

SE 1108 PROGRAMMING AND PROBLEM SOLVING II

Lab Assignment 3

Library System

Create two custom exceptions given below. Each exception must be the child class of the **Exception** class: (2pt)

- **BookLimitException**
- **InvalidBookOperationException**

Create a class called **LibraryAccount**. This class should include the following: (4pt)

- **accountID (int)**
- **holderName (String)**
- **borrowedBooks (int)**
- **maxBooksAllowed (int)**
- A constructor that takes all attributes.
- Getters for all attributes
- **borrowBook(int count) throws InvalidBookOperatorException, BookLimitException:**
Adds the given count to the borrowedBooks. Throws BookLimitException if borrowedBooks amount exceed maxBooksAllowed, throws InvalidBookOperationException if borrowedBooks is less than zero.
- **returnBook(int count) throws InvalidBookOperatorException:** Subtracts the given count from borrowedBooks if borrowedBooks becomes less than zero, throws an exception.
- **transferBooks(LibraryAccount target, int count) throws InvalidBookOperatorException, BookLimitException, NullPointerException:** takes the given count of books from the current account and transfer it into the target account.
- A toString method that uses all attributes.

In the **main** method: (4pt)

- Create at least **three LibraryAccount instances**.
- Demonstrate the usage of all methods in the **LibraryAccount**.
- Wrap required methods with a **try-catch** block and show different error messages according to the exception type.
- Print the final state of all **LibraryAccount** instances.