UNIVERSITAS INDONESIA
Veritas, Probitas, Iustitia

FACULTY OF COMPUTER SCIENCE

WORKSHEET - Functional Modeling

ANALISIS DAN PERANCANGAN SISTEM INFORMASI
REGULER - GASAL 2020/2021

Kelas : _____

Nama : _____

NPM : _____

CASE: Library Book Collection Management System

The functional requirements for an automated university library circulation system include the need to support searching, borrowing, and book-maintenance activities. The system should support searching by title, author, keywords, and ISBN. Searching the library's collection database should be available on terminals in the library and available to potential borrowers via the Web. If the book of interest is currently checked out, a valid borrower should be allowed to request the book to be returned. Once the book has been checked back in, the borrower requesting the book should be notified of the book's availability.

The borrowing activities are built around checking books out and returning books by borrowers. There are three types of borrowers: students, faculty or staff, and guests. Regardless of the type of borrower, the borrower must have a valid ID card. If the borrower is a student, having the system check with the registrar's student database validates the ID card. If the borrower is a faculty or staff member, having the system check with the personnel office's employee database validates the ID card. If the borrower is a guest, the ID card is checked against the library's own borrower database. If the ID card is valid, the system must also check to determine whether the borrower has any overdue books or unpaid fines. If the ID card is invalid, the borrower has overdue books, or the borrower has unpaid fines, the system must reject the borrower's request to check out a book, otherwise the borrower's request should be honored. If a book is checked out, the system must update the library's collection database to reflect the book's new status.

The book-maintenance activities deal with adding and removing books from the library's book collection. This requires a library manager to both logically and physically add and remove the book. Books being purchased by the library or books being returned in a damaged state typically cause these activities. If a book is determined to be damaged when it is returned, and it needs to be removed from the collection, the last borrower will be assessed a fine. However, if the book can be repaired, depending on the cost of the repair, the borrower might not be assessed a fine. Every Monday, the library sends reminder e-mails to borrowers who have overdue books. If a book is overdue more than two weeks, the borrower is assessed a fine. Depending on how long the book remains overdue, the borrower can be assessed additional fines every Monday.

According to the case above:

a. Identify actors of the system
b. List functional requirements and create use case diagram of the system
c. Create an activity diagram to augment "Borrow Books" use case
d. Create a use case description of "Borrow Books" use case