**SQL(Structural Query language) Commands**

**Q1. What are the different Languages/categories of SQL Commands?**

Ans:- Different Languages of SQL Commands:

1. DDL – Data Definition Language **(Create, Drop, Alter, Truncate)**
2. DQL – Data Query Language **(Select)**
3. DML – Data Manipulation Language **(Insert, Update, Delete, Lock)**
4. DCL – Data Control Language **(Grant, Revoke)**
5. TCL – Transaction Control Language **(Commit, Savepoint, Rollback)**

**Q2. SQL Datatypes?**

| **Datatype** | **Properties** |
| --- | --- |
| **Numeric data types** | These are used to store numeric values. Examples include INT, BIGINT, DECIMAL, and FLOAT. |
| **Character data types** | These are used to store character strings. Examples include CHAR, VARCHAR, and TEXT. |
| **Date and time data types** | These are used to store date and time values. Examples include DATE TIME, and TIMESTAMP |
| **Binary data types** | These are used to store binary data, such as images or audio files. Examples include BLOB and BYTEA. |
| **Boolean data type** | This data type is used to store logical values. The only possible values are TRUE and FALSE. |
| **Interval data types** | These are used to store intervals of time. Examples include INTERVAL YEAR, INTERVAL MONTH, and INTERVAL DAY. |
| **Array data types** | These are used to store arrays of values. Examples include ARRAY and JSON. |

**Q3. DDL – Data Definition Language (Create, Drop, Alter, Truncate)?**

Ans:-

1. **CREATE TABLE** statement is used to create table in a database. If you want to create a table, you should name the table and define its column and each column's data type.

**Syntax**: create table <tablename> ("column1" "data type", "column2" "data type", "column3" "data type", ... ,"columnN" "data type");

**Example**:- CREATE TABLE STUDENTS (Id INT NOT NULL, Name VARCHAR (20) NOT NULL, Age INT NOT NULL, Address CHAR (25), PRIMARY KEY (Id));

1. **DROP TABLE** statement is used to delete a table definition and all data from a table. This is very important to know that once a table is deleted all the information available in the table is lost forever, so we have to be very careful when using this command.

**Syntax:-** DROP TABLE "table\_name";

1. **ALTER TABLE** statement allows you to add, modify, and delete columns of an existing table. This statement also allows database users to add and remove various SQL constraints on the existing tables.

**Syntax:-** ALTER TABLE table\_name ADD (column\_Name1 column-definition, column\_Name2 column-definition, .....,column\_NameN column-definition);

**Example:-** ALTER TABLE Employee ADD (Emp\_ContactNo. Number(13), Emp\_EmailID varchar(50));

1. **TRUNCATE TABLE** statement is used to remove all rows (complete data) from a table. It is similar to the DELETE statement with no WHERE clause.

* Truncate table is faster and uses lesser resources than DELETE TABLE command. TRUNCATE TABLE doesn't delete the structure of the table.
* The rollback process is not possible after truncate table statement. Once you truncate a table you cannot use a flashback table statement to retrieve the content of the table.

**Syntax:-** TRUNCATE TABLE table\_name;

**Example:**- TRUNCATE TABLE Employee;

**Q4. DQL – Data Query Language (Select)**

**Ans:- SELECT** Statement – It is used to access the records from one or more database tables and views. It also retrieves the selected data that follow the conditions we want.

**Syntax:** SELECT Column\_Name\_1, Column\_Name\_2, ....., Column\_Name\_N FROM Table\_Name;

**Example:-** SELECT \* FROM table\_name;

SELECT \* FROM Employee\_Details WHERE Emp\_Panelty = 500;

SELECT COUNT (Car\_Name), Car\_Price FROM Cars\_Details GROUP BY Car\_Price;

SELECT SUM (Employee\_Salary), Employee\_City FROM Employee\_Having GROUP BY Employee\_City HAVING SUM(Employee\_Salary)>5000;

SELECT \* FROM Employee\_Order ORDER BY Emp\_Salary DESC;

**Q5. DML – Data Manipulation Language (Insert, Update, Delete, Lock)**

**Ans:-**

1. **INSERT** statement It is used to insert a single or a multiple records in a table.

**Syntax**:-INSERT INTO table\_name (column1, column2, column3....) VALUES (value1, value2, value3.....);

**Example**:- INSERT INTO STUDENTS (ROLL\_NO, NAME, AGE, CITY) VALUES (2, ALKA, 20, GHAZIABAD);

* A single query to insert multiple records in the student table

Example:- INSERT INTO items\_tbl(ID, Item\_Name, Item\_Quantity, Item\_Price, Purchase\_Date) VALUES(1, "Soap", 5, 200, "2021-07-08"), (2, "Toothpaste", 2, 80, "2021-07-10"), (3, "Pen", 10, 50, "2021-07-12"));

1. **UPDATE** statement is used to change the data of the records held by tables. Which rows is to be update, it is decided by a condition. To specify condition, we use WHERE clause

**Syntax:-** UPDATE table\_name SET [column\_name1= value1,... column\_nameN = valueN] [WHERE condition]

**Example:-** UPDATE students SET User\_Name = 'beinghuman' WHERE Student\_Id = '3';

UPDATE students SET User\_Name = 'beserious', First\_Name = 'Johnny' WHERE Student\_Id = '3';

1. **DELETE** statement is used to delete rows from a table. Generally DELETE statement removes one or more records from a table.

**Syntax:-** DELETE FROM table\_name [WHERE condition];

**Example:-** DELETE FROM Employee;

**Q6. DCL – Data Control Language (Grant, Revoke)**

**Q7. TCL – Transaction Control Language (Commit, Savepoint, Rollback)**

**Q8. Difference between TRUNCATE and DELETE?**

**Q9. Difference between TRUNCATE and DROP?**

**Q10. Difference between DROP and DELETE?**

**Q11. Aggregate Commands?**

**Q12. SQL Clauses**

**Q13. Constraints**

**Q14. Joins**