Q3. Book Management System

Code:

```
import java.util.*;
import java.io.*;
class Book //Parent class Book extended by Faculty and Student.
{
void auther()throws IOException , FileNotFoundException
                                                      //
auther function which shows Auther for different Book.
{
 Book b1 = new Book();
int auth=0;
Scanner sc1 = new Scanner(System.in);
System.out.println("------Welcome Now You Can Choose The Book
By Number----");
System.out.println("Auther for CSE are= \n1.. PROGRAMMING IN C
by ASHOK N. KAMTHANE,, Pearson Education India \n2. JAVA THE
COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL
EDUCATION \n3. DATA COMMUNICATIONS AND NETWORKING by
BEHROUZ FOROUZAN, MCGRAW HILL EDUCATION
\n4.PROGRAMMING WITH C++ by D RAVICHANDRAN, MCGRAW HILL
EDUCATION \n5. OBJECT ORIENTED PROGRAMMING IN C++ by E
BALAGURUSAMY, MCGRAW HILL EDUCATION \n6.. DATA
```

```
STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D.
ULLMAN AND JOHNE. HOPCROFT, PEARSON \n7. Go to Main
Menu");
System.out.println("Enter your Choice in Numeric=");
int a2=sc1.nextInt();
if(a2==2)
 {
 System.out.println("*******\nJava
syllabus\n*********);
 System.out.println("1. Basics of Java \n2. OOPS Conecpts \n3.
String Handling \n4. Exception Handling \n5. Nested Classes \n6.
Multithreading");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
 else if(a2==1)
 {
 System.out.println("********\n C syllbus \n********");
 System.out.println("1. Basics and introduction to C \n2. Control
structures and Input/Output functions \n3. User defined functions
and Storage classes\n4.Arrays in C \n5. Pointers, Dynamic memory
allocation and Strings \n6. Derived types including structures and
unions");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
```

```
b1.auther();
 else if(a2==3)
 {
  System.out.println("********\n NETWORKS SYLLBUS
\n*********"):
 System.out.println("1.NETWORK MODELS \n2.PHYSICAL LAYER:
Signal & Media \n3.DATA LINK LAYER \n4.NETWORK LAYER: IP
Addressing \n5.NETWORK LAYER: Routing \n6.TRANSPORT LAYER
");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
 else if(a2==4)
 {
   System.out.println("********\n C++ SYLLBUS
\n*********");
 System.out.println("1.Concepts and Basics of C++ Programming
\n2.Pointers, Reference Variables, Arrays and String Concepts
\n3.Constructors, Destructors and File Handling \n4.Operator
Overloading and Type Conversion \n5.Dynamic Memory
Management and Polymorphism \n6.Exception Handling, Templates
and Standard Template Library (STL) ");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
```

```
}
 else if(a2==5)
 {
   System.out.println("********\n C++ SYLLBUS
\n*********"):
 System.out.println("1.Concepts and Basics of C++ Programming
\n2.Pointers, Reference Variables, Arrays and String Concepts
\n3.Constructors, Destructors and File Handling \n4.Operator
Overloading and Type Conversion \n5.Dynamic Memory
Management and Polymorphism \n6.Exception Handling, Templates
and Standard Template Library (STL) ");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
 else if(a2==6)
 {
  System.out.println("********\n DATA STRUCTURE
SYLLBUS\n*********);
 System.out.println("1.Intruduction, Array and Sorting and Searching
\n2.Linked Lists \n3.Stack,Queues and Recursion \n4.Trees \n5.AVL
trees and Heaps \n6.Graph and Hashing ");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
```

```
else if(a2==7)
 {
 }
 else
 {
 System.out.println("Wrong choice Enter again");
 b1.auther();
 }
 void BookName()throws IOException, FileNotFoundException
 {
 Book b1 = new Book();
int auth=0;
Scanner sc1 = new Scanner(System.in);
System.out.println("------");
System.out.println("Auther for CSE are= \n1.. PROGRAMMING IN C
\n2. JAVA THE COMPLETE REFERENCE \n3. DATA
COMMUNICATIONS AND NETWORKING \n4.PROGRAMMING WITH
C++ \n5. OBJECT ORIENTED PROGRAMMING IN C++ \n6.. DATA
STRUCTURES AND ALGORITHMS \n7. Go to Main Menu");
System.out.println("Enter your Choice in Numeric=");
int a2=sc1.nextInt();
if(a2==2)
 {
```

```
System.out.println("*******\nJava
svllabus\n*********);
 System.out.println("1. Basics of Java \n2. OOPS Conecpts \n3.
String Handling \n4. Exception Handling \n5. Nested Classes \n6.
Multithreading");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 else if(a2==1)
 {
 System.out.println("********\n C syllbus \n********");
 System.out.println("1. Basics and introduction to C \n2. Control
structures and Input/Output functions \n3. User defined functions
and Storage classes\n4.Arrays in C \n5. Pointers, Dynamic memory
allocation and Strings \n6. Derived types including structures and
unions");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
 else if(a2==3)
  System.out.println("********\n NETWORKS SYLLBUS
\n*********");
```

```
System.out.println("1.NETWORK MODELS \n2.PHYSICAL LAYER:
Signal & Media \n3.DATA LINK LAYER \n4.NETWORK LAYER: IP
Addressing \n5.NETWORK LAYER: Routing \n6.TRANSPORT LAYER
");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 }
 else if(a2==4)
 {
   System.out.println("********\n C++ SYLLBUS
\n*********"):
 System.out.println("1.Concepts and Basics of C++ Programming
\n2.Pointers, Reference Variables, Arrays and String Concepts
\n3.Constructors, Destructors and File Handling \n4.Operator
Overloading and Type Conversion \n5.Dynamic Memory
Management and Polymorphism \n6.Exception Handling, Templates
and Standard Template Library (STL) ");
 System.out.println("Enter 1 to get Auther for CSE Menu");
 auth=sc1.nextInt();
 b1.auther();
 else if(a2==5)
 {
   System.out.println("********\n C++ SYLLBUS
\n**********):
```

System.out.println("1.Concepts and Basics of C++ Programming \n2.Pointers, Reference Variables, Arrays and String Concepts \n3.Constructors, Destructors and File Handling \n4.Operator Overloading and Type Conversion \n5.Dynamic Memory Management and Polymorphism \n6.Exception Handling, Templates and Standard Template Library (STL) ");

System.out.println("1.Intruduction, Array and Sorting and Searching \n2.Linked Lists \n3.Stack, Queues and Recursion \n4.Trees \n5.AVL trees and Heaps \n6.Graph and Hashing ");

```
System.out.println("Enter 1 to get Auther for CSE Menu");
auth=sc1.nextInt();
b1.auther();
}
else if(a2==7)
{
}
else
{
```

```
System.out.println("Wrong choice Enter again");
 b1.auther();
 }
}
class Student extends Book
                                  //Student class extends Book and
has addional function required by students.
{
int imc=0;
public void auther()throws IOException , FileNotFoundException //
syllabus function
{
user u4 =new user();
Book b2=new Book();
b2.auther();
u4.check3();
}
}
```

```
class Faculty extends Book // Faculty class which also extends
student and have diif function which needs.
{
public void Auther()throws IOException , FileNotFoundException
syllabus function.
user u5 =new user();
Book b4=new Book();
b4.auther();
u5.check2();
}
class user // user class from where are class awake.
{
```

```
void check()throws IOException , FileNotFoundException // check
function to get type of login and pass and exit.
{
Scanner sn1 = new Scanner(System.in);
user u1 = new user();
System.out.println("-----");
System.out.println("Enter \n1. 'Press F for Faculty' for LOGIN \n2.
'Press S for Student' LOGIN \n3. 'exit' if you want to Exit:");
String use=sn1.next();
if(use.equals("F"))
 {
   System.out.println("-----");
   u1.check2();
   else if(use.equals("S"))
   {
   System.out.println("-----");
   u1.check3();
   }
   else if(use.equals("exit"))
   {
   System.out.println("---Thank you for Using Book Management
System---");
   }
   else
```

```
{
   System.out.println("--Wrong Choice Please Try Again--");
   u1.check();
  }
}
void check2()throws IOException , FileNotFoundException //check2
function to get and call all functions that Faculty can do.
{
Scanner sn2 = new Scanner(System.in);
user u2 =new user();
Faculty s3 = new Faculty();
System.out.println("Enter 'Faculty' as PASS=");
String pass1=sn2.next();
if(pass1.equals("Faculty"))
 {
  System.out.println("------Welcome Now you can enjoy reading...--
----");
  System.out.println("Yo can search by...=");
  System.out.println("1. Auther \n2. Book name \n3. Go to Login
Page");
  System.out.println("Give your Choice by numeric=");
  int a1=sn2.nextInt();
  if(a1==1)
  {
  s3.auther();
```

```
}
  else if(a1==2)
  {
  s3.BookName();
  else if(a1==3)
  {
  u2.check();
  }
  else
  {
  System.out.println("Wrong choice You Type PASS again");
  u2.check2();
  }
 }
 else
 {
 System.out.println("Wrong PASS Please Try Again");
 u2.check2();
 }
void check3()throws IOException, FileNotFoundException
,InputMismatchException //check3 function to get and call all
function that studnet can do.
```

```
{
Scanner sn3 = new Scanner(System.in);
Student s2 = new Student();
user u3 =new user();
System.out.println("Enter 'student' as PASS=");
String pass2=sn3.next();
if(pass2.equals("student"))
 {
  System.out.println("###### Welcome Student ######");
  System.out.println("Functions You Can Do=");
  System.out.println("1. Auther \n2. Bookname \n3. Go to Login
Page");
  System.out.println("Give your Choice by numeric=");
  int a1=sn3.nextInt();
  if(a1==1)
  s2.auther();
  }
  else if(a1==2)
  s2.BookName();
  else if(a1==3)
  {
```

```
u3.check();
  }
  else
  {
  System.out.println("Wrong choice You Type PASS again");
  u3.check3();
  }
 }
 else
 {
 System.out.println("Wrong PASS Please Try Again");
 u3.check3();
 }
public static void main(String... aa)throws IOException,
FileNotFoundException
{
Scanner sn3 = new Scanner(System.in);
user u =new user();
System.out.println("******-Wellcome to Book Mangement
System -********");
u.check();
```

Output:

First screen of code asking type of login.

```
C:\Users\PRADHUM KUMAR MANDAL>cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code

C:\Users\PRADHUM KUMAR MANDAL>cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code

C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java

C:\Users\PRADHUM KUMAR MANDAL\Desktop\javac code>javac BookMan.javac

C:\Users\PradHUM KUMAR MAN
```

When press "F" for faculty then wants password:

```
C:\Users\PRADHUM KUMAR MANDAL\cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code

C:\Users\PRADHUM KUMAR MANDAL\cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code

C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java

c:\underline{\text{c}}
\text{c}
\te
```

After enter Password Now see search type of Book:

```
Command Prompt - java user
                                                                                                               ×
Microsoft Windows [Version 10.0.18362.720]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\PRADHUM KUMAR MANDAL>cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>java user
 ******-Wellcome to Book Mangement System -******
 -----Type of LOGIN-----
1. 'Press F for Faculty' for LOGIN
2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
------Welcome Faculty-----
Enter 'Faculty' as PASS=
Faculty
------Welcome Now you can enjoy reading...----
Yo can search by...=
1. Auther
Book name
3. Go to Login Page
Give your Choice by numeric=
```

If you want login page enter "3":

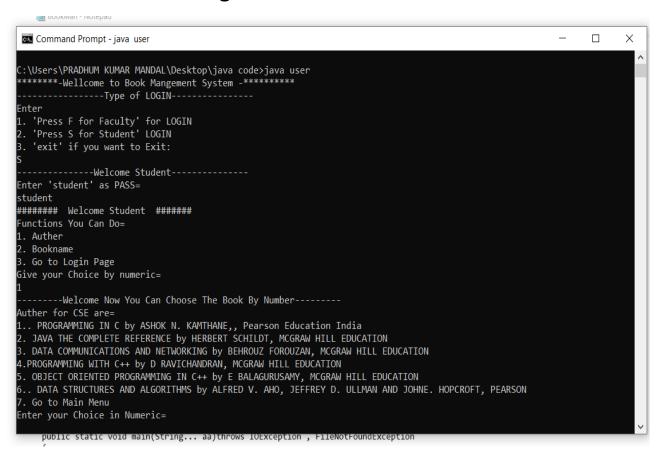
```
П
                                                                                                                    X
Command Prompt - java user
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\PRADHUM KUMAR MANDAL>cd C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>java user
*******-Wellcome to Book Mangement System -******
 -----Type of LOGIN-----

    'Press F for Faculty' for LOGIN

2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
-----Welcome Faculty-----
Enter 'Faculty' as PASS=
Faculty
------Welcome Now you can enjoy reading...-----
Yo can search by...=
1. Auther
2. Book name
3. Go to Login Page
Give your Choice by numeric=
 -----Type of LOGIN-----
1. 'Press F for Faculty' for LOGIN
2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
```

In LOGIN page Press "S" then select student and password as "Student":

When chose According to Auther Press "1":



If you wants read Java Press "2" and see syllabus:

```
student
####### Welcome Student #######
Functions You Can Do=

1. Auther
2. Bookname
3. Go to Login Page
Give your Choice by numeric=
ec.1

Auther for CSE are=
1.. PROGRAMMING IN C by ASHOK N. KAMTHANE, Pearson Education India
2. JAVA THE COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL EDUCATION
33. DATA COMMUNICATIONS AND NETWORKING by BEHROUZ FOROUZAN, MCGRAW HILL EDUCATION
5. OBJECT ORIENTED PROGRAMMING IN C++ by D RAVICHANDRAN, MCGRAW HILL EDUCATION
6. DATA STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHNE. HOPCROFT, PEARSON
7. Go to Main Menu
lanencer your Choice in Numeric=
2
2
3. String Handling
4. Exception Handling
5. Nested Classes
6. Multithreading
Enter 1 to get Auther for CSE Menu

A PROGRAMING STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHNE. HOPCROFT, PEARSON
7. Go to Main Menu
10. Structure of the Structure of the
```

For exit enter "1" then "3" for LOGIN page then enter "exit"

qur-1-/"-----Command Prompt Χ ------Welcome Now You Can Choose The Book By Number----- $^{ extsf{T}}$ Auther for CSE are= PROGRAMMING IN C by ASHOK N. KAMTHANE, Pearson Education India JAVA THE COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL EDUCATION 3. DATA COMMUNICATIONS AND NETWORKING by BEHROUZ FOROUZAN, MCGRAW HILL EDUCATION 4.PROGRAMMING WITH C++ by D RAVICHANDRAN, MCGRAW HILL EDUCATION jec 5. OBJECT ORIENTED PROGRAMMING IN C++ by E BALAGURUSAMY, MCGRAW HILL EDUCATION 6.. DATA STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHNE. HOPCROFT, PEARSON 7. Go to Main Menu enter your Choice in Numeric= oa(Enter 'student' as PASS= ####### Welcome Student ###### S Functions You Can Do= Auther _{na}2. Bookname Go to Login Page ^{s t}Give your Choice by numeric= -----Type of LOGIN----rs Enter 'Press F for Faculty' for LOGIN 2. 'Press S for Student' LOGIN 3. 'exit' if you want to Exit: exit ---Thank you for Using Book Management System---3(C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>_

When in LOGIN page enter "asdf" then print wrong choice please Try Again -> it is handle by throws IOException, FileNotFoundException

```
Command Prompt - java user
                                                                                                                                                      П
Bookname
3. Go to Login Page
Give your Choice by numeric=
          -----Type of LOGIN-----
1. 'Press F for Faculty' for LOGIN
2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
 exit
 --Thank you for Using Book Management System---
 :\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java
 :\Users\PRADHUM KUMAR MANDAL\Desktop\java code>java user
 ******-Wellcome to Book Mangement System -*****
                ----Type of LOGIN---
 ...'Press F for Faculty' for LOGIN
2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
asdf
 -Wrong Choice Please Try Again--
1. 'Press F for Faculty' for LOGIN
2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
```

Same Exception handle in Student Page:

```
Command Prompt - java user
                                                                                                                     X

    'Press F for Faculty' for LOGIN
    'Press S for Student' LOGIN

3. 'exit' if you want to Exit:
 ---Thank you for Using Book Management System---
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>java user
********-Wellcome to Book Mangement System -****
 -----Type of LOGIN-----

    'Press F for Faculty' for LOGIN

 Press S for Student' LOGIN
3. 'exit' if you want to Exit:
 ------Welcome Student-----
Enter 'student' as PASS=
student
####### Welcome Student ######
Functions You Can Do=
1. Auther
2. Bookname
3. Go to Login Page
Give your Choice by numeric=
Wrong choice You Type PASS again
Enter 'student' as PASS=
```

Same Exception handle in Auther Page:

```
Select Command Prompt - java user
                                                                                                                                                       ####### Welcome Student ######
Functions You Can Do=
 . Auther
2. Bookname
 . Go to Login Page
Give your Choice by numeric=
     -----Welcome Now You Can Choose The Book By Number------
Auther for CSE are=
1.. PROGRAMMING IN C by ASHOK N. KAMTHANE,, Pearson Education India

    JAVA THE COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL EDUCATION
    DATA COMMUNICATIONS AND NETWORKING by BEHROUZ FOROUZAN, MCGRAW HILL EDUCATION

4.PROGRAMMING WITH C++ by D RAVICHANDRAN, MCGRAW HILL EDUCATION
5. OBJECT ORIENTED PROGRAMMING IN C++ by E BALAGURUSAMY, MCGRAW HILL EDUCATION
6.. DATA STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHNE. HOPCROFT, PEARSON
 7. Go to Main Menu
Enter your Choice in Numeric=
 Wrong choice Enter again
       ----Welcome Now You Can Choose The Book By Number-----
Auther for CSE are=

1.. PROGRAMMING IN C by ASHOK N. KAMTHANE,, Pearson Education India
2. JAVA THE COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL EDUCATION
3. DATA COMMUNICATIONS AND NETWORKING by BEHROUZ FOROUZAN, MCGRAW HILL EDUCATION
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5. OBJECT ORIENTED PROGRAMMING IN C++ by E BALAGURUSAMY, MCGRAW HILL EDUCATION
 .. DATA STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHNE. HOPCROFT, PEARSON
 . Go to Main Menu
 Enter your Choice in Numeric=
```

When enter "exit" in LOGIN page terminate the program:

```
Х
Command Prompt
                                                                                                         П
Give your Choice by numeric=
   -----Type of LOGIN-----

    'Press F for Faculty' for LOGIN

  'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
exit
 --Thank you for Using Book Management System---
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>javac BookMan.java
C:\Users\PRADHUM KUMAR MANDAL\Desktop\java code>java user
 ******-Wellcome to Book Mangement System -*****
 ----Type of LOGIN---

    'Press F for Faculty' for LOGIN

2. 'Press S for Student' LOGIN
3. 'exit' if you want to Exit:
asdf
 -Wrong Choice Please Try Again--
 -----Type of LOGIN-----

    'Press F for Faculty' for LOGIN

2. 'Press S for Student' LOGIN
'exit' if you want to Exit:
 --Thank you for Using Book Management System---
 :\Users\PRADHUM KUMAR MANDAL\Desktop\java code>
```