

CSE212: SOFTWARE DEVELOPMENT METHODOLOGIES

YEDITEPE UNIVERSITY

FALL 2021

ASSIGNMENT 1 – DUE DATE OCTOBER 27TH, 2021

This semester you will be implementing a Library Management System as part of your assignment series.

As part of this week's assignment, you are asked to implement the following requirements set for you.

Your Library Management System should have the following classes with specified instance variables:

Book:

nameOfBook, ISBN, dueDate (Date), and bookCount

OnlineArticle:

nameOfArticle, DOI, and articleCount

Reader:

readerName, Id, reservedBook (Book), accessedArticle
(OnlineArticle)

Date:

day, month, year

Also, you should maintain the following arrays:

```
Reader[] readerArray
Book[] bookArray
OnlineArticle[] articleArray
```

(As part of this assignment the array sizes should be set to 10)

Your application should be able to handle the following scenario and requirements:

- You have to create a Menu enum to display the menu items. When a user starts your application, it should prompt the following menu:

- (1) Add a new book
- (2) Add a new Online Article
- (3) Create a Reader account
- (4) Reserve a book
- (5) Get access to an online article
- (6) Exit.

- When a user selects the 1st option, the user should be asked to enter the `nameofBook`, `ISBN`, and `dueDate`, which then should be used to create the `Book` object. The created `Book` object should be then added to the `bookArray`. `bookCount` variable should be defined static and should be used to store the total number of books in the library system. The constructor of the `Book` class needs to be structured so that it can receive multiple parameters. Bear in mind that `dueDate` should be a `Date` object where its `day`, `month`, and `year` values are obtained from the user.
- When a user selects the 2nd option, the user should be asked to enter a `nameOfArticle`, and a `DOI`, which then should be used to create the `OnlineArticle` object. `articleCount` variable should be static and should be used to store the total number of online articles in the library system. The constructor of the `OnlineArticle` class needs to be structured so that it can receive multiple parameters. Then, the newly generated `OnlineArticle` should be added to the `articleArray`.
- When a user selects the 3rd option, the user should be asked to enter a `name`, and an `ID`, which then should be used to create the `Reader` object. This object should be added to the `readerArray`. The remaining two object variables of the class (`reservedBook` and `accessedArticle`) should retain a “private” access modifier. Therefore, you must use setters and getters to set content and read their content.
- When a user selects the 4th option, the application should firstly request the ID of the reader who would like to reserve a book. Accordingly, the system should

initially check whether there is a reader account in `readerArray` with the given ID. If the reader account cannot be found, the system should respond with a "There is no account with that ID" message and exit that option. If the user ID exists, then the user should be asked to enter the ISBN of the book that he/she would like to reserve. If the book with the given ISBN number is not in the `bookArray`, then the system should display a message stating that "There is no book with that ISBN" and exit that option. If the reader has a valid ID and the book with the given ISBN number is in the `bookArray`, then the `reservedBook` variable of the `Reader` object then should be set with the book object of the given ISBN.

- When a user selects the 5th option, the application should request the ID of the reader who would like to access the article. The system then should check whether there is a reader account in `readerArray` with the given ID. If the reader account cannot be found, the system should display a "There is no account with that ID" message and exit that option. After that confirmation, the user should be asked to enter the DOI of the online article that he/she would like to access. If the article with the given ID number is not in the `articleArray`, the system should display a message stating "There is no article with that DOI" and exit that option. If both reader account and online article are verified, then the `accessedArticle` variable of `Reader` object should be set to the object of the article with the given DOI.
- When a user selects the 6th option, your application should terminate.

Submit your assignments in a zip file, which has your student number as name, through the COADSYS (<https://yulearn.yeditepe.edu.tr>) latest by the end of Tuesday, October 27th, 2021.