

SQL Database Project - Part 5 : Physical Database Design

Introduction -

Overview:

This project involves the design, implementation, and management of a relational database system for a small library. The system is intended to efficiently handle the library's collection of loanable items, manage different types of memberships, enforce borrowing policies, and generate insightful reports. By creating a well-structured database, the library can streamline operations, improve accessibility to resources, and ensure proper tracking of borrowed materials.

Scope:

This project will include a user interface for both the library staff and their clients. The library staff interface will include the ability to check out items, process returns, add new items, and manage client accounts. The client side will allow for searching the catalog, reserving items, checking loan status, etc. This project will be structured using SQL RDBMS databases. We will have client IDs, staff IDs, and inventory IDs to keep track of all interactions between users, the material, and the library staff. The database will implement rules for borrowing, due dates, and fines, ensuring compliance with library policies. Additionally, the system will provide reporting features for analyzing borrowing trends and member activity.

Chosen Platform -

MySQL:

For this project, the team decided to use MySQL for the platform. After discussion, the team found that it was the platform most members were familiar with and comfortable using in this project. Using MySQL also allowed the team to test and run the projects directly on hardware available to the team rather than having to use outside sources such as the KU servers. Potential issues to run into with using this platform involve a lack of knowledge and practice. While all members felt most comfortable with MySQL, some only had experience with it through class lessons and course work. The team worked through these issues through doing research and relying on one member who was very knowledgeable in the software to lead the team.