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Using LibreOffice Base to Teach Relational Database Management

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Using LibreOffice Base to Teach Relational Database Management

TREO Talk Paper

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Abstract

Choosing a relational database management system (RDBMS) to support teaching database management is a frequent decision for IS instructors. In order to support instructors making this decision, studies have taken an interest in commercial systems such as Microsoft Access, Oracle, SQL Server, and Open-Source Software (OSS) such as MySQL (Beise 2006; Denton and Peace 2003). However, scarce attention has been brought to LibreOffice Base. LibreOffice is a popular OSS alternative to office management products (Oualline and Oualline 2018). It features “Base,” an RDBMS comparable to Microsoft Access. This paper evaluates Base as an option to support teaching database management. Base was used to support teaching a database management class at McGill University during the winter 2021 semester. This class was delivered online due to pandemic safety guidelines. We use this case to provide insights.

- **Costs, compatibility, and installation:** Base is a desktop application part of the standard LibreOffice installation. It is a stable OSS available at no cost to students. It is also available on all major platforms, including Windows, macOS, and Linux. It can be used without creating a server or using a tertiary cloud service provider. The low monetary costs, high compatibility and easy installation facilitated the students’ access to the software on their own computers. We note that using the Base application requires the installation of a Java Run Time Environment. Skipping this step caused some confusion from students being unable to start the application.
- **Functionality and ease of use:** Base is based on HyperSQL, a mature OSS RDBMS. This platform supports the standard features of SQL, including the latest SQL:2016 standards. The user interface uses forms, which facilitate students’ navigation in the application and makes it easy to leverage the system’s functionalities. Base allows for creating database files saved in the Open Database file format. This feature allows easily sharing files with students and for students to submit their projects under this format. However, it should be pointed out that Base is limited in its capacity to manage tables containing over one million lines (Oualline and Oualline 2018).
- **Market appeal:** LibreOffice Base currently does not have the industry market share of market leaders such as Access, Oracle, and MySQL. However, skills learned on this platform are transferable to any RDBMS using standard SQL.

Overall, Base stood out as a practical choice for teaching database management concepts and SQL. The low costs, high compatibility, easy installation, and ease of use allowed for a frictionless engagement of students with the course material. Features allowing to easily share database files facilitated communications between the instructor and students and the management of material submitted to the instructor. However, due to its data volume limit, this technology would not be optimal for courses teaching big data analytics. Furthermore, due to its limited market appeal, it might not be optimal for courses aiming to teach the technical administration features of a specific RDBMS.

References

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