SSIE 510 Enterprise Systems Engineering SUMMER 2020

Mini Project Due on June 25th, 2020, 11:59 PM

Problem Description:

The aim of this project is to build a decision support system for a university library. The library carries a large number of books, journals, conference proceedings, reference books, and copies of some recorded lectures on CD. These items are loaned to members. Members of the library are mainly students, faculty, visiting scholars, and staff. The manager of the library has a few concerns. The manager is concerned that a number of items are returned late. The manager would like to send out notices to members in the case that they have not returned the item on time.

The manager is also interested in building an automated system that would facilitate the process of searching the database for books written by a particular author, books published by a certain publisher, books on a particular subject, etc.

When building the system, consider the following: the library has items that are to be used inside the library only, such as reference books; the maximum length of borrowing time depends on the item type (CDs can be borrowed for a maximum of three hours, journals for at most 2 days, and books for at most two months); the number of items borrowed at a time depends on the employment status of the member. Faculty and staff can borrow up to 5 items at a time; students can only borrow 2 items at a time. Each item has a unique access code. This code allows the librarian to identify the type of the item (book, journal, CD, etc.), the title, the author(s), and whether the item is on loan, overdue, or on shelf.

Data:

1. Build a dataset that presents the following data about books: identification number, title, author, publisher, publication year, and edition.
2. Build a dataset that presents the following data about reference books: identification number, title, publisher, publication year, and edition.
3. Build a dataset that presents the following data about journals: identification number, title, volume, number, and publication year.
4. Build a dataset that presents the following data about CDs: identification number, title, course number, professor name, and date.
5. Build a dataset that presents the following data about conference proceedings: identification number, title, volume, number, and publication year.
6. Build a dataset that keeps the following data about members: identification number, name, address, and status (student, staff, etc.).
7. Build a dataset that keeps historical data about the items borrowed by members, such as the borrowing date, the identification number of the item borrowed, and the due date.

Sample Outputs:

- Report a list with details about the items that are late.
- Report the top ten most popular books of the year.
- Report the top ten most popular authors of the year.
- Report the five most read journals.
- Create a summary report that presents the total number of journals, books, reference books, conference proceedings, and CDs that are present in the library and how many are lent to members.

This decision support system needs to be 'realistic' and the software should be robust.
It can be developed using any language.
It could also integrate and use multiple languages/packages.
Please discuss your project with the instructor if you have any questions.

Your project presentation along with the software is due on **June 25th, 2020**. Each team is required to submit executable files, a detailed report that describes the problem, the project's objective, systems design, process flow, etc. Please use figures and flowcharts when needed. The inputs and outputs to the system must be described along with (at least) one case study. The report should not exceed twenty pages (double spaced – 12 point Arial font – one inch margins).

Grading Scheme

Term project as submitted by		June 25th, 2020
Total Value of Mini Project for the Course	-	20.0%