Work on project. Stage 5/5: Errors!

Project: Cinema Room Manager

Medium 1 hour

2955 users solved this problem. Latest completion was **about 2 hours ago**.

Description

Running a cinema theatre is no easy business. To help our friends, let's add statistics to your program. The stats will show the current income, total income, the number of available seats, and the percentage of occupancy.

In addition, our friends asked you to take care of a small inconvenience: it's not good when a user can buy a ticket that has already been purchased by another user. Let's fix this!

Objectives

Now your menu should look like this:

```
1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
```

When the item `Statistics` is chosen, your program should print the following information:

- The number of purchased tickets;
- The number of purchased tickets represented as a percentage. Percentages should be rounded to 2 decimal places;
- Current income;
- The total income that shows how much money the theatre will get if all the tickets are sold.

The rest of the menu items should work the same way as before, except the item `Buy a ticket` shouldn't allow a user to buy a ticket that has already been purchased.

If a user chooses an already taken seat, print `That ticket has already been purchased!` and ask them to enter different seat coordinates until they pick an available seat. Of course, you shouldn't allow coordinates that are out of bounds. If this happens, print `Wrong input!` and ask to enter different seat coordinates until the user picks an available seat.

Examples

The greater-than symbol followed by a space (`> `) represents the user input. Note that it's not part of the input.

8 / 8 Prerequisites

- String 12 (In project)
- Formatted output 1
- Final variables 3 (In project)
- Write, compile, and run 7 (In project)
- Errors in programs 6

Show all

Join a study group for the project Cinema Room Manager

Discuss your current project with fellow learners and help each other.

```
Enter the number of rows:
> 6
Enter the number of seats in each row:
> 6

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 3

Number of purchased tickets: 0
Percentage: 0.00%
Current income: $0
Total income: $360

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 2

Enter a row number:
> 1
Enter a seat number in that row:
> 1

Ticket price: $10

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 3

Number of purchased tickets: 1
Percentage: 2.78%
Current income: $10
Total income: $360

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 2

Enter a row number:
> 1
Enter a seat number in that row:
> 1

That ticket has already been purchased!

Enter a row number:
> 10
Enter a seat number in that row:
> 20

Wrong input!

Enter a row number:
> 4
Enter a seat number in that row:
> 4

Ticket price: $10

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 1

Cinema:
  1 2 3 4 5 6
1 B S S S S S
2 S S S S S S
```

```
3 S S S S S S
4 S S S B S S
5 S S S S S S
6 S S S S S S

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 3

Number of purchased tickets: 2
Percentage: 5.56%
Current income: $20
Total income: $360

1. Show the seats
2. Buy a ticket
3. Statistics
0. Exit
> 0
```

Report a typo

See hint

Write a program

Code Editor IDE

Java

```java
package cinema;
import java.util.*;
public class Cinema {
    static int purchasedTicket;
    static int totalIncome;
    static int currentIncome;

    public static void setCinema(int row,int col){
        purchasedTicket = 0;
        currentIncome = 0;
        if(row * col <= 60){
            totalIncome = row * col * 10;
        }
        else{
            totalIncome = (row/2) * col * 10;
            totalIncome += (row - (row/2)) * col * 8;
        }
    }

    public static void main(String[] args) {
        int choice;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of rows:");
        int row = sc.nextInt();
        System.out.println("Enter the number of seats in each row:");
        int col = sc.nextInt();
        char[][] array = new char[row][col];
        initialize(array,row,col);
        do{
            System.out.println("\n1. Show the seats\n2. Buy a ticket\n3. Statistics\n0. Exit");
            choice = sc.nextInt();
            if(choice == 0){
                break;
            }
            else if(choice == 1){
                printArray(array);
            }
            else if(choice == 2){
                bookSeat(array, row, col);
            }

            else if(choice == 3){
                statistics(row, col);
            }
        } while(true);
        sc.close();
    }

    public static void statistics(int row, int col){
        System.out.println("\nNumber of purchased tickets: "+purchasedTicket);
```

```
        System.out.println("\nNumber of purchased tickets: "+purchasedTicket);
        System.out.printf("Percentage: %.2f%%\n",(float)((float)purchasedTicket/(float)(row*col)) * 100);
        System.out.println("Current income: "+"$"+currentIncome);
        System.out.println("Total income: "+"$"+totalIncome);
    }

    public static void bookSeat(char[][] array, int row, int col){
        Scanner sc = new Scanner(System.in);
        System.out.println("\nEnter a row number:");
        int crow = sc.nextInt();
        System.out.println("Enter a seat number in that row:");
        int ccol = sc.nextInt();
        if(row < crow || col < ccol){
            System.out.println("\nWrong input!");
            bookSeat(array, row, col);
        }
        else if(book(array, crow, ccol)){
            System.out.println("\nThat ticket has already been purchased!\n");
            bookSeat(array, row, col);
        }
        else{
            System.out.print("\nTicket price: ");
            if(row * col <= 60){
                currentIncome += 10;
                System.out.println("$"+ 10);
            }
            else{
                if((row/2) >= crow){
                    currentIncome += 10;
                    System.out.println("$"+10);
                }
                else{
                    System.out.println("$"+8);
                    currentIncome += 8;
                }
            }
            purchasedTicket++;
        }
    }

    public static boolean book(char[][] array, int row, int col){
        if(array[row - 1][col - 1] == 'B'){
            return true;
        }
        else{
            array[row - 1][col - 1] = 'B';
            return false;
        }
    }

    public static void initialize(char[][] array, int row, int col){
        for(int i = 0; i < array.length; i++){
            for(int j =0; j < array[i].length; j++){
                array[i][j] = 'S';
            }
        }
        setCinema(row, col);
    }

    public static void printArray(char[][] array){
        System.out.println("\nCinema:");
        System.out.print("  ");
        for(int i = 0; i < array[0].length; i++){
            System.out.print((i+1) + " ");
        }
        System.out.println();
        for(int i = 0; i < array.length; i++){
            System.out.print((i+1)+" ");
            for(int j =0; j < array[i].length; j++){
                System.out.print(array[i][j] +" ");
            }
            System.out.println();
        }
    }
}
```

✓ Correct.

Great job!

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