Description

Our Lady of Lourdes Catholic School operates with a limited budget and limited space. As a result, when the school decided a media room and computer lab was needed, they decided to do away with the physical library. Teachers relocated the books they specifically wanted to their own classrooms until the library was completely empty. The new English Language Arts teacher for the Middle School needs to know what books are in the school, where they are located and obtain a simple solution for students and teachers to check out individual books.

Database

The database will contain tables as a repository for all the items the school will track. This is expected to include mainly books but the project will leave room for adding additional items such as DVDs, computer equipment, and other items the school has available for students and teachers but does not track very well. The tables will include a books table, DVD table, media table, user table and a locations table. The books table will identify each book and all details such as author, genre, title, lexile score, description, publication date, replacement cost and eventually a photo of the cover of the book. The DVD table will be very similar to the books table with some slight differences that pertain only to DVDs. The media table will contain other items such as computers, monitors, iPads, Chromebooks, and have basic table headings to specifically identify them such as serial numbers, type of media, manufacturer etc. The users table will include basic student information and type of access such as teacher and faculty or administrator. Contact information including phone number and e-mail address, grade, name etc. will be included to specifically identify who would have what item. The locations table will be basic and include classroom identifiers, floor, building and a foreign key designator for which faculty member in the user table is the point of contact.

Business Requirements

Since this is a non-traditional library and many locations are in use, control for checking out books would need to be applied to a key stakeholder at each location. For example, the 1st Grade teacher would need to have control of her book shelf and would check books out from her classroom while the 8th Grade teacher checks books out from hers. Since the 8th Grade teacher also teaches a multi-grade level book club after hours, she would need to know a complete inventory of the books in the school regardless of location and their availability.

Students would be able to browse books by various fields and see if they are able to be checked out. If they would like to check a book out, they would simply click a button to check them out and an e-mail would generate to the key stakeholder listed as the point of contact for that book shelf. If they are not logged in, they would need to create a user profile to store basic data enabling the staff to know who has what items (add to the users table). If a user profile does exist, they would proceed to a check out window which would display any books previously checked out with due dates etc. A due date would be assigned on the screen for the user along with a caution statement indicating the cost of the item if lost or not returned.

Once the student checks-out the book, the e-mail generated and sent to the appropriate key holder for the location of that specific book would place the book on hold so other students would be unable to check it out and the teacher with the physical copy of the book could pull it from the shelf. When the student arrives to pick the book up, the teacher would return to the generated email and follow a link or go to their specific dashboard to complete the check-out process. Once the teacher clicks checked out, the student is then issued the book and becomes responsible for the item.

When a student brings a book back, the teacher can return to their inventory screen and sort by books checked out and simply check it back in with a single click or search by student ID and return books from that student. Students would likewise have an inventory of the books they have checked out and give them the due dates of when they would need to bring back books or extend their reservation period.

User Interface

Students at Our Lady of Lourdes have access to Chrome Books and a local internet connection. The project would start with a desktop, web based interface. The 8th Grade teacher would be the administrator for the database upload and she would engage her middle schoolers as a service hour project to obtain the required information from each classroom to complete the inventory on paper. Any new books being added to the system would be done by an administrator. The administrator would need a separate interface for entering new books as well as new items with potentially different return dates and to perform various other maintenance of the data such as upload pictures, change lexile scores, locations etc.

As a stretch goal, to make this program as easy and simple for students and teachers to follow, a phone app would be used to simplify the check in and check out process. Most students have more access to a smart phone than they do a computer with an internet connection. If students were to meet a teacher in a separate location with the book, the teacher could simply log in to their phone app and complete the check-out process. The phone app scope would not extend to administration functions.

Similar Software

Library software is available for download. There are some open source options but not with the functionality of what this project is attempting to perform. The proprietary software available which could perform all the necessary functions include Mandarin, Lucidea, EOS, Appolo, Evolve Library or Resource Mate. Most are web based and offer a subscription depending on your library size. Mandarin, for example, charges over $750.00 annually for a small library and Resource Mate has small packages starting at $295.00 with zero networking capability up to their premium offering at $1,695.00. Many of these systems include not only the functionality this project seeks but also many other features up to an including reporting tools, marketing analysis, e-books and connection to public systems enabling downloadable content.

Conclusion

This project includes requirements for a relational database with several tables and software built on the database. The user interface should be limited to a screen for users, a screen for faculty and a third screen for administrators. The process is simple and straight forward and allows a lot of room for deviation provided the items are being efficiently tracked in and out of the school while maintaining a repository for all faculty to be informed of what is available. Successful completion of the project would be measured solely on this requirement even if it was a stand-alone program on a single machine. This project is certain to test the skills taught in the MSSA program.

<script src="https://gist.github.com/gwilso39/d5a910b28e46128d97511818cc4a8f12.js"></script>