Java Assignment 1

Edward Entecott

101190443

package pkg101190443;

import java.util.\*;

public class Main {

public static void main(String[] args) {

Scanner input = new Scanner (System.in);

int choice, bNum, year, search;

String title, mainAuthor, genre;

String a = "Please make a selection from the options below.\n"

+ " 1. Add Book\n 2. Delete Book\n 3. View All Books\n"

+ " 4. View Book Details\n 5. Exit";

Catalogue b = new Catalogue(0, 100);

System.out.println("\nWelcome to the Casual Writers Book Club\n");

System.out.println(a);

choice = input.nextInt();

while (choice != 5){

if(choice == 1){

System.out.println("\nPlease enter the books details\n");

input.nextLine(); //nextLine() is to clear the line for the Title entry, otherwise it will skip the title input and jump to Author

System.out.println("Please enter the book title: ");

title = input.nextLine();

System.out.println("Please enter the books author: ");

mainAuthor = input.nextLine();

System.out.println("Please enter the books genre: ");

genre = input.nextLine();

System.out.println("Please enter the year of publication: ");

year = input.nextInt();

b.addBook(title, mainAuthor, genre, year);

}

//Delete selection

if(choice == 2){

System.out.println("Please enter the book number of the book to delete: ");

bNum = input.nextInt();

b.deleteBook(bNum);

System.out.println("Book deleted.");

}

//Views all the books that have been entered into the array

if(choice == 3){

System.out.println(b.getBookList());

}

//User input the books number, will search through the array, and find the book details associated with the number if valid

if (choice == 4){

System.out.println("Please enter the book number of the desired book: ");

input.next();

search = input.nextInt();

b.viewBook(search);

System.out.println(b.viewBook(search));

//System hangs after the user enters the book number, forcing the user to input the same number again, which then returns the book

//information that the user is looking for

if(b.viewBook(search) == null){

System.out.println("Book not found. Please try again.\n");

}

}

if (choice > 5 || choice < 1){

System.out.println("INVALID SELECTION! PLEASE MAKE A VALID MENU SELECTION!\n");

}

System.out.println(a);

choice = input.nextInt();

}

System.out.println("Thank you for using The Casual Writers Book Club catalogue. \nThe system will now exit.");

}

}

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package pkg101190443;

public class Catalogue {

private static int currentUnusedBookNo;

private int maxBooks, numBooks;

public Book[] bookLi;

//Constructor of the catalogue system

public Catalogue(int bookNoSeed, int maxBooks){

this.currentUnusedBookNo = bookNoSeed;

this.numBooks = 0;

this.maxBooks = maxBooks;

bookLi = new Book[maxBooks];

}

//Method for adding books into the system

public boolean addBook(String title, String mainAuthor, String genre, int year){

if(numBooks < maxBooks){

bookLi[numBooks] = new Book(currentUnusedBookNo, title, mainAuthor, genre, year);

numBooks++;

currentUnusedBookNo++;

return true;

}

return false;

}

//Will loop through the array, and find a book through its book number, assigned to it at the time of entry into the array

private int findBook(int bNum){

for (int i = 0; i < numBooks; i++){

if(bookLi[i].getBookNum() == bNum){

return i;

}

}

return -1;

}

//Will print out the book when its book number is entered

public String viewBook(int bNum){

int find = this.findBook(bNum);

if (this.findBook(bNum) != -1){

return bookLi[find].toString();

}

return null;

}

//Will delete the specified book with the books assigned number, error with shortening the array

public boolean deleteBook(int bNum){

int find = this.findBook(bNum);

if(find != -1){

bookLi[find] = bookLi[numBooks-1];

currentUnusedBookNo--;

return true;

}

return false;

}

//Will display all books stored in the array

public String getBookList(){

String s = "-----------";

s += "\nNumber of Books: " + numBooks + "\nMax Books: " + maxBooks;

for(int i=0; i<numBooks; i++) {

s += bookLi[i].toString();

}

return s;

}

}

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package pkg101190443;

public class Book {

private int bookNumber, year;

private String title, mainAuthor, genre;

public Book (int bn, String title, String author, String genre, int year){

//Book Constructor

this.bookNumber = bn;

this.title = title;

this.mainAuthor = author;

this.genre = genre;

this.year = year;

}

public int getBookNum(){ //Returns the book number

return bookNumber;

}

public String getTitle(){ //Returns the book title

return title;

}

public String getAuthor(){ //Returns the book author

return mainAuthor;

}

public String getGenre(){ //Returns the book genre

return genre;

}

public String toString(){ //To string method to print all the book variables

String s = "---Book---";

s += "\nBook Number: " + bookNumber + "\nBook Title: " + title + "\nBook Author: " + mainAuthor

+ "\nBook Genre: " + genre + "\nYear of Publication: " + year;

s += "\n----------";

return s;

}

}