Project 2
CSC 311: Data Structures, Spring 2019

Department of Computer Science

California State University, Dominguez Hills

(Due: March 26, 2019, 11:59 PM PDT)

A. Objectives

1. Use at least one Stack (10 points)
2. Use at least one Queue (10 points)
3. Use a separate class for movie objects (10 points)
4. Use methods to do separate and repetitive work. The main method should not have more than 20 lines of code (10 points)
5. Implement the project correctly (50 points)

10 points will be awarded for use of meaningful identifiers, consistent indentation, explanatory comments in your code and properly formatted output, including screen shots of execution.

B. Description

Watching movies on demand has become popular with a number of available services like Netflix, Hulu, Amazon Video etc. Assume you are working for a data analytics company, and you need to gather information about movie watching patterns of users. Each movie has a title, year of release, movie duration, movie genre and movie rating. You need to create a software that helps in doing your work. For this purpose, you write a menu driven program with the following options:

1. Register User and create User login (User supplies the userID and password, and the userID must be unique)
2. Login existing user
3. Watch a movie
4. Check the complete watch history of movies in chronological order (all movies are listed here in the order they were watched)
5. Check the history of movies watched in reverse chronological order (each movie is listed only once, starting with the most recently watched movie)
6. Number of times each movie is watched
7. Most watched movie
8. Most watched genre
9. Logout

The program is menu-driven; so until the user selects option 8 i.e., Logout, the program should keep executing.
The program begins by registering a user if using the system for the first time; while registering only unique user id's are allowed and password must be at least 8 characters long (First Name and Last Name also required in this step). If the user cannot chose a unique id after 2 attempts, generate a random 8 character alphanumeric user id based on the Last Name of the user. For users previously registered, option 2 can be chosen directly.
Using option 3, the user can search the movie they want to watch. The user should be provided the option of searching using title or genre, and then choosing any movie from available list. If nothing matches, the user can either go to main menu, or search again.
Option 4 lists the browsing history for the current user starting with the first movie they watched. This option lists all movies in the order they were watched, and can contain duplicates.
Movies can also be listed in the reverse chronological order starting with the most recently watched one by choosing option 5; however, in this option each movie is only listed once.
Options 6, 7 and 8 are for the data analysis part; option 6 lists the number of times each movie is watched and option 7 shows the most watched movie for the current user. 8 shows the most watched genre for the current user. When the user is done, they can exit the program by choosing option 9.

C. Constraints

1. Implement all code in Java programming language
2. Using Java Collections is not allowed
3. The project is due by March 26, 2019, 11:59 PM PDT, using Blackboard.
4. This is not a group project. Copying code from others or using an unfair means is strictly not allowed and plagiarism charges will be imposed on students who do not follow this.
5. If students find code somewhere else that they want to include in the program, they need to cite the reference as well.
6. Include print screens of the execution of the program as a separate pdf. All the options must be included to show the complete execution of the program. Include screenshots to show the execution of the project twice. There is a penalty of 10 points for not including this file.
7. Upload all files using a single zip file; dont use other compressed format such as rar.