Data Base Management

1. RDBM
2. MySQL
3. Postgre SQL
4. SQL Server

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1.RDBM :

RDBMS is a **relational database management system** which is the root for SQL. It is designed totally for relational models. The relational model can be represented on a table with rows and columns. Oracle is an example of RDBMS.

- RDBMS is a plan of action and employs a structure which permits to recognize, update and handle the relation database.

- It is arranged in tables which contains rows and columns.

- Every row in a table is nothing but a record through the unique ID known as key. Employs the normalization (method of arranging data in a database for eliminating the redundancy).

1.1 Functions of RDBMS

1.1.1 Security

This is one of the most important functions of RDBMS. Security management sets rules that allow accessing the database. This function also sets restraints on what specific data any user can see or write.

1.1.2 Accuracy

In relational database management systems multiple tables are related to one another with the use of primary key and foreign key concepts. This makes data non repetitive so there is no chance for duplication of data. Hence, accuracy of RDBMS is good.

1.1.3 Integrity

Data integrity enforces the three constraints. Entity integrity means a table should have the primary key.

1.1.4 Consistency

The data consistency in relational model is best in RDBMS for maintaining data across application and database copies.

1.2 Advantages of RDBMS

The advantages of RDBMS are as follows −

- RDBMS is based on rows and columns (table). So it is easier to understand RDBMS work.

- RDBMS supports more than one user.

- As it is advanced it can easily handle huge amounts of data.

- Security is pretty good for RDBMS.

2.MySQL

MySQL is the most popular RDBMS. It was initially released the 23 May 1995 and written in C/C++. It is currently owned by Oracle Corporation. It is used by many popular companies: Google, LinkedIn, Amazon, Netflix, Facebook, Twitter, Youtube… MySQL is open-source and benefits from a very big community. As a RDBMS it uses a strict schema model (data inputs must strictly respect a certain schema without flexibility as in NoSQL) and relational nature of its data. As a SQL (structured query language) it uses queries to obtain data via JOINS to join / connect tables together. Compared to NoSQL, SQL allows to automatically update data redundant in different parts of the databases.

3. Postgre SQL

Postgre SQL is the second most popular RDBMS. It was initially released the 8 July 1996 and written in C. It is developped and owned by Owned by PostgreSQL Global Development Group. It is used by many popular companies: Cisco, Apple, Skype… MySQL is open-source and benefits from a very big community. As a RDBMS it uses a strict schema model (data inputs must strictly respect a certain schema without flexibility as in NoSQL) and relational nature of its data. As a SQL (structured query language) it uses queries to obtain data via JOINS to join / connect tables together. Compared to NoSQL, SQL allows to automatically update data redundant in different parts of the databases.

4.SQL Server

SQL Server is also a RDBMS. It was initially released the 2 April 1989 and written in C,C++ and C#. It was developped and owned by Microsoft. It is used by many popular companies: EdgeWood College, Palo Alto University, Palo Alto University… MySQL is a commercial solution (everything is licensed so must be purchased). As a RDBMS it uses a strict schema model (data inputs must strictly respect a certain schema without flexibility as in NoSQL) and relational nature of its data. As a SQL (structured query language) it uses queries to obtain data via JOINS to join / connect tables together. Compared to NoSQL, SQL allows to automatically update data redundant in different parts of the databases

MySQL	PostgreSQL	SQL Server
Open-source	Open-source	Licensed
Owned by Oracle	Owned by PostgreSQL Global Development Group	Owned by Microsoft
Scalable buffer pool to pull cache	Scalable buffer pool to pull cache	Isolate processes as separate OS processes
Limited functionality regarding temporary tables to deal with complex processes	More functionality regarding temporary tables (divide tables into local and global). Better with complex processes.	More functionality regarding temporary tables (divide tables into local and global). Better with complex processes.
Organizes indexes into clusters and tables (not very flexible search)	Rich automated functionality for index management	Flexible search
Belongs to the Oracle ecosystem (very large community)	Belongs to the Oracle ecosystem (very large community)	Smaller community but Microsoft support team
Targeted to all sizes of companies	Targeted to all sizes of companies	Targeted to large companies
Flexible, cost efficient and innovative	Flexible, cost efficient and innovative	Professional management tools for big businesses