HUCS CINEMA RESERVATION SYSTEM REPORT

BBM104 Assignment 4

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Problem:

In a daily life of a person, it is seen that television and computer is a big part of them. Lately, there has been an increase in people using computer and television's popularity has been decreasing. The cinema sector is getting worse because of the changing habits of people. A new application for computers is needed to satisfy both the sector and people. According to statistics, people would be happier if they could watch films on a computer application.

Solution Approach:

In order for a solution to be found, a new software application is made mainly used on computers. This application is called HUCS Cinema Reservation System. Using this system, personal accounts are creatable by users, and they can be used to satisfy users' own needs. A list of films is available to be chosen by users without waiting. When a film is entered, a ticket must be bought to get a seat by user to watch the film. Cheaper tickets are available for club members. Seats are refundable if the user is unhappy. In the film window, the film can be played or paused, skipped back or forward for 5 seconds, rewinded and its volume can be adjusted. For admins, adding or removing films is possible to satisfy the users. If a user is eligible for club membership or adminship, they can be made club member or admin in the edit user window by admins. For each film, new halls can be created, or the existing halls can be removed. Admins are authorized to buy a seat or refund a seat for users. By using this application, it is believed that the problem's impact will be decreased.

Problems Faced and Solutions for Them:

During the making of this application, many problems were faced with. One of the problems was how to save the current state to backup file on user exit. The solution was to first detect if the user exited and then make the program check and iterate through the data collections such as user HashMap and save it to backup file again. Another problem was how to ban the user for an amount of time provided by the properties file after maximum error count was exceeded. It was solved by using the timer class which is used to do action after some time. One other problem was that the hall seats did not show up when a new hall was created. The solution was to make a new method that created seats for the empty hall. One problem was that in the edit users window, users' attributes were not showing up when they were promoted or demoted by admins. It was solved by adding a set on mouse action when a user was selected for the TableView, that way attributes of the selected user could be changed.

Benefits of the System:

Many benefits are provided by the application for users. First of all, safety is provided by the application by hashing the passwords on signing up. This way, users' passwords are unknown to people who have access to the backup file. Secondly, any film can be easily added to the system by admins for users. Little time is needed to add a new film. Thirdly, films can be watched by how the user wants. It can be played or paused, and many other things are possible. Another benefit is that film suggestion is provided by the system if the user wants. It is done in the welcome window; all it takes is clicking on the "Suggest Film" button. A random film is printed on the screen and when it is clicked again, it is made sure that the previous film is not suggested again. Finally, refunding is allowed in the system, so it is possible to get a refund of original price by system whenever the user wants with one click.

Benefits of GUI:

The GUI of the application is made so the user can easily interact with text fields and buttons. It is made clean and readable, and easy to get used to. The GUI is neither small nor big. The actions performed on the application will be clear for the users. The film resolution was preserved during the making of the film window. Admins are given a simple GUI for easy editing, adding and removing.

Appendix:

The extra feature in this project is the film suggestion feature. The goal is to get a random film suggestion by the application. The purpose of this feature is to make up users' mind if they are uncertain. To use the extra feature, it is required to be logged in the application. When the welcome window is shown, the user will be able to see a button named "Suggest Film" with a white box below it. When the button is clicked, there will be a random film suggested by the application in the white box. The button is clickable as many times as the user wants. When a film is suggested, it is ensured that the previously suggested film is not suggested again. There must be at least one film for the white box to show a film. If there are not any films added to the system, an error will be given by the system.

Resources:

- https://stackoverflow.com/
- https://docs.oracle.com/javase/tutorial/
- https://piazza.com/hacettepe.edu.tr/spring2022/bbm104/resources, JavaFX slides