



WeCloudData

SQL DDL & CTE Statements

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- **DDL Statements**
- CTE Statements

Agenda.



DDL **What is DDL?**



What is DDL?

Data Definition Language

The DDL commands in SQL are used to **create database schema** and to **define the type and structure of the data** that will be stored in a database.

SQL DDL commands are further divided into the following major categories:

- CREATE
- ALTER
- DROP
- TRUNCATE



Create

The CREATE query is used to create a database or objects such as tables, views, stored procedures, etc.

Creating a database:

```
CREATE DATABASE superstore;
```

Creating a table:

```
CREATE TABLE customers (  
  CustomerID INT,  
  CustomerName VARCHAR(100),  
  Province VARCHAR(50),  
  Region VARCHAR(30),  
  CustomerSegment VARCHAR(20)  
);
```



Alter

The ALTER command in SQL DDL is used to modify the structure of an already existing table.

- Adding a new column

```
ALTER TABLE customers  
ADD CustomerAddress varchar(200);
```

- Dropping the existing column

```
ALTER TABLE customers  
DROP COLUMN CustomerAddress;
```

- Modifying the existing column (Increase/Decrease size of the column & change the data type of the column)

```
ALTER TABLE customers  
MODIFY COLUMN Province varchar(30);
```

- Renaming a column

```
ALTER TABLE customers  
RENAME COLUMN Province to Province_verified;
```



Drop

The DROP command is a type of SQL DDL command, that is used to delete an existing database or an object within a database.

- Deleting a database

```
DROP DATABASE IF EXISTS superstore;
```

- Deleting a table

```
DROP TABLE IF EXISTS customers;
```



Truncate

The TRUNCATE command in SQL DDL is used to remove all the records from a table, but keep the table structure. Let's insert a few records in the Customers table:

```
INSERT INTO customers  
VALUES ('40732966', 'Tamara  
Dahlen', ' ', 'Ontario', 'Ontario', 'Corporate'),  
( '68464052', 'Bill Donatelli', 'Ontario', 'Ontario', 'Corporate')
```

below:

```
TRUNCATE TABLE customers
```

If you again select all the records from the Customers table, you will see that the table is empty.

- DDL Statements
- **CTE Statements**

Agenda.



CTE **What is CTE?**



What is CTE?

Common Table Expression

It is a temporary named result set that you can reference within a SELECT, INSERT, UPDATE, or DELETE statement. You can also use a CTE in a CREATE view, as part of the view's SELECT query. In addition, as of SQL Server 2008, you can add a CTE to the new MERGE statement.

Why we need it?

- CTE is a powerful SQL construct that helps simplify queries.
- CTEs act as virtual tables (with records and columns) that are created during query execution, used by the query, and deleted after the query executes.



Using CTE

It starts with a **WITH** clause contains one or more common table expressions (CTEs) with temporary tables

```
WITH my_cte AS (  
    SELECT a,b,c  
    FROM T1  
)  
SELECT a,c  
FROM my_cte  
WHERE ....
```



Discussion

Exercises



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