

Menu Assignment
ILS 501-S72
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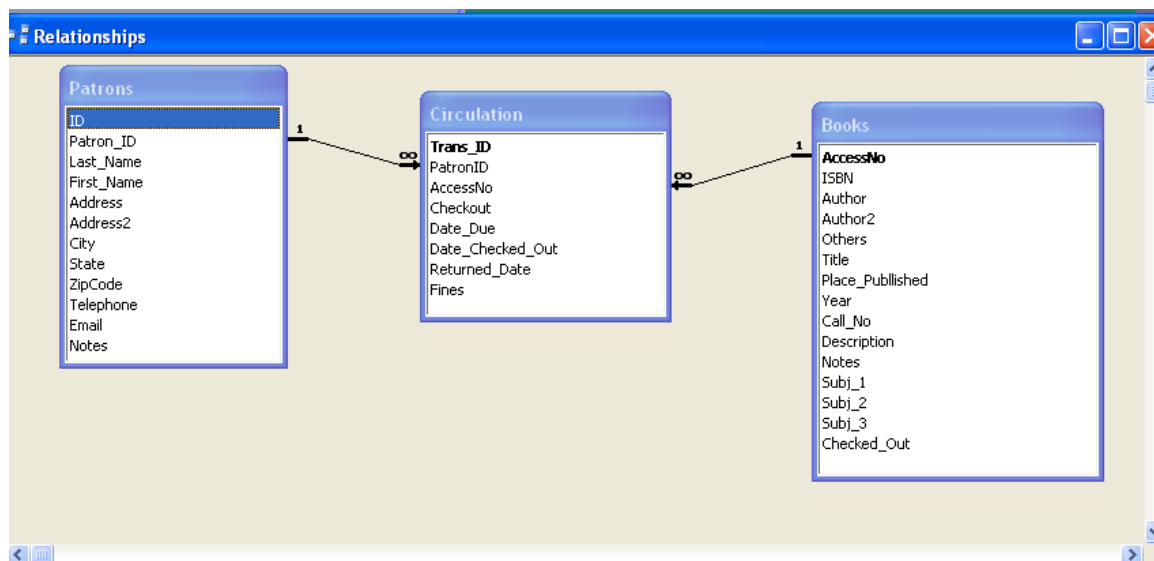
The Turtle Hill Library Microsoft Access Project

My first application for this project was to catalog and prepare a checkout system for a small library housed in the Career Development Center of our university. The staff there decided to make theirs web-based, working with the university webmaster so I decided to use this project for my personal library. I started with my knitting book collection and will expand the database to encompass our entire home collection, including audio CDs as well. My husband is a professional pianist so his collection is huge and not organized beyond identifying tracks and artists in *iTunes*. People are always borrowing from us so this way we can keep better track of where our items are. Of course, we will not fine our friends but I included that computation as a challenge for my professional growth.

I applied security to the database so to open the Main Menu, type the password: turtle. The database opens to a main switchboard, holding three components of the system: Patrons, Books, and Circulation Transactions. The relationships of each table used are accessible through the Relationships item under the Tools menu in the Access window. With Patrons to Books, patrons are one to many. To force the referential integrity I couldn't figure out how to "bury" names after several days to assure anonymity of patrons. The patrons' names are tied to the Circulation transaction.

Relationships

The table relationships established are shown below. It was crucial to realize that a patron can have many books attached to it and many circulation transactions. A book can have only a one to one relationship to a patron but be involved in many transactions throughout its "life." These relationships are shown below.



Forcing referential integrity protects data from missing crucial parts and disallows changes of primary keys to a value that may not exist. (Lewin, 2004) (Florida Gulf Coast University, 2004) I had some consternation when examining the cascading updates and deletions decision to be made. This is Access' was to automatically update changes made to a record that affects other records. I sometimes had to reason through and then experiment with choices to get it right.

Circulation Transactions

Checking out items: Check-out activities are completed by pulling down menus containing data from the Books table and the Patrons table. Lisa Bowman helped me discover the combo box idea for the title and patron pull-down menus. It represented a more elegant way to display the data from the tables for the check-out form. (Bowman, 2005) You also check the checkbox to indicate your intention to take the book out and I have calculated the fields for date due and today's date. If the book is checked out by someone else, an error routine begins and flashes the form red as a visible warning and then there is a button to let you make "another choice?" and start over. I did not want a patron to be able to check out a book already in circulation. I struggled with the routines to get this to work and finally called in my friend, Matt Snook (Snook, 2005), to help me with the logic. The problem that I struggled with most is that I did not plan out the project sufficiently at first in a storyboard fashion with file, macro, report, table, and query names established firmly. That made troubleshooting very difficult. Once you change a macro's name (or any other element,) it can break other dependent functions. It takes another set of keen eyes to put it right.

You can check out multiple items in this area by accessing the "new form" button at the bottom left of the checkout window. The exit button takes you back to the main menu. A transaction number is automatically assigned. All transaction data resides in the Circulation table.

Return Form: The function of this form is to check-in the item by pulling down the "Items in Circulation" combo box and selecting the title of the item that is being checked in. After you are assured that the item is correct and the patron's name appears in the box below that, uncheck the checkout box and the returned date automatically appears. I had the data due and date checked out box unavailable in this form because I did not want the data to be changed. Fines are calculated on this form and in the formula I charged a nickel per day for the difference between date due and date returned. There is no grace period figured in. There is an exit button to go back to the checkout transactions menu in case the patron wants to check-out another item right away. (University of Reading, 2005)

Overdue Patrons: This is a report that prints out who is overdue.

Patrons with Fines: This report calculates the fine and names the item that is creating the overdue report so the patron can look under the bed to find it!

The Circulation Table holds the data from the transactions made for checking in and checking out materials. It is not linked in the main menu as I did not want the data to be so conspicuous as to invite changing of the data. That table can be used to do historical queries in the future when more transactions and days have passed. I did alter some data after transactions were made to affect an overdue as an example transaction to calculate fines.

Patron Records

Patron Form: This is the data entry form for adding, editing, and deleting patron records. There are defaults in the city and zip code fields to save typing as most people from here live in this town (there are few towns around here!) In the future, I will work on making the Patron ID incrementally advanced automatically.

Patron Look-up: I made this macro to search for Last Name in the Patrons table. I thought it would be useful to clarify patrons' if there are same last names, different people, and to serve up the Patron ID numbers. There is no editing allowed here.

De-dup Patron Names: This macro performs a search for duplicate names in the patron table to assure integrity of the data.

Patrons Formal Report: This report is a page listing mailing information for each patron.

Patron Mailing Labels: Using the same Patrons table as the report above, this report is organized for Avery forms as mailing labels. I want to revisit this report and create another to search for overdue/fine situations.

Book Records

Book Form: This is the data entry form for the Books table where editing, adding, and deletion events are keyed manually. Entries are automatically assigned an accession number.

Books Checked Out: This query produces data that looks at the Circulation table and lists titles that are in circulation. The data is used to quickly find out if a book is available-like when I need it!!!

Keyword Search for Books: This is temporary approach to looking for a title using keywords. I would like to develop this for subject headings as well. This query asks for a keyword and, when supplied by the user, pulls up titles with that word in it from the Books table. I struggled with this query because I was erroneously thinking that I could just ask for keyword and it would search the title field and return results. Finally, by reading the information on *Office Tips* (Green, 2005) I found that I needed to add wildcard functions to look for a partial string of letters because my keyword could be listed anywhere in the field.

Joint Queries

Querying can get complex. It took some time for me to recognize the protocols, that is, what elements of language were allowable. I used the Help menus a lot. I experimented even more. When writing the fine formula, date due and return date routines, I got reacquainted with algebra. The hiding and showing of fields was employed to suppress some fields from being expressed in the results list/form. I developed the following in the development of this database. With more historical data gathering in the database, more queries will be developed that include: how many items were circulated last month of people living in La Grande, etc.

- What patrons owe fines? (Patrons_Fined query to show in Patrons with Fines Report)
- What patrons are overdue? (Overdue query to show in Overdue Patrons Report)
- What title does patron's last name have out? Useful in lieu of a more sophisticated online routine for checking one's own patron record. (I would not share this information unless the patron asked for it so I did not mount a link to it on the Patron or Checkout Transactions screens) (Patrons Query)

Simple Queries

While some data can be organized temporarily by using filters, queries are written to permanently gather data on multiple occasions. The following are available for use:

- What books are checked out? (Books_Checked_Out query)
- Which patrons live in towns other than La Grande? (Summerville query)
- What is this patron's record information? (Patron look-up query. Also found on Patrons menu screen)
- Have we two records for one patron? (Find Duplicates for Patrons query and also found on Patron menu screen)(Butler, 2002) Actually, in the Book Form the software will not allow you to enter two barcodes (Patron ID) that are the same but conceivably you could enter a name unwittingly twice and assign a different barcode.
- How can I find a title if I only know one word? (Keyword search query, found also on Books main screen)

Reports

In the *Patrons-Formal Report*, if could click past the parameter query, you get a preview of all the patrons in the Patrons table. This report would be useful to prepare mailings, tick-off participation in fund-raisers, etc.

In the *Report-Users with Overdue Books* (Report section of the database) we see a print preview of patrons with books overdue. I placed a convenient link on the Circulation Transactions menu page that also shows a print preview of the report *Overdue Patrons*.

To create Avery-style printing labels, I created a report called *Labels Patrons*. It would be useful for mailing out information to all patrons. It is called *Patron Mailing Labels* on the books Menu from the main menu of the database.

Conclusion

This assignment was invaluable to my future as a librarian. I absolutely knew nothing beyond how to spell it when I started. I have volunteered to put together a database of our reference questions at all three of the service points and from the librarians so we can track questions by directional, informational natures and then serve up a breakdown of each. We can then query for location, days of the week, etc. It will affect changes in signage, information literacy activities, and library procedures. I am starting it this week so that I can practice what I have learned quickly before it decays! One thing I will do differently is to plan out the tables, queries, reports that I want as outcomes before I start. I mentioned before that making up names for queries, macros and other elements on the fly is very confusing and cost me much time in troubleshooting. I can see that this small database can be useful to small, specialized libraries (churches, not-for-profit organizations, small businesses) and other small collections. I will be sharing it with others. It can easily be “branded” and stripped down to the essential elements to build for other applications. I have printed out the screens that include the most crucial, hard-fought for expressions and queries. I am going to use it as my template for all other applications that follow!

Resources Consulted

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