GIT Department of Computer Engineering
CSE 222/505- Spring 2020
Homework 6 Question 3 Report

Melihcan Çilek
1801042092

1. CLASS DIAGRAMS

Class diagram of Question 3 is added to Report_q3 file as named 1801042092_Class_Diagram.png because image didn't fit to pdf file.

2. PROBLEM SOLUTION APPROACH

In this problem, we asked to design a library automation system. The system has two types of users: administrators who can update information and users who browse books. Book search is a public feature. To update the information, administrators have to enter the system with a password. We actually know the solution of the People class side because we did the similar thing ar the first homework so I get used to this kind of structure but problemetic part about this question is that implementing abstract data type. After implementation, you are wanted to as abstract data type structure like Map<String,Map<String,Location of the books>>. I have never done this kind of structure so it was kinda hard. One of the problematic part of this question is that we have to control Locations. In my implementation, Locations are class that has fields such as shelf, corridor and queue. My system first controls locations of the books and than do the rest of the executions. Other problematic part of this question is that we are using Map abstract data type so as we know from Map lectures, We can't access Map's keys by using index values so we have to use iterators for iterating over map. Because of this, our search methods' time complexities getting higher.For keeping OuterMap private, I used one class named NestedMap that includes outermap Map abstract data type so I can't access map directly but I can make some operations over map so this wrapping Map over another class is make my program more private.

3. TEST CASES

Test Case Number	Test Case	Test Data	Expected Result	Result	Decision
Test1	Enter as administrator	admin	Program should ask to enter admin password	Admin password correction	PASS
Test2	Enter password after enter administrator	1234	We should be able to see the functionalities of Administrator People	Admin menu	PASS

Test3	Enter as User	melihcan	We should be able to see the functionalities of User People	User Menu	PASS
Test4	Add User	Kamil Paşa	If you enter wrong input, system wanted you if you want to add a new user or not. If we say y or n,we should be able to add user named "Kamil Paşa"	"Kamil Paşa" user added to system	PASS
Test5	Search By Author	George Orwell	Authors will be listed. For searching books that an author has and locations of these books, enter name of the author that is listed	Hayvan Çiftliği[cs] 1984[cs]	PASS
Test6	Search By Author	Yaşar Kemal	It should say "No author named Yaşar Kemal"		PASS

Test7	Search By Title Of The Book	Çalıkuşu	Author of the book named Çalıkuşu and locations of that book should be listed so user who uses that system can see the book's author and locations	Halit Ziya, [c5s4.1]	PASS
Test8	Add book feature for administrator	Miguel de Cervantes, Don Quixote, 9 9 9	Book should be added to system	Book added to system	PASS
Test9	Add same book to the same place feature for administrator	Halit Ziya, Çalıkuşu, 5 4 1	It doesn't matter where position you add, program should give you error	Çalıkuşu already exists at that position	PASS
Test10	Adding any book to location that is already located	Michael Ende, Momo, 5 4 1	It shouldn't add book	There is a book at position c5s4.1	PASS
Test11	Adding same book to another location	Halit Ziya, Çalıkuşu, 5 4 65	It should be able to add book to that location	Halit Ziya Çalıkuşu added to c5s4.65	PASS

Test12	Delete Book	5 4 1	After enter delete book, books taht is already located are listed. If you enter location of that book, book should be deleted	Çalıkuşu deleted	PASS
Test13	Delete book with empty location	5 2 369	It should give you error that says "No book at that position"	There is no book at position [c5s2.369]	PASS
Test14	Update locations of the book	5 4 1, 5 2 369	It should change location that book at 5 4 1 to 5 2 369		PASS
Test15	Update locations of the book that is not existed at that location	5 2 369, 5 4 787	It should say that no book at that position	There is no book at location [c5s2.369]	PASS
Test16	Update locations of the book that there is a book located to new location	5 4 3, 5 4 1	It should say that there is a book at that position	There is a book at location [c5s4.1]	PASS
Test17	Print all books	6 at Admin menu	It should print all book	All books printed	PASS

4. RUNNING AND RESULTS

```
Enter username : admin
Enter password : 1234
1-)Search By Author
2-)Search By Title of the Book
3-)Add Book
4-)Delete Book
5-)Update Location Of Book
6-)Print All Books
7-)Exit
```

```
Enter username : melihcan
1-)Search By Author
2-)Search By Title of the Book
3-)Exit
```

```
Please enter name of the author : George Orwell
George Orwell
    1->1984
    2->Hayvan Çiftliği

Select number that you want to see the location : 2
[s5c8.6]
```

```
2
Bir Ömür Nasıl Yaşanır?
Momo
Olağanüstü Bir Gece
Bilinmeyen Bir Kadının Mektubu
İcimizdeki Seytan
Küçük Prens
Bir İdam Mahkumunun Son Günü
Çalıkuşu
Seker Portakali
1984
Hayvan Çiftliği
Fahrenheit 451
Suç ve Ceza
Please enter title of the book : Bir İdam Mahkumunun Son Günü
Victor Hugo [s5c8.7]
```