**1) What is a database? Differentiate between SQL and NoSQL databases.**

Ans- A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a [database management system (DBMS)](https://www.oracle.com/in/database/what-is-database/#WhatIsDBMS). Together, the data and the DBMS, along with the applications that are associated with them, are referred to as a database system, often shortened to just database.

SQL is the programming language used to interface with relational databases. (Relational databases model data as records in rows and tables with logical links between them). NoSQL is a class of DBMs that are non-relational and generally do not use SQL.

**2) What is DDL? Explain why CREATE, DROP, ALTER, and TRUNCATE are used with an example.**

Ans-Data definition language (DDL) describes the portion of SQL that creates, alters, and deletes database objects. These database objects include schemas, tables, views, sequences, catalogs, indexes, variables, masks, permissions, and aliases. Creating a schema.

The CREATE TABLE command creates a new table in the database.

CREATE TABLE Persons (  
    PersonID int,  
    LastName varchar(255),  
    FirstName varchar(255),  
    Address varchar(255),  
    City varchar(255)  
);

The ALTER TABLE command adds, deletes, or modifies columns in a table.

The ALTER TABLE command also adds and deletes various constraints in a table.

ALTER TABLE Customers  
ADD Email varchar(255);

The DROP TABLE command deletes a table in the database.

DROP TABLE Shippers;

The TRUNCATE TABLE command deletes the data inside a table, but not the table itself.

TRUNCATE TABLE Categories;

**3) What is DML? Explain INSERT, UPDATE, and DELETE with an example.**

Ans- The data manipulation language statements are used to retrieve, add, delete, and modify the data that is stored in the objects of database.

* The INSERT statement is used to insert a new row in the database that is adding data to a table.
* The UPDATE statement is used to update the data or row in the table.
* The DELETE statement is used to delete a row from the table in the database.

**4) What is DQL? Explain SELECT with an example**

Ans- The full form of DQL is Data Query Language. DQL is a part of the grouping involved in SQL (Structures Query Language) sub-languages. The SQL sub languages have four major categories, DQL, DDL, DCL, and DML. TCL is also sometimes argued for being a part of the sub-language set.

A SELECT statement retrieves zero or more rows from one or more database tables or database views. In most applications, SELECT is the most commonly used data manipulation language (DML) command. As SQL is a declarative programming language, SELECT queries specify a result set, but do not specify how to calculate it.

**5) Explain Primary Key and Foreign Key.**

Ans-A primary key generally focuses on the uniqueness of the table. It assures the value in the specific column is unique. A foreign key is generally used to build a relationship between the two tables.

**6) Write a python code to connect MySQL to python. Explain the cursor() and execute() method**

Ans- import mysql.connector

# Creating connection object

mydb = mysql.connector.connect(

    host = "localhost",

    user = "yourusername",

    password = "your\_password"

)

# Printing the connection object

print(mydb)

Cursor is a Temporary Memory or Temporary Work Station. It is Allocated by Database Server at the Time of Performing DML(Data Manipulation Language) operations on Table by User. Cursors are used to store Database Tables.

Since this is a SELECT statement, the execute( ) method returns a boolean true to indicate that a result set is available.

**7) Give the order of execution of SQL clauses in an SQL query.**

Ans- The order in which the clauses in queries are executed is as follows:

**1. FROM/JOIN:**The FROM and/or JOIN clauses are executed first to determine the data of interest.

**2. WHERE:**The WHERE clause is executed to filter out records that do not meet the constraints.

**3. GROUP BY:**The GROUP BY clause is executed to group the data based on the values in one or more columns.

**4. HAVING:**The HAVING clause is executed to remove the created grouped records that don’t meet the constraints.

**5. SELECT:**The SELECT clause is executed to derive all desired columns and expressions.

**6. ORDER BY:**The ORDER BY clause is executed to sort the derived values in ascending or descending order.

**7. LIMIT/OFFSET:**Finally, the LIMIT and/or OFFSET clauses are executed to keep or skip a specified number of rows.