Digital Library System

Project introduction

The digital library system allows members browse through books available at the library and related information about them. They can also make a reservation for a book to come and pick it up at a certain date or report a book if they find anything wrong with the book itself or the information provided about it.

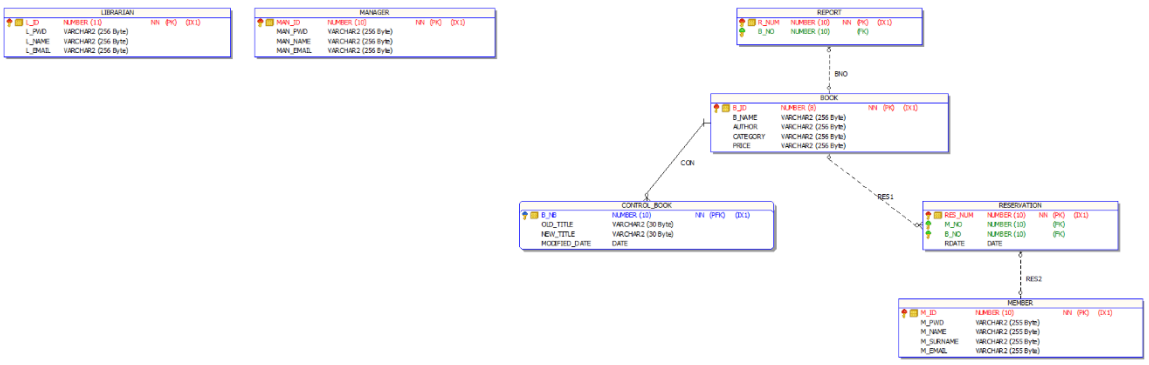
Relational Schema

DLS Database: library members, books, Reservations, Managers, Librarian and Reports information.
It is defined by the following relational schema:

member (m_id , m_pwd, m_name, m_surname, m_email)
librarian (l_id, l_pwd, l_name, l_email)
manager (man_id, man_pwd, man_name, man_email)
book (b_id, b_name, author, category, price)
reservation (res_num,#m_no, #b_no, rdate)
report (r_num, #b_no)

control_book(#b_nb,#l_no,old_title,new_title,modified_date)

Conceptual UML:



Interrogation implemented in the database:

RESERVED_BOOKS : A function that displays the number of books reserved by a member.

B_TITLE : A procedure that displays the titles of the books that have been reserved by a specified member.

REPORTED_BOOK : If the report number is 2, that means that the name of the title is wrong. This procedure will change the title.

REMOVE_MEMBER : A procedure that deletes a member whose number is specified by the manager.

EXCEP : If a book is reported more than 3 times, an exception created by the user will display 'this book has been reported more than 3 times'

AUDIT_BOOK : For each insert, update or delete on the table book, a trigger will insert in the table CONTROL_BOOK the previous title and/or the new title and the modified date.

RESERVE_BOOK: reserve a book for a certain member by inserting the book id and the member id.

REPORT_BOOK: report a book by inserting the book id.

DATE_RES: a trigger that displays and error message if the reservation date is before the system date

BOOK_INFO: see all information about a book by inserting its id.

VIEW_MEMBER: see all information about a member by inserting his or her id.

ADD_BOOK: add a book to the book table by inserting its informations.

Project Code: view sql files

Login and Password:

LOGIN: library_admin

PASSWORD: plibrary

Conclusion :

This project helped us organize books, members, librarians and managers in a single database. It allows for the manipulation of this data by reserving a book for a certain member, or adding one to the database by defining its information, reporting book for wrong information, removing a member or removing a librarian. It also includes procedure to see individual book information or see individual member information and a function to see the number of books reserved. It also contains a trigger that fires when there is an insertion, an update or a deletion of a book name to store the old and new data in a new control table. Finally, we put all of them into a package to make it easy to run them.