TRUNCATE TABLE

SQL provides command to TRUNCATE a table completely in one go instead of deleting table records one by one which will be very time consuming and combersome process.

The SQL TRUNCATE TABLE Statement

The SQL **TRUNCATE TABLE** command is used to empties a table completely. This command is a sequence of DROP TABLE and CREATE TABLE statements and requires the DROP privilege.

You can also use DROP TABLE command to delete a table but it will remove the complete table structure from the database and you would need to re-create this table once again if you wish you store some data again.

Syntax

The basic syntax of a **TRUNCATE TABLE** command is as follows.

```
TRUNCATE TABLE table_name;
```

Example

First let's create a table **CUSTOMERS** which can store the personal details of customers including their name, age, address and salary etc. as shown below -

```
   ID INT NOT NULL,
   NAME VARCHAR (20) NOT NULL,
   AGE INT NOT NULL,
   ADDRESS CHAR (25),
   SALARY DECIMAL (18, 2),
   PRIMARY KEY (ID)
);
```

Now insert values into this table using the INSERT statement as follows -

```
INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (1, 'Ramesh', 32, 'Ahmedabad', 2000.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (2, 'Khilan', 25, 'Delhi', 1500.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (3, 'kaushik', 23, 'Kota', 2000.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (4, 'Chaitali', 25, 'Mumbai', 6500.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (5, 'Hardik', 27, 'Bhopal', 8500.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (6, 'Komal', 22, 'Pune', 4500.00 );

INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)
VALUES (7, 'Muffy', 24, 'Indore', 10000.00 );
```

The table will be created as follows -

ID	NAME	AGE	ADDRESS	SALARY
1	Ramesh	32	Ahmedabad	2000.00
2	Khilan	25	Delhi	1500.00
3	kaushik	23	Kota	2000.00
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00

7	Mary	24	Indore	10000.00

Following SQL **TRUNCATE TABLE CUSTOMER** statement will remove all the records of the CUSTOMERS table -

```
TRUNCATE TABLE CUSTOMERS;
```

Verification

Now, the CUSTOMERS table is truncated and the output from SELECT statement will be as shown in the code block below -

```
SELECT * FROM CUSTOMERS;
```

Following will be the putput:

```
Empty set (0.00 sec)
```

TRUNCATE vs DELETE

Even though the TRUNCATE and DELETE commands work similar logically, there are some major differences that exist between them. They are detailed in the table below.

DELETE	TRUNCATE
The DELETE command in SQL removes one or more rows from a table based on the conditions specified in a WHERE Clause.	SQL's TRUNCATE command is used to remove all of the rows from a table, regardless of whether or not any conditions are met.
It is a DML(Data Manipulation Language) command.	It is a DDL(Data Definition Language) command.

the DELETE command, for the modifications to be committed.	to the table are committed automatically.
It deletes rows one at a time and applies same criteria to each deletion.	It removes all of the information in one go.
The WHERE clause serves as the condition in this case.	The WHERE Clause is not available.
All rows are locked after deletion.	TRUNCATE utilizes a table lock, which locks the pages so they cannot be deleted.
It makes a record of each and every transaction in the log file.	The only activity recorded is the deallocation of the pages on which the data is stored.
It consumes a greater amount of transaction space compared to TRUNCATE command.	It takes comparatively less amount of transaction space.
If there is an identity column, the table identity is not reset to the value it had when the table was created.	It returns the table identity to a value it was given as a seed.
It requires authorization to delete.	It requires table alter permission.
When it comes to large databases, it is much slower.	It is much faster.

TRUNCATE vs DROP

Unlike TRUNCATE that resets the table structure, DROP command completely frees the tablespace from the memory. They are both Data Definition Language (DDL) operations as they interact with the definitions of database objects; which allows the database to automatically commit once these commands are executed with no chance to roll back.

However, there are still some differences exist between these two commands, which have been summarized in the following table −

The DROP command in SQL removes an entire table from a database including its definition, indexes, constraints, data etc.	The TRUNCATE command is used to remove all of the rows from a table, regardless of whether or not any conditions are met and resets the table definition.
It is a DDL(Data Definition Language) command.	It is also a DDL(Data Definition Language) command.
The table space is completely freed from the memory.	The table still exists in the memory.
All the integrity constraints are removed.	The integrity constraints still exist in the table.
Requires ALTER and CONTROL permissions on the table schema and table respectively, to be able to perform this command.	Only requires the ALTER permissions to truncate the table.
DROP command is much slower than TRUNCATE but faster than DELETE.	TRUNCATE command is faster than both DROP and DELETE commands.