RELATIONAL DATABASE MANAGEMENT SYSTEM

MYSQL / POSTGRESQL / SQL SERVER

What is a Relational Database Management System (RDBMS)?

- A relational database management system (**RDBMS**) is a program that allows you to create, update, and administer a relational database. Most relational database management systems use the SQL language to access the database.

Here is a brief description of popular RDBMSs:

- **MySQL**
- **PostgreSQL**
- **SQL Server**

MySQL

- **MySQL** is the database management system. It is also referred to as an Open-source relational database management system (RDBMS). It supports all platforms like Windows, Mac OS, Solaris, Free BSD, Linux, etc. It was mainly written in C and C++. Its type is RDBMS and available in the English language only.
- **MySQL** was created by a Swedish company MySQL AB. The features are like support to cross-platform, stored procedures, triggers, cursors, data definition language, ACID compliance, SSL support, views updatable, partitioning, Indexing, select, commit grouping, Unicode support and many more.

PostgreSQL

- **PostgreSQL** is an advanced object-relational database management system which provides support to the extended subset of SQL standards including different transactions, foreign keys, subqueries, triggers, and different user-defined types and functions.
- **PostgreSQL** is developed by the PostgreSQL Global Development group. It is mainly written in C language only.
- **PostgreSQL** has many features like replication, indexing, schemas, wide variety of data types, Inheritance, online backup, used-defined objects like conversions and procedural language.

SQL Server

- **SQL Server** is defined as a relational database management system (RDBMS). It supports the platforms that are Linux, Microsoft Windows, and Windows server.
- **SQL Server** also referred to as MSSQL means Microsoft SQL Server. It was developed by Microsoft. It was written in C and C++. It is available in multi-languages like English, Japanese, French, Spanish, Chinese, etc.
- **SQL Server** has many features like the same database can be used by multiple developers. The database table model is used for storing records or information. The syntax is very simple for writing the basic queries like for Insert, create, update and delete, which is also referred to as CRUD statements

comparison between the three RDBMS

	MySQL	PostgreSQL	SQL Server
Price	Has additional paid tools; the core functionality can be accessed for free.	Open-source .	The database has free edition for developers and small businesses but only supports 1 processor and 1 memory GB. For a server, users need to pay $931.
Language	Written in C++, database management is done with SQL.	Written in C.	Written in C,C++.
Data Changes	A solution updates data automatically to the rollback storage .	Developers insert a new column and row in order to update the database.	The database has three engines that are responsible for row updates.
Defragmentation	Offers several approaches to defragmentation – during backup, index creation and with an OPTIMIZE Table command.	Allows scanning the entire tables of a data layer to find empty rows and delete unnecessary elements.	Offers an efficient garbage collector that doesn't create more than 15-20% of overhead.
Data Queries	Offers a scalable buffer pool – developers can set up the size of the cache according to the workload.	Each database has a separate memory and runs its own process.	Uses a buffer pool, and just like in MySQL, it can be limited or increased according to processing needs.
Temporary tables	Offers limited functionality for temporary tables (developers cannot set variables or create global templates).	Developers divide temporary tables on local and global, configure them with flexible variables.	Developers can create local and global temporary tables, as well as oversee and create variables.
JSON Support	Supports JSON files but doesn't allow indexing them.	Supports JSON files, as well as their indexing and partial updates.	Provides full support of JSON documents, their updates, functionality, maintenance.