```
public class Book {


	private int ISBN;
	private String author;
	private String title;
	private String genre;
	private String publisher;
	private int edition;
	private String refCode;

	public Book(){
		ISBN =0;
		author = null;
		title = null;
		genre = null;
		publisher = null;
		edition = 0;

	}


	public Book(int ISBN,String author,String title,String genre,String
publisher,int edition){
		this.ISBN=ISBN;
		this.author=author;
		this.title=title;
		this.genre=genre;
		this.publisher=publisher;
		this.edition=edition;

	}



	public int getISBN() {
		return ISBN;
	}

	public void setISBN(int iSBN) {
		ISBN = iSBN;
	}



	public String getAuthor() {
		return author;
	}

	public void setAuthor(String author) {
		this.author = author;
	}



	public String getTitle() {
```

```
	return title;
}

public void setTitle(String title) {
	this.title = title;
}



public String getGenre() {
	return genre;
}

public void setGenre(String genre) {
	this.genre = genre;
}



public String getPublisher() {
	return publisher;
}

public void setPublisher(String publisher) {
	this.publisher = publisher;
}



public int getEdition() {
	return edition;
}

public void setEdition(int edition) {
	this.edition = edition;
}


public String getrefCode() {
	String s;
	s= ""+author.charAt(0);
	s+=author.charAt(1);
	s+="-";
	s+=genre.charAt(0);
	s+=genre.charAt(1);
	refCode = s;
	return refCode;
}


public void  generateReference(){
	getrefCode();
	/*String s;
	s= ""+author.charAt(0);
	s+=author.charAt(1);
	s+="-";
	s+=genre.charAt(0);
```

```
            s+=genre.charAt(1);
            refCode = s;*/

      }



      public void printBookInfo(){
            System.out.println("Title: " + getTitle() +"\n"+"Author:
"+getAuthor()+"\n"+"ISBN: "+ getISBN() + " - " +"Reference Code :" +
getrefCode().toUpperCase() + "\n" + "Genre:" + getGenre() + "\n" +
"publisher:" + getPublisher() + "\n" + "edition: " + getEdition());

      }

      public void equals(Book www){
      if (this.author.equals(www.getAuthor()) &&
this.title.equals(www.getTitle()) && this.genre.equals(www.getGenre()) &&
this.refCode.equals(www.getrefCode()) &&
this.publisher.equals(www.getPublisher()) && this.getISBN()== www.getISBN()
&& this.edition==www.edition)
            System.out.println("Are equels");
      else
            System.out.println("Not equals");


      }



}
```

```
public class Library {

      private Book libraryBooks[];
      private int numOfBooks;
      public static final int MAX_SIZE = 100;

      public Library(){
            numOfBooks=0;
            libraryBooks= new Book[MAX_SIZE];
      }


      public void printAll(){
            if (numOfBooks > 0 ){
                  for (int i=0;i<numOfBooks;i++){
```

```
                        libraryBooks[i].printBookInfo();
                  }
            }

      }

      public boolean deleteBook(int is){
             for (int i = 0;i<=numOfBooks;i++){
                  if(libraryBooks[i].getISBN() == is)
                        libraryBooks[i]=libraryBooks[numOfBooks-1];
                        return true;

             }
             return false;
      }

      public int findBook(int is){
            for (int i = 0;i<numOfBooks;i++){
                  if(libraryBooks[i].getISBN() == is){
                        return i;}

            }
            return -1;
      }

      public void printGenre(String g){
            for (int i = 0;i<numOfBooks;i++){
                  if(libraryBooks[i].getGenre().equals(g))
                        libraryBooks[i].printBookInfo();

             }
      }

      public boolean verifyISBN (int ISBN){
            int num = ISBN ;
            int form = ((num/1000)*3)+(((num/100)%100)*2)+(((num/10)%10)*1);
            if(form%4==num%10)
                  return true;
            else
      return false;

    }

      public void printBookBaseOnEdition(int edition){
            for (int i = 0;i<numOfBooks;i++){
                  if(libraryBooks[i].getEdition()==edition)
                        libraryBooks[i].printBookInfo();

             }
      }

      public boolean addBook(int ISBN,String author,String title,String
genre, String publisher,int edition ){
               if (numOfBooks<libraryBooks.length){
                     if(findBook(ISBN)==-1){
                     Book a=new Book(ISBN,author,title,genre, publisher,
edition);
```

```
                    if (verifyISBN(ISBN)){
                    libraryBooks[numOfBooks]=a;
                    numOfBooks++;
                    return true;}
                    else {System.out.println("Error:ISBN not correct");
                    return false;
                    }}
                    else System.out.println("the Book is exist");
                    return false;}
              else{
                    return false ;}

        }


    public int getNumberOfBooksByAuthor(String s){

        int number=0;
              for(int i=0;i<numOfBooks;i++){
                    if(libraryBooks[i].getAuthor().equals(s))
                          number++;}
        return number;
    }


    public int getNumberOfBooks(){
        return numOfBooks;
    }

    public Book[] getLibraryBooks(){
        return libraryBooks;
    }

    public void setNumOfBooks(int s){
        numOfBooks=s;
    }




}
```

```
import java.util.Scanner;
public class TestLibrary {

    public static void main(String[] args) {
```

```
		// TODO Auto-generated method stub


		Library object = new Library();
		Scanner input = new Scanner (System.in);
		int x ;


	do {

	System.out.println("**************************************************
******************");
		System.out.println("*                        Welcome to KSU
Library :)");
		System.out.println("*                        ---------------------
------");
		System.out.println("*      Please enter one of the following
options:");
		System.out.println("*      1) Add a book");
		System.out.println("*      2) Delete a book");
		System.out.println("*      3) Find a book");
		System.out.println("*      4) List all books");
		System.out.println("*      5) List books for a given genre");
		System.out.println("*      6) Number of books for a given
author");
		System.out.println("*      7) Total number of books");
		System.out.println("*      8) List books for a given edition");
		System.out.println("*      9) Exit");
		System.out.println("*");

	System.out.println("**************************************************
******************");
		System.out.println("Enter your option :>");
		x=input.nextInt();

		switch (x){
		case 1:
if(object.getNumberOfBooks()==object.getLibraryBooks().length){
			System.out.println("The library is full");}
				else {
					System.out.println("Please, enter the book
details #ISBN, author, title,genre,publisher and edition:");
					int ISBN = input.nextInt();
					String author = input.next();
					String title = input.next();
					String genre = input.next();
					String publisher = input.next();
					int edition = input.nextInt();
					if (object.addBook(ISBN, author, title, genre,
publisher, edition)){
						System.out.println("The book has been
added.");
					}

				}

			break;
```

```
            case 2:System.out.println("Enter ISBN: ");
                        if (object.deleteBook(input.nextInt())){
                              System.out.println("The book has been
deleted.");
                        }
                  break;
            case 3:System.out.println("Enter ISBN");
            System.out.println(object.findBook(input.nextInt()));

                  break;
            case 4:object.printAll();
                  break;
            case 5:System.out.println("Enter genre: ");
            object.printGenre(input.next());
                  break;
            case 6:System.out.println("Enter author ");
            object.getNumberOfBooksByAuthor(input.next());
                  break;
            case 7:System.out.println(object.getNumberOfBooks());
                  break;
            case 8:System.out.println("Enter edition: ");
            object.printBookBaseOnEdition(input.nextInt());
                  break;
            }

      }while(x!=9);
      System.out.println("Thanks. Goodbye!");
      }
}
```