

3XA3 Project Statement, Revision 0 (Group 7)

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Problem

Databases are an essential tool that are used every day in software development and data science. Unfortunately, the database management systems (DBMS) that are used to manage these databases tend to be implemented in an highly complex manner in order to include features such as custom functions and support for various data types to improve their ease of use. While this enhances the user experience for DBMS users, it makes it far more difficult for beginners to understand and learn about the implementations of a DBMS. To be able to accurately demonstrate how a DBMS works, we are implementing a minimalist DBMS while also maintaining the ability for the system to perform multiple tasks at once.

Importance

The original project, SimpleDB, does demonstrate a simplistic database management system, but the software design of that project excludes the ability for the system to process multiple tasks at the same time. This project also includes various different types of data that the system can store rather than focusing on just a few, which over complicates the system. By rewriting this project, we aim to reduce the complexity of this system to focus on a few specific types of data while also introducing the ability for multiple tasks to run at the same time. This will allow us to create a simplistic system that can be used for lightweight projects or to learn about database management systems while also keeping the efficiency to handle multiple transactions.

Context

The stakeholders are the groups and organizations that are affected by the development of the project. This includes users who will want to benefit by using the product. Since we are building a simplistic DBMS, this would include developers that may need a lightweight database management system or beginners who are interested in learning about how database management systems work.

The software will be compiled into an executable that can be run on all operating systems which can be used anywhere in between the tech/IT departments of organizations to an individual that wants to run the software on their computer, however it's tailored to be simple enough for beginners to run and use to learn.