Hello everyone!

**The use of (Database Management System) DBMS and its benefits.**

Companies with DBMS can increase their access to data and help users collaborate on it. The users can make quick decisions and solve problems through access to pertinent information. According to Nutanix (2022), DBMS allows automatic control and overview of a database. Overseeing and adjusting a database would be time-consuming if done in manual mode. The DBMS provides for the storage, backup, recovery, and manipulation of data quickly for success in a modern environment (p1). Security is essential, and users only have access to what is allowed. DBMS will not replace IT but will make the job seem manageable.

Below is my comparison Matrix.

Thank you,

-Ben  
**Comparison Matrix Table MySQL, MSSQL, Oracle & SQLite.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | MySQL | MSSQL | Oracle | SQLite |
| Current version | 8.0.31  11 October 2022 | SQL Server 2019 | 19c & 21c & (XE) 21c | 3.39.4  29 September 2022 |
| Operating system | AIX, BSDi, FreeBSD, HP-UX, ArcaOS, eComStation, IBM i, IRIX, Linux, macOS, Microsoft Windows, NetBSD, Novell NetWare, OpenBSD, OpenSolaris, OS/2 Warp, QNX, Oracle Solaris, Symbian, SunOS, SCO OpenServer, SCO UnixWare, Sanos, and Tru64. | Windows and Linux  (MSSQL.com).  Mac can use Docker  (Tennakoon, 2022). | Windows, Linux, and mac if on a virtual machine (Oracle.com). | Most operating systems can run SQLite. Examples include iPhones, android, game consoles, Linux, Mac, Windows, etc. (SQLite.com) |
| Cost | Enterprise Edition $5,000 Cluster Carrier Grade Edition $10,000 Standard Edition $2,000  Opensource MySQL Community Server versions free (MySQL.com, Pricing). | Developer & Express editions free specialized editions.  Azure, Edge & on-premises Server. Start a free trial and then design to cost. Examples show $100/Month to over $24,000/  Month based on features needed. Many free services are included (MSSQL.com). | Varies from $100 to $100,000’s  Based on services and size and needs of database. Free developer and small versions (Pricelist, 2022). | Free & services can be purchased at cost. Annual maintenance subscription 1500/year, Tech support is 8K-85K/year, SqLite Consortium Membership is $120K/ year, etc. (sqlite.com). |
| Written in | C, C++ | C#, C, C++ | Assembly language, C, C++ | C |
| Licensing | GNU General Public License (GPL) & Commercial Licenses. | Microsoft licenses. | Oracle Licenses  (Pricelist, 2022). | Public domain no license required. A warranty of title perpetual license is available for legal purposes (sqlite.com). |
| Graphical management tools. | There are many Some examples: Beekeeper Studio, dbFordge sudio for MySQL, MySQL Workbench, Navicat for MySQL, etc. (Terra, 2022). | Azure, Edge & on-premises Server.  SQL Server Management Studio (SSMS).  Visual Studio for SQL (MSSQL.com). | There are many Some examples: RedGate deployment suite, dbFordge sudio for Aqua Data Studio, RazorSQL, Navicat for Oracle, etc. (Keary, 2022). | SQLiteStudio tool, DB Browser, DataGrip from JetBrains (Graber, 2021). |
| Maximum number of records | The internal representation of a MySQL table has a maximum row size limit of 65,535 bytes, even if the storage engine can support larger rows (Mysql.com, Developer). | The sum of the number of all objects in a database can't exceed 2,147,483,647 (MSSQL.com). | 4,254,950,911 – overhead.  Users and roles 2,147,483,638  (Docs.oracle.com). | According to sqlite.org, “The theoretical maximum number of rows in a table is 264 (18446744073709551616 or about 1.8e+19). This limit is unreachable since the maximum database size of 281 terabytes will be reached first.” (limits, 13). |

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