Midterm Exam: Library System
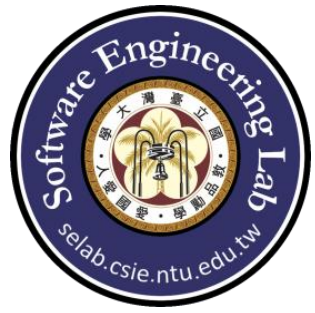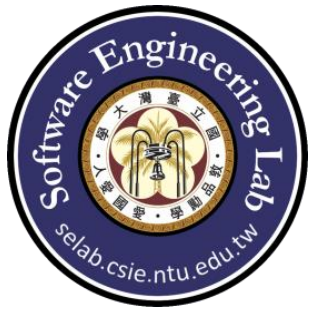
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Grade

❑ Initial design: 55%

❑ Refactor design: 10%

❑ Mapping: 5%

❑ Test cases: 30%

Requirements Statement

❑ Consider a small library system with the following transactions:
1. Check out a copy of a book/ Return a copy of a book.
2. Add a copy of a book to/ Remove a copy of a book from the library.
3. Get the list of books by a particular author or in a particular subject area.
4. Find out the list of books currently checked out by a particular borrower.
5. Find out what borrower last checked out a particular copy of a book.

❑ There are two types of users: staff users and ordinary borrowers.

❑ Transactions 1, 2, 4 and 5 are restricted to staff users, except that ordinary borrowers can perform transaction 4 to find out the list of books currently borrowed by themselves.

❑ The system must also satisfy the following constraints:
1. All copies in the library must be available for check-out or checked out.
2. No copy of a book may be both available and checked out at the same time.
3. A borrower may not have more than a pre-defined number of books checked out at one time.