

TRƯỜNG ĐẠI HỌC CÔNG NGHIỆP ĐỀ MINH HỌA THI GIỮA KÌ 01

THÀNH PHỐ HỒ CHÍ MINH

Môn thi: Kiến Trúc Tích Hợp Hệ Thống

Lớp: DHTH17

KHOA CÔNG NGHỆ THÔNG TIN

Ngày thi: 2022

Thời gian: 60 phút

Họ tên: MSSV.....

Đặc tả hệ thống

The ABC University want to build a Web site for library management, including 3 activities: Book information management, Reader information management, Book loan and Book return management. Students who want to borrow books from the library must first register for a library card by class, library card includes information (Reader ID, full name, class name, date of birth, gender). Then the librarian enters information about the library card into the system and prints the library card to give to the students after one month. When the information about the library card is wrong, the system allows the librarian to correct it. When the readers are removed from library, system allows to remove the library card of readers.

The books in the library are managed by title, each book in the library has many different copies. Information about book titles includes (Title ID, Reader ID, publisher, page number, size, authors, number of books), Information about book copies including (Copy ID, book ID, condition status, Date). When the library put new books into the library, the librarian is responsible for entering the book information into the library. If the book information is changed or removed from the library, the librarian will correct the book information or delete the book from the library. The library manages books by areas, the titles are divided into different areas. Information of one area includes (Area ID, major name, description).

Each reader can only borrow one book at a time. When a reader wants to borrow a book, he/she can find a book in the library and write information on the loan slip, including the book's ID, the reader's ID, and send it to the librarian. The librarian records the loan slip information into the system, keeps the reader's card and delivers the book to the reader. Borrowing slip information includes (Book ID, reader ID, library ID, loan date, status). When a reader returns a book, the librarian performs the book return function to record the return status of the book for the loan slip. Periodically, the librarian must make statistical reports and send to the library leaders the following reports: Information about the most lent books, information about readers who have not returned books.

To manage end users, in the library there is a staff member who plays the role of administrator. This employee has the right to manage information of end users. If there is a new librarian, the administrator updates librarian information to the system, creates an account and grants permissions to library staff. When library staff information is incorrect or removed from the system, the administrator edits or deletes this librarian's information from the system. The administrator and the librarian must log in before doing any task.

This application must run as fast as possible and 24/24, 7 days over one week. It allows more than 1000 people accessing at the same time. The system ensures the high available and high security. There are 2 web server and 2 SQL server database server running standby mode. Besides, there is one firewall for security monitoring. There are 2 FTTH with bandwidth about 10 Mbs provides by 2 ISP (FPT & Viettel) which connected to 2 different routers in standby mode. This application is built by MVC model with Java language and data storage is average 1TB/year. This system and database backup by daily, weekly and yearly.

Question 1: Please draw use case diagram for Book loan and Book return management in this system

Question 2: Please draw sequence diagram when the administrator update librarian's information in this system

Question 3: Please draw activity diagram for Book loan and Book return management in this system.

Question 4: Please draw state diagram when the administrator update librarian's information in this system

Question 5: Please draw deployment diagram for hardware implementation.

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Lưu ý: Đề thi được sử dụng tài liệu.