**SQL (Structured Query Language):**

It is standard language used to maintain the relational database and perform many difficult data manipulation operations on the data. It is a database language used for database creation, deletion, fetching, and modifying rows, etc. Sometimes, it is pronounced as **‘SEQUEL’ (Structured English Query Language).** We can also use it to handle organized data comprised of entities (variables) and relations between different entities of the data.

**Usages of SQL:** SQL is responsible for maintaining the relational data and the data structures present in the database, some of the common usages are:

* To execute queries against a database.
* To retrieve data from database.
* To insert records in a database.
* To updates records in a database.
* To delete records from a database.
* To create new databases.
* To create new tables in a database.
* To create views in a database.
* To perform complex operations on the database.

The SQL language is divided into 5 different languages. They are:

1. DDL (Data Definition Language)
2. DML (Data Manipulation Language)
3. DTL (Data Transactional Language) **(or)** TCL (Transactional Control Language)
4. DCL (Data Control Language)
5. DQL (Data Query Language)

**1.DDL (Data Definition Language):**

It is the subset of database that defines the **data structure of the database** when the database is created. For Example, we can use the DDL commands to add, remove, or modify tables.

It consists of the following commands/Statements:

1. CREATE
2. ALTER
3. RENAME
4. TRUNCATE
5. DROP etc…...

**1.CREATE:** Create statement is used to create the table inside the database along with the columns.

**Syntax for Parent Table:**

Create table TableName (ColumnName datatype(size) constrain, …);

**Syntax for Child Table:**

Create table TableName (ColumnName datatype(size) constrain, ChildColumnName references ParentTable(ParentColumnName));

**2.ALTER:**

Alter statement is used to modify the table structure by adding a new column or by removing a column or renaming a column.

**Adding a new column:**

**Syntax:**

Alter table TableName add (ColumnName datatype(size) constrain);

**Renaming a column:**

**Syntax:**

Alter table TableName rename column OldColumn to NewColumn;

**Removing a column:**

**Syntax:**

Alter table TableName drop column ColumnName;

**3.RENAME:**

Rename statement is used to change the existing table name

**Syntax:**

Rename OldTableName to NewTableName;

**4.TRUNCATE:**

Truncate statement is used to delete all the data present inside the table without deleting the table structure.

**The data will be gone permanently**.

**Syntax:**

Truncate table TableName;

**5.DROP:**

Drop statement is used **to delete the Complete or Whole table along data from the database.**

**Syntax:**

Drop table TableName;

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**2.DML (Data Manipulation Language):**

It is used **to manipulate existing data in the database.**

It consists of the following commands/Statements:

1. INSERT
2. UPDATE
3. DELETE etc…...

**1.INSERT:**

Insert statement is used to insert the data inside the tables.

**Syntax:**

Insert into TableName values (data);

**2.UPDATE:**

Update statement is used for updating data inside the tables.

**Syntax:**

Update TableName

Set ColumnName=data;

**3.DELETE:**

Delete statement is used for deleting the data inside the table.

**Syntax:**

Delete TableName

Where Condition;

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**3.DTL (Data Transaction Language) / TCL (Transaction Control Language):**

It is used to deal with the transaction operations in the database.

It consists of the following commands/Statements:

1. COMMIT
2. SAVEPOINT
3. ROLLBACK

**1.COMMIT:**

Commit statement is used to save the data inside the database permanently.

**Syntax:** Commit;

**2.SAVEPOINT:**

Savepoint is used to save the data at multiple point for temporarily.

**Syntax:** Savepoint name;

**3.ROLLBACK:**

Rollback statement is used to go back to the particular saved point.

**Syntax**: Rollback to name;

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**4. DCL (Data Control Language):**

It controls access to the data stored in the database.

It consists of the following commands/Statements:

1. GRANT
2. REVOKE

**1.GRANT:**

Grant statement is used for giving the permissions to the users to access the tables.

**Syntax:**

Grant privilege name on TableName to UserName;

**2.REVOKE:**

Revoke statement is used to take back the given permission.

**Syntax:**

Revoke privilege name on TableName from UserName;

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**5. DQL (Data Query Language):**

DQL language is used to Search the data inside the database.

It consists of the following commands/Statements:

1. SELECT
2. FROM
3. WHERE
4. GROUP BY
5. HAVING
6. ORDER BY

**1.SELECT:**

Select statement will Extract the data from table in database and give the output to us.

**2.FROM:**

From Statement will Extract the data from table in database and Store that data into the Buffered Memory.

**3.WHERE:**

Where Statement will Extract the data from Buffered Memory and it will use the Condition and Filter the Condition.

**Syntax:**

Select Column1, Column2, …….

From TableName

Where Condition;

**4.GROUP BY:**

Group By Statement is Used to Group the Records.

**Syntax:**

Group by ColumnName / Condition;

**5.HAVING:**

Having Statement is used to Provide Condition For Group by Statement.

**Syntax:**

Having Condition;

**Note:**

1. Where Statement can’t Used for MRF (Multi Row Functions) (or) Aggregate Functions.

2.Where Statement can’t Provide Condition for “Group by” statement.

So, that is the reason we are using “Having” Statement because it will Provide both Conditions or it will work for Both Conditions.

**6.ORDER BY**

Order by Statement is used to Arrange the data inside the tables in database.

**Syntax:**

Order by ColumnName / Condition;

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