Option 4. What does RDBMS mean and what is it used for?

RDBMS stands for “Relational Database Management System”, as the name suggests, it is management system specifically for relational databases. As you might remember, relational databases are used to store data in an organized or structured way in form of rows and columns usually referred to as tables. These tables can be related to each other by the use of primary keys which must be unique within a given table. Relational databases usually allow for objects other than tables, some of these are views, indexes, sequences, and more. Tables and views in a relational database often have permissions that can be set up by groups or by individuals. This is extremely useful when limited access is needed for certain information within the same database. Some common constraints from relational databases include, not only the primary key I mentioned before, but also the option to not allow for nulls, foreign keys, integrity checks, etc.

Some known advantages of RDBMS include: Maintainability as they are relatively easy to maintain, control, backup, replicate, and update; Flexibility as it allows for multiple updates across different objects; Data structure allows for easy readability for users and easy retrieval of data; Privileges allow the administrators to monitor and control activities and restrict access. We also need RDBMS because they tend to be considered more secure, not only because their internal characteristics and permissions that we have already mentioned but also because they are typically installed and executed in-house, and they can be easily controlled in-house as well which allows for additional firewalls on other data protection measures. RDBMS also allow for data replication which can come handy when there are system failures, these serve as a back-up to let the systems keep running as close to normal as possible and to minimize downtime.

RDBMS typically handle multiple databases at the same time, they can also be used across multiple servers. They can serve as an input source of data for different programming software like R, Python, SPSS, Excel and also for visualization software like Tableau, PowerBI, etc. The also serve as an ending point for data integrations programs like Pentaho, Splunk, etc. Depending on the database management system used, the connections to other programs like those mentioned above can be done directly with the use of dedicated connectors or indirectly with the use of ODBC or JDBC generic connectors.

There are different Relational Database Management Systems currently in the market. The most popular are Oracle, MySQL, Microsoft SQL Server, IBM DB2. Some of these also serve as non-relational database management systems which adds additional flexibility to the user.

Personally, I work with Ingres which is not a widely known Relational Database Management System but it is the one the company I work for has used for over twenty five years. The nice thing about most of these Relational Database Management Systems is that they handle SQL or QUEL pretty well which facilitates data retrieval among other operations.

References:

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