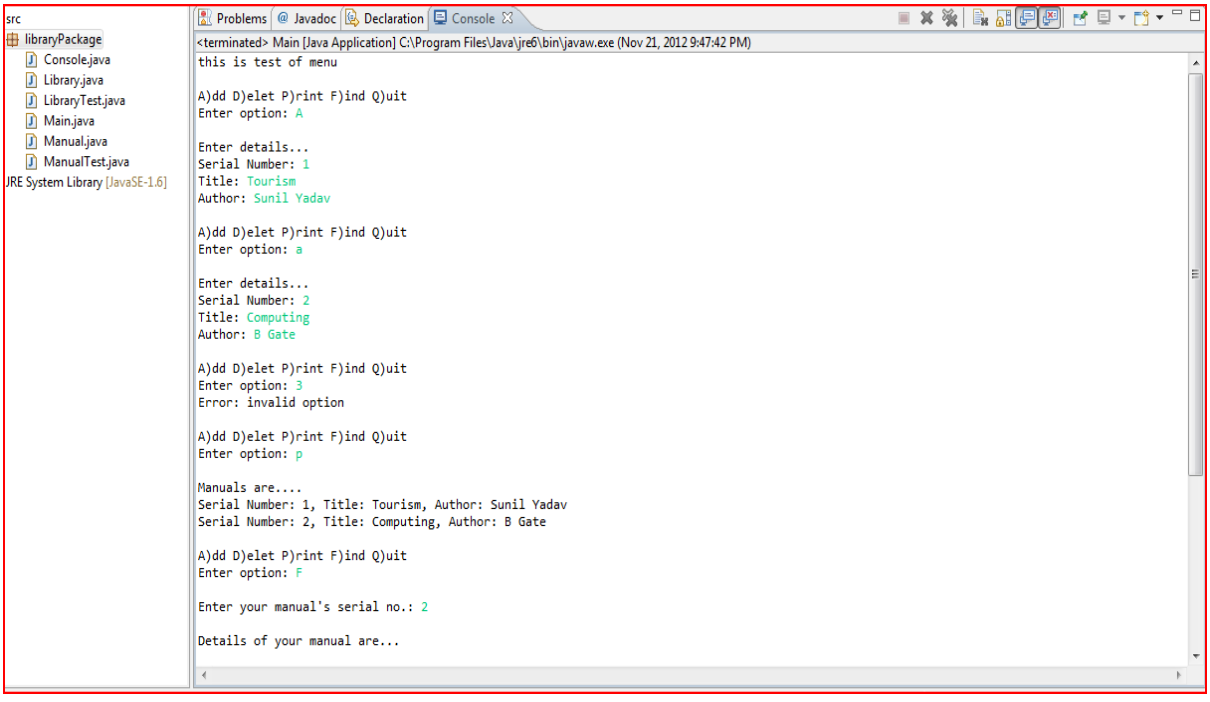
Contents

Introduction

This Application enables you to keep track of the library stock. Details of manuals can be added to the stock or delete from the stock. You can find any specific manual and can also print all the manuals from the stock.

The screen image of the application shown below explains all five options of the application. User enter add option first to add manuals in the stock. Then uses find and print option to find the particular manual and print all the manuals. User also uses delete option to delete a manual. At last user enters Quit option to stop the application.



User Guide

Add your Manuals

When you run your Main class it gives you a Menu of five options on console. One of them is the add option, user can enter upper case A or lower case a or can type add. The application will accept any of these and in return it will ask user to enter details of adding manual. If user does not enter a valid option, the application will display an error message and it will display menu back. After all details entered application will display menu again with all five option if user wants he or she can add more manuals or can use any other option.

Delete Manuals

If user wants to delete any particular manual from stock then there is a delete option in menu. Again user can enter upper case D or lower case d or can type delete. The application will accept any of these and in return it will ask user to enter serial number of deleting manual. If user does not enter a valid option, the application will display an error message and will also display menu option back. After serial Number entered application will delete that manual from stock and will also print all the remaining manuals of the stock.

Print all Manuals

By choosing print option from the menu user can print all the details of all the manuals. Again user can enter upper case P or lower case p or can type print. The application will accept any of these and in return it will print all the details of manuals on screen. If user does not enter a valid option, the application will display an error message and will also display menu option back.

Find a Manual

If a user wants to find any specific manual then there is a find option in menu. User can enter upper case F or lower case f or can type find. The application will accept any of these and in return it will ask user to enter the serial number of finding manual. If user does not enter a valid option, the application will display an error message and will also display menu option back. After serial Number entered the application will print all the details of that manual on console and will also display menu option back.

Quit the application

At last if user wants to stop this application then there is a quit option in menu. User can enter upper case Q or lower case Q or can type Quit. The application will accept any of these and in return it will stop the application.

Program Documentation

Main Class

In the beginning of this class, Constructed a new Library container called stock and also declared a variable called myManual which contains reference to Manual. There is a while loop and char variable called option. There is also a Boolean called finished whose initial value is set to false. There are five case options in the loop. When the loop start with finished value false, program ask user to input a option, after user enters the value of option then application compare the user value with case value by switch statement and then executed the matched case.

Add case: First case is adding manuals, when user choose add option, program calls' the ask function in Manual class which prompts user to enter all the details of manual. After all details entered, application calls' add function of library class which add all details of manual in stock. As it is in loop after this case finishes it goes back to first part of the loop where application displays all the menu options back.

Find case: If user chooses find option, application calls' askString function of Console class which ask user to enter a string (serial number). That is stored in a new variable called theSerialNo and then application calls' find function of library class which finds theSerialNo in serialNo container . this function has a if statement, if serial number doesn't match then it returns null or else application calls' get method of Library class and returns required details of the matched serial number.

Print case: If user chooses print option then application simply calls print method of Library class which prints all details of all the manuals in stock.

Quit case: At last if user chooses Quit option, than it makes finished value equals to true which means loop stops. If user does not enter a valid option, the application will display an error message and will also display menu option back.

Manual class

This class have a constructer called Manual() with three attributes of type string with assigned default value.

print() method: It has got a print method which in result prints all the attributes of Manual().

print(heading) method: There is a print heading method which prints the heading and then calls' print() method.

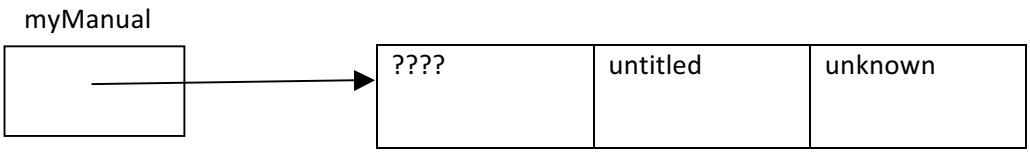
toString() method: this method takes all the data value of a Manual and convert them to a single String.

set() method: Application has created an object with default values, set() method changes the current value of the properties to different values; the new values are provided as parameters to the set method.

get() method: To prevent the direct access to the data members there is a get method which ensures that the values are acceptable. Thus the programmer cannot enter wrong values.

ask() method: this method performs input from user. It display the main prompt to the user and then calls' askString method of the console class which prompts user to enter the values and that stored in new string. Now set method is called to set entered values.

This following diagram explains that there is a new Manual() constructed and store a reference to the Manual in the variable name myManual



Library class

This class also have a constructer which constructs two containers or array list called myLibrary type Manual and serialNo type String. It has got several methods

getSize() method: In result this method returns the total number of manuals of myLibrary.

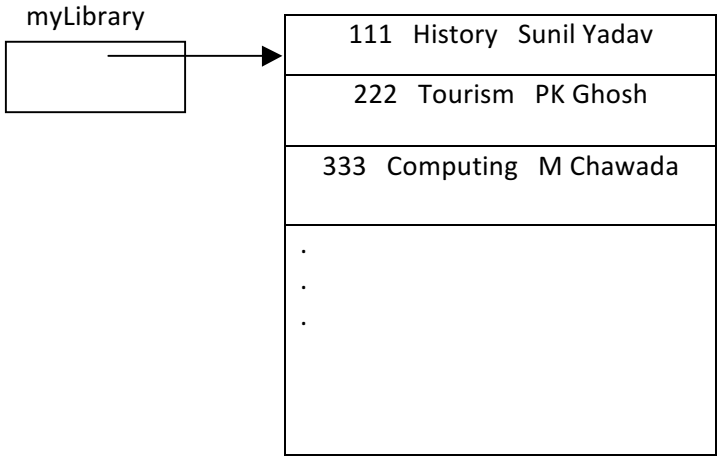
add(Manual aManual) method: This method add all the details of the manual in myLibrary container and also serial number into serialNo container.

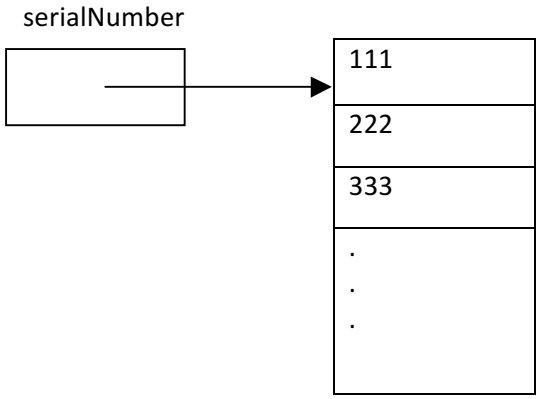
remove(Manual aManual) method: This method delete all the details of the particular manual in myLibrary container and also serial number into serialNo container.

print(String header): This method prints all the details of all the manuals of myLibrary.

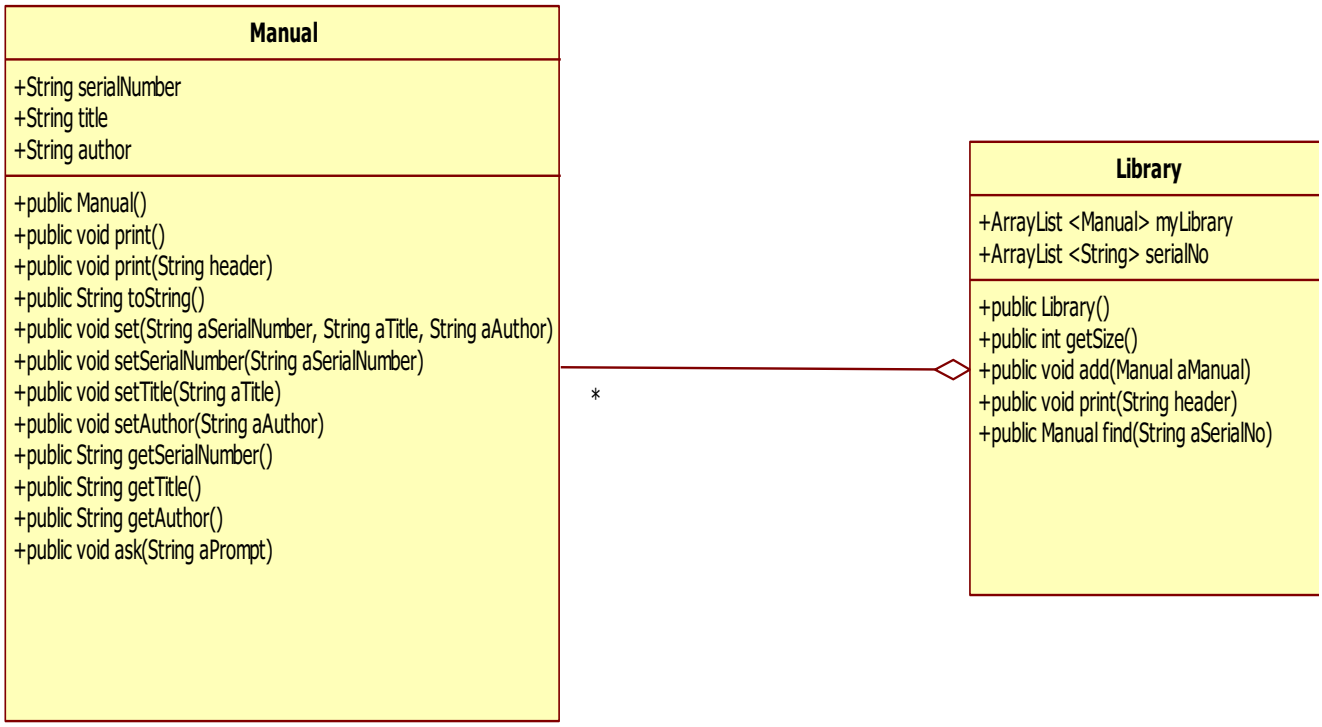
find(String aSerialNo): This method compares entered value to the values of serialNo container sets to a new variable called index type integer. Then if statement starts, if the value doesn't match the value becomes equal to null else application calls' get method to print that particular manual.

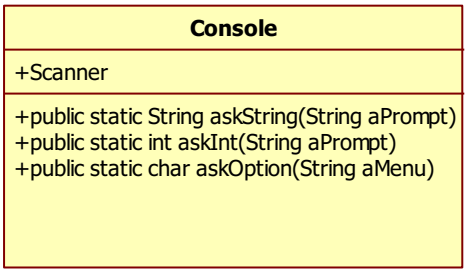
Library class can be illustrated by these following diagrams.





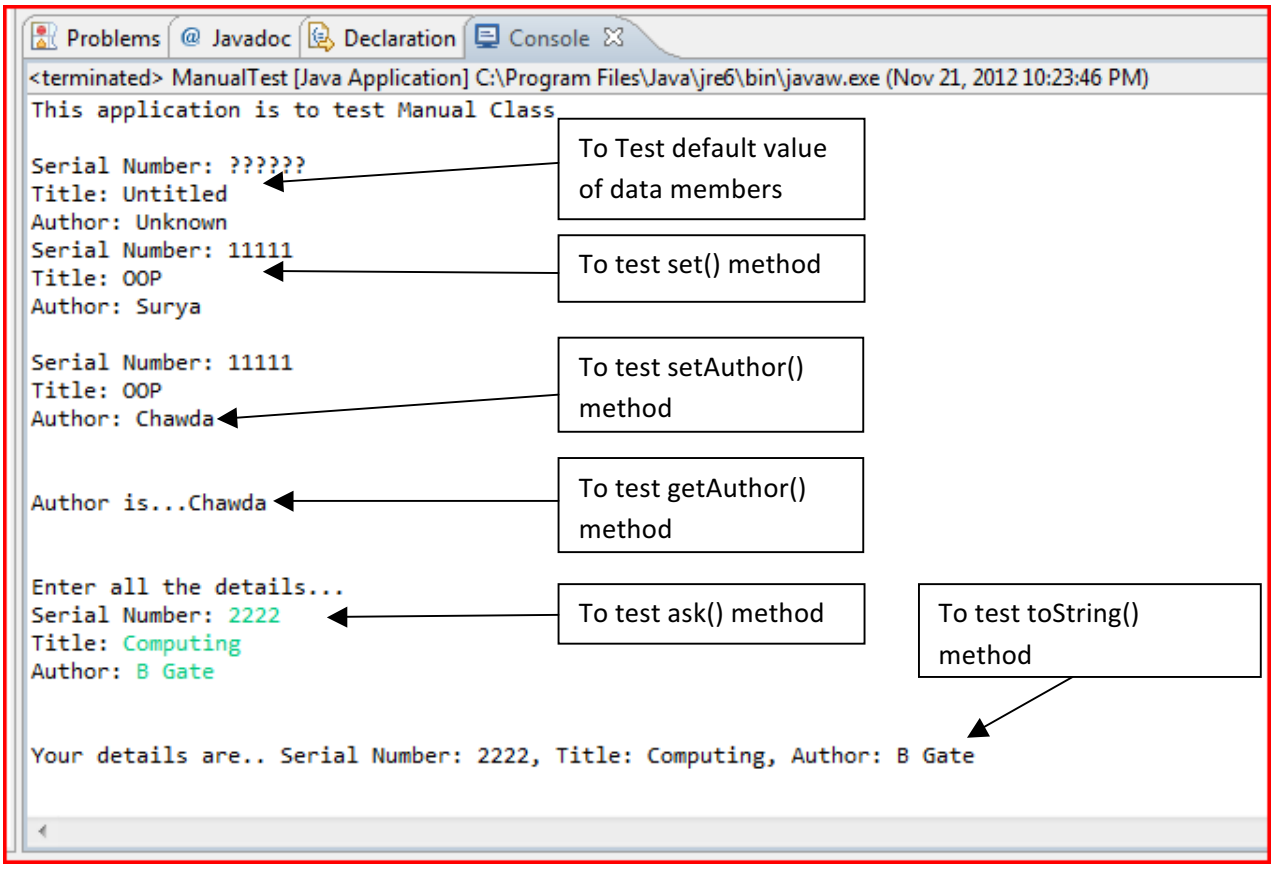
Class Diagrams





Test Classes

Manual Test Class



LibraryTest Class