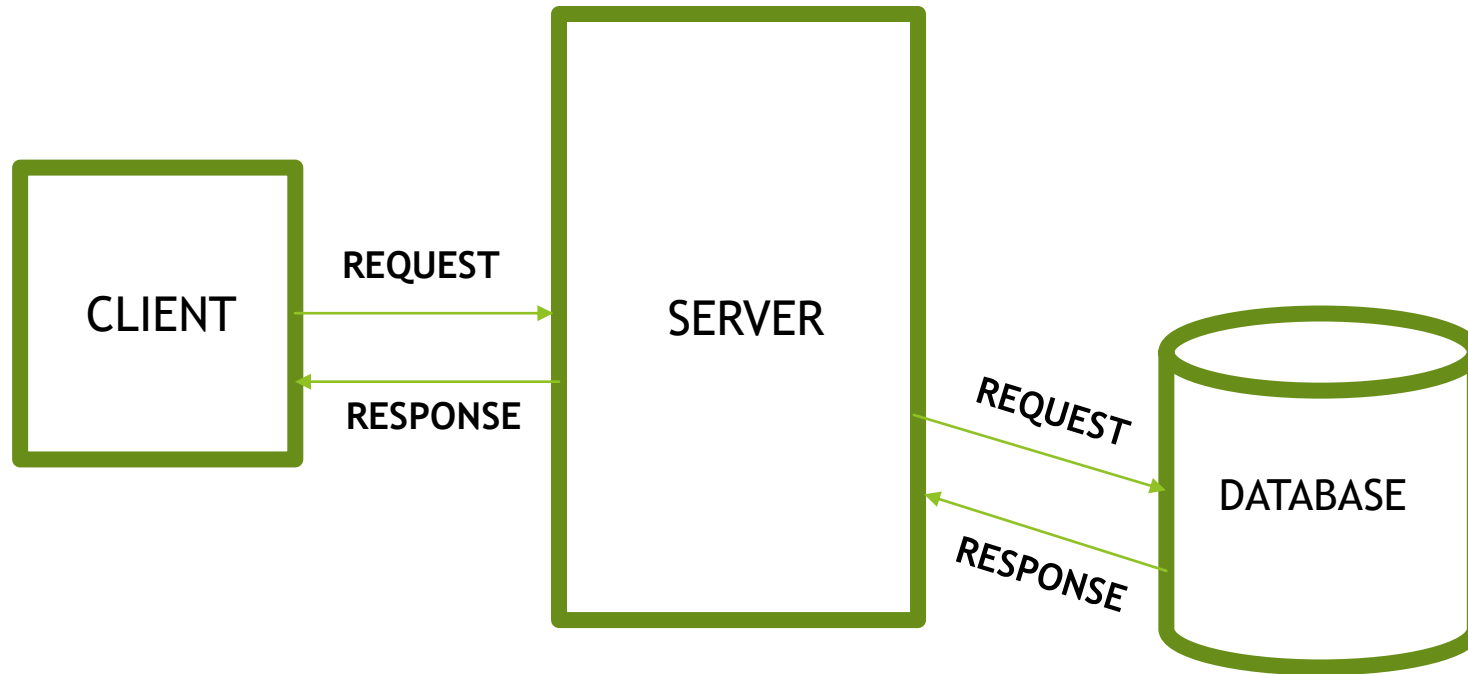


MySQL

Introduction to Database Management System (DBMS)



Client-Server Architecture:





STEPS:

- Client sends request to the server for the data.
- Server in turn searches for the data in the database.
- Finally Server responds back the client with the required data.

DEFINATION OF A DATABASE:

A Database is defined as a collection of interrelated data stored together to serve multiple applications.

DBMS:

DBMS stands for Data Base Management System.

DBMS refers to a software that is responsible for storing, maintaining and utilizing databases.

A database along with a DBMS is referred to as a database system.



USERS IN A DBMS ENVIRONMENT

Following, are the various category of users of a DBMS system



Component Name	Task
Application Programmers	The Application programmers write programs in various programming languages to interact with databases.
Database Administrators	Database Admin is responsible for managing the entire DBMS system. He/She is called Database admin or DBA.
End-Users	The end users are the people who interact with the database management system. They conduct various operations on database like retrieving, updating, deleting, etc.

Why to Learn DBMS?

A database system is widely used as a repository of the data needed for an organization's data processing.

- **Real-world entity**
- **Relation-based tables**
- **Isolation of data and application**
- **Less redundancy**
- **Consistency**
- **Query Language**



Types of DBMS



Applications of DBMS:

- **ACID Properties** – DBMS follows the concepts of **Atomicity**, **Consistency**, **Isolation**, and **Durability** (normally shortened as ACID).
- **Multiuser and Concurrent Access** – DBMS supports multi-user environment and allows them to access and manipulate data in parallel.
- **Multiple views** – DBMS offers multiple views for different users.
- **Security** – Features like multiple views offer security to some extent where users are unable to access data of other users and departments.



Simple example of a **SCHOOL DATABASE**. This database is maintaining information concerning students, courses, and grades in a school environment.

The database is organized as five files:

- The STUDENT file stores data of each student
- The COURSE file stores contain data on each course.
- The SECTION stores the information about sections in a particular course.
- The GRADE file stores the grades which students receive in the various sections
- The FACULTY file contains information about each teacher.





Popular DBMS Software

Here, is the list of some popular DBMS system:

- MySQL
- Microsoft Access
- Oracle
- PostgreSQL
- dBASE
- FoxPro
- SQLite
- IBM DB2
- LibreOffice Base
- MariaDB
- Microsoft SQL Server etc.