RDBMS (Relational Database Management System) and their functionalities

Stands for "Relational Database Management System." An RDBMS is a [DBMS](https://techterms.com/definition/dbms) designed specifically for [relational databases](https://techterms.com/definition/relational_database). Therefore, RDBMSes are a subset of DBMSes.

A relational database refers to a [database](https://techterms.com/definition/database) that stores data in a structured format, using [rows](https://techterms.com/definition/row) and [columns](https://techterms.com/definition/column). This makes it easy to locate and access specific values within the database. It is "relational" because the values within each [table](https://techterms.com/definition/table) are related to each other. Tables may also be related to other tables. The relational structure makes it possible to run [queries](https://techterms.com/definition/query) across multiple tables at once.

* **Number of allowed users.** While a DBMS can only accept one user at a time, an RDBMS can operate with multiple users.
* **Hardware and software requirements.** A DBMS needs less software and hardware than an RDBMS.
* **Amount of data.**RDBMSes can handle any amount of data, from small to large, while a DBMS can only manage small amounts.
* **Database structure.** In a DBMS, data is kept in a hierarchical form, whereas an RDBMS utilizes a table where the headers are used as column names and the rows contain the corresponding values.
* **ACID implementation.** DBMSes do not use the atomicity, consistency, isolation and durability ([ACID](https://searchsqlserver.techtarget.com/definition/ACID)) model for storing data. On the other hand, RDBMSes base the structure of their data on the ACID model to ensure consistency.
* **Distributed databases.** While an RDBMS offers complete support for [distributed databases](https://searchoracle.techtarget.com/definition/distributed-database), a DBMS will not provide support.
* **Types of programs managed.**While an RDBMS helps manage the relationships between its incorporated tables of data, a DBMS focuses on maintaining databases that are present within the computer network and system [hard disks](https://searchstorage.techtarget.com/definition/hard-disk).
* **Support of database normalization.** An RDBMS can be [normalized](https://searchsqlserver.techtarget.com/definition/normalization), but a DBMS cannot.

Comparison between the three RDBMS

MySQL

MySQL is an open source, relational database management system (RDBMS) based on structured query language (SQL). MySQL is available on all major operating systems, including [Windows](https://www.atlantic.net/cloud-hosting/how-to-install-mysql-windows-server-2012/), [Linux](https://www.atlantic.net/cloud-hosting/how-to-install-lamp-arch-linux/) and Solaris. It is free to use for individuals and non-production environments under the GNU General Public License; however, if used commercially, a commercial licence is required.

The MySQL software delivers a very fast, multi-threaded, multi-user, and robust SQL (Structured Query Language) database server. MySQL Server is intended for mission-critical, heavy-load production systems as well as for embedding into mass-deployed softwa

**Pros of MySQL**

Free

Easy

Widely used

Open source

High availability

SSL support

Easy to set up on all platforms

**Cons of MySQL**

Owned by a company with their own agenda

**What tools integrate with MySQL?**

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PostgreSQL

PostgreSQL is an advanced object-relational database management system that supports an extended subset of the SQL standard, including transactions, foreign keys, subqueries, triggers, user-defined types and functions.

**Pros of** Postgre**SQL**

Relational database

High availability

Enterprise class database

Sql

Sql + nosql

Relational database with MVCC

**Cons of** Postgre**SQL**

Table/index bloatings

**What tools integrate with** Postgre**SQL?**

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Microsoft SQL Server

Microsoft® SQL Server is a database management and analysis system for e-commerce, line-of-business, and data warehousing solutions.

**Pros of Microsoft SQL Server**

Reliable and easy to use

High performance

Great with .net

Works well with .net

Easy to maintain

Azure support

**Cons of Microsoft SQL Server**

Expensive Licensing

Microsoft

**What tools integrate with Microsoft SQL Server**

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