

CMPT 370 – Library Information System Project

Project Objectives:

Teams of 3-4 people are to be formed by students of the class for work on this project. Ideally a team should undertake to share the workload equitably among the team members, while at the same time each team member should undertake to participate in all aspects of the project in order to maximize the learning opportunity. A grade will be given to each team with each member of the team receiving the same grade. The objectives of the project are as follows:

1. Problem Analysis (DUE June 25, 2003 – 5:30pm):

Understand the problem as posed in the documentation below. Bear in mind that the requirement statement below does not contain detailed requirement of the system. Considerable effort should be spent on finding sensible requirements that enables the system to perform better than the current system. Model the problem using any or all of the following work products: use cases, use case diagrams, domain model (as-is and to-be). Key concepts should be documented and it is recommended that a glossary be included. For domain knowledge use either library systems that you are familiar with or consult with the T.A. Haris Teguh Widjaya as the subject matter expert (SME).

2. Solution Design (DUE July 30, 2003 – 5:30pm)

Propose a solution design based on the problem analysis done above. Model the design using any or all of the following work products: class diagrams, state diagrams, interaction diagrams (sequence and collaboration diagrams) activity diagrams, component diagrams and architecture diagrams.

Project Deliverables: The project deliverable should include two (2) hard copies of all materials as well as one electronic copy of all materials. Hardcopies of each phase is due at the start of the class on the same day the electronic copies are due.

You may use any software program to do UML modeling (such as Rational Rose or Visio). But please consider that we need a viewer to consider any electronic version that you submit.

As mentioned above, the first part of the project is due via the submission server at 5:30pm on Wednesday, June 25th, and the second part is due via the submission server at 5:30pm on Wednesday, July 30th.

Library Information System Problem Statement

A community currently has a library with a number of small library branches located within its jurisdiction. A library review board is reviewing the current library information system and looking for opportunities to expand the quality of service as well as the types of services that it offers its patrons. The current information system, while serving the community well up to this point in time, has reached its limitations and most likely will need to be computerized.

The current library system offers patrons the ability to loan books for a period of time. The library also has periodicals although they must remain in the library and cannot be loaned out. The system is based on a system of cards with every book in the library having a loaner card located with the book (usually in the inside cover of the book). When the book is loaned out, the card is removed and annotated by the librarian with the return date and the patron's name. The card is matched with the title card, which is the book information and kept at the library. The two cards are kept together with a paper clip. This lets the librarian know who has the book currently on loan and the latest date for it to be returned. The loaner card is replaced in the book with a return date card, which is simply the return date stamped on the card. This lets the borrower know the latest date they are expected to return the book to the library. When a book is returned from loan, the librarian removes the return date card and the return date is crossed out. In addition, the loaner card is located, the patron's name and return date are crossed out, the card is placed with the book and the book is returned to the shelf. If the book is returned late a fine of \$1.00 per week is collected from the patron. A patron with fines in arrears should not be permitted to loan out books, although this is difficult to enforce. Both the loaner card and the return date card are reused multiple times until they are 'full' and then discarded. A loaner card has room for about 20 loans on the card; a return date card has room for about 100 return dates on the card. A loaner card and a return date card can be used with any book.

Anyone who lives in the community can borrow books as a patron and the librarians know most patrons by sight. Patrons have a limit of 5 books on loan at any time, however there is no mechanism to ensure that this rule is followed. There is no ability to renew loans, other than to return the book to the library and loan it out again. There is no ability to have books placed on hold. While patrons can visit any branch in the community to borrow books, there is no knowledge of what books are in the other community branches, a library branch only knows about its own books.

The library review board would like to offer services such as renewals, reservations (place books on hold), and book loan transfers from other branches. It would also like to offer other materials on loan, such as periodicals, videos and CDs. It would also like to manage its' system so that librarians can help patrons find books or other materials anywhere within it's branch network. The library review board feels that with a new system they can better serve the community, as well as help the librarians better manage the books that are within their particular branch.

The library review board expects that the analysis and design work done by the project teams will yield clarity on some of these requirements as well as add to the knowledge and the addition of the requirements. Based on the findings of the project teams, the library review board will issue subsequent requirement document updates that indicate the requirements are to be considered in scope for the project.