## Q1. What is a database? Differentiate between SQL and NoSQL databases.

In [1]:
```
# Ans-A database is an organized collection of structured information, or data, typically stored electronically in a computer system.

# DIFFRENCE BETWEEN SQL and NOSQL:
# ::-SQL
#    SQL databases define and manipulate data-based structured query language (SQL).
# ::-NOSQL
#    A NoSQL database has a dynamic schema for unstructured data. Data is stored in many ways which means it can be document-oriented,
#    column-oriented, graph-based, or organized as a key-value store.
```

## Q2. What is DDL? Explain why CREATE, DROP, ALTER, and TRUNCATE are used with an example.

In [3]:
```
# Ans- DDL-Data definition language (DDL) describes the portion of SQL that creates, alters, and deletes database objects.
#      CREATE-The CREATE DATABASE command is used is to create a new SQL database.
       CREATE DATABASE testDB;
#      DROP-The DROP COLUMN command is used to delete a column in an existing table

#      ALTER-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.

#TRUNCATE-The DROP TABLE command deletes a table in the database.
```

## Q3. What is DML? Explain INSERT, UPDATE, and DELETE with an example.

In [4]:
```
# Ans-DML -Data manipulation language (DML) statements access and manipulate data in existing tables.
#     INSERT-The INSERT INTO command is used to insert new rows in a table.

    # INSERT INTO Customers (CustomerName, ContactName, Address, City, PostalCode, Country)
     #          VALUES ('Cardinal', 'Tom B. Erichsen', 'Skagen 21', 'Stavanger', '4006', 'Norway');
#     UPDATE-The UPDATE command is used to update existing rows in a table.

#     DELETE-The DELETE command is used to delete existing records in a table.
```

## Q4. What is DQL? Explain SELECT with an example.

In [5]:
```
# 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.

#    SELECT-A SELECT statement consists of a query with an optional ORDER BY clause, an optional result offset clause, an optional fetch first clause,
#           an optional FOR UPDATE clause and optionally isolation level.
#            The SELECT statement is so named because the typical first word of the query construct is SELECT.

#SELECT column1, column2, ...
# FROM table_name;
```

## Q5. Explain Primary Key and Foreign Key.

In [6]:
```
# Primary key-The PRIMARY KEY constraint uniquely identifies each record in a table.
#             Primary keys must contain UNIQUE values, and cannot contain NULL values.
#             A table can have only ONE primary key; and in the table,
#             this primary key can consist of single or multiple columns (fields).
#Foreign key-The FOREIGN KEY constraint is used to prevent actions that would destroy links between tables.
#           A FOREIGN KEY is a field (or collection of fields) in one table, that refers to the PRIMARY KEY in another table.
```

## Q6. Write a python code to connect MySQL to python. Explain the cursor() and execute() method.

In [8]:
```
 """ import mysql.connector
mydb = mysql.connector.connect(
  host="localhost",
  user="abc",
  password="password"
)
print(mydb)
mycursor = mydb.cursor()
mycursor.execute("SHOW DATABASES")
for x in mycursor:
  print(x)"""

# cursor()-The MySQLCursor of mysql-connector-python (and similar libraries) is used to execute statements to communicate with the MySQL database.

# execute():-execute() returns an iterator if multi is True . In Python, a tuple containing a single value must include a comma.
```

Out[8]:
```
' import mysql.connector\nmydb = mysql.connector.connect(\n host="localhost",\n user="abc",\n password="password"\n)\nprint(mydb)\nmycursor = mydb.cursor
()\nmycursor.execute("SHOW DATABASES")\nfor x in mycursor:\n print(x)'
```

## Q7. Give the order of execution of SQL clauses in an SQL query.

In [9]:
```
# Order Clause  Function
#   1   FROM    Tables are joined to get the base data.
#   2   WHERE   The base data is filtered.
#   3   GROUP BY        The filtered base data is grouped.
#   4   HAVING  The grouped base data is filtered.
#   5   SELECT  The final data is returned.
#   6   ORDER BY        The final data is sorted.
#   7   LIMIT   The returned data is limited to row count.
```

In [ ]:
```

```