**Project (Movie Ticket Booking)**

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package Movie;

import java.util.\*;

//User defines unchecked exception declaration for ArrayIndexOutOfBoundsException

class SeatNoNotFoundException extends Exception{

SeatNoNotFoundException (String message){

super(message);

}

}

//Parent class Theater

class Theater{

private char seats[][]=new char[7][15];

private double price[]= new double[105];

private String bookingName[]=new String[105];

//Default Constructor to set seats to @ and price.

Theater(){

for(int i=1; i<=105; i++){

this.seats[(i-1)/15][(i-1)%15]='@';

//setting price fro each row according to distance from screen

if(i<=30)

this.price[i-1]=250;

else if (i>=30 && i<=75)

this.price[i-1]=300;

else

this.price[i-1]=380;

}

}

//Method to display all booked and unbooked seats in the theater

void displaySeats(){

System.out.println(" SCREEN THIS WAY");

System.out.println(" =========================================================================\n");

for(int i=0; i<7; i++){

for(int j=0; j<15; j++){

System.out.printf(" %c |",this.seats[i][j]);

}

System.out.println();

for(int k=0; k<15; k++){

System.out.printf(" %03d |",((i\*15)+k+1));

}

if(i<2)

System.out.printf(" Silver = Rs. %.2f", this.price[i\*15]);

else if (i>=2 && i<=4)

System.out.printf(" Gold = Rs. %.2f", this.price[i\*15]);

else

System.out.printf(" Diamond = Rs. %.2f", this.price[i\*15]);

System.out.println("\n");

}

}

//Method to book seats (to change '@' (seat available) to '-' (seat not available))

void bookSeat(int... arr){

try{

for(int seatNo:arr){

if (seatNo>0 && seatNo<=105){

if(this.seats[(seatNo-1)/15][(seatNo-1)%15]=='@')

this.seats[(seatNo-1)/15][(seatNo-1)%15]='-';

else

System.out.println("\*\*\*Seat number '"+seatNo+"' is already booked by "+getBookingName(seatNo)+"\*\*\*");

}else{

throw new SeatNoNotFoundException ("\nYou selected a seat number that does not exist in the theater...\n!!!!!Seats entered after the wrong seat number are not booked!!!!!\n");

}

}

}catch(SeatNoNotFoundException e){

System.out.println(e);

}finally{return;}

}

//To set name of the booking person to the corresponding seat number

void setBookingName(String name, int... arr){

for(int seatNo:arr){

if (seatNo>0 && seatNo<105){

if(this.seats[(seatNo-1)/15][(seatNo-1)%15]=='@')

this.bookingName[(seatNo-1)]=name;

}

}

}

//To return the price of the seat number selected

double getPrice(int seatNo){

return (this.price[seatNo-1]);

}

//To retrive the name of the person who booked the particular seat

//and to return 'NO ONE' if the seat is not booked

String getBookingName(int seatNo){

if(seats[(seatNo-1)/15][(seatNo-1)%15]=='-')

return this.bookingName[(seatNo-1)];

else

return "NO ONE";

}

//Function declaration in parent function, to be overriden by child class Movie

void bookingDetails(int seatNo){}

//main function for checking Theater Class

/\*public static void main(String args[]){

Scanner sc=new Scanner(System.in);

Theater t=new Theater();

System.out.print("Enter seat numbers: ");

//To take multiple inputs from user

String nextL= sc.nextLine();

String given[]=nextL.split(" ");

int seatno[]=new int[given.length];

System.out.print("Enter your name: ");

String name=sc.nextLine();

for(int i=0; i<given.length;i++){

seatno[i]=Integer.parseInt(given[i]);

}

t.setBookingName(name, seatno);

t.bookSeat(seatno);

t.displaySeats();

//to display who booked the ticket

System.out.print("Enter seat number you want to check: ");

System.out.print("Booked by "+t.getBookingName(sc.nextInt()));

}

\*/

}

package Movie;

import java.util.\*;

//Child class to Theater

class Movie extends Theater{

static String movieList[] = {"1. Harry Potter", "2. Batman", "3. GodFather"};

private double total;

public String movieName;

//Default contructor to set the movie name of the calling object

Movie(String name){

this.movieName=name;

}

//To display the list of all movies available

public static void displayAllMovie(){

for(int i=0; i<movieList.length; i++){

System.out.println(movieList[i]);

}

}

//To return the movie name of the calling object

String getMovieName(){

return this.movieName;

}

//To accept the booking details (name, seat numbers) and to call corresponding functions

//book in parent class to book the seats and name of the booking person

void provideDetails(){

Scanner sc=new Scanner(System.in);

System.out.print("Enter required seat numbers (in single line): ");

//To take multiple inputs from user

String nextL= sc.nextLine();

String given[]=nextL.split("[^0-9]");

int seatno[]=new int[given.length];

for(int i=0; i<given.length;i++){

seatno[i]=Integer.parseInt(given[i]);

}

System.out.print("Enter your name: ");

String name=sc.nextLine();

this.book(name, seatno);

}

//To book the seats and set the name of the booking person

void book(String name, int... arr){

super.setBookingName(name, arr);

super.bookSeat(arr);

}

//Overriding the parent function to display the details of a booked seat

@Override

void bookingDetails(int seatNo){

System.out.println("Booked by "+super.getBookingName(seatNo)+".");

if (super.getBookingName(seatNo)!="NO ONE"){

System.out.print("For the movie " + this.getMovieName().substring(3));

System.out.printf(", at a price of Rs. %.2f.\n", super.getPrice(seatNo));

}

}

//To select the movie number and to check if its within range

public static int selectMovieNum(){

Scanner sc=new Scanner(System.in);

System.out.print("Kindly enter the number corresponding to the movie you like to watch: ");

int movieNo=sc.nextInt();

if(movieNo<0 || movieNo>movieList.length){

System.out.println("Sorry, you selected a wrong movie number!!!");

return -1;

}

else

return movieNo;

}

//To display the vairous options available for ticket booking

static void menue(){

System.out.println("\n \*\*Welcome to CD Theaters Ticket Booking Portal\*\*");

System.out.println("=======================================================");

System.out.println("1. Check the list of movies running in CD Theater");

System.out.println("2. Select Movie and book tickets");

System.out.println("3. Check if a seat is booked");

System.out.println("4. Quit");

System.out.print("Please enter the number corresponding to your choice: ");

}

//Actual main function

public static void main (String args[]){

Scanner sc=new Scanner(System.in);

Movie m[]=new Movie[movieList.length];

for(int i=0; i<movieList.length; i++){

m[i]= new Movie(movieList[i]);

}

//For multiple running of program accoring to the wish of the user

char c='y';

int movieNo;

while (c=='y' || c=='Y'){

menue();

int choice=sc.nextInt();

switch(choice){

case 1: displayAllMovie();

break;

case 2: movieNo=selectMovieNum();

if(movieNo==-1)

break;

m[movieNo-1].displaySeats();

m[movieNo-1].provideDetails();

System.out.println("Your seats are booked... \nHappy watching!\n");

break;

case 3: movieNo=selectMovieNum();

if(movieNo==-1)

break;

m[movieNo-1].displaySeats();

System.out.print("Enter the seat number you would like to check: ");

int seatNo=sc.nextInt();

m[movieNo-1].bookingDetails(seatNo);

break;

case 4: break;

default: System.out.println("\nXXXXXX Incorrect Input XXXXXX \nPlease enter a proper choice between 1-4\n");

}

System.out.print("Do you wish to continue (Y/N): ");

c=sc.next().charAt(0);

}//while loop for c

}

//main fuction for checking the Movie class

/\*public static void main(String args[]){

Theater t1=new Movie("RRR");

Scanner sc=new Scanner(System.in);

System.out.print("Enter seat numbers: ");

//To take multiple inputs from user

String nextL= sc.nextLine();

String given[]=nextL.split(" ");

int seatno[]=new int[given.length];

System.out.print("Enter your name: ");

String name=sc.nextLine();

for(int i=0; i<given.length;i++){

seatno[i]=Integer.parseInt(given[i]);

}

t1.bookSeat(seatno);

t1.setBookingName(name, seatno);

t1.displaySeats();

//to display who booked the ticket

System.out.print("Enter seat number you want to check: ");

t1.bookingDetails(sc.nextInt());

}\*/

}