BBM104 SPRING 2022 PROJECT ASSIGNMENT 4

The problem is the development of a program using JavaFx, which has a simple interface from us with the Java language. This program should be a simple cinema application. Thanks to this application, users can only watch trailers and buy tickets, while Admins have many powers such as adding movies, deleting movies, adding halls, deleting halls, managing user titles, buying tickets for other users, returning tickets. While the program is running, keeping the data file up to date according to the program's functions and keeping this data in the background is also part of the problem.

Here is the solution I developed for this problem:

Firstly, Data files are kept as static ArrayLists under the Data class. In this way, they can be accessed from every part of the program. There are separate classes for Seats, Users, Halls, Movies. Since every item can be kept as an object, manipulations on the object can be done easily. Login page opens first in the program. Then, if the user has an account, he enters the account information. The password converted to hash password with the entered username is checked in the database. If the checked information is correct If the user is admin, the admin page is displayed, and if the user is a normal user, the Normal page is displayed. If the user does not have an account, user can log in as a normal user by creating an account on the Sing Up page. By handling the admin and normal user pages under different class structures, a user is prevented from entering the admin page or vice versa. An error message is displayed to the user when the variable that is kept as static Integer on the Login screen is equal to the maximum number of errors from the Properties file by increasing each incorrect entry made by the user on the Login screen. Even if the user logs in incorrectly and goes to another page, the number of incorrect logins made by her/him is not reset because it is kept as static property in the Login class. In the movie selection section, I listed the movies thanks to the chociceBox class belonging to JavaFx. In the trailer viewing section, buttons have been created so that the user can go back and forth through the trailer while watching the trailer. Thanks to these buttons, the user can rewind the trailer, return it to the beginning, adjust the volume. Even if there is no data behind or in front of the video, a possible program crash is prevented by using these functions under the Try Catch structure so that the program does not crash when the rewind or forward button is pressed. On the ticket purchase screen, a button was created for each seat with the help of the for loop. These buttons are correctly placed in their indexes thanks to the gridPane structure. If the user is a normal user, the seats belonging to someone else are set so that they cannot interact with the setDisable function. If the user is admin, it is set to access every seat

Some of the problems I encountered and my solutions:

Pressing the arrow button on the movie selection screen even though there is no movie. This problem was solved by first checking the size of the films Arraylist that holds the films in when the arrow button is pressed for the selection process.

The problem of the program crashing in case the path given on the movie adding screen is wrong was solved by first trying to open the given path with the Try structure and throwing the error message under the Catch structure in case of any error.

The problem of pressing the arrow button to switch to the living room although there is no room in the trailer watching section. When the button to enter the hall is pressed, it is solved by first checking the hall and throwing an error message if there is no hall.

Benefits of this System

Thanks to this system, the operation of a small movie theater can be done offline. Thanks to the program, administrators can see details such as which seats are sold, which seats are vacant, or which seats are sold to whom, and they can sell accordingly. In addition, the total revenue can be calculated by adding the prices of the tickets sold. In addition, users can choose the movie they want and can make a reservation for the movie by watching the trailers as they want and taking the seats, they want from the empty parts of the hall they choose. With pages such as adding movies and deleting movies, admins can easily add movies that have been shown or remove movies that have been discontinued. It can open more theaters for movies that attract more attention or reduce the number of theaters for movies that have less interest, thanks to options such as add or delete hall.

Benefits of GUI

GUI is a kind of interface that is much easier to use, even for a beginner. It is understandable. Therefore, it is used in many computers and mobile devices today. Thanks to many libraries such as JavaFx, programs can be easily developed by software developers with the help of OOP.

Mustafa Emre Yıldırım 2200356068