DATA STRUCTURE AND ALGORITHMS HOMEWORK 06 REPORT SHEET

MOHAMMAD ASHRAF YAWAR

161044123

PART02

UML:

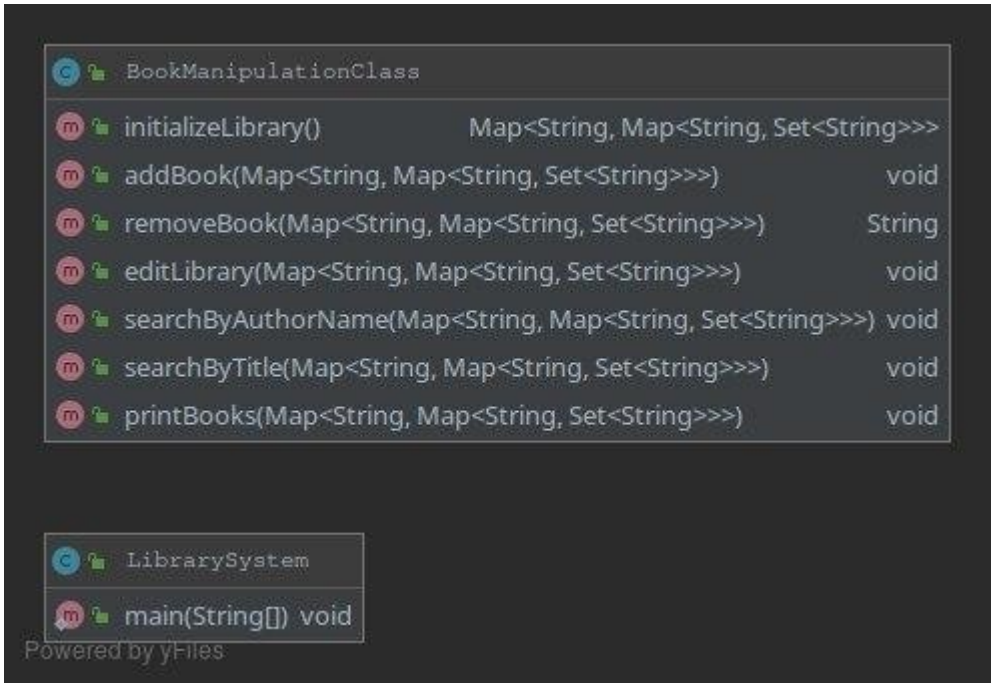
COMMAND LINE:

PROBLEM SOLUTION APPROACH:

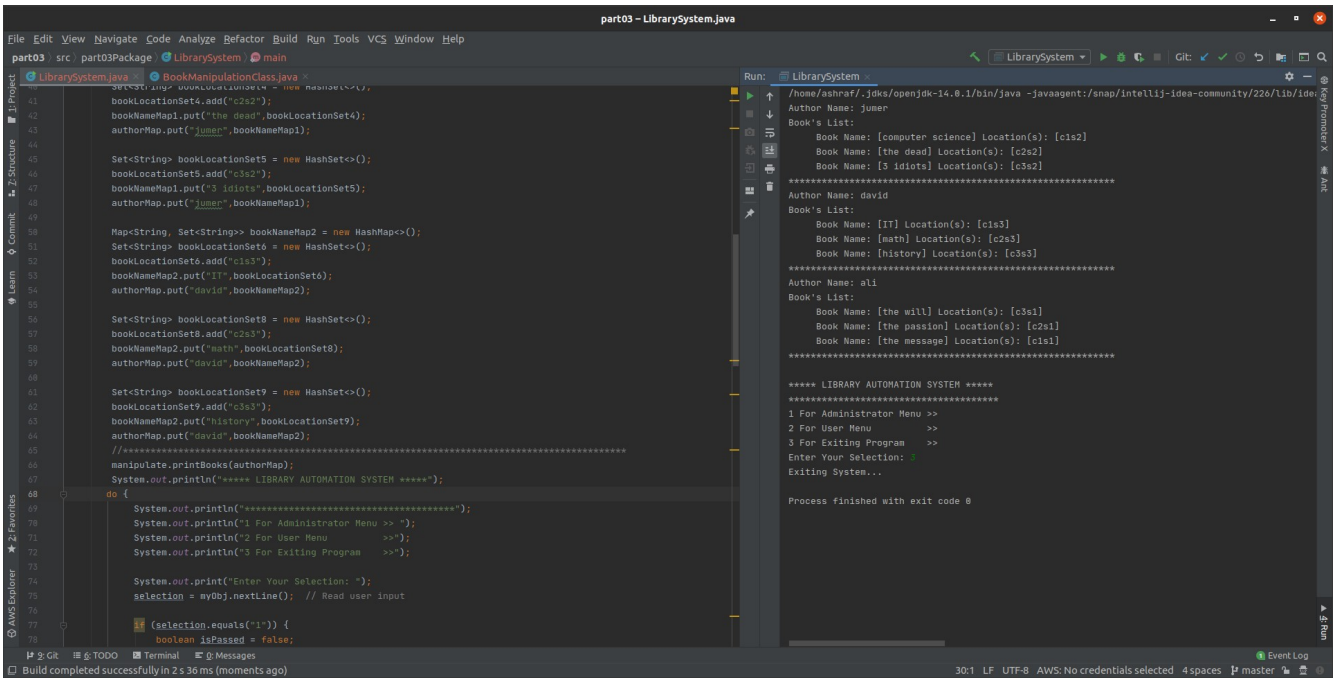
TEST CASES:

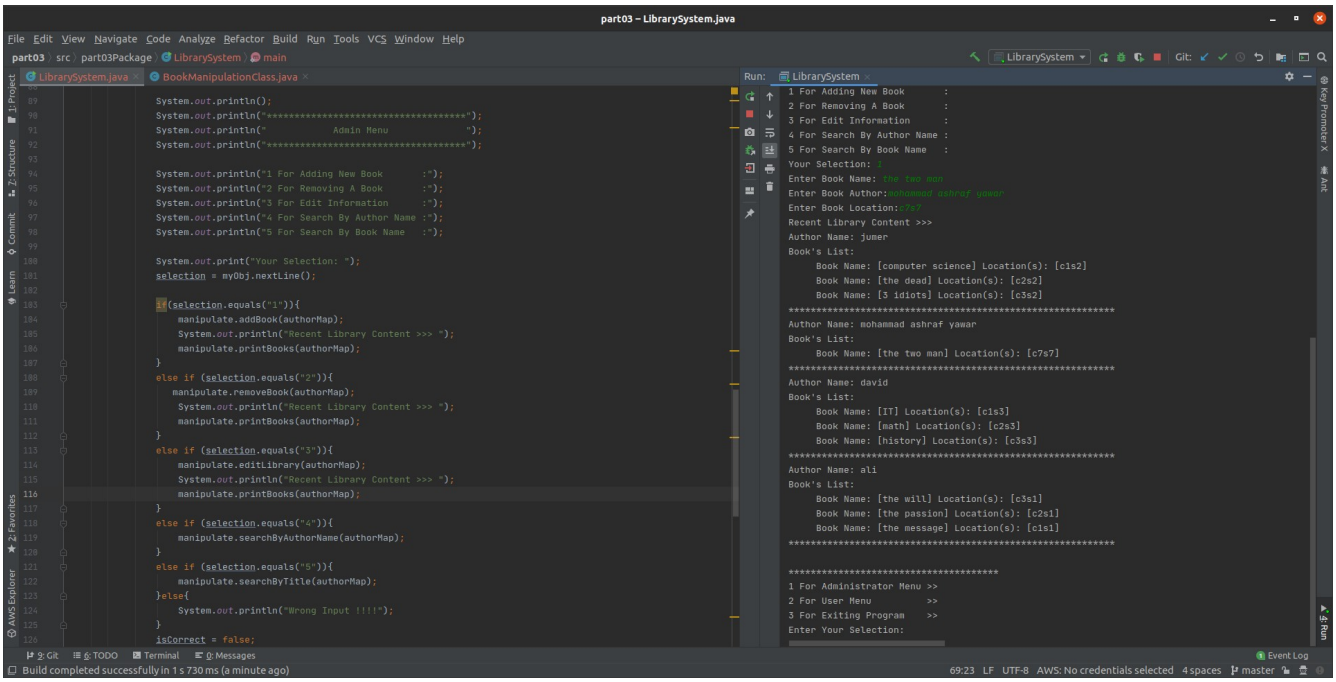
PART03

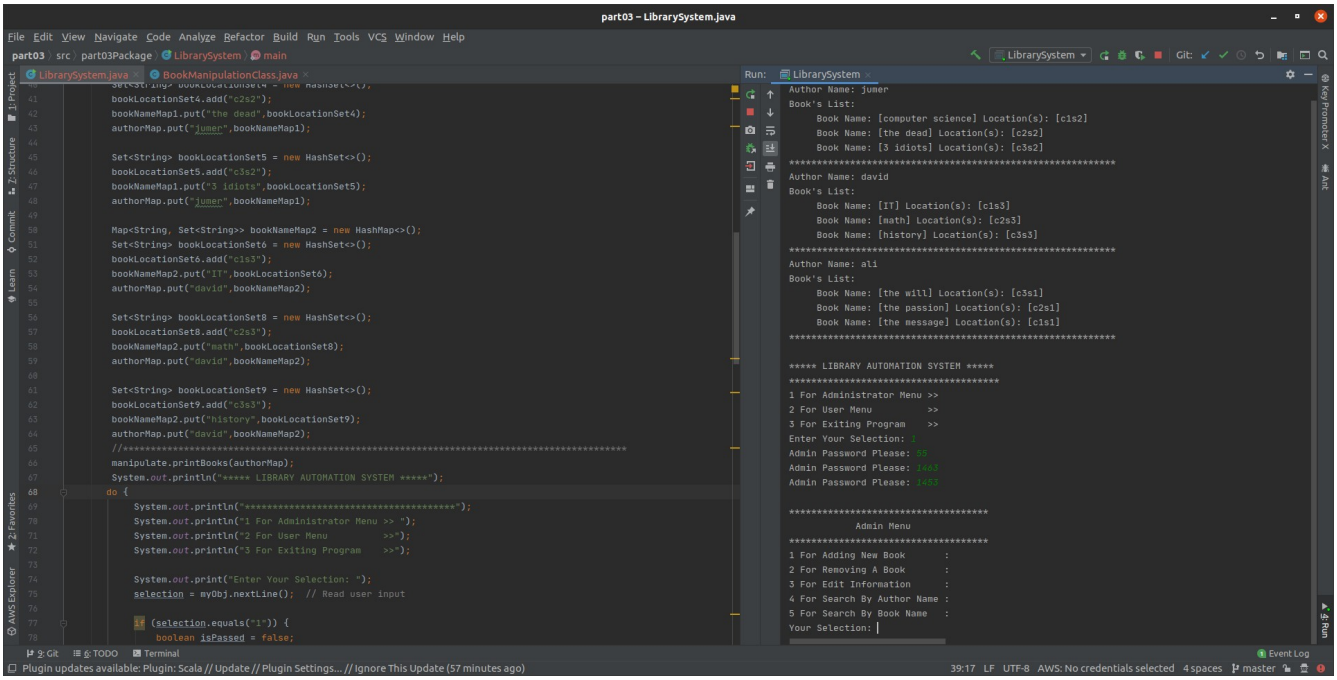
UML:

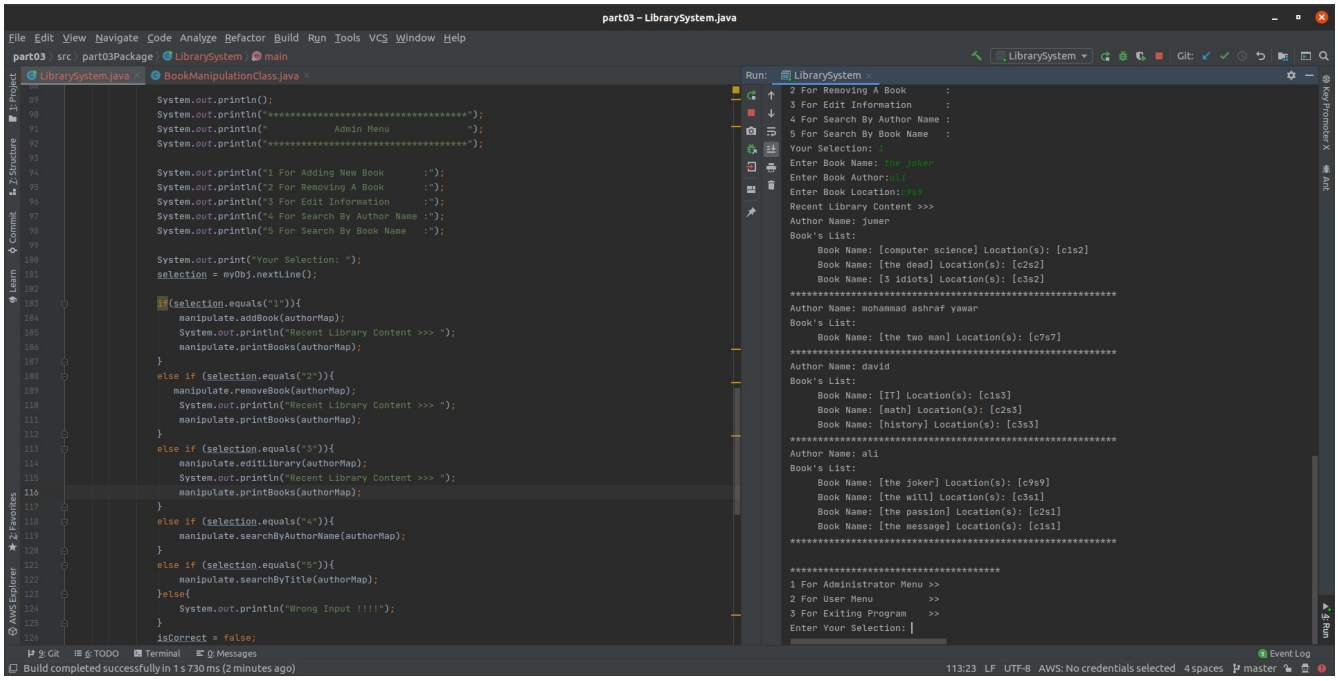


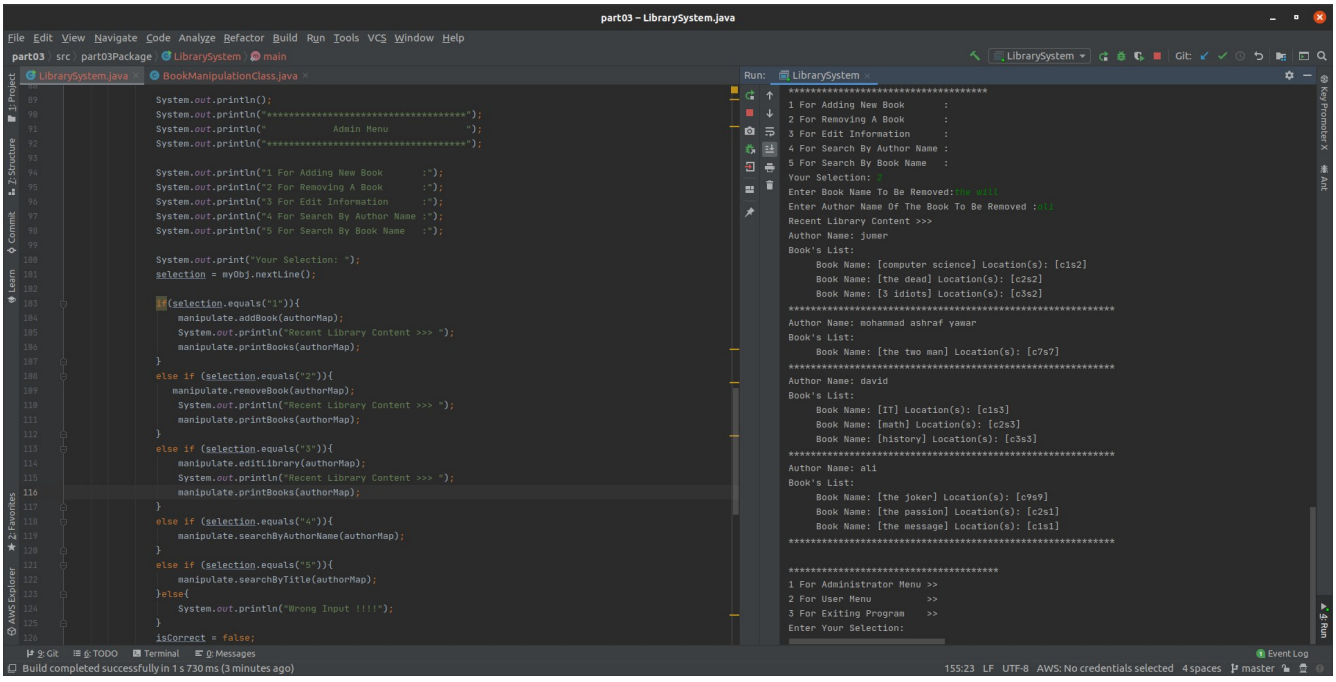
COMMAND LINE:

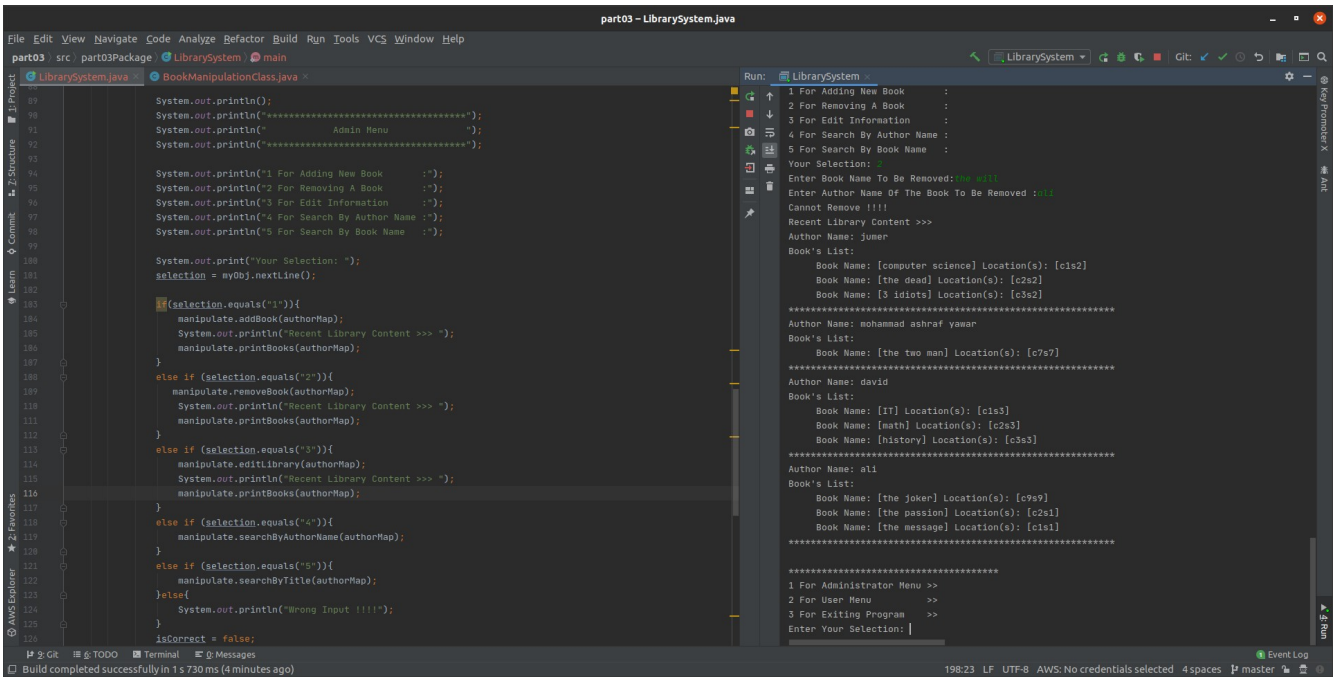


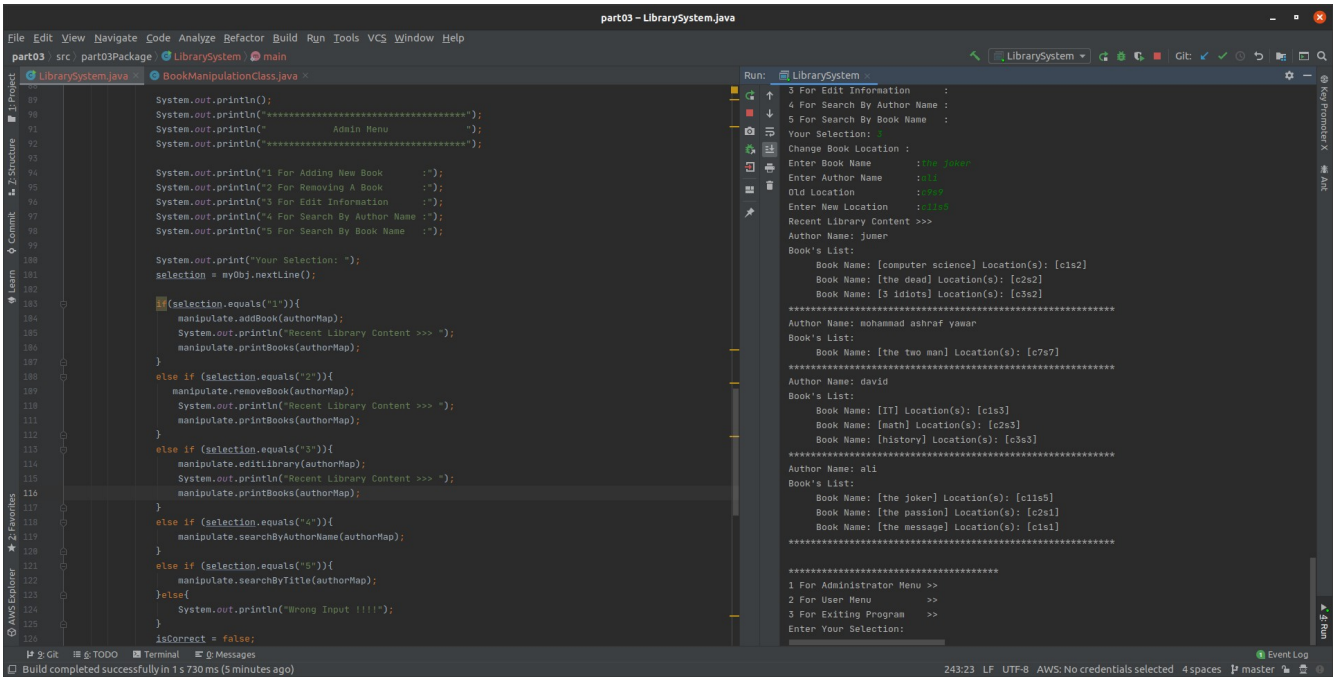

part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 1
Enter Book Name: the two man
Enter Book Author:mohammad ashraf yawar
Enter Book Location:c7s7
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the will] Location(s): [c3s1]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (a minute ago)
69:23 LF UTF-8 AWS: No credentials selected 4 spaces master

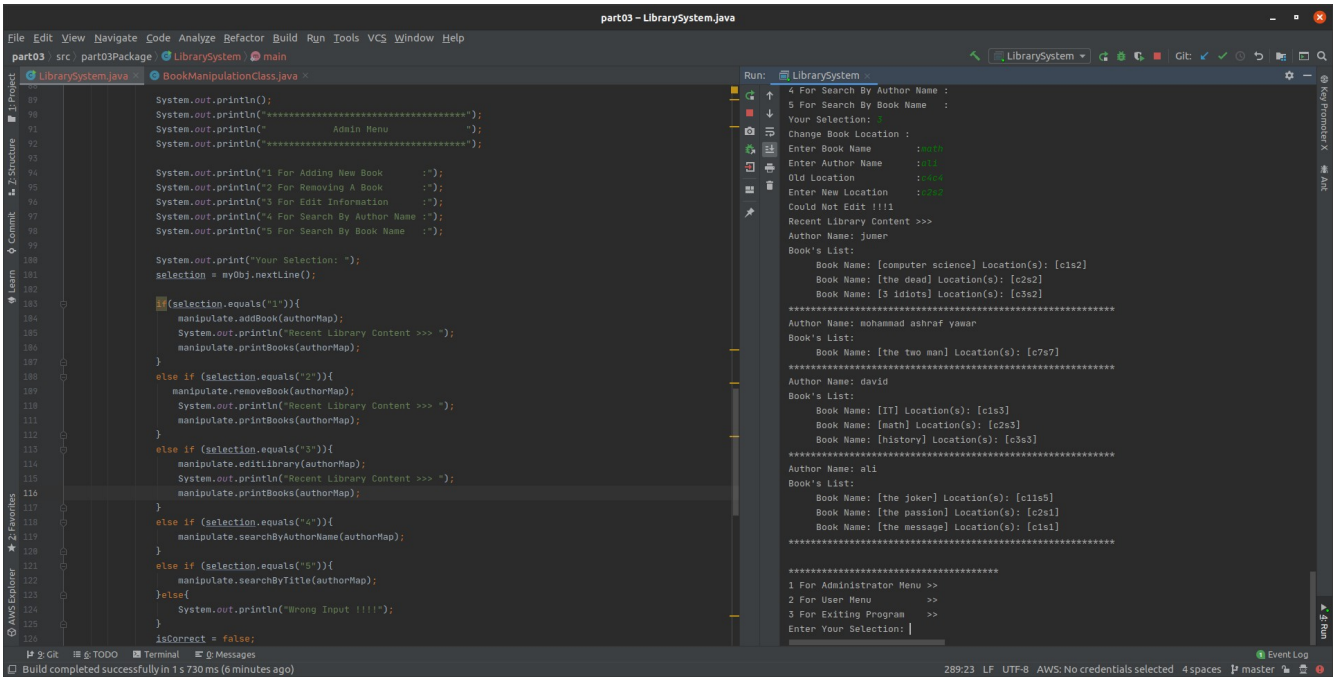

part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
bookLocationSet4.add("c2s2");
bookNameMap1.put("the dead",bookLocationSet4);
authorMap.put("jumer",bookNameMap1);
Set<String> bookLocationSet5 = new HashSet<>();
bookLocationSet5.add("c3s2");
bookNameMap1.put("3 idiots",bookLocationSet5);
authorMap.put("jumer",bookNameMap1);
Map<String, Set<String>> bookNameMap2 = new HashMap<>();
Set<String> bookLocationSet6 = new HashSet<>();
bookLocationSet6.add("c1s3");
bookNameMap2.put("IT",bookLocationSet6);
authorMap.put("david",bookNameMap2);
Set<String> bookLocationSet8 = new HashSet<>();
bookLocationSet8.add("c2s3");
bookNameMap2.put("math",bookLocationSet8);
authorMap.put("david",bookNameMap2);
Set<String> bookLocationSet9 = new HashSet<>();
bookLocationSet9.add("c3s3");
bookNameMap2.put("history",bookLocationSet9);
authorMap.put("david",bookNameMap2);
//***
manipulate.printBooks(authorMap);
System.out.println("***** LIBRARY AUTOMATION SYSTEM *****");
do {
System.out.println("************************************");
System.out.println("1 For Administrator Menu >> ");
System.out.println("2 For User Menu >>");
System.out.println("3 For Exiting Program >>");
System.out.print("Enter Your Selection: ");
selection = myObj.nextLine(); // Read user input
if (selection.equals("1")) {
boolean isPassed = false;
Run: LibrarySystem
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the will] Location(s): [c3s1]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
***** LIBRARY AUTOMATION SYSTEM *****
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 1
Admin Password Please: 88
Admin Password Please: 1403
Admin Password Please: 1403
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection:
Plugin updates available: Plugin: Scala // Update // Plugin Settings... // Ignore This Update (57 minutes ago)
39:17 LF UTF-8 AWS: No credentials selected 4 spaces master

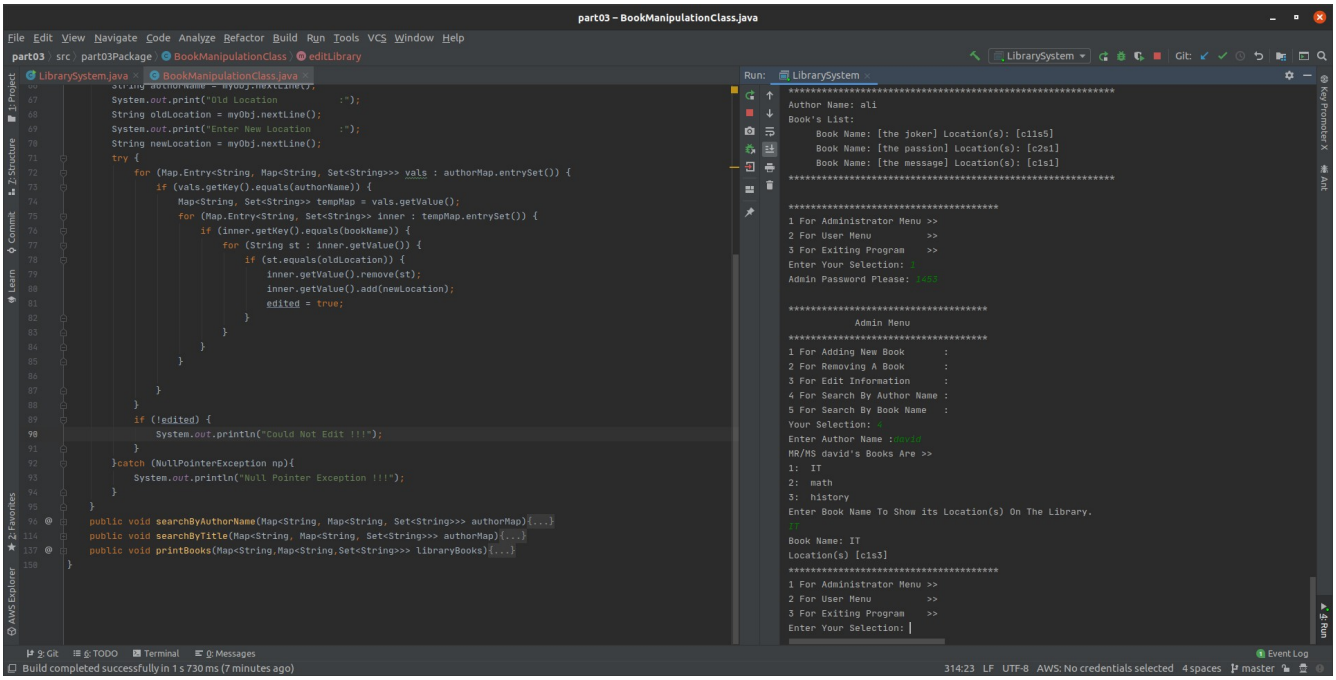

part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 1
Enter Book Name: the joker
Enter Book Author:ali
Enter Book Location:c9s9
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c9s9]
Book Name: [the will] Location(s): [c3s1]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (2 minutes ago)
113:23 LF UTF-8 AWS: No credentials selected 4 spaces master

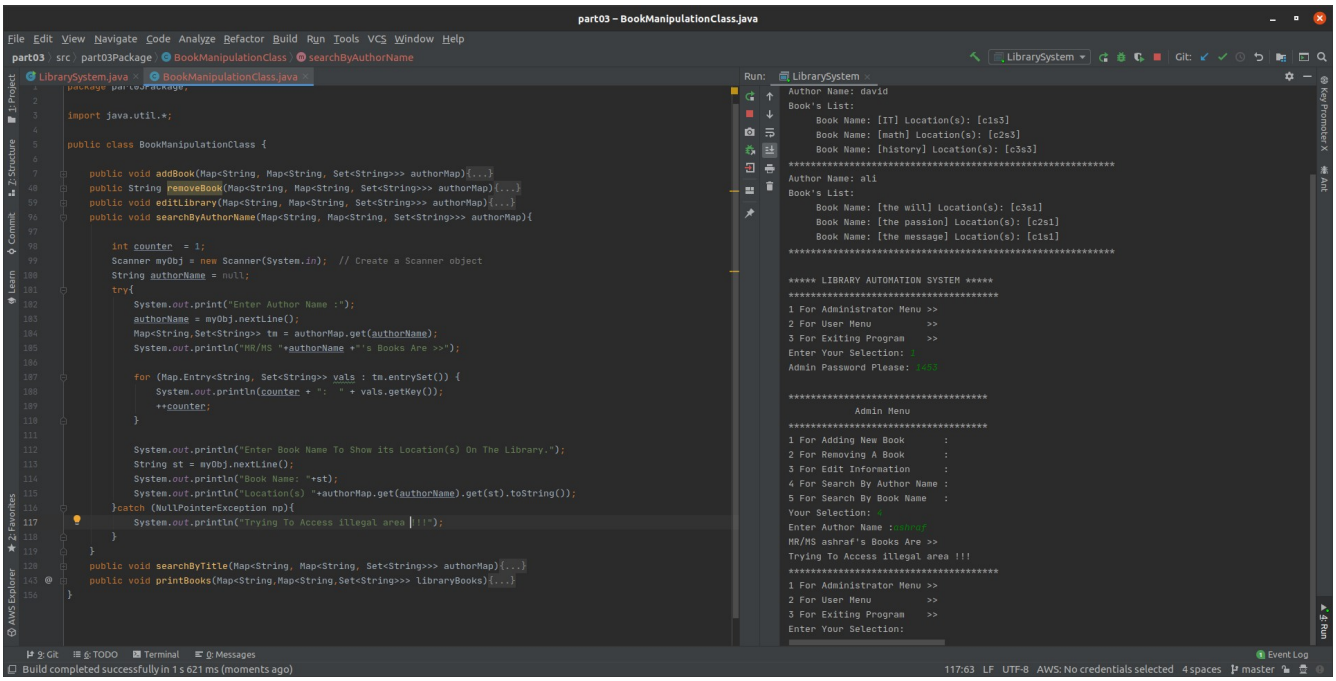

part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 2
Enter Book Name To Be Removed:the will
Enter Author Name Of The Book To Be Removed :ali
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c9s9]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (3 minutes ago)
155:23 LF UTF-8 AWS: No credentials selected 4 spaces master


part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 2
Enter Book Name To Be Removed:the_adIT
Enter Author Name Of The Book To Be Removed :ali
Cannot Remove !!!!
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c9s9]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (4 minutes ago)
198:23 LF UTF-8 AWS: No credentials selected 4 spaces master


part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 3
Change Book Location :
Enter Book Name :the joker
Enter Author Name :ali
Old Location :c9s9
Enter New Location :c11s5
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c11s5]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (5 minutes ago)
243:23 LF UTF-8 AWS: No credentials selected 4 spaces master


part03 – LibrarySystem.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › LibrarySystem › main
LibrarySystem.java
BookManipulationClass.java
System.out.println();
System.out.println("************************************");
System.out.println("   Admin Menu   ");
System.out.println("************************************");
System.out.println("1 For Adding New Book   :");
System.out.println("2 For Removing A Book   :");
System.out.println("3 For Edit Information   :");
System.out.println("4 For Search By Author Name :");
System.out.println("5 For Search By Book Name   :");
System.out.print("Your Selection: ");
selection = myObj.nextLine();
if(selection.equals("1")){
manipulate.addBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("2")){
manipulate.removeBook(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("3")){
manipulate.editLibrary(authorMap);
System.out.println("Recent Library Content >>> ");
manipulate.printBooks(authorMap);
}
else if (selection.equals("4")){
manipulate.searchByAuthorName(authorMap);
}
else if (selection.equals("5")){
manipulate.searchByTitle(authorMap);
}else{
System.out.println("Wrong Input !!!!");
}
isCorrect = false;
Run: LibrarySystem
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 3
Change Book Location :
Enter Book Name :math
Enter Author Name :ali
Old Location :b4e4
Enter New Location :c2s2
Could Not Edit !!!1
Recent Library Content >>>
Author Name: jumer
Book's List:
Book Name: [computer science] Location(s): [c1s2]
Book Name: [the dead] Location(s): [c2s2]
Book Name: [3 idiots] Location(s): [c3s2]
Author Name: mohammad ashraf yawar
Book's List:
Book Name: [the two man] Location(s): [c7s7]
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c11s5]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (6 minutes ago)
289:23 LF UTF-8 AWS: No credentials selected 4 spaces master


part03 – BookManipulationClass.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › BookManipulationClass › editLibrary
LibrarySystem.java
BookManipulationClass.java
System.out.print("Old Location :");
String oldLocation = myObj.nextLine();
System.out.print("Enter New Location :");
String newLocation = myObj.nextLine();
try {
for (Map.Entry<String, Map<String, Set<String>>> vals : authorMap.entrySet()) {
if (vals.getKey().equals(authorName)) {
Map<String, Set<String>> tempMap = vals.getValue();
for (Map.Entry<String, Set<String>> inner : tempMap.entrySet()) {
if (inner.getKey().equals(bookName)) {
for (String st : inner.getValue()) {
if (st.equals(oldLocation)) {
inner.getValue().remove(st);
inner.getValue().add(newLocation);
edited = true;
}
}
}
}
}
}
if (!edited) {
System.out.println("Could Not Edit !!!");
}
}catch (NullPointerException np){
System.out.println("Null Pointer Exception !!!");
}
}
public void searchByAuthorName(Map<String, Map<String, Set<String>>> authorMap){...}
public void searchByTitle(Map<String, Map<String, Set<String>>> authorMap){...}
public void printBooks(Map<String,Map<String,Set<String>>> libraryBooks){...}
}
Run: LibrarySystem
Author Name: ali
Book's List:
Book Name: [the joker] Location(s): [c11s5]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 1
Admin Password Please: 1403
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 4
Enter Author Name :david
MR/MS david's Books Are >>
1: IT
2: math
3: history
Enter Book Name To Show its Location(s) On The Library.
IT
Book Name: IT
Location(s) [c1s3]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 730 ms (7 minutes ago)
314:23 LF UTF-8 AWS: No credentials selected 4 spaces master


part03 – BookManipulationClass.java
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
part03 › src › part03Package › BookManipulationClass › searchByAuthorName
LibrarySystem.java
BookManipulationClass.java
import java.util.*;
public class BookManipulationClass {
public void addBook(Map<String, Map<String, Set<String>>> authorMap){...}
public String removeBook(Map<String, Map<String, Set<String>>> authorMap){...}
public void editLibrary(Map<String, Map<String, Set<String>>> authorMap){...}
public void searchByAuthorName(Map<String, Map<String, Set<String>>> authorMap){
int counter = 1;
Scanner myObj = new Scanner(System.in); // Create a Scanner object
String authorName = null;
try{
System.out.print("Enter Author Name :");
authorName = myObj.nextLine();
Map<String,Set<String>> tm = authorMap.get(authorName);
System.out.println("MR/MS "+authorName +"'s Books Are >>");
for (Map.Entry<String, Set<String>> vals : tm.entrySet()) {
System.out.println(counter + ": " + vals.getKey());
++counter;
}
System.out.println("Enter Book Name To Show its Location(s) On The Library.");
String st = myObj.nextLine();
System.out.println("Book Name: "+st);
System.out.println("Location(s) "+authorMap.get(authorName).get(st).toString());
}catch (NullPointerException np){
System.out.println("Trying To Access illegal area !!!");
}
}
public void searchByTitle(Map<String, Map<String, Set<String>>> authorMap){...}
public void printBooks(Map<String,Map<String,Set<String>>> libraryBooks){...}
}
Run: LibrarySystem
Author Name: david
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the will] Location(s): [c3s1]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
***** LIBRARY AUTOMATION SYSTEM *****
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 1
Admin Password Please: 1453
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 4
Enter Author Name :ashraf
MR/MS ashraf's Books Are >>
Trying To Access illegal area !!!
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
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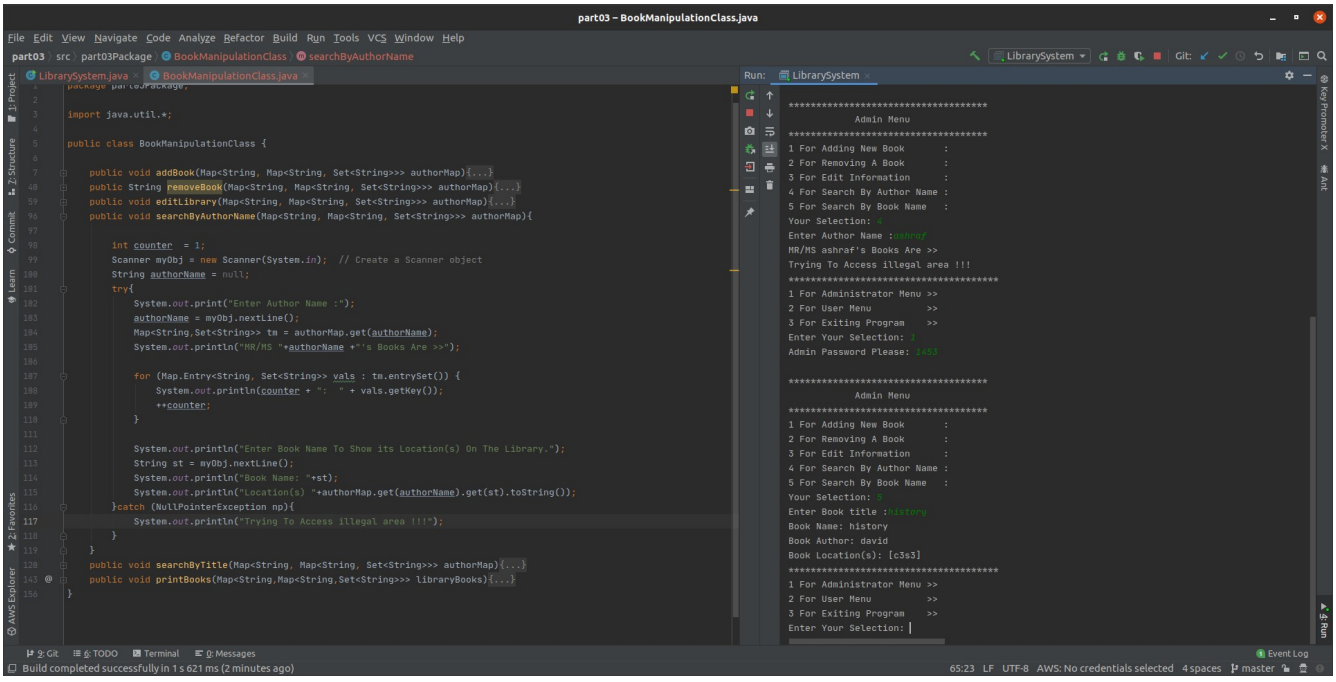
117:63 LF UTF-8 AWS: No credentials selected 4 spaces master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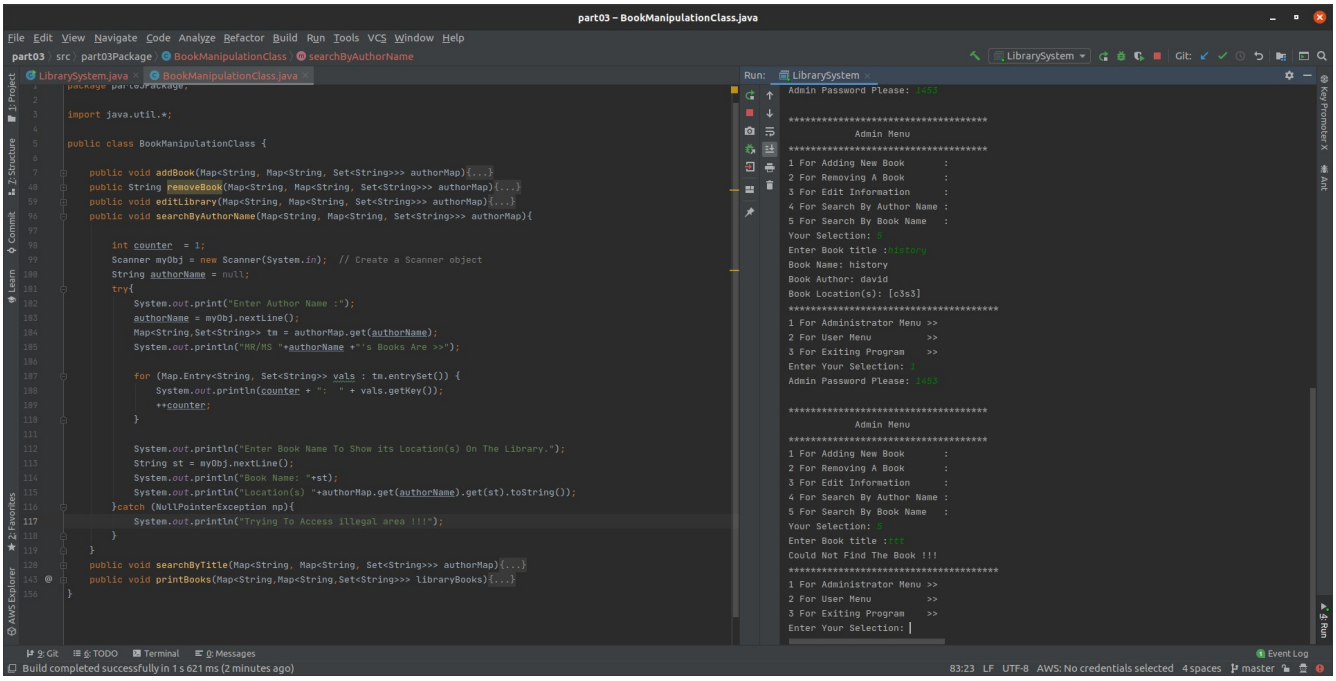
Scanner myObj = new Scanner(System.in); // Create a Scanner object
String authorName = null;
try{
System.out.print("Enter Author Name :");
authorName = myObj.nextLine();
Map<String,Set<String>> tm = authorMap.get(authorName);
System.out.println("MR/MS "+authorName +"'s Books Are >>");
for (Map.Entry<String, Set<String>> vals : tm.entrySet()) {
System.out.println(counter + ": " + vals.getKey());
++counter;
}
System.out.println("Enter Book Name To Show its Location(s) On The Library.");
String st = myObj.nextLine();
System.out.println("Book Name: "+st);
System.out.println("Location(s) "+authorMap.get(authorName).get(st).toString());
}catch (NullPointerException np){
System.out.println("Trying To Access illegal area !!!");
}
}
public void searchByTitle(Map<String, Map<String, Set<String>>> authorMap){...}
public void printBooks(Map<String,Map<String,Set<String>>> libraryBooks){...}
}
Run: LibrarySystem
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 4
Enter Author Name :ashraf
MR/MS ashraf's Books Are >>
Trying To Access illegal area !!!
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 1
Admin Password Please: 1453
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 5
Enter Book title :history
Book Name: history
Book Author: david
Book Location(s): [c3s3]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 621 ms (2 minutes ago)
65:23 LF UTF-8 AWS: No credentials selected 4 spaces master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System.out.println(counter + ": " + vals.getKey());
++counter;
}
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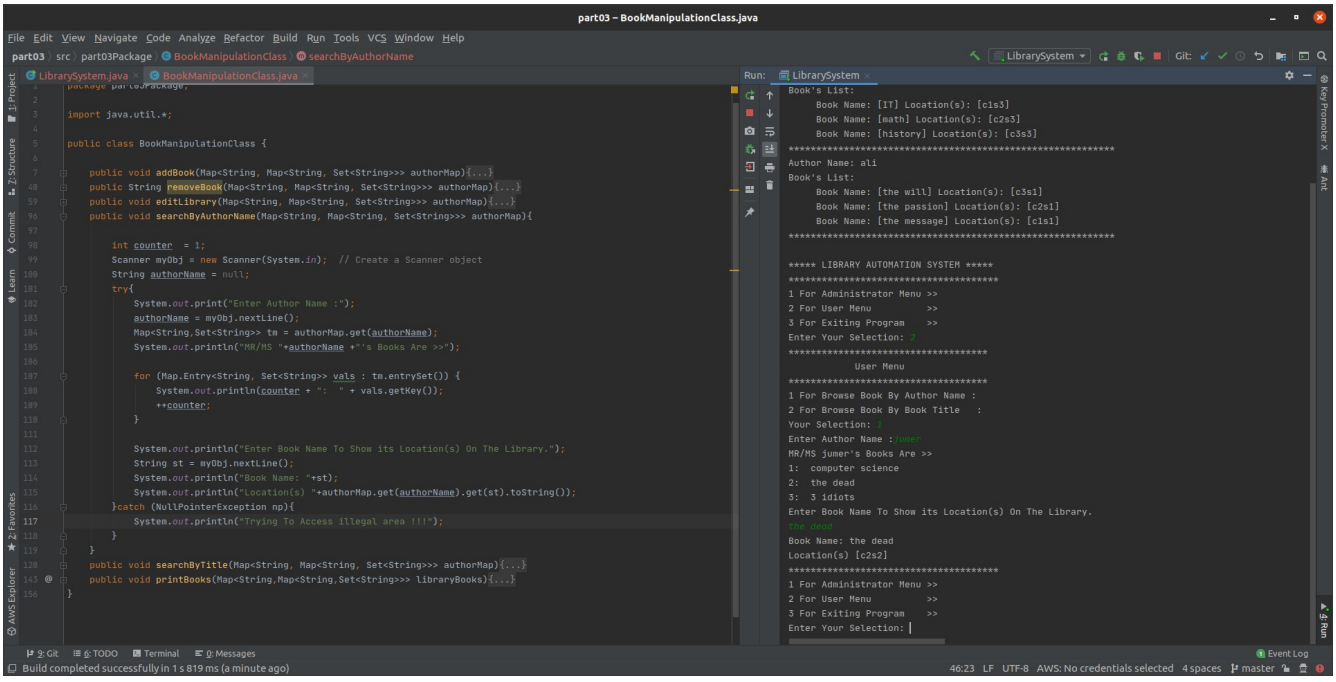
}
Run: LibrarySystem
Admin Password Please: 1453
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 5
Enter Book title :history
Book Name: history
Book Author: david
Book Location(s): [c3s3]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 1
Admin Password Please: 1453
Admin Menu
1 For Adding New Book :
2 For Removing A Book :
3 For Edit Information :
4 For Search By Author Name :
5 For Search By Book Name :
Your Selection: 5
Enter Book title :fff
Could Not Find The Book !!!
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 621 ms (2 minutes ago)
83:23 LF UTF-8 AWS: No credentials selected 4 spaces master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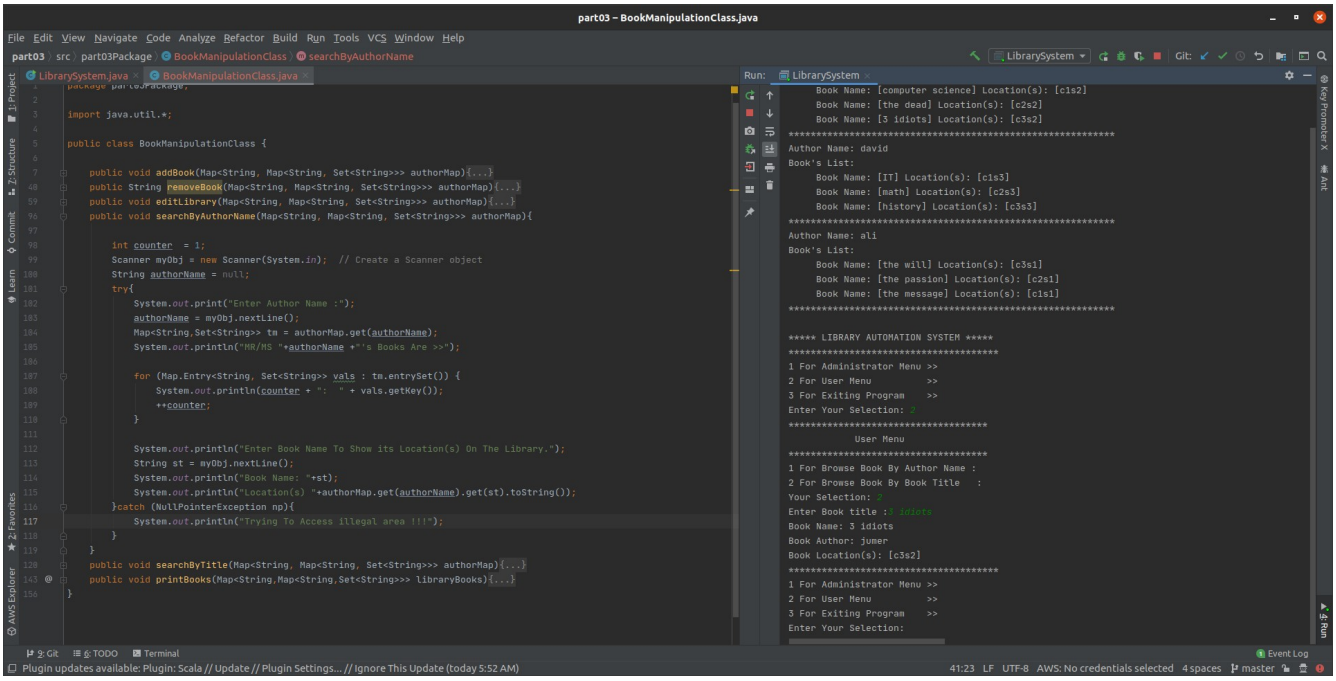
part03 › src › part03Package › BookManipulationClass › searchByAuthorName
LibrarySystem.java
BookManipulationClass.java
Run: LibrarySystem
Book's List:
Book Name: [IT] Location(s): [c1s3]
Book Name: [math] Location(s): [c2s3]
Book Name: [history] Location(s): [c3s3]
Author Name: ali
Book's List:
Book Name: [the will] Location(s): [c3s1]
Book Name: [the passion] Location(s): [c2s1]
Book Name: [the message] Location(s): [c1s1]
***** LIBRARY AUTOMATION SYSTEM *****
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection: 2
User Menu
1 For Browse Book By Author Name :
2 For Browse Book By Book Title :
Your Selection: 1
Enter Author Name :jumer
MR/MS jumer's Books Are >>
1: computer science
2: the dead
3: 3 idiots
Enter Book Name To Show its Location(s) On The Library.
the dead
Book Name: the dead
Location(s) [c2s2]
1 For Administrator Menu >>
2 For User Menu >>
3 For Exiting Program >>
Enter Your Selection:
Build completed successfully in 1 s 819 ms (a minute ago)
46:23 LF UTF-8 AWS: No credentials selected 4 spaces master



PROBLEM SOLUTION APPROACH:

→ we are asked to implement this project using maps and set data structure

→let's think of a library automation system where users can browse books and shows their desired books by entering simply the book name and author name and the other hand admin of the system who can access to change the books location in a library and change the information about any books he/she wants to.

→ I have used typical menu format to start the system any time we run.

→ I have entered some books with their related author names and locations. So we assume that we have some books in our library to directly access add or remove them just after we start our program.

→ admin can add remove and change any books title location or author names and also admin can display the whole books in library.

→ users can only browse the books by their author names or book titles and users are kind of in RED ONLY mode of the system opposite to admins who are in READ AND WRITE mode.

→BookManipulate Class handles all the overhead works of system like adding books removing books printing books and even changing books location.

→ we have all the methods checked for any possible exception occurrence.

TEST CASES:

Test Case ID	Test Scenarios	Test Data	Expected Results	Actual Result	Pass/Fail
T01	Confirm admin password	input	1453	1453	Pass
T02	Confirm admin password	input	1453	Any number other than 1453	Fail
T03	Add new book	Manipulate.addBook(authorMap)	Book title author name,location	If all correct add the book to library list	Pass
T04	Add new book	Manipulate.addBook(authorMap)	Book title author name,location	If any one not correct do not add to library	fail
T05	Remove Book	Manipulate.removBook(authorMap)	Book name ,book author name	If all correct then remove the book from library list	Pass
T06	Remove Book	Manipulate.remove(authorMap)	Book name,book Author name	If any not correct	Fail
T07	Edit books	Manipulate.editLibrary(authorMap)	Book name, author name,old location,new location	If all correct /if nor	Pass/fail
T08	Search for a book	Manipulate.searchByAuthorName(authorMap)	Author name,book selection	If all correct/if any one not correct	Pass/fail
T09	Search for a book	Manipulate.searchByTitle(authorMap)	Take book title	if book title book author and book locations is found	Pass

T10	Search for a book	Manipulate.searchByTitle(authorMap)	Take book title	if any from book title book author and book locations is not found	Fail
T11	Print library content	Manipulate.printBook(author)	Take libray map		pass

PART04

UML:

COMMAND LINE:

PROBLEM SOLUTION APPROACH:

TEST CASES: