**DBMS vs SQL**

**1.**[**Database management system (DBMS)**](https://www.geeksforgeeks.org/dbms/)**:**  
Database management system (DBMS) is a software that manage or organize the data in a database. We can arrange the data in a tabular form (i.e. in row or column). It helps the user to retrieve the data from the database.

Best examples of DBMS are – MYSQL, ORACLE, dBase etc.

DP

**2.**[**Structured Query Language (SQL)**](https://www.geeksforgeeks.org/structured-query-language/)**:**  
Structured Query Language (SQL) is designed for managing data in a relational database management system(RDBMS). SQL helps in storing, manipulating, and retrieving data in databases.

Best examples of SQL are :- MYSQL, SQL server.

Database programing Lang

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| **Database management system (DBMS)** | **Structured Query Language (SQL)** |
| 1. It is used to manage the database.  For example:- MYSQL, oracle. | 1. It is a query language not a database. |
| 2. It performs various operation like database creation, storing data, updating data. | 2. It performs various operation on a database like creation, deletion and modification. |
| 3. It provides security to the database. | 3. It is designed for managing data in RDMS (Relational database management system) |
| 4. It contains automatic backup and database recovery. | 4. It allows the user to create a view stored procedure function in database. |
| 5. It can control data redundancy (i.e. it stores all the data in one single database file.) | 5. It helps in creating, updating , deleting data from the database. |
| 6. It can reduce complex relationship between data. | 6. It consists of different types of SQL languages like DDL, DML, TCL. |

# **DBMS Architecture**

### 1-Tier Architecture

### 2-Tier Architecture

### 3-Tier Architecture

**RDBMS and DBMS**

# **Building blocks of database**

* **Columns (Fields, Attributes)**
* **Rows (Tuples, Record)**
* **Tables (Relation) :**

**DBMS Database Models**

1. Hierarchical databases
2. Network databases
3. Relational databases
4. Object-oriented databases
5. NoSQL databases

## **ACID Properties**

* **A**tomicity,
* **C**onsistency,
* **I**solation
* **D**urability.