

## Homework 6

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### Question 3

#### Problem solutions approach

Problem solution approach is very simple. Rules from the pdf are followed. There is a hash map with names of the authors and whole values are Hash tables of their books. Books have key value as a String( name of the book ) and the values stored in hash table with instances of BookPosition which is a class that hold the position and status of the book at that position. Number of positions is the number of copies of the same book. Admin can add another admin, another user, remove a user, add book, remove book and add information about the book. Adding information about book updates the status of the book and can be done through admin only( it was said one method only so I just made it for status, if it wasn't written like that in the pdf I would probably make additional method for changing position of the book). User can check information about the book by searching it using its title or its author.

#### Test cases

Test Scenario	Expected Results	Actual Results
Creating a system with admin name 'djuro' with pw 'djuro1234'	System with such an admin should be created	As expected
Admin logs in using 'djuro' as username and 'djuro123' as password	Admin should be logged in through system's getAdmin method	As expected
Admin adds a book with author 'Mesa' with title 'Dervis' and location of 'c15r23.2234'	Book should be added to the system	As expected
Admin adds user named 'marija' to the system	'marija' user should be added	As expected
Getting user from the system by providing its name 'marija'	User should be returned from the system since 'marija' was just added	As expected
User 'marija' searches a book using its title 'Dervis'	Should return string as: Author: Mesa Location: c15r23.2234 - available/	As expected
User 'marija' searches a book using its author's name 'Mesa'	Should return string as: Title: Dervis Locations: c15r23.2234/	As expected

Admin deletes a book from author 'Mesa' with the title 'Dervis'	Book should be removed from the system	As expected
User 'marija' tries to access removed book using author's name	Should not be able to access it and it should throw an exception with message 'Such author does not exist'	As expected
User 'marija' tries to access using name of the title 'Dervis'	Should not be able to find and and it should return: 'No such title'	As expected
Admin 'djuro' adds a book with author 'Mesa' and name 'Dervis' at 'c1r1'	Should be added to the system	As expected
Admin adds a book with author 'Mesa' and name 'Tvrdjava' at 'c1r2'	Should be added to the system	As expected
Admin 'djuro' changes the status of 'Dervis' at 'c1r1' to not available	Status should be updated	As expected
Admin 'djuro' tries to add a book at location 'c1r1' which should not be possible( name is 'Ako Znam' with the same author: 'Mesa' at 'c1r1')	Should not be possible to add the book	As expected
User tries to find the book with title 'Ako Znam' that should not have been added to the system	Should not be able to find it and would return: 'No such title'	As expected
Admin 'djuro' adds again book called 'Dervis' from 'Mesa' but now at position 'c4r4'	Book should be added at that position meaning that now there are two books from 'Mesa' with name 'Dervis' but at different positions	As expected
User 'marija' searches for book with the title 'Dervis':	Should return it: Author: Mesa Location: c1r1 - not available/ c4r4 - available/	As expected
Now 'marija' user searches for books from author called 'Mesa'	Should return: Title: Dervis Locations: c1r1/ c4r4/  Title: Tvrdjava Locations: c1r2/	As expected

Admin 'djuro' adds a new admin called 'maka' with password 'marija1'	Admin should be added to the system	As expected
Getting 'maka' admin from the system by using its username 'maka' and password 'marija1'	maka is taken from the system: true	As expected
Admin 'maka' removes user with a name 'marija'	User should be removed	As expected

## Class diagram



## Test cases and command line

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Komut İstemi
1 File(s)          3.903 bytes
3 Dir(s)  32.123.330.560 bytes free

C:\Users\cse222\Desktop\huk6\src>javac Main.java LibraryAutomationSystem\gtu\Admin.java LibraryAutomationSystem\gtu\User.java LibraryAutomationSystem\gtu>Status.java LibraryAutomationSystem\gtu\BookLocation.java

C:\Users\cse222\Desktop\huk6\src>java Main
Creating a system with admin names 'djuno' with pw 'djuno123'
Getting the admin from the system by providing admin's username and password correctly
Admin adds a book with author 'Mesa' with title 'Dervis' and location of 'c15r23.2234'
Admin adds user named 'marija' to the system
Getting a user from the system by providing its name
User searches a book using its title 'Dervis'
Author: Mesa
Location: c15r23.2234 - available/
User searches a book using its author's name 'Mesa'
Title: Dervis
Locations: c15r23.2234/

Admin deletes a book from author 'Mesa' with the title 'Dervis'
User tries to access using author's name
Exception caught with a message: Such author does not exist
User tries to access using name of the title: No such title
Admin adds a book with author 'Mesa' and name 'Dervis' at 'c1r1'
Admin adds a book with author 'Mesa' and name 'Tvrdjava' at 'c1r2'
Admin changes the status of 'Dervis' at 'c1r1' to not available
Admins tries to add a book at location 'c1r1' which should not be possible( name is 'Ako Znam' with the same author
User tries to find the book at that location that should not have been added
Searching for 'Ako Znam' returns: No such title
Admin adds again book called 'Dervis' from 'Mesa' but now at position 'c4r4'
User searches 'Dervis': Author: Mesa
Locations: c1r1 - not available/ c4r4 - available/
Now searches for all the books from 'Mesa':
Title: Dervis
Locations: c1r1/ c4r4/

Title: Tvrdjava
Locations: c1r2/

Admin 'djuno' adds a new admin called 'maka' with password 'marija1'
Getting 'maka' admin from the system by login in with password 'marija1'
maka is taken from the system: true
Maka removes user with a name marija
Marija was successfully removed from the system

C:\Users\cse222\Desktop\huk6\src>
```